Leaping Hurdles

Pilot study into the effectiveness of an occupation-based group for anxious and depressed children

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Abstract

This research evaluated the acceptability and effectiveness of Leaping Hurdles: an occupation-based anxiety and mood management group intervention for children aged 10-14 years, (alongside a parallel parenting group). The intervention was conducted at a government-funded Child and Adolescent Mental Health Service (CAMHS) and children referred to the group as clinically indicated were invited to participate in the research (n=34). The research used a quasi-experimental, repeated measures design with no randomisation. Self- and parent-rated clinical measures were used: Beck Youth Inventory-II (BYI), Child Behaviour Checklist (CBCL), and Occupational Questionnaire (OQ); as well as the clinician-rated Children's Global Assessment Scale (CGAS) and Health of the Nations Outcome Scale for Children and Adolescents (HoNOSCA). Measurement tools were administered at waitlist, pre-group, post-group, and three months follow-up to allow for comparison to a control group (waitlist) and exploration of retention of change. Data was examined using descriptive analysis, repeated measures t-tests, one-way ANOVAs and analysis of correlation coefficients. This was further extended through exploration of six case studies. The power calculations were low (<.74) and the effect sizes moderate or higher.

No difference in self- or parent-rated symptomology was reported between waitlist and pre-group measurements. Descriptive analysis found a trend of improvement pre- to post-group in anxiety and depression symptoms as reported by the children. A significant improvement in pre- to post-group symptomology and level of functioning as reported by the parents and clinicians was also found. Descriptive analysis of the follow-up findings indicated the self- and parent-rated outcome measures continued to improve. A summary of the case studies suggested that males and those engaged in treatment as usual for less time - prior to commencing the group - were more likely to attain better outcomes. This research study was not randomised so it cannot be stated conclusively that the intervention was responsible for the changes found. However, early indications with the small sample size suggest that Leaping Hurdles impacted on reducing symptomology and increasing functioning: further research with a larger sample size is indicated.

Attestation of authorship

I Emma Tokolahi, hereby declare that this submission is my own work and that to the best of my knowledge and belief it contains no material previously written or published by another person (except where explicitly defined in the acknowledgements) nor material which is to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Signed:

Date:

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Chapter one: Introduction

A new, local initiative has seen the development of an occupation-based anxiety and mood management group for children aged 10-14 years, named Leaping Hurdles. The aim of this study was to evaluate the effectiveness of the Leaping Hurdles group for reducing symptoms of anxiety, depression and occupational disruption in a clinical sample. Intervention efficacy was compared to a wait list and followed-up at three months to ascertain if any improvements were maintained after the group's completion.

This research represented a significant opportunity to evaluate an occupation-based group treatment intervention that addressed the needs of children with moderate mental health concerns. It was anticipated that effective outcomes at this age would promote functional performance and strengthen resilience and capacity for coping later in life. This evaluation contributes to the limited pool of evidence-based group treatments available to occupational therapists in child and adolescent mental health. Additionally, acquiring New Zealand specific and occupational therapy specific knowledge in this area is important, not only in respect to the individual outcomes, but also in respect to funding, and the service and profession's developments.

This chapter considers the aetiology of anxiety and depression in order to lay the foundation for principles underlying the intervention of interest. This leads to discussion of how these disorders are classified, which relates to how outcomes are evaluated and how need is defined. Prevalence is discussed to highlight the substantial need for treatment targeting this population. This chapter concludes with consideration of the impact of anxiety and depression on the occupational participation, known as occupational disruption, of children and the clear need for this to be addressed.

Development and aetiology

Non-clinical anxiety

Fears and a level of anxiety are considered normal and are at their highest during the first 11-14 years of a child's life (Field & Davey, 2001). Typically, the developmental progression of these is from behavioural and physical fears, for example, fear of punishment and physical harm, to more psychological and abstract fears, such as shame and humiliation (Silverman & Treffers, 2001). When a child with normative fears is in an overprotecting environment it is thought this sends the child the message that the world is threatening and they cannot cope. In such an environment the child is also less likely to be given or seek opportunities to test this theory and learn otherwise, thus perpetuating and reinforcing the fears (Rapee, 1997). When these fears or worries impact on the child's functioning and development, then pathological explanations can be considered.

Non-clinical Depression

Normal fluctuations in mood are to be expected and typically these variations are in response to life events. It is reported about a third of children with depression experience adverse life events or problems with friendships prior to onset of their illness (Goodyer, 1994). Wakefield and colleagues (2007) sought to explore whether bereavement and other losses produce qualitatively different changes in mood when compared to a mood disorder, such as major depression. In a community-based epidemiology study in the US, 867 people aged 15-54 years and diagnosed with depression were compared on nine disorder indicators (Wakefield, Schmitz, First, & Horwitz, 2007). It was found that depression triggered by bereavement was qualitatively similar to depression triggered by recent life events, on eight of the nine disorder indicators. Thus, variations in mood triggered by life events may present similarly but not have the psychopathology of a full depressive or mood disorder. This highlights natural variances in mood that must be accounted for when considering a diagnosis of major depression or other mood disorders.

Aetiology of pathological anxiety and depression

Several theoretical frameworks have constructed different, often complimentary, conclusions regarding how anxiety and depressive disorders develop in children. Biological, cognitive, information-processing, psychoanalytic, attachment and behavioural theories are outlined briefly.

Biologists have observed the profound impact of stress (e., fears) on the stress-response-system (SRS) and the hypothalamic-pituitary-adrenal (HPA) system in a person's neuroendocrine system and the role this can have on the manifestation of anxiety (Gillespie, Phifer, Bradley, & Ressler, 2009). This theory is behind the use of Selective Serotonin Reuptake Inhibitors (SSRI's) as one of several pharmacological treatments for anxiety and their efficacy supports the SRS and HPA systems playing a role (Capriotti, 2006; Silverman & Treffers, 2001). Geneticists have reported Behavioural Inhibition (BI) is a 'propensity to react consistently to novelty and unfamiliarity with initial restraint and avoidance' in response to neurologic and genetic factors. However, the correlation between BI and anxiety suggests the strength is inconclusive (Silverman & Treffers, 2001, p. 45).

Beck and colleague's seminal work on the cognitive development of depression and anxiety symptoms asserts that the core beliefs a person holds about themselves influences how they understand and interpret events (Beck, Rush, Shaw, & Emery, 1979). These interpretations lead to distorted cognitions and subsequent negative self talk. Consequently, the anxious or depressed person processes experiences with a heightened sense of perceived threat and a decreased estimation of coping ability (Silverman & Treffers, 2001).

The information-processing perspective offers a more specific cognitive viewpoint and attributes the development of anxiety and depression to impairment in processes such as memory and attention that also affect a person's coping thoughts (Silverman & Treffers, 2001). Psychoanalytic assumptions assert that anxieties in children older than 6 years are invariably symbolic expressions of early fears and intrapsychic conflict. However, these assumptions are generally based on Freud's work with adult

psychiatric patients and have no robust foundation (Silverman & Treffers, 2001).

Attachment theorists found insecure attachments with the child's primary care-giver in the first 2-3 years were strongly correlated with anxiety disorders, however, with correlations causal inference cannot be definitively identified (Silverman & Treffers, 2001). Behaviourists would argue that the correlation is more likely to be the result of modelling and potentially over-protective behaviour from the primary care-giver (Murray, Creswell, & Cooper, 2009; Siepmann & Joraschky, 2007). This is supported by Bandura's social learning theory which asserts that a host of knowledge and action-ensembles, previously unknown to learners, could be acquired through observation and put into use without tediously overt practice (Price & Archbold, 1995). This is reinforced by findings that children of parents with anxiety disorders are two to seven times more likely to have an anxiety disorder compared to children where neither parent has an anxiety disorder (Ginsburg, 2009).

In summary, no definitive cause for anxiety or depression has been identified and there is varying evidence for each of the frameworks described. As a consequence, diagnosis of such disorders is inconsistent at times and highly influenced by the process of diagnostic classification and the paradigms subscribed to.

Classification

The taxonomy of anxiety and depressive disorders can be described in two main approaches: categorical and dimensional. The nomothetic approach of categorical classification systems assumes a person either has the condition or they don't. This approach assumes a level of heterogeneity between those diagnosed in terms of aetiology, symptoms, treatment and prognosis, that is rarely seen in child psychiatry (Werry, 1985). Categorical approaches most commonly referred to in literature pertaining to mental health are the DSM-IV and ICD-10, though neither are a complete, closed and validated list of diagnostic entities (Jablensky, 1999).

A dimensional approach assumes elements of psychopathology are present along a graded continuum and acknowledge variability based on age and gender (Silverman & Treffers, 2001). However, frequently nomothetic cut-off points are identified along this for gauging severity or the presence of clinical versus subclinical pathology (Werry, 1985). Neither categorical nor dimensional approaches are without limitations, but they do provide a starting point for shared understandings regarding the terms 'anxiety disorder' and 'depression' and are outlined below (Scotti, Morris, McNeil, & Hawkins, 1996).

Categorical

Diagnostic and statistical manual – fourth edition (DSM IV).

Primarily developed by a group of self-appointed expert psychiatrist from the United States the DSM-IV provides a categorical classification of anxiety and depression that has been adopted widely across New Zealand (Andrews, 2000).

Pathological anxiety as defined by the DSM-IV is characterised by excessive, intrusive and often irrational worry disproportionate to the level that would typically be expected (American Psychiatric Association, 1994). When this worry is pervasive in relation to everyday matters and occurs in anticipation of multiple situations and possible events it is often referred to as generalised anxiety. Anxiety is also broken down into several sub-categories when the worry is in

relation to particular stimuli, for example specific phobias, social phobia, separation anxiety, obsessive-compulsive disorder, acute stress disorder and anxiety not otherwise specified (NOS). Separation anxiety disorder is the only condition in the DSM-IV to be recognised as unique to childhood (Zhan-Waxler, Klimes-Dougan, & Slattery, 2000).

Depression as defined by the DSM-IV is characterised by the presence of five or more of the following over a two-week period: lowered mood, diminished interest or pleasure from previously enjoyed activities, diminished or excessive sleep or appetite, psychomotor agitation or retardation, lethargy, feelings of worthlessness, impaired concentration and thinking, and frequent thoughts of death or dying (American Psychiatric Association, 1994). Similarities in the presentation of childhood and adult uni-polar depression have resulted in the disorder being considered isomorphic (Zhan-Waxler, Klimes-Dougan, & Slattery, 2000). Though structurally identical the presentation of childhood and adult depression may differ, with children and adolescents more likely to present with irritability, boredom or an inability to experience pleasure and emotions other than sadness (Brent & Birmaher, 2002). Mood disorders in the DSM-IV are categorised into two groups: those that are uni-polar, that is, major depressive episode and major depression disorder, and those that are bipolar in nature, that is, hypomanic episode, mixed episode and mood disorders NOS.

DSM-IV reliability is an ongoing concern and reported as problematic; open to societal, cultural and political influences (Carr, 1999). However, DSM-IV has gone further than previous editions to promote reliability by describing 'observable clusters of symptoms' for diagnostic criteria (Carr, 1999, p. 66). For most (but not all) DSM-IV diagnosis, 'a single criteria set is provided that applies to children, adolescents and adults' (American Psychiatric Association, 2000, p. 39). This may result in disorders in children being missed or misdiagnosed; though this is mediated by the insertion of a section into most categories on specific features related to age that describe variations in presentation according to developmental stage.

New Zealand is a multi-cultural nation and the DSM-IV is recognised as having made significant improvements with regard to cultural sensitivity; however, there are significant deficits still to be addressed (Carr, 1999).

International classification of diseases – tenth edition (ICD-10). The ICD-10 was endorsed by the World Health Organisation in 1994: it is an internationally developed system for classifying diseases and other health problems. Overall, it is still a set of definitions written by a group of international experts and as a classification system, ICD-10 has not been as widely used as the DSM-IV as reported by Andrews (2000).

Anxiety as defined in the ICD-10 is broken down into specific mental functions related to the affective processes of the mind, such as appropriateness of emotion and regulation of emotion (World Health Organisation, 2010). Disorder of these mental functions is categorised very similarly to the DSM-IV: separation anxiety disorder, panic disorder, obsessive-compulsive disorder etc, however the criteria attributed to each is not consistent (Andrews, 2000). For example, three or more of six symptoms must be present for a DSM-IV diagnosis of generalised anxiety disorder; yet, for an ICD-10 diagnosis the presence of four or more of 22 symptoms are required (Andrews, 2000).

Pathological depression as defined by ICD-10 is classified as a mood disorder characterised by a fundamental disturbance in the client's affect (World Health Organisation, 2010). In other mood disorders the disturbance may shift the individual's affect to that of elation. ICD-10 subdivides mood disorders into episodes of mania, depression, bipolar episodes, recurrent, persistent, NOS and unspecified mood disorders. The individual with depression is reported to experience lowered mood, reduced energy, and decreased activity. The individual's capacity for enjoyment, interest, and concentration is reduced, and they experience marked tiredness after minimum effort. Sleep is usually disturbed and appetite diminished. Self-esteem and self-confidence are almost always reduced and, even in the mild form, some ideas of guilt

or worthlessness are often present. Severity is gauged dimensionally by the number of symptoms present (World Health Organisation, 2010).

Version 10 of the ICD is radically different to earlier more conservative versions and was developed with much consultation with the designers of the DSM-IV to facilitate convergence of key features (Jablensky, 1999). It is unclear what impact this may have had on the theoretical frameworks influencing the developers of the ICD-10. This convergence is recognised as imperfect as cross-referencing of diagnostic codes does not yield wholly accurate information due to inconsistencies in diagnostic criteria. An additional feature of ICD-10 is that it incorporates a dimensional aspect to its classificatory system with qualifiers allocated to each condition rating the severity and impact on health states.

Awareness of how health states differ across developmental stages is demonstrated in ICD-10 with a child and youth specific system; however, it does not adequately capture the changing functional characteristics of a developing child. What it does capture, is acknowledgement of the integral role the environment plays in the manifestation of disability, which is relevant across the lifespan (Lollar & Simeonsson, 2005).

For a multicultural nation, such as New Zealand, there is a significant lack of cultural sensitivity through the ICD-10. The existence of cultural variations in psychopathology are acknowledged in ICD-10, however, there is no acknowledgement of indigenous languages or separate criteria to accommodate this (Jablensky, 1999).

A major limitation of both ICD-10 and DSM-IV is that the diagnostic criteria for anxiety do not represent a natural division between wellness and illness, nor do they represent natural division between diagnostic entities (Andrews, 2000). The challenge for DSM-IV and ICD-10 is the many masters they must serve (e.g., data collection, research, communication) and clinical utility is but one of those. Additionally, these systems have been constructed as tools for use by

clinicians from a variety of disciplines, utilising a range of approaches (e.g., medical, cognitive, behavioural, and psychodynamic) across different settings (e.g., inpatient, community).

Categorical functional classification. Functional approaches to classification of disorders are gaining increasing popularity, particularly in relation to anxiety (Scotti, Morris, McNeil, & Hawkins, 1996). This approach classifies anxiety disorders by their trigger. For example, a fear of people from other ethnic/cultural backgrounds is classified as xenophobia. This approach identifies target behaviours and their consequences to allow more specific and targeted treatment (Silverman & Treffers, 2001). However, there is limited evidence of the heterogeneity in individual's responses to common triggers and the construction of an exhaustive list of disorders would be substantial.

Dimensional

Mundt (2002) purports all psychiatric classification is dimensional by nature. Two systems that are intentionally dimensional in approach are behavioural and functional classification.

Behavioural classification. Classification of disorders behaviourally considers the observable behaviour of the person in response to stimuli before placing the severity of their behaviour on a continuum. Such an approach collects empirically-based factors (i.e., observable behaviours) and utilises less costly and easy to administer measures (e.g., self or parent/teacher rated checklists) and as a result is reported to present higher indices of reliability than more categorical approaches to classification (Silverman & Treffers, 2001).

Dimensional functional classification. Classification of disorders by their function aims to delineate the basic functions and dysfunctions of mental applications and behaviour, which result in symptomology (Mundt, 20002). In a study using regression analysis it was found that defining dimensions of dysfunction allowed pre-morbid risk factors to be highlighted (Allardyce, McCreadie, Morrison, & van-Os, 2007). Such an approach would support reference to syndromes over distinct conditions, which is consistent with the overlap between anxiety and depression where some symptoms are part of the same syndrome, but others, that is, separation anxiety, fears and compulsions, are part of a distinct anxiety dimension (Lahey, Applegate, Waldman, Loft, Hankin, & Rick, 2004).

Whatever the approach taken to classify pathological symptoms, there remains no single test that can conclusively diagnose the presence of anxiety or depression. The process of ascribing diagnosis still requires the clinician to elicit, and the readiness of the client to communicate subjective experiences, much as the processes went over a century ago (Jablensky, 1999). Subsequently, there is substantial variation in reported prevalence of the disorders, influenced by whom, how and when data was collected.

Epidemiology

Prevalence

Reported prevalence rates of middle childhood (i.e., 10-14 years) anxiety and depressive disorders vary widely, with the incidence of depression ranging from 0.9% to nearly 50% and of anxiety from 0.5% to 10.5% (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Klein, Dougherty, & Olino, 2005; Meltzer, Gatward, Goodman, & Ford, 1999; Schwartz, Gladstone, & Kaslow, 1998; Zhan-Waxler, Klimes-Dougan, & Slattery, 2000).

An early study from the late 1950's found parent-reported problems in 6-12 year olds, in New York, showed problems related to fears and worries were extensive (Lapouse & Monk, 1958). At the time it was believed these findings cast doubt over the concept that such problems were psychopathological. However, when specific criteria were applied the prevalence of anxiety disorders ranged from 0.5%-10.5% depending on which specific anxiety disorder from the Diagnostic and Statistics Manual – Third Edition (DSM-III) was referred to. The most common anxiety disorder in childhood is separation anxiety disorder; in adolescence this is generalised anxiety disorder, and panic disorders are most common in late adolescence to early adulthood (Silverman & Treffers, 2001). Age of onset for such disorders were noted to range from 4.1 years for conditions such as specific phobias and separation anxiety disorder to 15.6 years for conditions such as social phobia, panic and obsessive-compulsive disorders (OCD). The latter group identified as more prevalent for children in middle childhood (Lapouse & Monk, 1958).

A more recent longitudinal community study in the United States of 1,420 children aged 9-13 years at intake and followed through until age 16 years, found a prevalence of 2.4% for anxiety and 2.2% for depression in this population (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). Findings for children and adolescents in the United Kingdom (UK) indicate prevalence rates of 3.8% for anxiety and only 0.9% for depression (Meltzer, Gatward, Goodman, & Ford, 1999). Klein and colleagues (2005) reported a prevalence of 1-3% in school aged children, increasing to 15-20% in

adolescence. Another study reported depression prevalence rates as high as 50% for adolescents in a clinical setting (Schwartz, Gladstone, & Kaslow, 1998). A comprehensive review of previous studies reported the prevalence of anxiety to sit between 5.7%-17.7% (Costello & Angold, 1995). However, Zhan-Waxler and colleagues (2000) review of the literature, 5 years later, reported more conservative prevalence rates for depression between 2%-8% for 4-18 year olds.

Regarding depression it is important to consider its strong correlation with suicide (Vitiello, et al., 2006). From 13-15 years the risk of suicide in NZ increases, with approx 11% reporting suicidal thoughts and behaviours at 13 years increasing to 17% at 15 years (Adolescent Health Research Group, 2008). This highlights the need for early intervention before adolescence to prevent such high rates of risk.

Discrepancies in reported prevalence may potentially be accounted for by several factors. First, cultural differences may impact on the presentation and diagnosis of these disorders. Second, different study designs were employed, which is likely to have impacted on data collection and analysis and similarly on comparability of findings. Third, studies have shown significant variability in the prevalence of disorders across developmental stages (Silverman & Treffers, 2001). Fourth, research that reports prevalence rates across clinical or population representative samples will provide different estimates (Klein, Dougherty, & Olino, 2005). While the true prevalence remains unclear, clinical impression indicates anxiety and depression are a serious concern for Child and Adolescent Mental Health Services (CAMHS).

Gender differences

Statistics from the New Zealand Youth ’07 study (i.e., 13-18 year old adolescents in school) found higher rates of females (25%) than males (10%) reported seeing a health professional for emotional worries in the previous 12 months. Of the total number of students surveyed, 15% female and 7% male reported experiencing symptoms of depression (Adolescent Health Research Group, 2008). This study has a number of limitations, including only capturing information from students enrolled and attending

secondary schools and not those in alternative education or not attending a school.

In New Zealand, unlike several other countries reported on, males aged 10-11 years are more vulnerable than females to psychiatric disorders, except separation anxiety. However, after 15 years the higher prevalence rates shift to females (Cohen, et al., 1993; Klein, Dougherty, & Olino, 2005; Silberg, et al., 1999).

This is evident in the Christchurch Health and Development study, which followed a cohort of 1,265 children born in the late 1970's until their 21st birthday. When participants were aged 15 years, overall rates of anxiety and depression were found to be 12.9% and 6.3% respectively (Fergusson & Horwood, 2001). When this data was broken down, in both instances the average rates for females exceeded the overall by about a third, that is, anxiety – 18.8% females, 6.9% males; depression – 9.2% females, 3.3% males.

Co-morbidity

A significant relationship between anxiety and depression has been clearly identified (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Silverman & Treffers, 2001) with anxiety disorders in childhood and adolescence having shown to precede and predict later depressive disorders (Merrick, 1992; Zhan-Waxler, Klimes-Dougan, & Slattery, 2000). A 15 year follow-up study has shown that co-morbid anxiety and depression is more stable than either disorder alone (Merikangas, Zhang, Avenevoli, Acharyya, Neuenschwander, & Angst, 2003). This relationship is noted to be more marked in girls than boys (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). One hypothesis asserts that increasing levels of anxious cognitions result in depressive symptom formation, though no definitive or causal relationship has been established (Silverman & Treffers, 2001). Lapouse and Monk (1958) suggested that high rates of co-morbidity between anxiety and depression may be an outcome of true associations (e.g., shared aetiology, causal associations, or correlated risk factors) or artificial associations (e.g., treatment seeking factors, artefacts of assessment or nosologic factors). Others suggested anxiety and depressive symptoms are part of the same

syndrome (Lahey, Applegate, Waldman, Loft, Hankin, & Rick, 2004). Regardless, this is a very real and potentially debilitating experience for the individual requiring attention.

Implications for occupational therapy

Significantly, research has shown high levels of diagnosis continuity from childhood into adolescence and adulthood, and that adolescents with a history of a psychiatric disorder are three times more likely to have a diagnosis (though this may not be the same diagnosis as in childhood; Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Klein, Dougherty, & Olino, 2005). This has implications for the individual, their families and health organisations in terms of decreasing functional abilities (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003), lowered sense of well-being and length of service admissions and medication (Freeman, Gillam, Shearin, & Plamping, 1997).

The impact of anxiety and depression has potentially devastating functional limitations in social, academic and other domains of participation (Harrington & Dubicka, 2002), undermining success in key occupations of childhood, including school and play (Descha & Ziviani, 2007). An occupation is defined as any meaningful activity or task performed as part of everyday functioning related to self-care, leisure, productivity and rest (Hagedorn, 2000). Normal childhood occupations include play, attending school and family activities. When an individual's ability to participate in their normal occupations is temporarily interrupted by internal or external factors (such as low mood or family conflict), this is referred to as occupational disruption (Christiansen & Townsend, 2004).

Occupational disruption is a consequence of many conditions and is a recognised impact of anxiety and depression (Borris, Kielhofner, Burch, Gelinas, Klement, & Schultz, 1986). This was demonstrated by Merrick, (1992) who found that children with depression participated in a more limited range of activities than those who had recovered from depression. It logically proceeds that there is a relationship between anxiety and depression symptoms and occupational disruption. Most studies target the psychiatrically labelled symptoms with little attention to the latter, despite the potentially devastating impact of occupational disruption.

Chapter two: Defining the intervention

High rates of co-morbidity between anxiety and depression have contributed to the notion that these disorders have an etiologic connection (Freeman, Gillam, Shearin, & Plamping, 1997). This theory is further strengthened by the demonstrated effectiveness of using the same or similar treatments for both conditions. Interventions used to treat anxiety and depressive disorders in children are outlined below, followed by a description of outcome measures typically used to evaluate interventions. This chapter concludes with a brief description of the Leaping Hurdles programme that was the focus of this research.

Current treatments for anxiety and depression

Research has identified four main treatment modalities as effective in alleviating symptoms of depression: cognitive behaviour therapy, pharmacology, acceptance and commitment therapy and interpersonal therapy (Rossello & Bernal, 1999). The first three have been found to be effective treatments for anxiety also. These treatment modalities are discussed, followed by a review of a less evidenced treatment: occupational therapy.

Pharmacological treatments

Biologists have found depression to be the result of a deficiency of monoamine neurotransmitters - in particular norepinephrine, serotonin and dopamine – for unknown reasons. This led to the development of two groups of antidepressants. First, monoamine oxidase inhibitors (MAOI's) that destroy the enzyme which deactivates norepinephrine in the brain, thus reducing the deficiency. Second, tricyclic antidepressants (TCA's) that enhance norepinephrine and/or serotonin transmission, thus increasing their effectiveness. These medications were found to have many adverse side-effects and potentially lethal consequences, particularly in overdose (Capriotti, 2006).

Subsequently, there was a drive to develop safer pharmacological treatment options. Medications were developed that manipulate the monoamine neurotransmitters in the brain's synapses – in particular, Selective Serotonin Reuptake Inhibitors (SSRI's), which inhibit serotonin reuptake, thus increasing its binding affinity. SSRI's are considered the first line treatment for those with depression (American Academy of Child and Adolescent Psychiatry, 2007). One of these – fluoxetine – is the only one Pharmac approve for use with children in New Zealand, although its efficacy for use with those under 18 years remains unestablished (Medsafe, 2009).

A double-blind, placebo controlled study of 15 children, 6-11 years old and diagnosed with selective mutism, social phobia or avoidant disorder found that fluoxetine was superior in reducing symptoms than a placebo (Black & Uhde, 1994). In a clinical trial of 74 children aged 7-17 years and diagnosed with generalised anxiety disorder, social phobia and separation anxiety disorder, 61% were found to have improved markedly on fluoxetine for the first two disorders as opposed to 35% in the placebo group. However, for separation anxiety disorder there was little difference in the effects between fluoxetine and the placebo medication (Birmaher, et al., 2003).

Most antidepressants must be taken for 2-4 weeks before the patient reaches a therapeutic level and senses a change in mood. In the initial stages of treatment, antidepressant medications are asserted to increase suicidality in children. Analysis of 24 short-term, placebo-controlled trials -

of 4-16 weeks - in over 4000 children and adolescents diagnosed with depression, obsessive compulsive disorder or another psychiatric disorder revealed an increase in suicidal thinking during the first few months of using an SSRI. This was evident in 4% of the population being treated with an antidepressant, as opposed to 2% of those treated with a placebo (Medsafe, 2009). However, this is controversial as the evidence is highly inconclusive. As a precaution, families are advised to be aware this is a potential side-effect. Treatment generally continues for 6-12 months with a maintenance dose for 12-36 months reducing the risk of relapse. The black-box warnings on the use of Selective Serotonin Reuptake Inhibitors (SSRI's) with adolescents means the use of non-pharmacological treatments is more relevant than ever (Brunstein-Klomek, Zalsman, & Mufson, 2007).

A herbal remedy promoted for the treatment of depression is St John's Wort, which is thought to enhance serotonin in the brain. A Cochrane review of 37 double-blind randomised controlled trials in adults found St John's Wort may be useful for those with mild to moderate depression and less so for those with major depression (Kinde, Mulrow, & Berner, 2005). In one study, 101 children - aged 1-12 years - were observed over a period of 6 weeks following prescription of St John's Wort for depression and psycho-vegetative disturbances. There was respectable agreement between independent parent and physician ratings of efficacy, which was rated as excellent (Hubner & Kirste, 2001). It is important to note no standardised measures were used, there was no control group and dosage varied according to physician discretion (average 300 mg/day; maximum 900 mg/day).

While clinical trials have produced ambiguous results and the use of St John's Wort is considered controversial (Capriotti, 2006; Wellington School of Medicine, 2004), it was found to be the third most popular (non-Maori) complementary/alternative medicine for anxiety and depression in New Zealand used by Maori and non-Maori alike (Nicholson, 2006). Traditional Maori medicines reported were generally for non-specific conditions so treatments specifically for depression or anxiety were not identified.

Cognitive behaviour therapy

Individual Cognitive Behaviour Therapy (CBT) has been shown to be effective both in the short and long term, with one study finding that at one year post-completion, 73% of adolescents would no longer meet the criteria for their original anxiety disorder (Flannery-Schroeder, Choudhury, & Kenall, 2005). Vitielo and colleagues (2006) conducted a 12 week clinical trial of 439 adolescents diagnosed with major depression. Participants were randomised into four treatment groups: medication only; CBT only; a combination of medication and CBT; standard clinical management with a placebo medication. Combination treatment and the medication alone were found to be statistically superior to the others in reducing depressive symptoms and improving functioning ($p < .001$).

CBT as a treatment for anxiety and depressive symptomology was found to be insufficient in effecting significant change when level of functioning was measured as an outcome (Brent et al., 1997; Vitiello, et al., 2006). Interventions that relieve symptoms without addressing functional impairments are insufficient for effecting functional change and the use of other, complementary treatment modalities is recommended (Brent et al., 1997).

CBT addresses perceptual and cognitive processing errors and its effects should be evident within 8-12 weeks or else alternative treatment methods should be considered (Harrington & Dubicka, 2002). Despite this, a randomised control trial found that in order for CBT to be effective for adolescents a change in depressive cognitions was not necessary (Kolko, Brent, Baugher, Bridge, & Birmaher, 2000). This makes it difficult to pin-point what it is about CBT that works: a contentious factor when individual CBT can be expensive, both in regards to time and financial cost. Group therapy has long been advocated as a way to reduce costs while maintaining therapeutic benefit (Brown & Lewisohn, 1984; Wood, Trainor, & Rothwell, 2001).

Group CBT and parental involvement. Barrett (1998) extended research beyond individual CBT using a randomised clinical trial design with 60 children, aged 7-14 years and diagnosed with anxiety. The three treatment groups compared were group-based CBT (n=23); group-based CBT with a parallel parenting group (n=17); and a waitlist control group (n=20). Following group-based CBT, 64.8% were found to no longer meet criteria for anxiety, more than double those from the waitlist control group (25.2%). From those receiving group-based CBT and a parallel parenting intervention 84.8% were found to no longer meet criteria for anxiety. Incorporating parenting components alongside group-based CBT was found to be more effective than the group-based CBT alone.

An unpublished study found that offering parental education as an intervention was effective at increasing parental knowledge around anxiety but not for increasing their reporting of it, indicating no change in parent-child agreement around how anxiety is presenting in their own child (Seibert, 2002). However, a number of studies have identified increased effectiveness of interventions when a parenting intervention is combined with treatment (Barrett, 1998; Barrett, Dodds, & Rapee, 1996; Cobham, Dodds, & Spence, 1998; Silverman, Kurtines, Ginsburg, Weerns, Lumpkin, & Carmichael, 1999).

In an Australian randomised controlled trial, 79 children diagnosed with anxiety, aged 7-14 years, were randomised into three treatment groups including a control group (Barrett, Dodds, & Rapee, 1996). Following a 12 week programme of CBT (*n*=28) or CBT with family intervention *n*=25), 37 of 53 children (69.%) were found to no longer meet criteria for anxiety as opposed to six of 23 (26%) on the waitlist control (three moved out of state and were not included in data analysis). Notably, at 1 year follow-up this improvement was maintained for the CBT group at 70.3%, and actually improved for those who were given CBT and family intervention, with 95.6% no longer meeting criteria for an anxiety disorder. This indicates the significant role parent interventions can have on reducing the immediate and long term impact of an anxiety disorder.

A later study considered the additional impact of parental anxiety on treatment efficacy in a controlled trial of 67 children, aged 7-14 years and diagnosed with anxiety (Cobham, Dodds, & Spence, 1998). Parents were assessed for anxiety using the State Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1970) and split into two groups accordingly: one or more anxious parents (n=35) or non-anxious parents (n=32). Each group was then randomly subdivided into one of two intervention groups: CBT or CBT and family management. Cobham and colleagues found that 26 out of 32 children (81%) no longer met criteria for anxiety - regardless of the treatment intervention - for those with non-anxious parents compared to the 20 out of 35 children (57%) in the group with anxious parents. For those with one or more anxious parents and allocated to the CBT group only 7 children out of 18 (39%) no longer met criteria for an anxiety disorder as opposed to 13 out of 17 children (77%) from the CBT and family management group. Again, the significant role parental involvement can have alongside CBT on a child overcoming anxiety is evident.

Acceptance and commitment therapy

Acceptance and commitment therapy (ACT) is a novel approach based on acceptance and mindfulness-based behavioural psychotherapy (Gaudiano, 2009). This approach seeks to facilitate therapeutic change by altering the context in which negative emotions are experienced rather than the content to promote psychological acceptance and reduce dysfunctional avoidance behaviours (Zettle, 2003). Acceptance and commitment therapy is based on modern behavioural psychology and includes six core treatment processes: 1) acceptance, 2) diffusion, 3) contact with the present moment, 4) self as context, 5) values, and 6) committed action. On the one hand, ACT has been identified as potentially beneficial for use with anxiety and depressive disorders and it is reported empirical support for this assertion is still emerging (Forman, Herbert, Moitra, Yeomans, & Geller, 2007; Gaudiano, 2009; Pull, 2009). On the other hand, a meta-analysis of 18 randomised controlled trials found ACT outperformed control conditions except for distress conditions, such as anxiety and depression, and was not

significantly more effective than established treatments (e.g., CBT; Powers, Zum-Vorde-Sive-Vording, & Emmelkamp, 2009).

In a repeated-measures study of 24 college students with maths anxiety, in which four were male and the mean age was 30 years, Zettle (2003) found equivalent reductions in self-reported anxiety following six sessions of either ACT or the more traditional treatment of systematic desensitisation (p<.001). However, statistically and clinically significant decrements in trait-anxiety were only found in those treated with the latter (p<.001). Limitations of this study include the small sample size and lack of control group to account for interaction effects.

In a more recent clinical study of 19 adults diagnosed with social anxiety disorder (10 females, mean age 31 years), participants were assessed at pre-, post- and three month follow-up to a 12 week programme of exposure therapy and ACT (Dalrymple & Herbert, 2007). Self-report measures found a significant decrease in anxious symptomology at post-treatment and an equally significant improvement in perceived quality of life between pre-treatment and follow-up (p<.001 for both). This study was limited by its small sample size, lack of control group and the use of another treatment approach (exposure therapy) alongside ACT - potentially impacting on treatment integrity and the ability to pin-point what part of the treatment was responsible for the significant effects found.

Forman and colleagues (2007) conducted a randomised controlled trial of 101 adults reporting moderate to severe anxiety or depression (measured by a score of >9 on the Beck Depression Inventory –BDI- or the Beck Anxiety Inventory -BAI). The mean age of participants was 27.9 years and the majority were female (80.2%). Participants were randomised into two treatment conditions: CBT (n=44) or ACT (n=55). Over a third in each condition did not complete treatment (CBT: 42.2%; ACT: 33.9%) and for those who did the mean number of sessions completed was 15.27 for CBT and 15.60 for ACT. ACT was found to be equally as effective as CBT in reducing symptomology as rated by the participants and clinicians (p<.001) and Cohen's d was computed for pre-post effect sizes for each outcome measure - BDI: 1.27; BAI: 0.68 - indicating a large and moderate effect size respectively. Improvements were thought to have been achieved

through different therapeutic mechanisms. The validity of these findings is somewhat questionable given the high rates of attrition across the treatment conditions and the lack of a waitlist control group.

One case study was found using ACT with a young person, aged 18 years, who was diagnosed with a learning disability and experiencing anxious and obsessive thoughts. Brown and Hooper (2009) found through using mindfulness and ACT-based experiential activities the client learned to notice her thoughts and distance herself from their literal content, thereby reducing the negative impact of these on her day-to-day life. It was acknowledged that individual adaptation was needed, as is often the case when working with young people with learning disabilities, potentially affecting treatment fidelity. Given only one individual was used is this case study findings must be considered with caution and are not generalisable.

There are insufficient studies to conclude that ACT is more effective than established treatments but the data on its effectiveness shows some promise (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Ost found ACT did not meet formal criteria for an empirically supported treatment due to substantial methodological shortcomings in study designs (Ost, 2008). However, it was noted that this is characteristic of early randomised controlled trials from other emerging psychotherapeutic approaches (Gaudiano, 2009). There is a significant paucity of research in the use of ACT with children and adolescents, suggesting its use with this population should only be considered with caution and indicating further research is needed.

Interpersonal therapy

Interpersonal Psychotherapy (IPT) is an emerging treatment approach for individuals experiencing depression though with less supporting research than CBT. The IPT perspective explains depression in the context of problems with interpersonal relationships and aims to promote more satisfying and healthy relationships in order to ameliorate the individual's depressive symptoms (Rossello & Bernal, 1999).

A 12 week controlled clinic trial of 30 women with recurrent depression piloted the use of IPT via telephone (Miller & Weissman, 2002). Following the treatment intervention the women reported a pre- to post-treatment reduction in depressive symptoms as rated by the Hamilton Rating Scale for depression (p<.02), increased functioning as measured by the Global Assessment Scale (p<.02) and increased work and social functioning (p<.03 and .05 respectively).

Mufson and colleagues have conducted several research projects where IPT was found to be an effective therapy for adolescents with depression (Gladstone & Beardslee, 2009; Mufson, Dorta, Wickramaratne, Nomura, Olfson, & Weissman, 2004; Mufson & Fairbanks, 1996; Mufson, Gallagher, Dorta, & Young, 2004; Mufson, Weissmann, Moreau, & Garfinkel, 1999). A 16 week randomised clinical trial of 63 adolescents found IPT to be more effective in reducing depressive symptoms (p<0.04) and improving functioning (p<0.04) than treatment as usual, which generally consisted of individual psychotherapy/counselling (Mufson, Dorta, Wickramaratne, Nomura, Olfson, & Weissman, 2004).

An adaptation of IPT as a group treatment used a chart review method to evaluate the effectiveness of the intervention with six girls aged 13-17 years (Mufson, Gallagher, Dorta, & Young, 2004). Participants were reported to present with decreased depressive symptomology as rated on the DSM-IV depressive symptom checklist and increased functioning as measured by the Child Global Assessment Scale. Limitations of this study include the small number of participants, that they engaged in concurrent individual therapy for the duration of the study and that there was no control group.

A review of the literature in relation to IPT with adolescents supported its use (Gladstone & Beardslee, 2009), but only one study was identified where a comparative group receiving an alternative treatment, such as CBT, was used (Rossello & Bernal, 1999).

Rossello and Bernal (1999) conducted a 12 week trial with 71 Puerto Rican adolescents aged 13-17 years who met the criteria for depression. Participants were randomly assigned into three groups: CBT (n=25), IPT

(*n*=23) and waitlist (*n*=23). Measures of depression, self concept, social adjustment, family emotional involvement and criticism and behavioural problems were measured at three time points: pre-, post-, and three months follow-up. Post measurements found the treatment groups produced significant reductions in depressive symptoms (CBT p <.015 and IPT p <.002) when compared to the waitlist group where no significant differences were found at post measurement. Functioning was measured by level of depressive symptomology, that is, those who scored 17 or less on the Child Depression Inventory (Kovacs, 1992) were considered functional. Following treatment, 15 out of 25 participants (60%) receiving CBT and 15 out of 19 participants (79%) receiving IPT were functional after treatment. However, at follow-up it was indicated that participants receiving CBT continued to make gains, which was contrary to the participants who received IPT.

Rossello and Bernal's (1999) study is limited by its low sample size and the proportion of clients with higher depressive symptoms being randomly assigned to receive CBT. When considering IPT within a New Zealand context it is useful to consider the similarities between Puerto Rican values and those of Maori. Puerto Rican adolescents are reported to hold strong values regarding family: strong identification and attachment to family group, solidarity, loyalty and reciprocity. This is consistent with the values attributed to Maori youth (Bishop, Berryman, & Richardson, 2001; Metge, 1984), which implicates IPT as a potentially acceptable and effective treatment for adolescents in New Zealand.

Occupational therapy

Occupational therapy addresses occupational development, competence and mastery through the use of developmental, restorative or compensatory strategies (Hagedorn, 2000). To date there is no systematic research to evaluate the effectiveness of occupational therapy as a treatment intervention for anxiety and depression in children and adolescents, particularly within a New Zealand context. A study exploring the relationship between control-related beliefs and depression applied a multiple regression analysis and found low levels of perceived competence were moderately correlated with depressive symptoms (Weisz, Weiss,

Wasserman, & Rintoul, 1987). Given the focus within occupational therapy on buliding up levels of percieved and actual competence in meaningful occupations this study highlights the potential of occupational therapy in the treatment of depression.

A study of 62 adults with major depression, reduced work functioning and absenteeism were randomised into two groups: treatment as usual (TAU), which included case management and at times antidepressants, or TAU plus occupational therapy (Schene, Koeter, Kikkert, Swinkels, & McCrone, 2007). Occupational therapy treatment in this study consisted of a diagnostic phase (assessment of occupational history, video observations and return to work transition planning), followed by 24 weeks of therapy (preparation for work, stress management, limitations and boundaries, transition implementation), which was a mix of individual and group-based. This therapy had previously been tested in a small open study (n=20) and found to be effective, acceptable and appreciated. Assessments were made at baseline, 3, 6, 12, and 42 months and concluded that occupational therapy did not improve depression, but did improve work functioning without increasing work stress and was superior to TAU in terms of cost-effectiveness.

In the late 1990's seminal research investigating an occupational therapy group-work programme with older adults was conducted (Clark, et al., 1997). The Lifestyle Redesign Program was a nine-month occupational therapy intervention that emphasised occupations as dynamic in maintaining and promoting good physical and mental health and well-being (Mandel, Jackson, Zemke, Nelson, & Clark, 1999). In a randomised controlled trial a sample of 361 well-elderly persons was split into three groups: occupational therapy (intervention), non-professionally led activity and untreated (controls). The intervention group demonstrated greater gains (or few declines) in physical health and functioning, social functioning, mental health and life satisfaction than the control groups and the inclusion of the activity group demonstrated this effect was not the result of non-therapy driven activity (Jackson, Carlson, Mandel, Zemke, & Clark, 1998).

The Well Elderly Study highlighted the need for balance between work, leisure and rest for anyone, though occupational balance is affected by developmental stage (Christiansen & Townsend, 2004). It has been

recognised that imbalance in these areas creates a risk factor for compromised well-being because of the potential to limit discovery and expression of interests, capacities and the benefits experienced through community participation (Krupa, McLean, Eastabrook, Bonham, & Baksh, 2003). How individual's use their time is recognised as a measure of functioning and more restrictive measures - such as work status or school attendance - fail to capture the complex relationship between activity participation, health and well-being in the community. Findings from Krupa and colleague's study indicate a need for occupational therapy research addressing the relationship between activity participation and mental illness.

A survey of 476 occupational therapists working in schools found that most believed occupational therapy could provide a much needed service to students with emotional disturbances (Barnes, Beck, Vogel, Grice, & Murphy, 2003). Interventions were provided individually and in response to specific performance needs at school, for example, handwriting, play, functional communication and the heavy emphasis on sensorimotor components was noted. However, this study was unclear on the exact nature of the children's emotional disturbances and outcomes were not measured. Additionally, no independent research exploring this need was found.

Across the range of treatment modalities outlined there is a notable gap in published research regarding evaluating effective treatments of anxiety and depression for children and adolescents in a New Zealand context. Internationally, there is also a paucity of literature rigorously investigating occupational therapy as a treatment for children with anxiety and/or depression. Limitations in the occupational therapy literature include an absence of studies exploring the relationship between occupational disruption, mental health and treatments – particularly for children and adolescents. From the literature reviewed it is clear there is scope for meaningful research in these areas.

Follow-up

Intervention follow-up periods ranged from three-months (Dalrymple & Herbert, 2007; Levy, Hunt, & Heriot, 2007; Rossello & Bernal, 1999), to six-months (Clark, et al., 1997; Lewinsohn, Hobberman, & Clarke, 1989) to one year (Flannery-Schroeder, Choudhury, & Kenall, 2005). Results indicated the residual effects from engaging in CBT, ACT, IP and occupational therapy treatments were lasting and beneficial. One study had no follow-up assessment so the future impliations of the treatments were not ascertained (Vitiello, et al., 2006).

Outcome measures

Dimensions of psychosocial functioning examined in previous studies include anxiety, depression and occupational performance or functioning. These are explored below with reference to typical outcome measures used in international research. Interviews are frequently cited as a method for measuring the manifestation of depression and anxiety in a population (Hodges, 1993; Hogendoorn, Wolters, Vervoort, Prins, Boer, & deHaan, 2008). Interviews allow comprehensive enquiry of the participant and facilitate opportunities to follow-up or clarify understandings and meaning. However, interviews are time-consuming and often not standardised, which can result in idiosyncratic questioning and inaccurate perceptions of the disorder by the interviewer (Klein, Dougherty, & Olino, 2005).

Psychometric instruments, on the other hand, refer to a range of standardised measurement tools, including questionnaires, rating scales and checklists, designed to measure an individual's emotional and cognitive states. They are a method for estimating the extent of anxiety and depression. It is important to note psychometric tools do not replace comprehensive assessment and measurement of depression, anxiety or other psychiatric conditions. They are more tentative than fully diagnostic (Klein, Dougherty, & Olino, 2005). Typically, the raw scores from psychometric tools are transformed into standardised scores with a mean of 50 and standard deviation of 10, known as *T* scores, as with the Beck Youth Inventories (Beck, Beck, Jolly, & Steer, 2005).

Klein and colleagues (2005) advocated best practice guidelines for the assessment of children and adolescents with depression and anxiety are via triangulated methods involving observation, self- and parental-report.

Depression

Beck Depression Inventory – second edition (BDI). The BDI is a commonly reported psychometric scale used to measure depression in children and adolescents, particularly in pre-, post- and follow-up studies (Brent, et al., 1997) (Brollier, Hamrick, & Jacobsen, 1995) (Lewinsohn, Hobberman, & Clarke, 1989) (Mufson, Dorta, Wickramaratne, Nomura, Olfson, & Weissman, 2004) (Williams & Schouten, 2008). The BDI and the Hamilton Anxiety and Depression (HAD) Rating Scale (Mufson, Dorta, Wickramaratne, Nomura, Olfson, & Weissman, 2004) were found to be equivalent in their ability to differentiate depression from subclinical cases, as were non-specific assessments such as the Sense of Coherence (SOC) and Strengths and Difficulties Questionnaire – emotional subscale (SDQ-em) (Blom, Larsson, Serlachius, & Ingvar, 2010)***.***

The BDI standard and short forms were also found to be significantly correlated to the Zung Self-Rating Depression Scale (r=.57 and r=.58 respectively; p<.001) and to the University of California-Los Angeles Loneliness Scale (r=.42 and r=.47 respectively; p<.01) providing evidence of criterion validity (Reynolds & Gould, 1981). Both forms were found to have high internal consistency reliability (α>.83) and were strongly correlated to each other (r=.93). However, this testing was conducted on an adult population (mean age 26.13 years).

The BDI for youth was tested on 859 girls aged 9-13 years and was again found to have high internal consistency (α>.90) and was correlated with the Child Depression Inventory (r= .83) (Stapelton, Sander, & Stark, 2007). Slightly lower reliability was found in the younger girls, aged 9 years, but no significant affects for race or ethnic groups were found.

Beck Youth Inventories (BYI). Beck and colleagues later developed a collection of psychometric inventories known as the BYI (Atwine, Cantor-Graae, & Bajunirwe, 2005; Bregnvalle, Thastum, & Schoitz, 2007; Levy, Hunt, & Heriot, 2007). The BYI consist of five inventories, which each contain 20 questions about thoughts, feelings, and behaviours associated with emotional and social impairment in youth (Beck, Beck, Jolly, & Steer, 2005). Children and adolescents describe how frequently the statement has been true for them during the past two weeks, including today. The inventories measure the child or adolescent's emotional and social impairment in five specific areas: depression, anxiety, anger, disruptive behaviour and self-concept. The first two areas listed were most pertinent to this study. Level of concern for each area is rated as subclinical, mild, moderate or severe. This dimensional data has arbitrary cut-offs indicating intensity of psychopathology as subclinical (<50), mild (50-59), moderate (60-69) and severe (>70). Movement between these categories is considered clinically significant.

The developers of the BYI found the inventories to have high internal consistency (α =.86 to .92) for children 7-14 years. One-hundred-and-five children aged 7-14 years from the standardisation sample were retested after a period of seven days and test-retest reliability coefficients were moderate to high, ranging from .74 to .93 (Beck, Beck, Jolly, & Steer, 2005). A study involving 100 children aged 7-12 years diagnosed with various psychiatric disorders was conducted to investigate the construct validity of the BYI with child psychiatric outpatients (Steer, Kumar, Beck, & Beck, 2001). Steer and colleagues investigated correlations between the BYI, the Child Depression Rating Scale (CDRS) and the Conner's Parent Rating Scale. A high positive correlation was found between the CDRS and the BYI depression scale (r=.81, p<.001). The Conner's oppositional scale and the BYI anger (r=.41, p<.001) and disruptive behaviours (r=.49, p<.001) scales correlated moderately. It was concluded that the Anxiety, Depression and Disruptive behaviour inventories were uni-dimensional and could be analysed individually (Beck, Beck, Jolly, & Steer, 2005).

International studies investigating the reliability and validity of translated versions of the BYI confirmed their validity and reported high reliability (α =.70 to .93), suggesting it is a cross-culturally relevant instrument (Mathiak, Karzel, Ocypa, Seget, Mathiak, & Ostaszewski, 2007; Thastum, Ravn, Sommer, & Trillingsgaard, 2009).

Child Depression Rating Scale (CDRS). A comparison of the psychometric properties of the CDRS to the Montgomery-Asperg Depression Rating Scale (MADRS) was made. The CDRS was found to produce a greater effect size for differentiating between individuals assigned to the randomised intervention or a placebo groups as well as discriminating differences in magnitude of depression (Jain, et al., 2007). The CDRS was also reported to provide better test information. However, this study was limited by the sample size (n=96). The order of completing the rating tools was not randomised either, potentially resulting in participants paying more attention to the first scale completed (typically the CDRS).

Child Depression Inventory (CDI). Vitiello and colleagues (2006) found the CDI effective in measuring change in depressive symptoms of adolescents in a randomised control trial over a 12 week period and comparing four different treatment groups. The CDI is reported as sensitive at identifying clinical depression as described in the DSM-IV (Sourander, Niemela, Santalahti, Helenius, & Piha, 2008) and was found to be correlated to low levels of self-perceived competence in children aged 8-17 years (Weisz, Weiss, Wasserman, & Rintoul, 1987). Sourander and colleagues reported removing the question about suicide for younger populations (i.e., <8 years) lest it confuse them.

Anxiety

Fear Survey Schedule for Children – revised (FSSC-R) and Modified Stait Trait Anxiety Inventory for Children (STAIC-M).

A study comparing the scores of 217 boys diagnosed with an anxiety disorder (*n*=109), Attention Deficit Hyperactivity Disorder (ADHD) (*n*=59) or no psychiatric disorder (*n*=49), examined the discriminant validity of three widely used measures of anxiety (Perrin & Last, 1992). These measures were the Fear Survey Schedule for Children-Revised (FSSC-R), the Revised-Children's Manifest Anxiety Scale (RCMAS), and the Modified State-Trait Anxiety Inventory for Children (STAIC-M).

Results indicated the children with no diagnosis differed significantly from those with anxiety or ADHD as measured by the RCMAS and STAIC-M, but there were no significant differences between the two groups with diagnoses. These results suggest either that ADHD and anxiety are diagnostically linked, or the measurement instruments were not sensitive enough to discriminate between the two conditions. The FSSC-R was found not to detect any significant differences between the groups indicating poor validity of this as a tool for assessing anxiety. This study was conducted with males only so results may not be generalisable to females (Perrin & Last). However, a separate study using the RCMAS and the anxiety subscales from the Checklist for Problems and Resilience and the Self-Report Personality found anxiety in males and females to be measured equally as well (Reynolds, 1998).

Beck Youth Inventories (BYI). The BYI have been used in numerous studies to evaluate the efficacy of an intervention for reducing anxious symptomology (Maddern, Cadogan, & Emerson, 2006; Yellowlees, Hilty, Marks, Neufeld, & Bourgeois, 2008). Reliability and validity of the BYI are described earlier in this section. In a study of 192 children aged 7-14 years the BYI anxiety inventory was found to have high convergent validity with the RCMAS ($r = .70$, $p < .0001$) indicating good validity (Beck, Beck, Jolly, & Steer). However, an independent study found that the SOC and SDQ-em were significantly better at differentiating cases of anxiety from sub-clinical cases than the specialised scales, that is, the BYI's anxiety inventory and that from the HAD rating scale (Blom, Larsson, Serlachius, & Ingvar, 2010).

Achenbach's Child Behaviours Checklist (CBCL).

Achenbach's Child Behaviours Checklist (CBCL) is a standardised measure listing 118 child behaviour problems and is rated by parents/care-givers (Achenbach, 1991*a*). Parents provide information for 20 competence items covering their child's activities, social relations, and school performance. Items are rated for how true each item is now or within the past 6 months using the following scale: 0 = not true; 1 = somewhat or sometimes true; 2 = very true or often true. *T* scores reflect the child's status relative to others the same age and gender for internalising, externalising and total problems (Weisz, Weiss, Wasserman, & Rintoul, 1987).

The CBCL provides an indicator of behavioural change as perceived by the parents and a decrease in problem behaviours is assumed to reflect a decrease in anxiety and depressive symptoms (Lewinsohn, Hobberman, & Clarke, 1989). Though providing dimensional data, arbitrary cut-offs indicate levels of psychopathology as subclinical (<65), borderline (65-70) or clinically significant (>70). Movement between these categories is considered clinically significant.

The developer of the CBCL assessed 1753 children, aged six to 18 years in the United States, to construct a normed sample. Further testing on this sample found the tool had excellent test-retest

reliability coefficients of .95 to 1.0, inter-rater reliability coefficients of .93 to .96 and criterion validity was found to be acceptable (Achenbach, 1991*b*). Of the different scales measured the Anxious, Withdrawn/Depressed and Aggressive scales best predicted mood disorders and the Anxious, Withdrawn/Depressed and Thought Problems scales were found to best predict anxiety disorders (Biederman, Monuteaux, Kendrick, Klein, & Faraone, 2005).

Occupational disruption

Paediatric Quality of life Enjoyment and Satisfaction Questionnaire (PQ-LES-Q). A tool for measuring occupational disruption is the PQ-LES-Q, which addresses satisfaction with current life circumstances. A study of 376 children diagnosed with major depressive disorder found the PQ-LES-Q had high internal consistency (α=.87 to .90 and an alpha level of .05). This study found a medium positive correlation between the PQ-LES-Q and the CGAS (r=+.36) and a medium negative correlation with the CDRS (r=-.45) indicating acceptable validity (Endicott, Nee, Yang, & Wohlberg, 2006). High internal consistency using the PQ-LES-Q with adolescents was also reported by Vitielo and colleagues (α= 0.87), however, this instrument is not explicit in measuring the impact of occupational disruption (Endicott, Nee, Yang, & Wohlberg).

Occupational Questionnaire (OQ). The Occupational Questionnaire (OQ) documents a child's participation in occupations by half-hour intervals throughout the day and is a shortened version of the NIH Activity record (Smith, Kielhofner, & Watts, 1986). The OQ provides categorical data about the number and type of activities participated in, time spent on activities, level of enjoyment, ability and importance of these activities, as rated by the child. Raw data for number of activities participated in can be compared for change. Averaged data can be compared between time points for levels of perceived enjoyment, competence and importance. Proportions of time spent on different types of activities can be converted into

percentages: analysed subjectively this data can be considered alongside developmentally appropriate expectations of time use.

Smyntek, Borris and Kielhofner (1985) analysed data from the OQ by using a Chi-square test to analyse frequencies of activities and their consequent classifications into categories. A national survey in the United States found 15.6% (n=1000) of therapists who apply the Model of Human Occupation use the OQ in practice (Lee, Taylor, Kielhofner, & Fisher, 2008). Over 55% of participants worked with children and adolescents but the data does not identify what proportion of these reported using the OQ. The OQ is reported in research studies as an instrument for measuring participation, type of occupations engaged in, and level of enjoyment/competence (Ebb, Coster, & Duncombe, 1989; Smyntek, Borris, & Kielhofner, 1985). Ebb and colleagues report wide variability in how occupations are classified thus reducing the reliability of the OQ (1989). This study also found the OQ to be an inadequate instrument for differentiating between normal and psychosocially dysfunctional adolescents. However, the OQ does measure change in perceptions related to daily occupational participation.

Typically, a time use diary is described as collecting data on an individual's activities over a 24 hour period in 15-30 minute segments, sometimes only in relation to a specific focus (e.g., media use, content of TV watched, sleep duration) or more generally. This data is reportedly used for one or more of three key purposes. First, it is used to describe a populations' pattern of time use. Second, it is used for comparison to another population (Peachey-Hill & Law, 2000). Third, it is used to identify associations or correlations with other key variables (e.g., Socio-demographic status, health/well-being) (Hale, 2005; Mathers, Caterford, Olds, Hesketh, Ridley, & Wake, 2009; Zimmerman & Bell, 2010). Studies have supported recall time use diaries as a reliable and valid approach compared to other methods of recording daily time use that have been presumed to have greater reliability and validity but higher implementation costs (Harvey & Singelton, 1989; Pentland, Harvey, Lawton, & McColl, 1999; Pentland,

Harvey, & Walker, 1998; Robinson, 1988). In all such studies it is necessary to also attend to the confounding influence of atypical days (Krupa, McLean, Eastabrook, Bonham, & Baksh, 2003).

The OQ is reported to have 68-78% test-retest reliability and high concurrent validity (82-97%) when compared to a similar standardised tool, the Household Diary (Ebb, Coster, & Duncombe, 1989). Acknowledged limitations of the OQ are that it lacks objective accuracy increasing the risk of response bias and it has not been rigorously tested for reliability and validity, particularly with children (Ebb, Coster, & Duncombe; Smyntek, Borris, & Kielhofner).

Health of the Nations Outcome Scale for Children and Adolescents (HoNOSCA). The HoNOSCA is a clinician-rated measurement of the child's health and social functioning over the previous two weeks. Ratings are scored on 13 clinical features covering four broad areas: namely behaviour, learning and physical impairment, psychological/emotional symptoms and social functioning (Section A). Functioning is rated on a five-point severity scale - 0: no problem, 1: problems are subclinical and within developmental norms, 2: mild concern of clinical significance outside of developmental norms, 3: moderate concern impacting on most areas, 4: severe concern with pervasive impact. There are two additional questions, which assess parental understanding of difficulties and information on services (Section B). HoNOSCA provides a raw score (0-44) as an indicator of the child's level of health and functioning as rated by the clinician. Data is dimensional and not standardised so comparison between individuals is not appropriate. A reduction in the raw score is associated with an increase in functioning and a reduction in factors negatively impacting on their health and well-being – if the score changes by ≥2 in either direction this is considered clinically significant.

The HoNOSCA is an instrument sensitive enough to measure change but is dependent on the clinician's judgement (not the client's) and focuses on symptoms rather than client processes (Manderson &

McCune, 2003). Manderson and McCune report the HoNOSCA to be a reliable and valid tool but do not cite any research to support this. However, one study does report a moderate correlation (r= 0.57) between change in HoNOSCA ratings and change in level of depression in children, at a significant level (p<.001) (Vitiello, et al., 2006).

Children's Global Assessment Scale (CGAS). The CGAS is a numeric scale (1 through 100) used by mental health clinicians to provide a dimensional rating for general functioning of children - under the age of 18 - over the previous week. Clinical populations generally score <61 indicating significant dysfunction and graduations of dependent behaviour. Scores from 61 to 70 indicate increasing levels of functioning. Scores >70 indicate no clinically significant impairment with scores >90 demonstrating exceptionally high functioning. Movement between these categories is considered clinically significant.

The CGAS is reported in several studies as a measure of a child's functioning (Brent, et al., 1997; Mufson, Dorta, Wickramaratne, Nomura, Olfson, & Weissman, 2004; Schaffer, Gould, & Brasic, 1983; Vitiello, et al., 2006). The CGAS has been found to have a moderate-strong negative correlation with depressive symptoms (r=-0.37) ((Vitiello, et al., 2006). Thus, as depressive symptoms decrease, level of functioning as measured by CGAS increases. Mufson and colleagues (2004) concluded the CGAS to be sensitive for measuring change in client functioning following treatment for depression. Limitations of the CGAS include it being a rating scale open to subjective interpretation and that it is based on the perception of the clinician not the client.

Chapter three: Methodology

Research question

Leaping Hurdles was the intervention under investigation. It was a new initiative, developed by the first author and colleagues and provided by a government-funded Child and Adolescent Mental Health Service (CAMHS). The CAMHS clinic attends to the needs of children and adolescents with moderate-severe mental illness within the District Health Board (DHB) catchment area. The aim of this study is to answer the following:

> *'Is the Leaping Hurdles group an acceptable and effective treatment intervention for decreasing symptoms of anxiety, depression and occupational disruption in a clinical population of 10-14 year olds?'*

This overall aim was achieved by addressing the following objectives:

1. Evaluating the acceptability of the Leaping Hurdles group as a treatment intervention for children being seen by a CAMHS to address symptoms of anxiety, depression and occupational disruption.

2. Analysing the effectiveness of Leaping Hurdles group for children aged 10-14 years compared to a waitlist control (treatment as normal; TAU).

3. Calculating the magnitude of change that occurred for children aged 10-14 years as measured by proven psychometric instruments and clinical measurement tools following participation in Leaping Hurdles group.

4. Analysing the ongoing effectiveness of Leaping Hurdles group for children aged 10-14 years at 3 months post-group.

Hypothesis

The null hypotheses this study either rejected or confirmed are outlined below with the alternative hypothesis predicted:

1. Null: The Leaping Hurdles group is not an acceptable treatment intervention alongside TAU for children treated at a CAMHS to address symptoms of anxiety, depression and occupational disruption.
   Alternative: The Leaping Hurdles group is an acceptable treatment intervention alongside TAU for children treated at a CAMHS to address symptoms of anxiety, depression and occupational disruption
2. Null: There will be no change in level of symptoms reported of anxiety, depression or occupational disruption in children aged 10-14 years who complete the Leaping Hurdles group between pre- and post-group measurements.
   Alternative: There will be a decrease in level of symptoms reported of anxiety, depression and occupational disruption in children aged 10-14 years who complete the Leaping Hurdles group between pre- and post-group measurements.
3. Null: There will be no difference - in level of symptoms of anxiety, depression and occupational disruption - in children aged 10-14 years, between participants measured on entering a waitlist and participants measured at pre-group.
   Alternative: There will be a difference - in level of symptoms of anxiety, depression and occupational disruption - in children aged 10-14 years, between participants measured on entering a waitlist and participants measured at pre-group.

4 Null: Any change in level of symptoms of anxiety, depression and occupational disruption will not have been retained three months after completing Leaping Hurdles group.
   Alternative: Any change in level of symptoms of anxiety, depression and occupational disruption will have been retained three months after completing Leaping Hurdles group.

5. Null: Individual factors, such as age, ethnicity and gender, will have no significant relationship with any differences found regarding symptom levels of anxiety, depression or occupational disruption.
   Alternative: Individual factors, such as age, ethnicity and gender, will have a significant relationship with any differences found regarding symptom levels of anxiety, depression or occupational disruption.

Intervention - Leaping hurdles

The author and colleagues developed an occupation-based anxiety and mood management group for children aged 10-14 years. The group, titled Leaping Hurdles, is the pilot intervention being investigated. The clinic where the group is run is a Child and Adolescent Mental Health Service (CAMHS) in New Zealand and addressing moderate-severe mental illness needs within the District Health Board (DHB) catchment area.

Conceptual foundations

Leaping Hurdles group incorporates concepts from occupational therapy (Mandel, Jackson, Zemke, Nelson, & Clark, 1999), CBT (Huebner, 2007; Stallard, 2002); solution focused brief therapy (Furman, 2004) and the clinical experience of the group facilitators regarding group-work processes and dynamics.

Intervention details

Leaping Hurdles group was run for 1.5 hours weekly, over nine weeks, for children aged 10-14 years, and facilitated psycho-education, skill development and skills practice. The intervention was based on a range of international programmes and was designed to account for children developing in a New Zealand context and the unique challenges and opportunities this allowed. The aims of the intervention were for participants to:

- Understand mood/anxiety and different responses to it
- Develop understanding of the interactions of thoughts, feelings, behaviours and bodily responses
- Recognise their own mood/anxiety triggers and responses and the importance of self care
- Learn effective strategies for managing mood/anxiety, including relaxation
- Develop problem solving skills such as the ability to state problems, generate solutions, consider alternatives and make a plan

- Modify anticipatory and interpretation processes in relation to occupational experiences in a culturally appropriate context

The group involved multiple forms of activity and instruction, including: games and discussions at a developmentally appropriate level, brainstorming, reflection and creative activities. The sixth session of the group was an adventure activity that encouraged experiential learning and practical applications of the skills learned in group (see Appendix 7 for details from the intervention manual).

Parallel to the children's group was a parents group that ran for five of the nine weeks for 1.5 hours each time, concurrent with the children's group. This group was for parents of children attending the Leaping Hurdles group. It was intended to provide parents with psycho-education about anxiety and depression, the role of occupational disruption in perpetuating and reinforcing their child's symptoms, education about how their own behaviour influences their child's illness experience, the role of avoidance and skills for shaping their child's behaviour to promote health and well-being.

Design

This study utilised a prospective, quasi-experimental approach with repeated measures design, between-groups comparison and no randomisation. The independent variable was participation in Leaping Hurdles group; those who did not participate were placed on a waiting list and received TAU (control group). Dependent variables were reported symptom levels of anxiety, depression and occupational disruption measured using self-, parent- and clinician-reported instruments. The study required waitlist, pre- and post-group testing and repetition of these at three months follow-up, which oftentimes occurred following discharge from the CAMHS (see Figure 1). Data from outcome measures was analysed at study completion to assess the effectiveness for 10-14 year olds with symptoms of anxiety, depression and occupational disruption that participated in the Leaping Hurdles group.

Therapists

The children's group was facilitated by an occupational therapist and one other qualified mental health professional (typically another occupational therapist). The parents' group was facilitated by a clinical psychologist or another mental health professional. A manual was developed in collaboration between the facilitators and the same basic structure was followed each group. Because this was a pilot study, intervention adherence was not formally evaluated. Furthermore, scope for small modifications to the intervention to meet the needs of the group members was intended. For example, whether relaxation was practiced after the break or at the end of the group or different examples used appropriate to the group members' interests. Such modifications have been explored with other treatments and deemed applicable, indeed at times beneficial (Chu & Kendall, 2009).

Participants

Children were referred to the intervention as clinically indicated by staff at the CAMHS clinic. To be accepted into the group intervention, and therefore the study, participants had to a) be aged 10-14years, b) have a suspected

or diagnosed Axis-I or co-morbid diagnosis of an anxiety or mood disorder, c) be able to converse in basic English, d) have completed their initial assessment and be engaged in Treatment as Usual (TAU), e) not be engaging in suicidal or para-suicidal behaviour, f) not be suspected of or diagnosed as experiencing psychotic phenomena (see Table 2).

Over a period of 15 months (January 2009 to March 2010) a total of 44 participants were referred to the group - all of which were invited to participate in the research. Ten participants did not complete the intervention and reasons for not participating or completing the intervention are recorded in Table 1.

Table 1: Demographic information for non-participants

Variable	***N***	***%***
Gender		
Male	4	40
Female	6	60
Age (years)		
Range	10.0-13.6	
Mean (SD)	12.04 (1.05)	
Ethnicity		
NZE	6	60
Asian	2	20
Middle Eastern	1	10
Maori	1	10
Diagnosis		
Adjustment Disorder – with Anxiety	2	20
Anxiety	4	40
No diagnosis assigned	2	20
Parent-Child relationship	2	20
Reason for not participating		
Not appropriate/ready for the group	4	40
Moving out of catchment	2	20
Discharge from CAMHS	1	10
Transport/logistical barriers	3	30

Group 1_____|pre-group|____|intervention|__|post-group|_____|follow-up|

Group 2_____|waitlist|_____|pre-group|____|intervention|__|post-group|___|follow-up|

Group 3_____|waitlist|_____|pre-group|____|intervention|__|post-group|___|follow-up|

Group 4_____|waitlist|_____|pre-group|____|intervention|__|post-group|___|follow-up|

Group 5_____|waitlist|_____|intervention and treatment not included as part of research|

Figure 1: Graphical representation of study design

Table 2: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
• 10-14 years of age • Suspected or diagnosed Axis-I or co-morbid diagnosis of an anxiety or mood disorder • Accepted into Leaping Hurdles group • Engaged with case worker prior to entering intervention and continuing to have regular contact with their key worker (e.g., fortnightly)	• Severe lack of proficiency in English language • Currently/frequently engaging in suicidal or para-suicidal behaviours • Clients with emerging/florid psychosis

In total, 34 participants completed the group intervention across five intervention groups: 17 girls (50%) and 17 boys (50%), with a mean age of 11.86 years (range 10.0-13.8 years, *SD*=1.06). Of these, six out of 34 were 10 years old, 13 out of 34 were 11 years old, nine out of 34 were 12 years old and six out of 34 were aged 13 years (see Table 3 for details).

The majority of the sample population were Pakeha/New Zealand European (*n*=25; 74%), followed by Asian – including Chinese, Indian and Philippine (*n*=4; 12%), Maori (*n*=3; 9%), Pacific Island (*n*=1; 3%) and African (*n*=1; 3%).

A significant proportion of the participants had not been assigned a formal Axis-I diagnosis (*n*=12; 35%) and the most commonly assigned diagnosis was Anxiety – including Generalised Anxiety Disorder, Obsessive Compulsive Disorder, Separation Anxiety and Anxiety Not Otherwise Specified (*n*=13; 38%). Other diagnoses assigned included Adjustment Disorder – with Anxiety (*n*=2; 6%), Attention Deficit Hyperactivity Disorder (*n*=2; 6%), Parent-Child Relationship Problems (*n*=2; 6 %), Asperger's Syndrome (*n*=1; 3%), Dyspraxia (*n*=1; 3%) and Post Traumatic Stress Disorder (*n*=1; 3%).

Participant engagement in TAU with the CAMHS prior to starting the intervention ranged from 2 to 455 days, with a mean duration of 94.5 days (*SD*=114.4).

Power calculation

As a result of the varied sample sizes between the outcome measures (*n*=11, 12, 17, 19 and 27), several calculations were conducted to measure the power of this study using an alpha level of .05 and a medium effect size of .5 (two tailed). The calculations indicated this study had power of .51, .53, .62, .65 and .74 respectively (Faul, Erdfelder, Lang, & Buchner, 2007). These were below the targeted power size of .8 indicating the power of this findings was not strong.

Table 3: Demographic information for waitlist, intervention and follow-up participants

Variable	Waitlist		Intervention		Follow-up	
	N	*%*	*N*	*%*	*N*	*%*
Gender						
Male	3	60	17	50	6	100
Female	2	40	17	50	0	0
Age (years)						
Range	11.3-13.5		10.0-13.8		10.8-13.5	
Mean (SD)	12.00 (.95)		11.86 (1.06)		12.17 (1.06)	
Ethnicity						
NZE	4	80	25	73.5	5	83
Maori	0	0	3	8.8	1	17
Pacific Island	0	0	1	2.9	0	0
Asian	1	20	4	11.8	0	0
African	0	0	1	2.9	0	0
Diagnosis						
Adjustment with anxiety	0	0	2	5.8	0	0
Anxiety	2	40	13	38.2	3	50
ADHD	0	0	2	5.8	1	17
Asperger's	0	0	1	2.9	0	0
Dyspraxia	0	0	1	2.9	0	0
Parent-Child relationship	0	0	2	5.8	0	0
PTSD	0	0	1	2.9	0	0
No diagnosis assigned	3	60	12	35.3	2	33
Duration from initial to group (days)						
Range	9-147		2-455		2-125	
Mean (SD)	103.2 (54.06)		94.53 (114.43)		65.33 (51.62)	

Ethical and cultural considerations

Ethical approval for this study was granted by the Central Regional Ethics Committee (CEN/09/04/015) and the Auckland University of Technology Ethics Committee (AUTEC) (see Appendix 1). In order to uphold obligations under the Treaty of Waitangi, good governance requires that Maori are not disadvantaged by inferior levels of care or research; therefore, it was crucial Maori were offered the same opportunity to participate in this research as non-Maori (Te Puni Kokiri, 2009). Parents were offered the use of an interpreter (including for Te Reo) as needed during the parenting seminars to promote inclusion. When participants were recruited it was made clear that non-participation in the research would not exclude them from participating in the group. Potential participants were approached at the CAMHS clinic by the non-clinical member of the research team. This was to ensure participant collaboration, upholding the principle of *participation* from the Treaty of Waitangi Act 1975 and ensuring participants felt safe in

their decision-making process (King, 2003; Ministry of Maori Development, 2009).

Parents and children were given an information sheet about the research and were asked to sign an assent form for the collection of data and administration of the additional tests. A consent form was not used with the participants as children aged 10-14 years are deemed legally unable to give informed consent and this is the responsibility of the parents (Citizens Advice Bureau, 2009). However, children were asked to assent to participate and were not involved in the research if they refused (even if their parent consented). Being open with information allowed participants to provide informed consent, have confidence in the integrity of the research's procedures and be respected as active partners in the research process.

Only members of the research team and the key worker for that participant had access to participant's raw data. Data is stored for 10 years and then destroyed, as directed by Ministry of Health policy and Auckland University of Technology guidelines (Auckland University of Technology, 2009). Adherence to these guidelines upholds ethical standards relating to protection of confidentiality, the Privacy Act 1993 and demonstrates responsibility for the principles of *partnership* and *protection* from the Treaty of Waitangi Act 1975.

Measurement tools

Evaluation was essentially quantitative using self- and parent-rated psychometric instruments and clinician-rated measurements; alongside qualitative information provided by case studies. Demographic information, including age, ethnicity, gender, diagnosis and duration engaged in TAU prior to the group, was collected. Diagnostic interviews were not conducted as participants had previously undergone a semi-structured interview on entry into the CAMHS that has established the presence of symptoms of an Axis-I or co-morbid anxiety or mood disorder. It was not within the scope of this project to accommodate the associated costs (financial and time) of repeating these interviews. Psychometric tools were chosen because of their high utility rates within the CAMHS clinic and familiarity to clients and clinicians. Additionally, psychometric tools are low cost and less time-consuming to administer, score and interpret than interviews. Subsequently, the chosen tools were selected as most suitable for the research design as they are established tools with good validity and reliability, demonstrated as appropriate for the sample population and appropriate to a New Zealand context. Furthermore, the chosen psychometric instruments were easily available and sourced (see Table 4).

Table 4: Measurement tools selected, subscales used, purpose and rater

Psychometric Tool	Subscale	Purpose	Rater
Beck Youth Inventories (BYI)	• Anxiety inventory • Depression inventory	Measures both depression and anxiety and other variables potentially affected by the intervention (i.e., anger, disruptive behaviour and self-concept)	Child
Child Behaviour Checklist (CBCL)	• Anxious • Withdrawn/ depressed • Aggression • Thought problems • Internalising behaviours	Identifies behavioural symptoms observed by the child's parent that indicate the presence of anxiety or depression	Parent
Occupational Questionnaire (OQ)	• No. activities participated in • Perceived competence • Perceived enjoyment	Ascertains child's perceived level of occupational performance and participation	Child
Health of the Nations Outcome Scale (HoNOSCA)	• Section A	Measures the level of impact a child's problems have on their academic, social, emotional and physical well-being	Clinician
Children's Global Assessment Scale (CGAS)	• Not applicable	Identifies the child's level of functioning in relation to developmental expectations	Clinician

Procedure

This study was conducted over 68 weeks by the principal investigator (author) and a team of clinical and non-clinical staff from the CAMHS (see Figure 2). An ethics application was submitted to the Central Regional Ethics Committee. Prior to this a pilot study was conducted and the final group-work programme established. The proposed research was presented to the CAMHS and recruitment commenced via clinicians at the CAMHS clinic.

Referrals to the group were accepted based on the inclusion/exclusion criteria stated in Table 2 and once the maximum number was recruited per group (i.e., 8) further referrals were deferred to the waitlist. All children accepted into the group or deferred to the waitlist were invited to take part in the research. Children and parents were given information sheets and the information reviewed with a clinician not involved in the research project. Parents or caregivers and their participating child were asked to sign an assent form to participate. This included consent to contact participants at three months follow-up even if they were discharged from the CAMHS.

The five intervention groups ran consecutively for nine weeks with a two-week break in-between. Therefore, children may have been on the waitlist for up to 11 weeks and were automatically accepted into the next available group. Children in the intervention group and on the waitlist were both exposed to TAU and depending on their clinical need this may have been case management, individual or family therapy. Assessments were completed on admission to the waitlist; during week one of the intervention; during week nine of the intervention; and at three months follow-up. Follow-up assessments were completed within a one-week period, three months after group completion. Follow-up assessments occurred at the CAMHS clinic or the child's school. All measures were collected pre- and post- intervention as part of clinical best practice (Occupational Therapy Board of New Zealand, 2004) with waitlist and follow-up testing additional to this. Pre- and post-group data from those not consenting to complete the additional requirements of the research was collected from medical records.

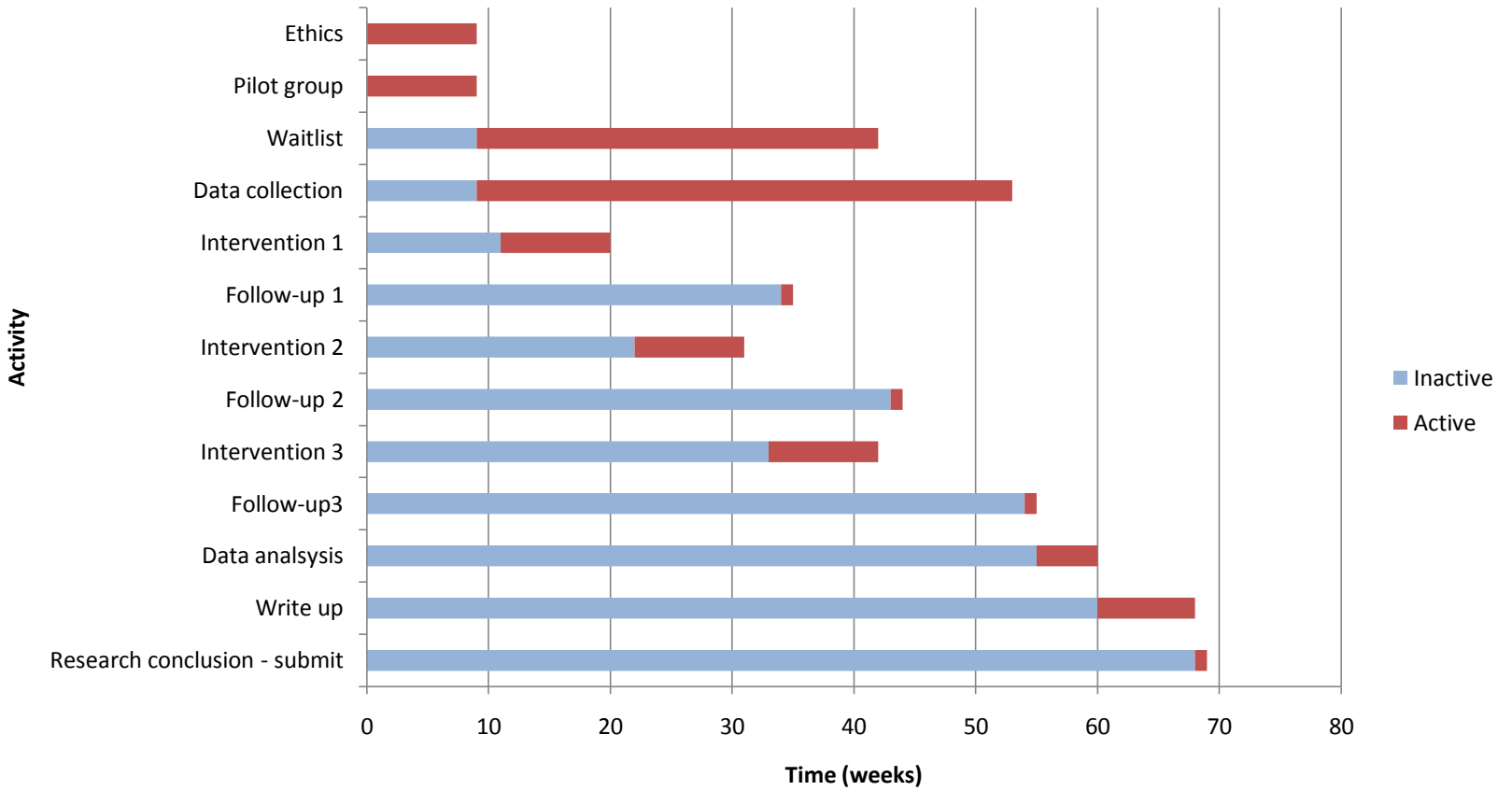

Figure 2: Graphical representation of procedure and timeframe

Data analysis

Data collected from psychometric instruments (CBCL, BYI and OQ) and clinical measurement tools (HoNOSCA and CGAS) was entered into the computer software package SPSS version 16.0. Alpha level for statistical significance was set at .05 (95% confidence interval). Data about demographic variables - gender, age, ethnicity, diagnosis and duration of engagement in TAU - was categorised and frequencies recorded; then means and standard deviations recorded for age and duration in TAU (see Table 3). Means and standard deviations were calculated for continuous data, (i.e., anxiety and depression and occupational disruption) for all complete pre-group and post-group data sets. Waitlist and follow-up data was subjected to the same procedures if the respondent's pre/post-group data set was complete (See Tables 6-8).

Data was analysed for outliers and adherence to distribution assumptions (See Table 5). Due to the small sample size careful consideration was given to ensure the data did not violate the assumptions for parametric testing: the data was found to be largely normally distributed with few exceptions and parametric testing was employed with the continuous variables. Furthermore, due to more than one statistical test being performed on the data, this would often be accommodated with a correction such as the Bonferroni adjustment. However, there is an emerging consensus that doing so means the interpretation of findings is dependent on the number of tests performed and actually increases the likelihood of type II errors, so truly important differences are deemed non-significant (Pemeger, 1998). Therefore, this study did not apply the Bonferroni adjustment and instead multiple comparisons were dealt with by describing tests of significance performed and why. Taking the above factors into account, statements about statistical significance are made with great caution.

Table 5: Results for assessing for normality in the data

Scale	Subscale	Kolmogorov-Smirnov**			
		Pre-group		Post-group	
		Df	*Sig.*	*Df*	*Sig.*
Beck Youth Inventories	Anxiety	27	.200*	27	.200*
	Depression	27	.008	27	.200*
Occupational Questionnaire	Activities	12	.200*	12	.178
	Competence	11	.200*	11	.200*
	Enjoyment	11	.200*	11	.144
Child Behaviour Checklist	Anxiety	19	.200*	19	.200*
	Depression/Withdrawn	19	.200*	19	.200*
	Aggression	19	.200*	19	.175
	Thought Problems	19	.000	19	.200*
	Internalising	19	.185	19	.200*
Children's Global Assessment of Functioning		14	.165	14	.200*
Health of the Nations Outcome Scale		14	.137	14	.153

Significance >.05 indicates normal distribution
*. This is the lower bound of the true significance
**. Lilliefors Significance Correction

Descriptive data was analysed for trends and patterns of clinical significance that confirm or negate the null hypotheses: *T* scores were categorised into levels of severity as indicated in the tool manuals and a crude measure of clinically significant change was considered to have occurred if the score moved from one category level to another. Furthermore, six case studies were used to highlight examples of the most significant change – as rated by child, parent and clinician - in anticipated and unanticipated directions.

The first hypothesis concerned with the acceptability of the intervention for children being seen by a CAMHS to address symptoms of anxiety, depression and occupational disruption was appraised through attendance and attrition rates. Good attendance and low attrition would lead to the rejection of this null hypothesis, thus suggesting the intervention is acceptable to this population. Poor attendance would not definitely lead to acceptance of the null as other circumstances may have occurred, for example, illness or moving out of the service catchment area.

The second hypothesis, concerned with difference in reported symptomology and functioning between pre-group and post-group measures was addressed through repeated-measures *t*-tests and descriptive analysis at pre-group and post-group. Differences found would lead to the rejection of this null hypothesis and indicate the intervention had

an effect – it was hypothesised that this effect would be to decrease symptomology and increase functioning.

The third hypothesis, concerned with any difference between those who in the intervention group and those placed on a waitlist was evaluated through analysis of the descriptive data and trends. The sample size was insufficient for conducting further statistical analysis. Differences between the time points would lead to the rejection of the null hypothesis. It was hypothesised that there would be no difference between the time points (due to lack of targeted intervention) and that the null hypothesis would be confirmed.

The fourth hypothesis, concerned with change in levels of symptomology and functioning at post-group not being retained at three months follow-up was evaluated by conducting a Wilcoxon Signed Rank Test. A change in levels of symptomology and functioning towards pre-group levels, between the post-group and follow-up, would lead to the confirmation of this null hypothesis. However, it was hypothesised that this change would be maintained and/or further improvements achieved.

The final hypothesis, concerned with individual factors, such as age, ethnicity and gender having no significant relationship with levels of symptomology and functioning was evaluated using two approaches. First, with a one-way ANOVA and post-hoc Tukey tests were appropriate. Second, analysis of correlations using Pearson's and Spearman Rho's coefficients. Insufficient data was available to conduct a linear regression analysis to determine if a predictive relationship existed amongst the variables.

Missing data

Figure 3 shows the flow of participants through the study. At waitlist five children provided self-reported outcome measures and one parent provided parent-reported measures. Of the 34 participants who completed the intervention 27 had complete data sets (pre-group and post-group outcome measures) for the BYI; 12 had complete data sets for part one of the OQ and 11 for part two; 19 had complete data sets for the CBCL; and 17 and 19 had complete data sets for the CGAS and HoNOSCA respectively. At

follow-up six children and five parents provided completed outcome measures.

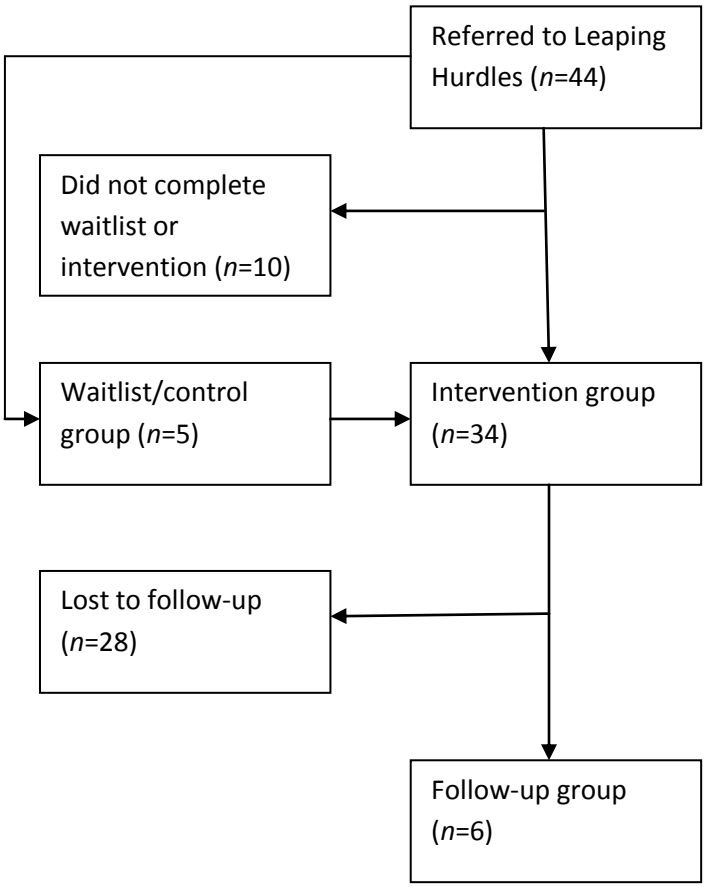

Figure 3: Flow chart showing participant flow through the research

Chapter four: Findings

Demographic information for the waitlist, intervention and follow-up conditions is shown in Table 3. Tables 6-8 show the means (and standard deviations) for child-, parent- and clinician-rated scores at the different time points.

Attrition and attendance

All participants allocated to the wait list condition went on to complete the intervention. Two participants in the final intervention group did not complete the group as it became evident that their presentation was not related to anxiety or depression and that attending the group would not be clinically beneficial. In total, 34 participants, of the 36 who started, completed the intervention. Participants attended 88% of the sessions with the average number of sessions missed per participant being 1.03, and ranging from none to three.

Ten participants who were referred did not enter or complete the intervention group and reasons given are recorded in Table 2.

Child-rated outcomes

Table 6: Descriptive results from child-rated outcome measures

	N	*Mean*	*SD*
BYI Anxiety			
Waitlist	5	54.00	9.823
Pre-group	27	57.56	13.631
Post-group	27	56.67	15.440
Follow-up	6	45.83	12.400
BYI Depression			
Waitlist	5	55.40	14.673
Pre-group	27	57.00	12.276
Post-group	27	54.26	11.588
Follow-up	6	49.00	12.361
OQ Activities			
Pre-group	12	10.42	3.088
Post-group	12	8.33	1.670
OQ Competence			
Pre-group	11	1.979	0.505
Post-group	11	1.812	0.463
OQ Enjoyment			
Pre-group	11	1.851	0.617
Post-group	11	1.875	0.597

BYI= Beck Youth Inventories; OQ = Occupational Questionnaire

Descriptive data from the child-rated outcome measures are tabled above.

Waitlist

A total of five participants consented to enter the waitlist condition and completed the BYI as a self-rated outcome measure, thus the sample size was insufficient for more than descriptive analysis.

The mean score for the BYI Anxiety inventory on the waitlist was 54.0 (*SD*=9.8): the difference between this and the mean score for the pre-group was 3.56, suggesting little difference in levels of anxiety between the two time points. In this instance the mean level of anxiety as rated by the BYI Anxiety inventory was lower for the waitlist and increased prior to the intervention commencing. For three of the five participants an increase in anxiety was found and for the other two a decrease was found.

The mean score for the BYI Depression inventory on the waitlist was 55.40 (*SD*=14.7): the difference between this and the mean score for the pre-group was 1.60, suggesting no difference in levels of depression between the two time points. In this instance the mean level of depression as rated by the BYI Depression inventory was lower for the waitlist and increased

prior to the intervention commencing. For three of the five participants an increase in depression was found, for one a decrease and for another no change was found as measured by the BYI Depression inventory.

Two of the three participants reporting an increase in anxious symptomology were the same as two of the three participants reporting an increase in depressive symptomology. Those participants reporting a decrease on either inventory were not the same individuals.

Intervention

Symptoms of anxiety and depression. A paired-samples t-test was conducted to evaluate the impact of the intervention on children's ratings of anxiety and depression on the BYI Anxiety and Depression inventories. There was no statistical difference in the children's self-rating scores on the Anxiety ($t(26)=.57$, $p=.58$) or Depression ($t(26)=1.54$, $p=.14$) inventories between pre-group and post-group measures, even with outliers (on Depression inventory ratings) removed. Therefore, detailed descriptive analysis was conducted.

The difference between the mean scores for pre-group and post-group on the BYI Anxiety inventory was -.89, indicating that anxiety had reduced. For 21 of the 27 participants (78%) no clinically significant change was found, but for three of the 27 participants (11%) a clinically significant decrease in anxiety was found. For the remaining three (11%) a clinically significant increase in anxiety was found (See Figure 4). Clinical significance is defined earlier as movement from one category of severity to another (e.g., from severe to moderate).

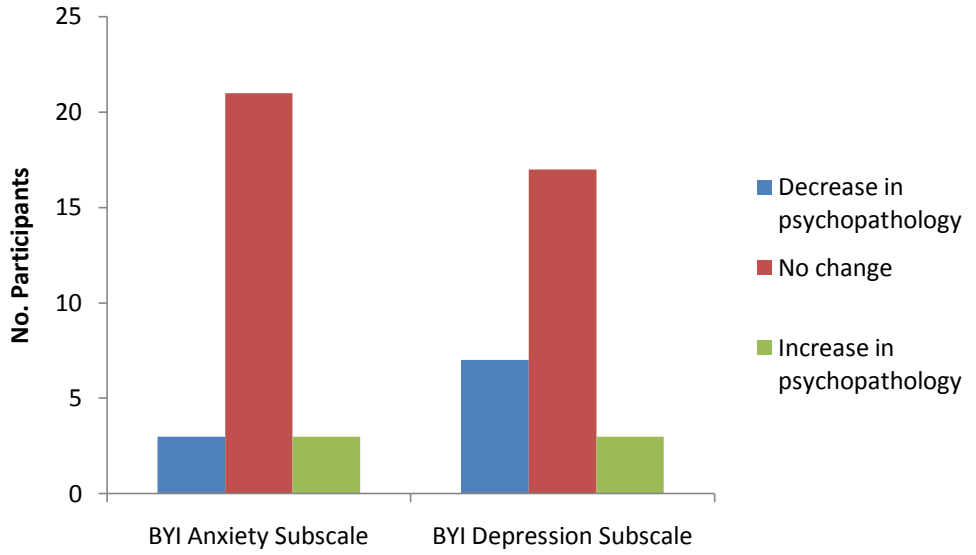

Figure 4: Bar chart showing clinically significant change in child-rated anxiety and depression as measured by BYI

The difference between the mean scores for pre-group and post-group on the BYI Depression inventory was -2.79, indicating that symptoms of depression had reduced – more so than for anxiety. For 17 out of 27 participants (63%) no clinically significant change was found, but for seven of the 23 participants (26%) a clinically significant decrease in depressive symptoms was found. For the remaining three (11%) a clinically significant increase in depression was found (See Figure 4).

Of note, two of the participants whose scores on the Anxiety inventory decreased by a clinically significant level, were two of the participants whose scores on the Depression inventory also decreased by a comparable amount. Similarly, two of the participants whose scores increased by a clinically significant level on the Anxiety inventory, were two of those whose scores on the Depression inventory also increased by a clinically significant amount. None of the participants whose scores decreased by a clinically significant level for one of the inventories had scores that increased by a clinically significant level on the other inventory.

Given the multiple time points a polynomial trend line was graphed to the waitlist, pre-group, post-group and follow-up ratings for the BYI Anxiety and Depression inventories. Both graphs showed an initial increase in symptomology between waitlist and pre-group before a

decrease to below waitlist levels between pre-group and post-group symptomology that continued to decrease on to follow-up (see Figures 5-6). Polynomial trend lines with such a small sample size are subject to a greater degree of uncertainty as it may reflect the method used to construct the curve as much as it reflects the observed data (Myung, 2003).

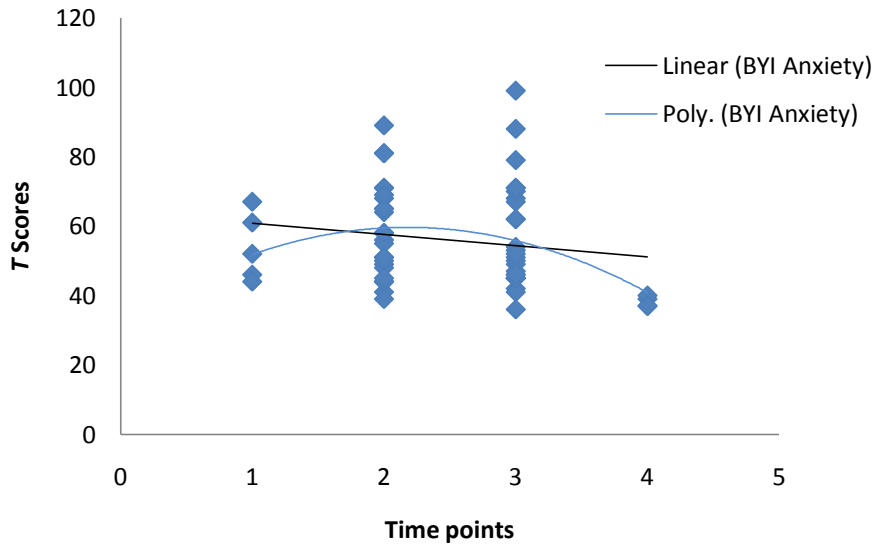

Figure 5: Polynomial and linear trend lines for BYI Anxiety scores at waitlist, pre, post and follow-up

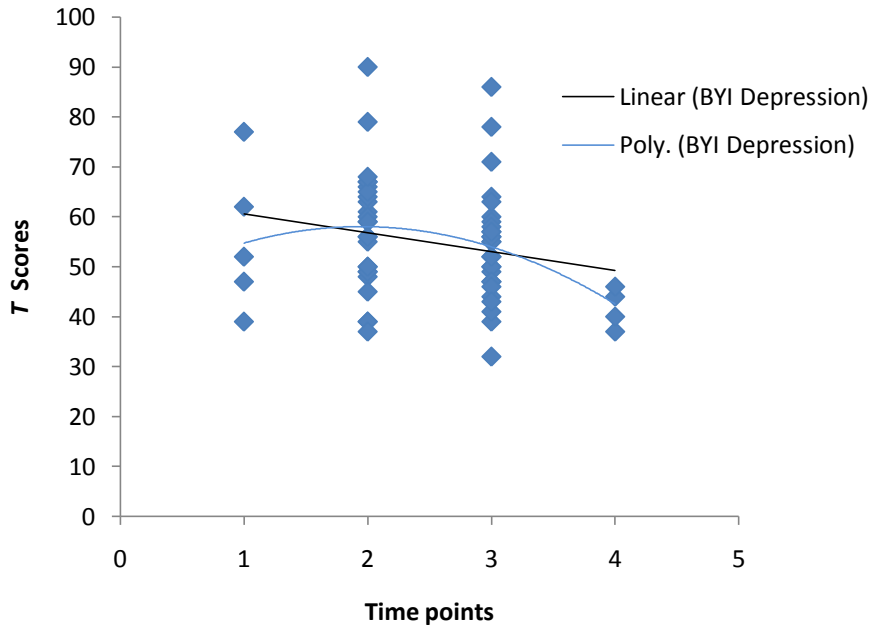

Figure 6: Polynomial and linear trend lines for BYI Depression scores at waitlist, pre, post and follow-up

Symptoms of occupational disruption. A paired-samples *t*-test was conducted to evaluate the impact of the intervention on the number of activities the children reported they participated in and self-ratings of their perceived competence and enjoyment on the OQ. There was a statistically significant decrease in number of activities participated in from pre-group (M = 10.42, SD = 3.088) to post-group (M = 8.33, SD = 1.67), t (11) = 2.54, $p<.05$. The mean decrease in number of activities participated in was 2.08 with a 95% confidence interval ranging from .28 to 3.89. Cohen's d was .64, indicating a medium effect size. There was no statistical difference between pre- and post-group measures in the children's self-rating of their perceived competence or enjoyment of occupations participated in so a detailed descriptive analysis was conducted.

For nine of the 12 participants (75%) a decrease in number of activities participated in was found, for two (17%) an increase was found and for the other one (8%) no change was found. These results, however, were not clinically significant (see Figure 7).

The difference between the pre-group and post-group mean scores on the perceived competence rating was .17, indicating a small increase in perceived self-competence. For 54% of the participants (n=6) an increase in self rated competence was found, for 36% (n=4) a decrease in self-rated competence was found and for the remaining 9% (n=1) no change was found (See Figure 7). These results again were not clinically significant.

The difference between the mean scores for pre-group and post-group on the enjoyment rating was -.02, indicating a miniscule decrease in perceived enjoyment of occupations. For 27% of the participants (n=3) an increase in self-rated enjoyment of activities participated in was found, for 46 % (n=5) a decrease self-rated enjoyment was found and for the remaining 27% (n=3) no change was found (See Figure 7). These results were not significant.

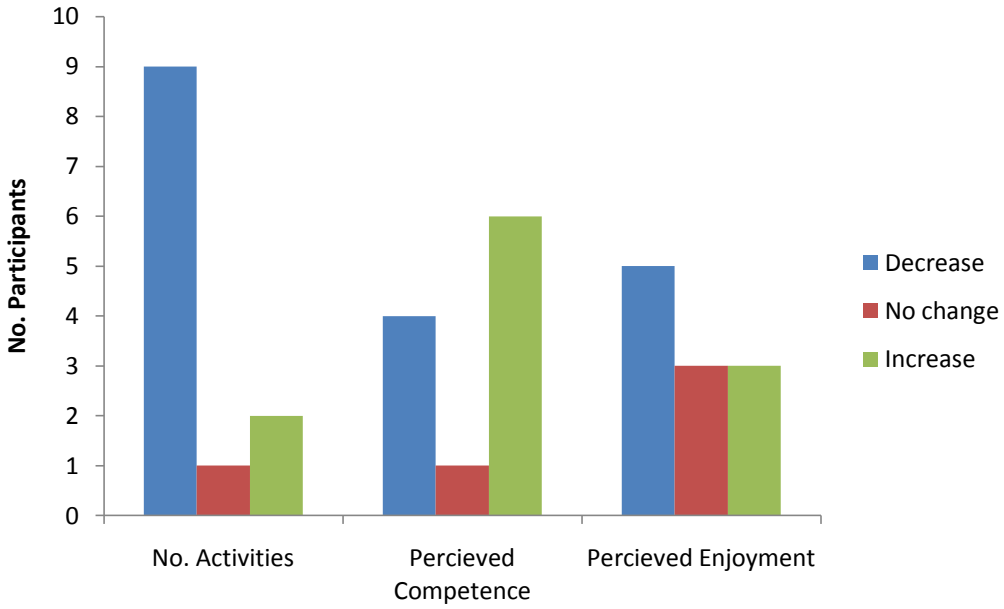

Figure 7: Bar chart showing change in child-rated number of activities participated in, perceived self-competence and level of enjoyment as measured by OQ

Follow-up

A Wilcoxon Signed Rank Test was applied to follow-up data given the small sample size (n=6). The test revealed a statistically significant difference in child-reported symptomology on the BYI Anxiety inventory from pre-group to three months follow-up, z=2.02, p<.043, however, the effect size was small (d=.49). The mean score on the BYI Anxiety inventory decreased from pre-group (M=55.83, SD=8.33) to three month follow-up (M=45.83, SD=12.40). No statistical difference in the children's self-rated depression at three months follow-up was found. Although the result was not significant the mean score on the BYI Depression inventory did decrease more than the BYI Anxiety inventory from pre-group (M=60.33, SD=6.77) to three months follow-up (M=49.00, SD=12.36).

Parent-rated outcomes

Table 7: Descriptive results from parent-rated Child Behaviour Checklist

	N	*Mean*	*SD*
Anxiety			
Waitlist	1	82.00	-
Pre-group	19	73.16	14.049
Post-group	19	67.79	13.398
Follow-up	5	65.40	10.714
Depression/Withdrawn			
Waitlist	1	80.00	-
Pre-group	19	63.58	11.102
Post-group	19	62.32	10.446
Follow-up	5	57.20	9.859
Aggression			
Waitlist	1	81.00	-
Pre-group	19	64.26	10.241
Post-group	19	62.00	10.604
Follow-up	5	55.40	9.423
Thought Problems			
Waitlist	1	78.00	-
Pre-group	19	64.94	9.554
Post-group	19	62.955	8.803
Follow-up	5	57.80	6.573
Internalising behaviours			
Waitlist	1	86.00	-
Pre-group	19	69.53	12.598
Post-group	19	64.53	15.031
Follow-up	5	60.00	11.683

Descriptive data from the parent-rated outcome measures are tabled above.

Waitlist

Insufficient complete waitlist ratings (n=1) were available to perform basic statistical or descriptive analysis of parent-rated waitlist data.

Intervention

Anxiety. A paired-samples t-test was conducted, to examine the impact of the intervention on parent's ratings of their child's anxiety, on the Anxiety subscale of the CBCL. There was a statistically significant decrease in scores on the Anxiety subscale from pre-group (M=73.16, SD=14.049) to post-group (M=67.79, SD=13.40), $t(18)=3.84$, $p<.001$. The mean decrease in CBCL Anxiety subscale scores was 5.37 with a 95% confidence interval ranging from 2.43 to 8.31. Cohen's d indicated a medium effect size (.57).

The difference between the mean scores for pre-group and post-group on the CBCL Anxiety subscale was -5.37, indicating the parents noticed that anxiety behaviours in their child had reduced. For 15 of the 19 participants (71%) no clinically significant change was found but for four (29%) a clinically significant decrease in parent-rated anxiety was found. None of the parents reported a clinically significant increase in Anxiety (See Figure 8).

Of note, two participants with clinically significant decreases on the Anxiety subscale had comparable decreases on the Internalising behaviour subscale – one of these reported a clinically significant decrease on the Thought Problems subscale also. Other participants reporting a clinically significant decrease on the Anxiety subscale also reported a clinically significant increase on the Depressed/Withdrawn and Aggressive subscales respectively.

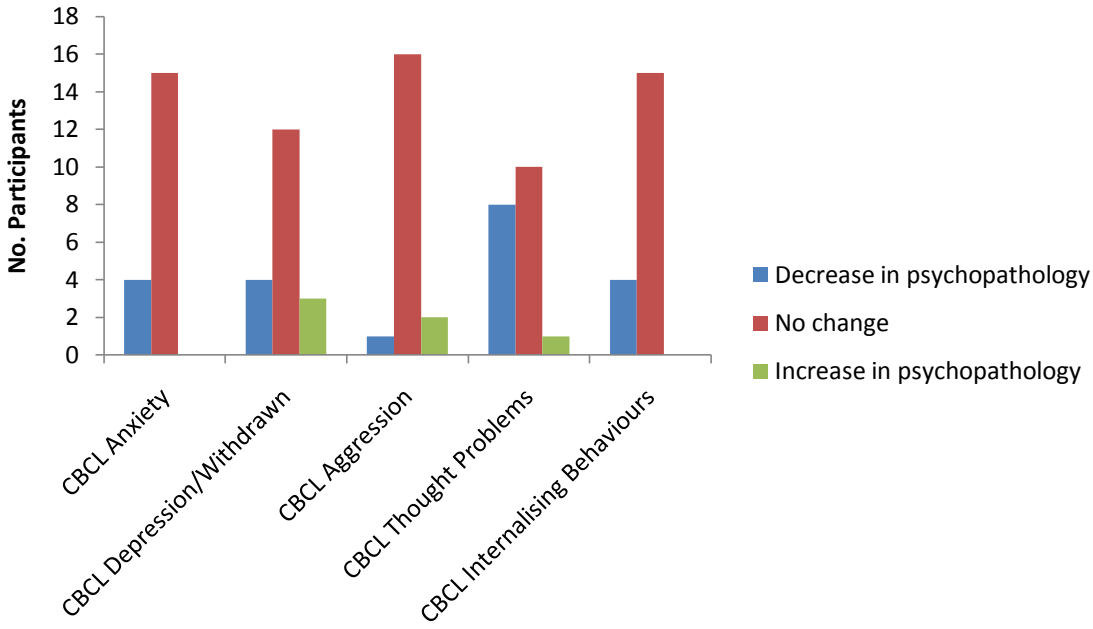

Figure 8: Bar chart showing clinically significant change in parent-rated anxiety, depression, thought problems, aggression and internalising behaviours as measured by the CBCL

Depression. Paired-samples *t*-tests were also conducted on the Depression/Withdrawn, Aggressive Behaviour and Though Problems subscales of the CBCL. No statistical differences in the parent rated scores of their child between pre-group and post-group measures was found so detailed descriptive analysis was conducted.

The difference between the mean scores for pre-group and post-group on the CBCL Depression/Withdrawn subscale was -1.26, indicating the parents noticed that depressed behaviours in their child had reduced. For 12 of the 19 participants (63%) no clinically significant change was found, for four (21%) a clinically significant decrease in parent-rated depressed behaviour was reported and for the remaining three (16%) a clinically significant increase was found (See Figure 8).

Of note, participants reporting a clinically significant decrease on the Depression/Withdrawn subscale also reported a clinically significant decrease on the Thought Problems (n=1) and the Internalising Behaviours subscales (n=1). None of the participants reporting a clinically significant decrease on the Depressed/Withdrawn subscale reported a clinically significant increase on any of the other subscales.

Aggression. The difference between the mean scores for pre-group and post-group on the CBCL Aggressive behaviours subscale was -2.26, indicating the parents noticed that depressed behaviours in their child had reduced and change had occurred in the hypothesised direction. For 84% of the participants (*n*=16) no clinically significant change was found, for 5% (*n*=1) a clinically significant decrease in parent-reported Aggressive behaviours was found and for the remaining 11% (*n*=2) a clinically significant increase was found (See Figure 8).

Of note, one participant reporting a clinically significant decrease on the Aggressive behaviours subscale reported a comparable decrease on the Thought Problems subscale and a clinically significant increase on the Withdrawn/Depressed subscale.

Thought Problems. The difference between the mean scores for pre-group and post-group on the CBCL Thought Problems subscale was -2.0, indicating the parents noticed that depressed behaviours in their child had reduced and change had occurred. For 10 of the 19 participants (53%) no clinically significant change was found, for eight (42%) a clinically significant decrease in parent-reported Thought Problems was found and for the remaining one (5%) a clinically significant increase was found (See Figure 8).

Of note, five participants reporting a clinically significant decrease on the Thought Problems subscale also reported comparable decreases on other scales including the Anxiety (*n*=2), Aggressive behaviours (*n*=1), Internalising behaviours (*n*=1) and Depression/Withdrawn (*n*=1) subscales. One of the participants reporting decreases on the Though Problems and Anxiety subscales also reported a comparable increase on the Aggressive behaviours subscale.

Internalising Behaviours. When subjected to a paired-samples *t*-test, a significant difference was found in the parent-rated scores on the Internalising behaviours subscale of the CBCL. There was a statistically significant decrease in the CBCL scores on the Internalising subscale from pre-group (*M*=69.53, *SD*=12.598) to post-group (*M*=64.53, *SD*=15.03), *t*(18)=3.10, *p*=.006. The mean decrease in

CBCL Internalising subscale scores was 5.0 with a 95% confidence interval ranging from 1.61 to 8.39, and a medium effect size (*d*=.57).

The difference between the mean scores for pre-group and post-group on the CBCL Internalising behaviours subscale was -5.0, indicating the parents noticed that depressed behaviours in their child had reduced. For 79% of the participants (*n*=15) no clinically significant change was found and for 21% (*n*=4) a clinically significant decrease in parent-reported Internalising behaviours was found. No parents reported a clinically significant increase in Internalising behaviours (See Figure 8).

Of note, four participants reporting clinically significant decreases on the Internalising subscale reported comparable decreases on the Anxiety (*n*=2), Thought Problems (*n*=1) and Depressed/Withdrawn (*n*=1) subscales. No participants reporting clinically significant decreases on this subscale reported clinically significant increases on any of the other subscales.

The linear trend lines on the graphed waitlist, pre-group, post-group and follow-up ratings for the CBCL Anxiety, Depression, Aggression, Thought Problems and Internalising Behaviours all showed a distinct decrease in reported symptomology from waitlist to follow-up (see Figures 9-13). However, trend analysis with the waitlist and follow-up data should be viewed with much caution given the sample size for parent-reported ratings was small (*n*=1 and 5 respectively).

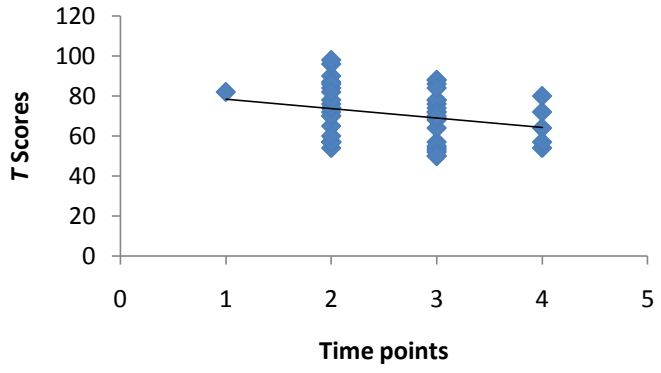

Figure 9: Linear trend line for CBCL Anxiety scores at waitlist, pre, post and follow-up

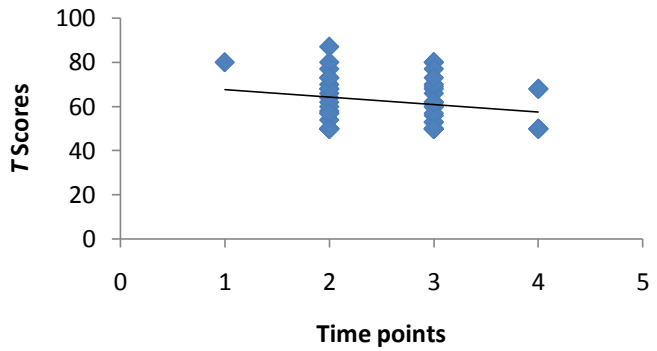

Figure 10: Linear trend line for CBCL Depression/Withdrawn scores at waitlist, pre, post and follow-up

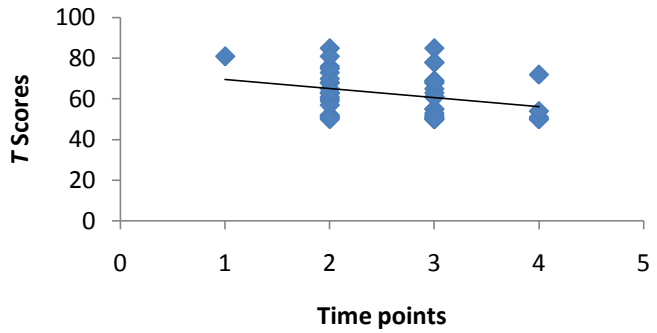

Figure 11: Linear trend line for CBCL Aggression scores at waitlist, pre, post and follow-up

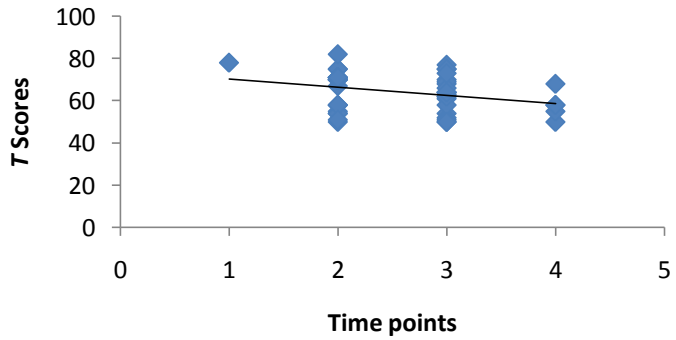

Figure 12: Linear trend line for CBCL Thought Problem scores at waitlist, pre, post and follow-up

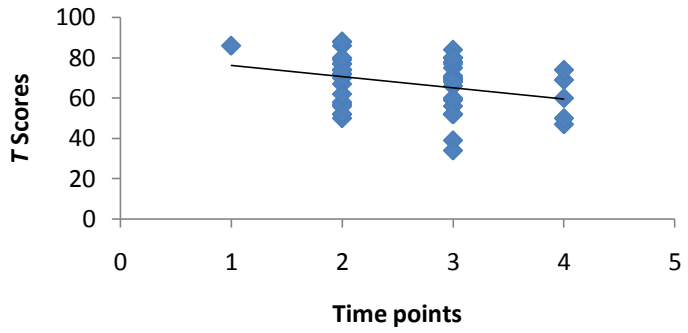

Figure 13: Linear trend line for CBCL Internalising Behaviour scores at waitlist, pre, post and follow-up

Follow-up

The mean score on all of the CBCL subscales reported (except depression) decreased significantly ($p<.05$) from pre-group to three month's follow-up (see Table 7). A Wilcoxon Signed Rank Test revealed statistically significant differences in parent-reported symptoms of their child on the CBCL Anxiety ($z=2.02$, $p<.043$), Aggression ($z=2.02$, $p<.043$), Thought problems ($z=2.03$, $p<.042$) and Internalising ($z=2.02$, $p<.043$) subscales from pre-group to three months follow-up. However, the effect sizes were small ($d=.49$ for all).

No statistical difference in the parent-rated CBCL Depression subscale at three months follow-up was found. Although the result was not significant the mean score on the CBCL Depression subscale did decrease from pre-group ($M=65.00$, $SD=12.69$) to three months follow-up ($M=57.20$, $SD=9.86$). This analysis should be taken with much caution as the number of participants' parents that completed follow-up outcome measures was small ($n=5$).

Clinician-rated outcomes

Table 8: Descriptive results from clinician-rated outcome measures

	N	*Mean*	*SD*
CGAS			
Pre-group	17	63.59	8.032
Post-group	17	72.06	7.084
HoNOSCA			
Pre-group	19	9.58	5.221
Post-group	19	4.37	2.432

Descriptive data from the clinician-rated outcome measures are tabled above.

Waitlist

Insufficient complete waitlist ratings were available to perform basic analysis of clinician-rated waitlist data.

Intervention

A paired-samples *t*-test was conducted, to evaluate the impact of the intervention on clinician-ratings of the child's functioning as measured by the CGAS (n=17) and the HoNOSCA (n=19).

There was a statistically significant increase in CGAS ratings, indicative of an increase in functioning, from pre-group (M=63.59, SD=8.03) to post-group (M=72.06, SD=7.08), $t(16)=3.20$, $p<.006$ (two-tailed). The mean increase in CGAS ratings was by 8.47 with a 95% confidence interval ranging from 2.86 to 14.08 and a medium effect size (d=.59).

There was a statistically significant decrease in HoNOSCA ratings, indicative of an increase in functioning, from pre-group (M=9.58, SD=5.22) to post-group (M=4.37, SD=2.43), $t(18)=4.63$, $p<.001$ (two-tailed). The mean decrease in HoNOSCA ratings was by 5.21 with a 95% confidence interval ranging from 2.85 to 7.58 and a medium effect size (d=.59).

The difference between the mean scores for pre-group and post-group on the CGAS was 8.47, ranging from five to 30, indicating the clinicians noticed that the child's level of global functioning had improved and change had occurred. For 11 of the 17 participants (65%) an increase in global

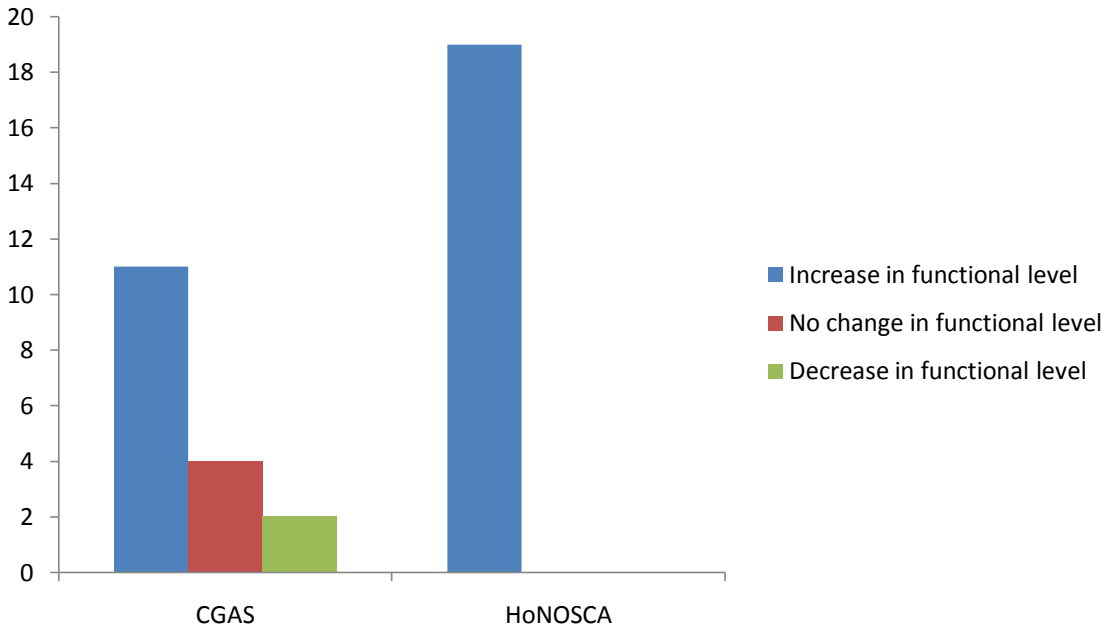

Figure 14: Bar chart showing change in functional level as measured by the CGAS and HoNOSCA

functioning was reported and for four (24%) no change was found. Only two of the participants (12%) were reported to have decreased global functioning by their clinician (See Figure 14).

The difference between the mean scores for pre-group and post-group on the HoNOSCA was -5.21, ranging from -1 to -22, indicating the clinicians noticed the number of factors negatively impacting on the child's health and functioning had reduced. For all 19 participants a reduction in factors negatively impacting on health and functioning was reported. There were no instances of a clinician reporting that such factors had increased or that no change had been found (See Figure 14).

The linear trend lines on the graphed waitlist, pre-group, post-group and follow-up ratings for the CGAS showed a clear increase in level of functioning (see Figure 15) and for the HoNOSCA showed a clear decrease in factors negatively impacting on health and functioning (see Figure 16), as reported by the clinicians.

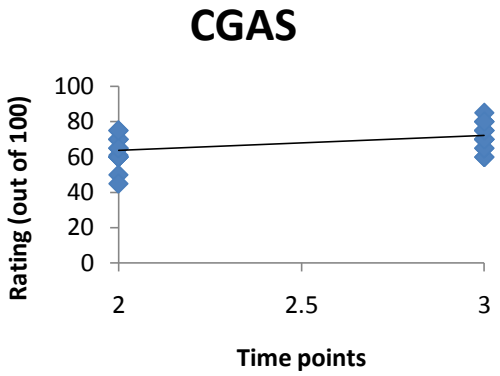

Figure 15: Linear trend line for CGAS scores (level of functioning) at pre and post group

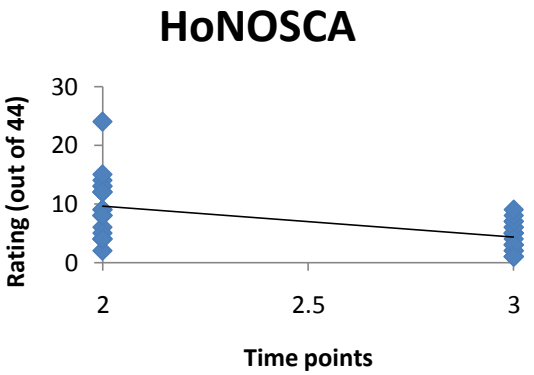

Figure 16: Linear trend line for HoNOSCA scores (no. factors negatively impacting on functioning) at pre and post group

Follow-up

Insufficient complete waitlist ratings were available to perform basic analysis of clinician-rated waitlist data.

Individual factors

Demographic information about each of the participants was collected and examined for any correlations, including age group, ethnicity, gender and duration in TAU. Division of duration of time engaged in TAU prior to the group was approximately two-months: Group 1 = <62 days; Group 2 = 63-123 days; Group 3 = 124-185 days; Group 4 = 186-247 days; Group 5 = 248-309 days; Group 6 = >310 days. Groups 4 and 5 were made redundant as no participants fitted into these categories. No significant correlations were found between age group, ethnicity, gender or duration TAU. However, individual factors were found to significantly relate to the outcome measures.

To determine if child demographic features predicted change in self-reported symptomology, one-way ANOVAs examined differences in change of BYI inventory scores (for Anxiety and Depression) across age, gender, duration of engagement in TAU prior to group, and ethnic groups. No statistically significant difference in change of BYI Anxiety and Depression inventory scores were found for age and ethnic groups and no significant difference was found for gender on the BYI Anxiety inventory. There was a statistically significant difference at $p<.06$ level in change of BYI Depression inventory scores between the genders: $F(1, 25) = 4.22$, $p=.051$. Cohen's d is .50, indicating a medium effect size. However, this is a less stringent p level than normally applied to clinical studies. The mean difference in score change on the Depression inventory was 6.41 (just over half a standard deviation according to the inventories T scoring system).

When assuming adherence to parametric test assumptions, the Pearson's correlation identified that TAU was significantly related to parent-rated anxiety, $r(16)=-.53$, depression, $r(16)=-.50$, thought problems, $r(16)=-.50$, ($p<.05$ for each), and internalising behaviours, $r(16)=-.61$ ($p<.01$), as measured by the CBCL. These indicate large negative correlations, whereby, as duration TAU prior to the intervention increases then parent-rated symptomology decreases. Furthermore, it was revealed that gender was significantly related to self-rated anxiety as measured by the BYI, $r(24)=.46$, $p<.05$. This indicates a moderate positive correlation between gender and self-rated anxiety. Examining the scatter plot chart of gender

graphed against self-rated anxiety shows the positive correlation refers to females being more likely to report a higher level of anxiety (see Figure 17). When assuming violation of parametric test assumptions the Spearman's rho correlation confirmed the significant correlation between gender and self-rated anxiety, $r(24)=.43$, $p<.05$ and not the relationships between TAU and parent-rated outcomes.

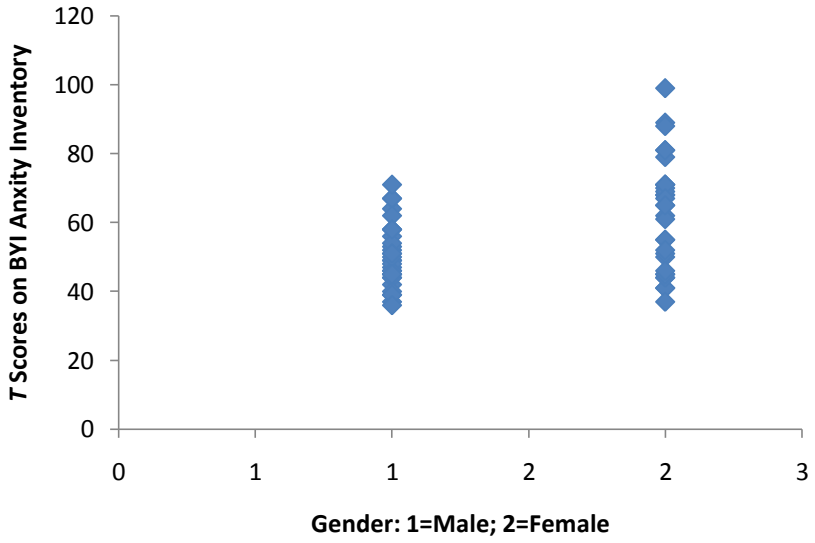

Figure 17: Scatter-plot graph showing relationship between gender and self-rated anxiety

Case studies

In order to further illuminate the impact of the intervention on the sample population, six case studies were selected and examined. The case studies were chosen as they were considered striking, insomuch as three cases represented the participants where the most change occurred as reported by the child, parents or clinician in the anticipated direction. The other three represented participants where the most change occurred in the opposite direction to that anticipated as reported by the child, parents or clinician. Table 9 shows the demographic information for the six case studies and Table 10 shows the change in scores for each case study participant for each outcome measure. Change values are consistent with each scale and are not comparable between scales. For clarity, negative values indicate an undesirable change in presentation, as measured by the scale and positive values a desirable change: directionality is not always consistent with that of the scale itself. Full descriptive notes for each case study can be found in Appendix 6.

Case study one

Participant 14 was a 13 year old NZ European male from treatment group 2, diagnosed with Generalised Anxiety Disorder, whose parents reported a clinically significant decrease in problematic behaviours post-group as measured by four of the five CBCL subscales. For the Aggression subscale deterioration was reported. The participant's own ratings on the BYI inventories also indicated a decrease in symptoms of both anxiety and depression: the latter at a clinically significant level. His self ratings on the OQ reported an increase in activities participated in and to a small degree an increase in perceived self-competence. A novel finding was that his ratings on the OQ indicated a decrease in perceived enjoyment of activities participated in. The clinician ratings indicated no change in global functioning and a reduction in factors negatively impacting on health and functioning.

Table 9: Demographic information for six case studies

Participant ID	Age	Gender	Ethnicity	Diagnosis	Engagement in TAU	Treatment group	No. sessions missed
			Change in the anticipated direction				
14	13.2	Male	NZ European	Anxiety	76	2	2
21	12.2	Male	NZE/Indian	None	20	3	2
23	11.3	Male	NZ European	None	9	3	3
			Change in the opposite direction to that anticipated				
4	11.0	Female	NZ European	ADHD	429	1	0
7	11.2	Female	NZ Maori	None	129	1	0
18	13.8	Female	NZ European	Dyspraxia	455	2	2

Table 10: Differences pre-group to post-group on outcome measures for six case studies

Participant ID	BYI		OQ			CBCL					CGAS	HoNOSCA	Rater scoring most change
	Anxiety	Depression	No. Activities	Competence	Enjoyment	Anxiety	Depression	Aggression	Thought Problems	Internalising			
					Change more in the anticipated direction								
14	7	13*	1	0.2	-1.06	13	7	-2	1*	8*	0	3	Parent
21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30	22	Clinician
23	9*	16*	-5	1.92	0	N/A	N/A	N/A	N/A	N/A	5	2	Child
					Change more in the opposite direction to that anticipated								
4	3	-3	N/A	N/A	N/A	0	-6	-1	-12	-4	-10	N/A	Clinician
7	-20*	-12*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Child
18	9	11	N/A	N/A	N/A	2	-12*	2	-2	-3	0	6	Parent

Available notes from the group indicated that he was engaged with the group process: he made '*insightful contributions'* to the group, '*participated well'* and '*volunteered'* on several occasions. The notes also indicated he was socially competent: he was reported as '*talkative'*, '*sociable'*, '*open'* and as having developed a bond with another group member. Furthermore, he was noted to *'give and receive instructions well'* and to act assertively. The notes also indicated that at times his social skills were more limited: he was reported as being '*defensive'*, too '*serious'*, '*bossy'* or '*withdrawn'* and oppositional, oftentimes being quick to point out others' mistakes. He was noted not to have completed homework on at least one occasion.

Case study two

Participant 21 was a 12 year old NZ European/Indian male from treatment group 3, without a diagnosis assigned, whose clinician reported marked improvement in his level of functioning post-group as measured by the CGAS and HoNOSCA. Unfortunately, no complete data sets were available to compare these ratings with his self-rated or parent-rated measures.

The group notes described him as contributing to group discussions and formulating his goals well. He offered to assist others or be the first to complete tasks on several occasions and his reported behaviour was socially competent: he *'engaged well with others'* in conversation and he managed a tension in the social dynamics effectively. The notes also reported he was very quiet, '*lacked confidence'* and on one occasion he '*quickly wanted to give up'*. He was reported to have not completed his homework at least once.

Case study three

Participant 23 was an 11 year old NZ European male from treatment group 3, without a diagnosis assigned, who reported clinically significant improvement in his own presentation post-group as measured by the Anxiety and Depression inventories from the BYI. His ratings on the OQ indicated that he was participating in fewer activities than before the group, perceived himself as more competent at performing these activities and was enjoying them at a level comparable to pre-group. His clinician rated his global functioning as having improved and that there were less factors

negatively impacting on his health and functioning. No complete parent reported measures were available.

Group notes describe him as having reasonable social skills: he was reported to have '*chatted with peers'*, he '*tried to be supportive'* and was noted to be '*cheerful'*. On several occasions he was reported to have been participating in the group process: he '*participated well'* and made '*good contributions'* and *'answered questions'*. The notes also indicated that some of his behaviours were socially immature: he used a '*child-like voice'*, '*frequently sought adult reassurance'*, was unaware of a tension in the group and when being playful occasionally '*came across as teasing'*. Worthy of consideration is the fact that although he did not have a diagnosis he was described as being '*visibly anxious'*.

Case study four

Participant 4 was an 11 year old NZ European female from treatment group 1, diagnosed with ADHD, whose clinician reported a clinically significant deterioration in her presentation as measured by the CGAS and HoNOSCA. Her self-rated ratings on the BYI indicated she felt her Anxiety symptoms had reduced and her Depressive symptoms increased. She did not complete the OQ ratings for comparison. Her parents also reported deterioration in her presentation across all the CBCL subscales reported.

Available group notes report that she was "*relaxed and cheerful"* for many of the sessions, "*actively contributed"* to group discussions and was "*assertive in expressing her views*". She chose to keep her goal private, unlike other members of the group, and this was considered acceptable.

Case study five

Participant 7 was an 11 year old NZ Maori female from treatment group 1, without a diagnosis assigned, whose self-ratings on the BYI Anxiety and Depression inventories indicated deterioration in her presentation, both at a clinically significant level. She did not complete sufficient OQ information for comparison and no complete data sets were available for the parent and clinician rated measures to put her self-ratings into more context.

Notes from the group identify that this participant attended all the sessions, however, arrived late to at least three (after the initial activity). He was described as showing "*good initiation skills"* and that he "*exhibited good social skills like encouragement, showing empathy and being respectful".* On at least three occasions this participant reportedly 'shut-down' mid-way through the session when encouraged to discuss his worries with the group or a group leader or to discuss more general topics, such as physical symptoms of anxiety. He was also described as "*articulate and assertive".*

Case study six

Participant 18 was a 13 year old NZ European female from treatment group 2, diagnosed with Dyspraxia (and a secondary diagnosis of Generalised Anxiety Disorder), whose parents reported a deterioration in her presentation as measured by three of the five subscales from the CBCL: Depression (clinically significant), Thought Problems and Internalising Behaviours. On the remaining two CBCL subscales – Anxiety and Aggression – an improvement was reported, which is consistent with her self-rated improvements as measured by the BYI Anxiety and Depression inventories. No complete OQ data was available for comparison. Furthermore, her clinician rated her global functioning as unchanged and that there had been a decrease in factors negatively impacting on her health and functioning.

Group notes described her as being an active participant in the group process: she made frequent, relevant '*insightful contributions'* that enhanced the group discussion, '*participated actively'* and appeared '*motivated'* demonstrating good recall. Additionally, she was described at times as being reluctant and that she expressed dislike regarding some activities. While her social skills were not overly reported it appeared she was often '*unaware of the impact of her behaviour on others*' and less considerate of their needs. She was noted to have not completed her homework on at least two occasions.

Summary of case studies

The three participants representing the most change in the anticipated direction were all male and had a mean age of 12.3 years (*SD*=0.9). Their

average time engaged in TAU prior to commencing the group was 35 days (*SD*=35.9) and the mean number of sessions missed was 2.3 (*SD*=0.6).

The three participants representing the most change in the opposite direction to that anticipated were all female and had a mean age of 12 years (*SD*=1.6). Their average time engaged in TAU prior to commencing the group was 337.7 days (*SD*=181.2) and the mean number of sessions missed was 0.7 (*SD*=1.2).

The available group notes were not detailed and did not always contain the same information week to week or participant to participant (e.g., whether or not homework was completed) so a robust analysis was not feasible. Tentative trends include those performing well in the anticipated direction contributing to the group process, having good social skills (e.g., being cheerful) and often volunteering to perform or go first for activities. There is the hint of a suggestion that not completing homework was a pattern for those where change occurred in the opposite direction to that anticipated, however, it is acknowledged that for some where change was in the anticipated direction homework was also not completed on occasions. Furthermore, a lack of awareness of their behaviour on others was present for participants at both ends of the change spectrum.

Chapter five: Discussion

The aim of this pilot study was to explore the acceptability and effectiveness of a new intervention – the Leaping Hurdles group: an occupation-based group for 10-14 year old children with symptoms of anxiety, depression and occupational disruption. The results showed a tentative trend of improvement in child-rated anxiety and depression symptoms and a significant improvement in parent-rated symptoms of anxiety, aggression, thought problems and internalising behaviours. Improvements were corroborated by clinician-ratings, which also demonstrated significant increases in overall functioning. This was not a randomised controlled trial; therefore it cannot be stated definitively whether changes reported were attributed solely to the Leaping Hurdles programme. However, the preliminary findings from this study support the use of this programme with a clinical population of 10-14 year olds and their parents.

Addressing the hypotheses

Intervention acceptability

The first hypothesis tested was whether children would find the group acceptable – as measured by their participation and attendance. Ten participants did not start the group for a variety of reasons, mostly logistical and not related to the intervention specifically. Of the 36 participants who started the intervention, 34 completed it and anecdotal evidence suggests they found it to be a positive experience, which was further reinforced by positive feedback from their parents. The two participants who did not complete the intervention had been inappropriate referrals and it quickly became evident their presentations did not meet the inclusion/exclusion criteria for the group and the research (see Table 2). Thus, they were redirected to more appropriate treatment by their clinician.

No participants refused to attend the group after attending their first session and no more than three sessions were missed by any one participant; 13 participants (38%) did not miss any at all. With regard to this study it is important to consider the potential influence of parents on

the children's choice to attend as they may have been coaxed, bribed or made to attend. However, anecdotally, no children complained about attending the group or seemed unhappy about doing so. Furthermore, these attrition and attendance rates are exceptional when compared to attrition rates reported by others. For example, Foreman and colleagues (2007) reported over one-third from their study did not complete treatment and Garfield (1994) highlights that 25-50% of patients (across several studies) failed to return after an initial session.

Stice and colleagues (2009) conducted research, which found studies that included homework assignments were more likely to achieve a greater effect size. Although homework was included in the present study intervention, completion rates were not formally recorded and it appeared adherence to homework tasks was sporadic and inconsistent between participants. Anecdotally it was reported as least helpful by those least likely to complete it and acceptability appeared low. This would be a useful variable to record and more rigorously pursue in further research into such interventions, with some modifications to make it more acceptable. Overall, it can be concluded that the group was an acceptable intervention for children being seen by a CAMHS to address symptoms of anxiety, depression and occupational disruption and the first null hypothesis is rejected.

Intervention effectiveness

The second hypothesis predicted a difference in anxiety and depressive symptomology and level of occupational disruption between pre-group and post-group measurements. The BYI Anxiety and Depression inventory scores elicited non-significant reductions in scores through indicated a decrease in anxiety and depressive symptomology. Descriptive analysis found most participants reported no clinically significant change. But more reported clinically significant improvements in depressive symptomology than decrements (clinical significance is outlined in Chapter 2: Outcome measures).

Linear and polynomial trend lines also indicated a decrease in both BYI Anxiety and Depression inventory scores. Essentially, testing became a part of the treatment and there is the possibility an interaction effect

occurred. As a result, scores may not have improved as much as anticipated over the course of the intervention as participants may have been disinterested completing the measurement tools initially and become more aware and invested in their responses by post-group. Overall, evidence from the children's self-reports on the BYI, regarding a difference in symptomology between pre-group and post-group was weak and inconclusive but is suggestive of a difference in the positive direction of improvement.

The OQ measured the number of activities participated in, perceived self-competence and level of enjoyment. An unexpected outcome found was a significant decrease in the number of activities participated in from an average of 10.4 down to 8.3. It had been thought that reduced symptomology would increase the child's capacity to participate in more activities. With no conclusive self-reports of reduced symptomology perhaps this was why number of activities participated in did not increase; however, it does not explain why they decreased. No significant difference in perceived self-competence or level of enjoyment was found. However, descriptive analysis did indicate over half the participants reported an increase in self-competence and just under half reported a decrease in level of enjoyment.

It may be that the participants were taking part in fewer activities due to a developing sense of competence, flow and mastery (Christiansen & Townsend, 2004; Csikszentmihalyi, 1993; Mandel, Jackson, Zemke, Nelson, & Clark, 1999), which increased their tolerance and therefore the duration of time spent on each occupation. However, developing these skills may also be perceived more as hard-work than pleasure resulting in the lack of change in level of enjoyment reported. Alternatively, it may be that level of enjoyment is less significant for occupational disruption than self-competence. It was previously reported that perceived self-competence was correlated with symptoms of depression so this idea is plausible (Weisz, Weiss, Wasserman, & Rintoul, 1987). Furthermore, the OQ may not have been a sensitive enough measure of change in occupational disruption for this population (Ebb, Coster, & Duncombe, 1989), who reported finding it unwieldy and difficult to complete.

The parent-reported measure, the CBCL, elicited a statistically significant difference in anxiety and internalising behaviours between pre-group and post-group indicating a reduction in symptoms. Furthermore, descriptive analysis found that all children were reported to have improved or there was no change: none were reported to have increased symptoms identified by the Anxiety and Internalising Behaviours subscales. These findings indicate a significant positive change in psychopathology following the intervention as perceived by the parents.

Descriptive analysis of the remaining subscales also suggested a reduction in psychopathology association with Depression, Aggression and Though Problems. Of note, clinically significant reductions in Thought Problems were associated with clinically significant reductions in each of the other subscales reported. This suggests a pivotal role Thought Problems may play in effecting change in anxious and depressive symptomology.

There was a statistically significant increase in CGAS scores from an average of 63.6 pre-group to 72.1 post-group and over two-thirds reporting increased functioning in the child. Scores <70 are indicative of reduced functionality in the child's presentation. It was evident that the CGAS showed a significant improvement from pre-group to post-group indicating the intervention impacted positively on the children's global functioning according to the clinician-ratings. Additionally, there was a significant decrease in HoNOSCA scores reported from pre-group to post-group demonstrating decreased number of factors negatively impacting on participant's health and functioning. Of particular note is the fact that no participant's HoNOSCA score increased. Overall, the clinician-rated measures clearly demonstrated an improvement in participants functioning on completion of the intervention.

Given the discrepancy between the self-reported outcomes and those of the parents and clinicians a number of reasons are proposed to explain this phenomenon. First, it was shown in other studies that change in observable behaviour takes effect quicker than change with internal cognitions (Kolko, Brent, Baugher, Bridge, & Birmaher, 2000; Vitiello, et al., 2006). So while the participant's parents and clinicians are reporting change in observable

behaviours there may be a delay in those changes becoming habituated and new cognitions becoming internalised by the child.

Second, the BYI may have been an imprecise measure of actual change if initial changes were typically behavioural/functional. Cognitive changes may have occurred later when consolidated and reinforced by behavioural experiences. This concept would explain why in this study the CBCL and clinician-rated tools provided more sensitive measures of change as they target observable behaviours.

Third, the children's ratings at pre- and post-group indicate a possible floor effect – the reporting of many subclinical scores at pre-group leaving minimal scope for improvement by post-group. Improvements reported by parents and clinicians suggest the children may not have accurately reported or recognised any change in themselves between pre-group and post-group. A sizeable proportion of the intervention educates the participants about symptomology and how to recognise it (in preparation for learning skills to effectively manage it). Subsequently, by the time of the post-group measure it was anticipated the participants were more skilled at and aware of recognising and reporting symptoms. This may have resulted in their symptoms appearing to have increased or not changed at the post-group measure, which would make the measured degree of change in their self-reported symptomology at this point inaccurate. To minimise the impact of this potential factor it is vital to have external (parent- and clinician-rated) measures alongside the self-rated measures, as in the present study. This possibility is considered with caution as the trend line analysis of the children and parents pre-group and post-group ratings show a level of consistency in changes reported (see Figures 18 -19).

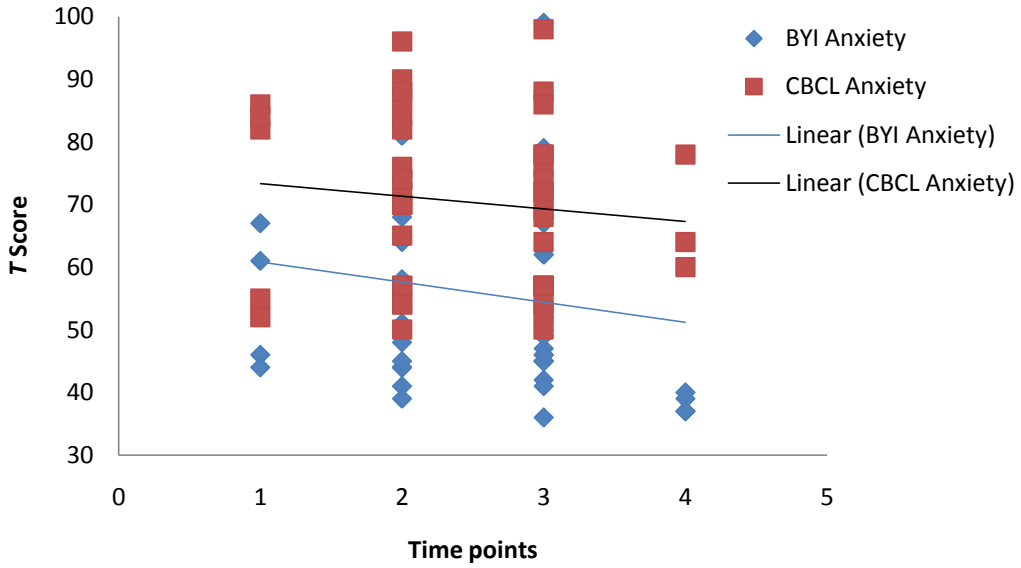

Figure 18: Trend line graph showing change in child- and parent-rated anxiety

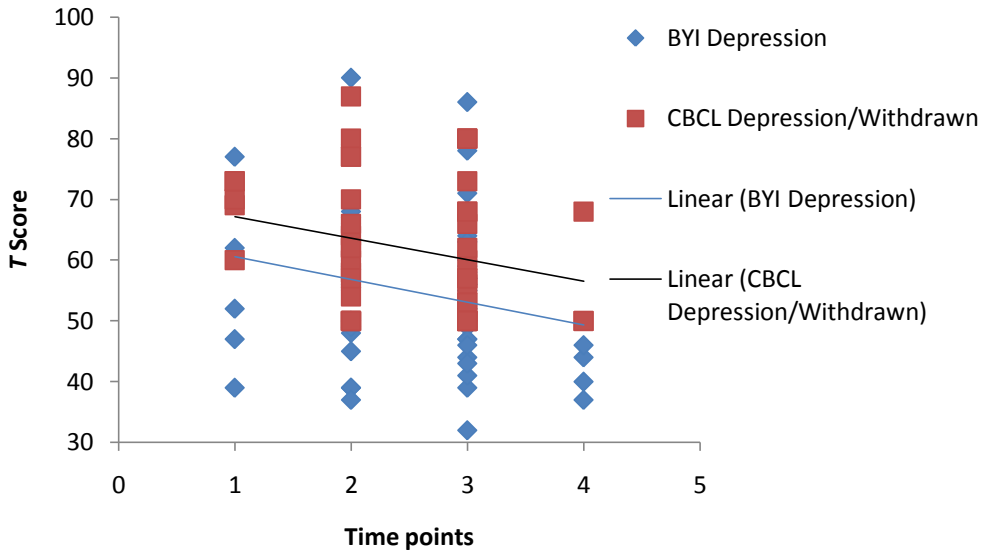

Figure 19: Trend line graph showing change in child- and parent-rated depression

Fourth, the discrepancy in child-rated outcome measures may be due to increased symptomology in the final treatment session, when the post-group measure was recorded, with the participant potentially anxious about the intervention coming to an end. To mediate this potential confounder in further studies the post-group measure could be recorded the week before or after the final session.

Finally, it would be imprudent not to consider the possibility that there was no significant difference found because the group did not affect change in the measured variables. Change in parent-rated measures may be

explained as different perceptions or understanding after they participated in the parent group or based on expectation of change. However, given the changes reported in the parent-rated measures were consistent with the changes reported from the clinician-rated measures (and clinicians did not participate in the intervention) then this explanation seems unlikely.

Additional findings from the case studies indicated the possible trend of the boys improving to a greater extent than the girls. This may relate to gender differences in learning styles (Riding, Grimley, Dahraei, & Banner, 2003). For example, males typically prefer multi-modal instruction, consistent with the intervention's approach and females typically prefer single-mode instruction (Wehrwein, Lujan, & DiCarlo, 2007). Alternatively, it has been reported that co-morbid conditions in females are more stable than in males and perhaps this instability created an opportunity for the intervention to have more effect with males than females (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). However, given the small number of case studies no firm conclusions can be drawn.

Another indication from the case studies was they highlighted the potential impact of time engaged in TAU prior to commencing the group. Findings suggested the sooner a child commenced the group after engaging with the CAMHS the greater their improvement – whether this impact is about the client being engaged in the intervention early while still motivated, that those clients were likely to have improved and been discharged quicker anyway or that prior time engage in TAU was insignificant is uncertain.

Furthermore, the case studies indicated that missing two or three of the sessions did not impact negatively on the participants. While this finding is not conclusive it does have clinical implications for considering shortening the duration of the group series.

Waitlist control group

The third hypothesis predicted there would be no difference in level of symptomology and functioning between those on the waitlist (control group) and those starting the intervention measured at pre-group. Mean waitlist and pre-group scores are reported in Tables 6-8. The difference between the child-rated waitlist and pre-group measures was minimal (non-

significant) and if anything, showed a minor increase in symptoms between the two time points – particularly in relation to anxiety. The difference between the parent-reported waitlist and pre-group measures was considerably larger. However, only one parent completed the waitlist measures and so comparison is unduly biased.

Although it is possible that the waitlist condition had a negative impact rather than the intervention having a therapeutic effect, given that no iatrogenic effects of waitlist controls have been reported in the literature, this hypothesis seems unlikely (Ginsburg, 2009). It is possible that TAU was untargeted and non-specific, resulting in an increase in symptoms. Researchers were mindful that TAU as a control poses considerable challenges to maintaining scientific rigor and meeting high ethical standards but was necessary for treatment in the clinic setting (Reynolds, et al., 2001). This was not the first study to have examined an intervention compared to a waitlist that consisted of TAU, with TAU available alongside the intervention also (Schene, Koeter, Kikkert, Swinkels, & McCrone, 2007).

With regard to the small difference in symptomology reported between waitlist and pre-group, clinically it was imagined that participants were more anxious at the pre-group measurement due to being in a new and unfamiliar situation. Overall, evidence of no difference between the waitlist and pre-group measures is weak and inconclusive and the null hypothesis could not be adequately tested.

Retention of change

The nature of the clinic setting meant that it was often difficult to obtain follow-up measurements from participants. Of the participants that did complete follow-up measures improvements continued beyond post-group, whether the rater was the child or parent (no clinician data available). Improvements in observable behaviours related to Anxiety, Aggression, Thought Problems and Internalising Behaviours as measured by the CBCL and rated by the parents were significant (no significant change on Depression subscale). However, improvement in self-rated symptoms of anxiety and depression as measured by the BYI were not significant. This is consistent with earlier discussion that if the observed change in behaviour was maintained from post-group a change in cognitions would be evident at

a later time. Clinically, it is imagined that this trend would continue and testing at six months follow-up would reveal further improvements still.

Furthermore, a limitation of the sample size may be that it was self-selecting and that those who chose to participate in follow-up measurements did so because they felt strongly about demonstrating their improvements. Whereas those who had not continued to improve may have felt less inclined to participate in follow-up testing. Without testing of these participants this is an unverified hypothesis.

Individual factors

While no significant correlations existed between the demographic variables there were significant relationships with the outcome measures. Duration in TAU prior to the intervention had a large negative relationship with parent-rated Anxiety, Aggression, Thought Problems and Internalising Behaviours. This indicates that the longer a child had been engaged in TAU prior to the intervention the lower their parents reported symptomology. This may be related to genuine improvements made while in TAU, lower levels of symptomology originally or possibly those having been in TAU longer experiencing persistent and residual symptomology at low levels rather than an acute presentation. This last explanation would be consistent with suggestions from the case studies that those engaged in TAU for less time achieved greater improvements as once a disorder becomes stable it is less easily changed (Merikangas, Zhang, Avenevoli, Acharyya, Neuenschwander, & Angst, 2003). These findings together may be the result of there being greater scope for improvements with participants who have been engaged in TAU for shorter periods. It is worth remaining mindful that TAU was divided relatively arbitrarily (two-month intervals) and that grouping it differently may have yielded different results.

Gender impacted significantly on self-reported symptoms of anxiety with higher levels of anxiety reported by female participants. This is consistent with literature describing gender differences in reporting of symptomology (Adolescent Health Research Group, 2008; Cohen, et al., 1993; Klein, Dougherty, & Olino, 2005; Silberg, et al., 1999). Given the higher levels of symptomology reported by the females this does not explain why the extent of change reported was higher in males according to the case studies (if we

consider there was more scope for females). Again, the idea that the group was more beneficial for males than females is supported.

Limitations

There were several difficulties inherent to a pilot study and associated with performing research in a clinical rather than research-based setting. Due to the clinic setting the total population represented in this study was limited to clients initially meeting criteria for the CAMHS and secondly by individual clinician's decisions to select the programme as an appropriate treatment for their client. It was not ethical or feasible to randomly assign participants to waitlist or intervention group. Pre- and post-group measures were collected as part of best practice and so adherence was high. It is unknown if the timing of the pre- and post-group measurements compromised the results to any extent. However, waitlist and follow-up measures were difficult to obtain, which contributed to the particularly low sample sizes of these groups. Subsequently, these factors contributed to this study's small sample size and increased the risk of making a Type II error – accepting the null hypothesis when it should be rejected. The sample size also limited the power calculation of this study. Furthermore, statistical tests were not always applicable or appropriate and all results should be interpreted with caution. Despite this, as a pilot study this research was inherently small and able to achieve moderate effect sizes.

Another limitation associated with the clinic setting was that the CAMHS population source (District Health Board catchment area) did not constitute a representational sample of New Zealand demographic characteristics. In future studies it would be useful for multiple sites to be recruited in order to obtain a larger and more representational sample.

Standardised diagnostic interviews were not routinely conducted within this CAMHS service, and therefore a large proportion of the participants (12 out of 34) were not assigned a formal diagnosis during the course of this study. Diagnoses are often not assigned in the CAMHS for a range of reasons including: stigma associated with mental illness; the transient nature of many child and adolescent illnesses; and the qualitatively different presenting symptoms of child and adolescent disorders compared to adults (for which the DSM-IV bases its criteria). Furthermore, the nature of the clinic setting meant there was some dependence on prior assessment of participants by clinicians not involved with the study. As a result, it is

unclear what proportion of participants met criteria for diagnoses at pre- and post-group and what proportion was subclinical. However, given that the New Zealand Youth '07 study found that 25% of females and 10% of males reported seeing a health professional for emotional worries in the previous 12 months, a clinical need is clearly present regardless of diagnostic status (Adolescent Health Research Group, 2008).

For this study the clinicians at the CAMHS clinic were briefed on the research prior to it commencing. To what extent this may have impacted on their responses and findings is unknown. This factor is worthy of consideration when repeating this study with a larger sample across multiple sites.

Use of the Occupational Questionnaire proved to be another limitation of this study. The children reported finding it unwieldy and it took longer to complete than anticipated (often more than 20 minutes). Despite detailed written and verbal instructions, many of the questionnaires were returned incomplete or inaccurately filled out. Variation in interpretations of how to categorise occupations participated in were extensive and there were multiple, potentially conflicting, options for how to analyse the data for research (Ebb, Coster, & Duncombe, 1989).

Reliability of the data was not formally assessed as any conclusions would be compromised by the small sample size. Moreover, data was not analysed from every inventory or subscale on the psychometric tools meaning item analysis would be imprecise. However, the reliability of the outcome measures themselves were previously demonstrated and discussed in Chapter 2. Should this study be repeated with a larger sample size then calculation of Cronbach's alpha is strongly recommended.

Practice implications and future directions

The results of the present study indicate that the Leaping Hurdles intervention was acceptable and found to be more effective than the control condition (waitlist group) at reducing symptoms of anxiety and mood disorders and increasing functioning. Furthermore, trends indicated that this improvement was maintained and continued at three months follow-up. The research team anticipate that the intervention will be continued at the CAMHS and improvements to it made as indicated by the findings. For example, that the group may be more effective if available over less weeks and with fewer modes of instruction for targeting females.

Indications to the effectiveness of Leaping Hurdles from the present study are positive, and inevitably limited by the sample size of a pilot study. Further evaluation with a larger sample size, thus increasing the study's power, is the next step indicated in more fully demonstrating the effectiveness of the intervention and its generalisability across a clinical population. It is recommended that future research on this intervention reconsiders the timing of the outcome measures so as to minimise any interference from the intervention itself. For example, the pre-group measure being completed a week before starting the intervention instead and the post-group measure in the second-to-last last week or the week after completion. Furthermore, a longer follow-up period may yield interesting results about the longevity of the interventions effects.

The use of an occupation-focused measurement tool to elicit children's self-ratings of occupational disruption and performance is indicated. However, the occupational questionnaire has been shown to be less appropriate with this age group and a suitable alternative would need to be found.

As shown in other studies, the use of homework assignments and targeting higher risk populations has been shown to improve effect sizes. It is recommended that future research into the effectiveness of Leaping Hurdles documents and reports on homework completion rates. With regard to higher risk populations, it would be valuable to include diagnostic interviews as an outcome measure to more accurately define diagnostic status across the time points.

Interesting, the parent-rated Internalising behaviour scale and clinician-rated HoNOSCA both showed no decrements in the children's presentations. Further analysis into any relationship between these two variables may prove enlightening.

Conclusion

This research represented a significant opportunity to evaluate an occupation-based group treatment intervention that addressed the needs of 10-14 year olds with moderate mental health concerns related to anxiety, depression and occupational disruption. Current groups available in the community did not target this population nor have the flexibility to be tailored to the specific emotional, behavioural and cognitive needs of the group members.

Leaping Hurdles was found to be acceptable intervention for children aged 10-14 years in New Zealand. It was shown to be more effective than a waitlist control for reducing child-, parent- and clinician-rated symptoms of anxiety and mood disorders while increasing functioning. Descriptive analysis of the follow-up findings indicated the self- and parent-rated outcome measures continued to improve. A summary of the case studies suggested that males and those engaged in treatment as usual for less time - prior to commencing the group - were more likely to attain better outcomes. This research study was not randomised so it cannot be stated conclusively that the intervention was responsible for the changes found. However, early indications with the small sample size suggest that Leaping Hurdles impacted on reducing symptomology and increasing functioning: further research with a larger sample size is indicated.

This study contributes to the limited pool of evidence-based group treatments available to occupational therapists in child and adolescent mental health. Further research is needed with more children, from a wider geographical population to increase generalisability across the clinical population of 10-14 year old children. The need for more research, with regard to a study with a larger sample size, longer-term follow-up; comparison with alternative treatment options (e.g., non-therapeutic activity groups); or cost-analysis/efficacy has been identified. Acquiring New Zealand specific and occupational therapy specific knowledge in this area is important, not only with respect to the individual outcomes, but also with respect to funding, service and the profession's development.

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Appendix 1: Ethics

Health and Disability Ethics Committees

Central Regional Ethics Committee
Ministry of Health
Level 2, 1–3 The Terrace
PO Box 5013
Wellington
Phone: (04) 496 2405
Fax: (04) 496 2191
Email: central_ethicscommittee@moh.govt.nz

25 June 2009

Emma Russell
Building 13, Greenlane Clinical Centre
Greenlane 1042
Auckland

Dear Emma Russell

Leaping Hurdles: evaluation of the effectiveness of a group for children 10-14 years old addressing anxiety, low mood and occupational disruption, with a parallel parenting group
CEN/09/04/015

The above study has been given ethical approval by the **Central Regional** Ethics Committee.

Approved Documents

- Parent Participant Information Sheet, version 1, dated 25/03/2009
- Participant Information Sheet [10-14 years]
- Leaping Hurdles: Teacher's Information Sheet, received 12 May 2009
- Assent Form for Children Aged 10-14 Years Old
- Parenting Satisfaction Scale (1994)
- Beck Youth Inventories for Children and Adolescents, dated 2001
- ASEB Child behaviour Checklist for Ages 6-8, dated 2001
- Occupational Questionnaire, dated November 16, 1993, March 7, 2004

Accreditation
The Committee involved in the approval of this study is accredited by the Health Research Council and is constituted and operates in accordance with the Operational Standard for Ethics Committees, April 2006.

Progress Reports
The study is approved until **31 December 2010**. The Committee will review the approved application annually and notify the Principal Investigator if it withdraws approval. It is the Principal Investigator's responsibility to forward a progress report covering all sites prior to ethical review of the project in **22 June 2010**. The report form is available on http://www.ethicscommittees.health.govt.nz. Please note that failure to provide a progress report may result in the withdrawal of ethical approval. A final report is also required at the conclusion of the study.

Amendments
It is also a condition of approval that the Committee is advised if the study does not commence, or is altered in anyway, including documentation eg advertisements, letters to prospective participants.

Please quote the above ethics committee reference number in all correspondence.

The Principal Investigator is responsible for advising any other study sites of approvals and all other correspondence with the Ethics Committee.

It should be noted that Ethics Committee approval does not imply any resource commitment or administrative facilitation by any healthcare provider within whose facility the research is to be carried out. Where applicable, authority for this must be obtained separately from the appropriate manager within the organisation.

Yours sincerely

S Scott

Sonia Scott
Central Regional Ethics Committee Administrator
Email: sonia_scott@moh.govt.nz

AUT UNIVERSITY
TE WĀNANGA ARONUI O TAMAKI MAKAU RAU

MEMORANDUM

Auckland University of Technology Ethics Committee (AUTEC)

To: Rex Billington
From: **Madeline Banda** Executive Secretary, AUTEC
Date: 24 September 2009
Subject: Ethics Application Number 09/197 **Leaping Hurdles: evaluation of the effectiveness of an occupation-based groups for children aged 10-14 years addressing anxiety, low mood and occupational disruption.**

Dear Rex

I am pleased to advise that the Auckland University of Technology Ethics Committee (AUTEC) approved your ethics application at their meeting on 14 September 2009, subject to the following conditions:

1. Provision of all the documents identified in the Central Regional Ethics Committee approval letter dated 25 June 2009;
2. Amendment of the Information Sheets as follows:
   a. Inclusion of the AUT Logo;
   b. Identification that this research is being undertaken as part of the requirements of a Masters degree;
   c. Inclusion of the points given in the Parent Participation Sheet in the Teacher's Information Sheet;
   d. Correction of the information about the approving ethics committee in the Information Sheets.

AUTEC noted the unusually long delay in submitting the ethics approval by the Central Regional Ethics Committee to AUTEC for approval.

I request that you provide the Ethics Coordinator with a written response to the points raised in these conditions at your earliest convenience, indicating either how you have satisfied these points or proposing an alternative approach. AUTEC also requires written evidence of any altered documents, such as Information Sheets, surveys etc. Once this response and its supporting written evidence has been received and confirmed as satisfying the Committee's points, you will be notified of the full approval of your ethics application.

When approval has been given subject to conditions, full approval is not effective until *all* the concerns expressed in the conditions have been met to the satisfaction of the Committee. Data collection may not commence until full approval has been confirmed. Should these conditions not be satisfactorily met within six months, your application may be closed and you will need to submit a new application should you wish to continue with this research project.

When communicating with us about this application, we ask that you use the application number and study title to enable us to provide you with prompt service. Should you have any further enquiries regarding this matter, you are welcome to contact Charles Grinter, Ethics Coordinator, by email at ethics@aut.ac.nz or by telephone on 921 9999 at extension 8860.

Yours sincerely

Madeline Banda
Executive Secretary
Auckland University of Technology Ethics Committee
Cc: Emma Russell erussell@adhb.govt.nz, Daniel Shepherd

Appendix 2: Research documents

Assent Form for children aged 10-14 years old

Evaluating the Leaping Hurdles group.

I have had someone tell me about this study, I have read the information sheet dated 25/03/09 and talked about the study with that person. I understand what I am being asked to do.

YES NO

I have had the opportunity to ask questions and I am happy with the answers I have been given.

YES NO

I know that I do not have to take part in this study and I can stop whenever I want to.

YES NO

I (full name)_____ hereby consent to take part in this study.

Parent/guardian signature: Date:

Name of parent/guardian:

Full names of Researcher: Emma Russell
Contact Phone Number for researchers: 09 623 4646 ext. 28697

Project explained by:
Project role: Research Team Member

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AUCKLAND DISTRICT HEALTH BOARD
Te Toka Tumai

Parent Participant Information Sheet

Leaping Hurdles: CAMHS Anxiety & Mood Group

Principal Investigator: Emma Russell
Occupational Therapist
Kari Centre
Private Bag 92189
Auckland.
Tel: 09 623 4646 extn 28697

You and your child are invited to take part in a research study about the effects of the Leaping Hurdles group for anxiety and low mood.

Please take your time to think about it and decide whether you wish to take part in it. Taking part is completely voluntary (your choice) and if you decided you do not wish to take part, you and your child can still take part in the Leaping Hurdles group.

Although we need you to agree to your children participating in the study, we will also need your child's assent to participate in the study.

Why are you being asked? / What is it all about?

- We want to find out about the effectiveness of the Leaping Hurdles Group for anxiety and low mood.
- We are inviting all clients from the Leaping Hurdles Group, both parents and children, to participate in this research.
- In the study you and your child will be asked to complete two extra sets of psychometrics (specialised questionnaires that are used to gain more in depth understanding of the anxiety/low mood issues).

What happens during the study?

- The study involves one or two extra sets of the psychometrics (questionnaires) that are completed as part of the Leaping Hurdles Group for anxiety and low mood. Each set of questionnaires will take approximately 30 minutes to complete.

- Two sets of questionnaires take place as part of the Leaping Hurdles Group – at the first session and in the last session. This is the usual practice of the Leaping Hurdles Group and takes place whether you decide to take part in the research or not.

- The additional sets of questionnaires that we will ask you to complete occurs when you are placed on the waiting list for the next group, and three months after completion of the Leaping Hurdles Group.

- We are asking you to complete these sets in order to evaluate any changes in your child's anxiety or low mood from being placed on the waiting list to starting the group, and to see if the skills learnt in the Leaping Hurdles Group are long lasting. By this stage, your child may have been discharged from service and so we are asking for permission to contact you if this is the case.

- Please see the attached flowchart that demonstrates this process

Risks & benefits

- There are no specific benefits to taking part in the research, although you may derive satisfaction from participating in such a study.
- You will also have a clearer picture of your child's anxiety or low mood
- No participants will receive any payment for taking part.
- There are no obvious risks to your or your child in this study.
- There will be no financial costs for participants.
- If you have any questions or concerns about risks to you or your child during or after your family's participation in the study you may contact Emma Russell, any member of the research team, your Key Worker or the Peer Representative, Chloe Shaw.

Compensation

In the unlikely event of a physical injury as a result of your participation in this research, you may be covered by ACC.

Participation

- Your participation is entirely voluntary (your choice). You do not have to take part in this study, and if you choose not to take part this you and your child can still take part in the Leaping Hurdles Group.
- If you do agree to take part, you can withdraw from the study at any time up until a month after the three month follow up psychometric. You do not have to give a reason. It will not affect your or your child(ren)'s health care in any way.
- Your child can also withdraw from the study at any point without having to give a reason. This will not affect your or your child's health care in any way.

General Information

- If you have any questions about the study, do not hesitate to contact Emma Russell or your Key Worker.
- You may have a friend, family or whanau support to help you understand the risks and/or benefits of this study and any other explanation you may require.

Confidentiality

- No material which could personally identify you or your children will be used in any reports on this study.
- If we learn that you or anyone else involved in the project plans to take their life, or that there is a serious risk that this will happen, we are obliged to take steps to try and keep the person at risk safe.
- In this situation, we would talk about our obligations with you, and sort out the least intrusive way of making the situation safe with you before doing anything, unless it was an emergency and we couldn't get hold of you before we had to act.

Results

- The results and outcomes of the research will be made available to you.
- We intend to publish the study in an academic journal, and possibly present at a conference. There may be a significant delay between the completion and publication of the programme.
- The study will contribute to part of the requirements of a Masters degree and anonymous results will also be presented to AUT staff and students.

Who should I contact if I have further questions?

If you have any questions about the study, do not hesitate to contact Emma Russell or your Key Worker.

The Kari Centre also has a Peer Representative, Chloe Shaw, who is happy to talk to you about this study or just to chat. Her number is 09 623 4646 ext 28668.

If you have any queries or concerns regarding your rights as a participant in this study you may wish to contact a Health and Disability Advocate, telephone 0800 555 050.

For Maori health support at the ADHB, or to discuss any concerns or issues regarding this study, please contact Mata Forbes RGON, Maori Health Services Co-ordinator / Advisor, 5th Level, GM Suite, Auckland City Hospital. Tel 307 4949 extn. 23939 or Mobile 021 348 432

The number for after-hours crisis assistance from the mental health service is 0800 800 717. Please enter this number into your cell-phone now.

This study has received ethical approval from the Central Regional Ethics Committee and the Auckland University of Technology Ethics Committee.

Please feel free to contact the researcher if you have any questions about this study.

Thank you for making the time to read about, and consider taking part in this study.

Participant Information sheet (10-14 years)

Evaluation of the Leaping Hurdles group

AUT UNIVERSITY
The University for the changing world.

AUCKLAND DISTRICT HEALTH BOARD Te Toka Tumai

Would you consider taking part in some research?

I am planning to investigate how helpful the Leaping Hurdles group is and I would like to invite you to take part in the study…

What is Leaping Hurdles group?

It is a group for 10-14 year olds who come to the Kari Centre. It's aimed at young people who have some difficulties with strong feelings (like sadness, anger, and fear), who would like to learn skills to manage these at school, home or with friends. I understand you have already talked to your key worker about taking part in this group.

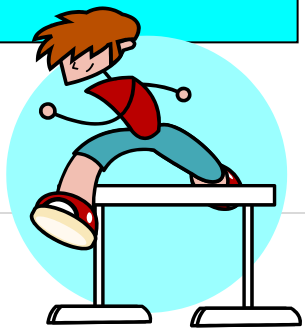
What does the study need you for?

As part of the group you will be filling out some questionnaires anyway. For the study, I would like to collect everyone's answers and I will make these anonymous – that means no-one can identify who they belong to. Then, I would like to contact you 3 months after the group has ended to complete a few more questionnaires. This will mean we can find out how helpful the group was.

Why am I doing the study?

The reason I am doing the study is because the group is new and the Kari Centre would like to know how well it helps young people to manage strong feelings and improve how active they are. The study will also contribute to part of the requirements for a Masters degree.

Ethics to conduct this research was granted by the Central Regional Ethics Committee CEN/09/04/015 in June 2009.



Who is being invited to participate and what will they have to do?

Everyone who is referred to the Leaping Hurdles group is being invited to take part!

What if you are on the waiting list?

People on the waiting list for the group are also asked to complete the questionnaires when first referred to the group.

What if I don't want to take part?

If you don't want to take part then you don't have to. This is very okay and won't make any difference to the help that you and your family will receive from the Kari Centre. If you do want to take part, there are just a few more questionnaires to fill in than you would normally do. You can stop being in the study at any time and you don't have to give a reason for stopping.

Confidentiality

When people write about the study, names will not be used and no-one will be able to tell that you were part of the study. We welcome any suggestions or ideas you have about the study or the

Participant Information sheet (10-14 years)

Evaluation of the Leaping Hurdles group

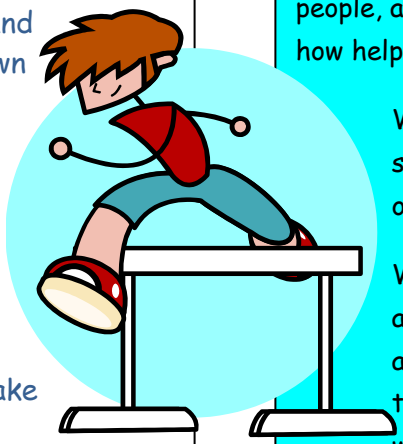
Continued

What are the benefits of participating?

Taking part in this study will mean we can see how well Leaping Hurdles helps young people to learn how to manage strong feelings.

What are the risks of participating?

Leaping Hurdles is a new group and so we don't yet know how helpful it can be; however, it is based on groups and treatments that have been shown to be helpful with other young people.



Completing questionnaires when you're on the waiting list and 3 months after the group is more than what you would normally have to do. This will take about 30 minutes of your time (at each date) and will give us a better idea of how well the group works. These can be completed at your school or at the Kari Centre at a time convenient to you.

Who will see the information collected?

It is important to remember that once the answers from your questionnaire have been collected, your name will be removed so that your information cannot be identified by anyone else.

This anonymous information will kept on a spreadsheet with information from other young people, and we will use this information to look at how helpful the group is.

When we have finished doing this, we will send you and your family a one page summary of what we have found.

We will also talk about what we find to staff at the Kari Centre, other staff within ADHB and staff/students at AUT. We may also talk about our findings at conferences, or with professionals outside of the Kari Centre.

Any information we talk about outside of the Kari Centre will be about the group generally and no names or personal details will be used.

Who should you contact if you have further questions?

Ema Russell
09 623 4646 ext 28697

ERussell@adhb.govt.nz

Right to withdraw

You have the right to chose whether or not to participate in this research without it affecting your treatment at the Kari Centre. You can refuse and do not have to give a reason for this. Should you choose to participate and later change your mind you can withdraw your consent to participate and this will not be questioned.

Appendix 3: Descriptive statistics

Child-rated measures

BYI Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Anxpre	27	39	89	57.56	13.631
Anxpost	27	36	99	56.67	15.440
Deprpre	27	37	90	57.00	12.276
Deprpost	27	32	86	54.26	11.588
Valid N (listwise)	27				

OQ Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Actpre	12	6	16	10.42	3.088
Actpost	12	6	12	8.33	1.670
Awakepre	12	12.5	16.0	14.458	1.2147
Awakepost	12	11.0	16.0	13.750	1.6855
Comppre	11	1.00	2.92	1.9791	.50485
Comppost	11	1.00	2.29	1.8118	.46316
Imppre	11	1.63	2.83	1.9945	.36167
Imppost	11	1.00	3.00	2.0391	.52702
Enjpre	11	1.00	2.94	1.8509	.61658
Enjpost	11	1.00	2.56	1.8745	.59656
Valid N (listwise)	11				

Parent-rated measures

CBCL Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ANXpre	19	54	98	73.16	14.049
ANXpost	19	50	88	67.79	13.398
WITHpre	19	50	87	63.58	11.102
WITHpost	19	50	80	62.32	10.446
THOUpre	19	50	82	64.95	9.554
THOUpost	19	50	77	62.95	8.803
AGGpre	19	50	85	64.26	10.241
AGGpost	19	50	85	62.00	10.604
INTpre	19	50	88	69.53	12.598
INTpost	19	34	84	64.53	15.031
Valid N (listwise)	19				

Clinician-rated measures

CGAS descriptive statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
CGASpre	17	30	45	75	63.59	8.032
CGASpost	17	25	60	85	72.06	7.084
Valid N (listwise)	17					

HoNOSCA Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
HoNOSCApre	19	22	2	24	9.58	5.221
HoNOSCApost	19	8	1	9	4.37	2.432
Valid N (listwise)	19					

Appendix 4: Correlation coefficients

Correlations

		Agegroup	Ethnicity	Gender	TAU	BYIAnxiety	BYIDepression	CBCL Anxiety	CBCL Depression	CBCL Aggressive	CBCLThought	CBCL Internalising
Agegroup	Pearson Correlation	1.000	.094	-.140	.163	-.025	-.161	.067	.009	.006	-.281	-.030
	Sig. (2-tailed)		.623	.462	.389	.904	.431	.793	.971	.981	.259	.906
	N	30.000	30	30	30	26	26	18	18	18	18	18
Ethnicity	Pearson Correlation	.094	1.000	.234	-.270	-.116	-.152	.101	.456	-.261	.134	.242
	Sig. (2-tailed)	.623		.214	.149	.572	.459	.689	.057	.295	.595	.333
	N	30	30.000	30	30	26	26	18	18	18	18	18
Gender	Pearson Correlation	-.140	.234	1.000	.190	.463*	.084	-.044	.303	.174	-.013	.009
	Sig. (2-tailed)	.462	.214		.316	.017	.682	.861	.222	.490	.960	.971
	N	30	30	30.000	30	26	26	18	18	18	18	18
TAU	Pearson Correlation	.163	-.270	.190	1.000	.087	-.119	-.528*	-.495*	-.104	-.496*	-.606**
	Sig. (2-tailed)	.389	.149	.316		.674	.563	.024	.037	.682	.036	.008
	N	30	30	30	30.000	26	26	18	18	18	18	18
BYI Anxiety	Pearson Correlation	-.025	-.116	.463*	.087	1.000	.801**	.411*	.177	.345*	.352*	.365*
	Sig. (2-tailed)	.904	.572	.017	.674		.000	.011	.295	.037	.033	.026
	N	26	26	26	26	63.000	63	37	37	37	37	37

BYI Depression	Pearson Correlation	-.161	-.152	.084	-.119	.801**	1.000	.479**	.162	.199	.380*	.422**
	Sig. (2-tailed)	.431	.459	.682	.563	.000		.003	.338	.238	.020	.009
	N	26	26	26	26	63	63.000	37	37	37	37	37
CBCL Anxiety	Pearson Correlation	.067	.101	-.044	-.528*	.411*	.479**	1.000	.586**	.625**	.703**	.924**
	Sig. (2-tailed)	.793	.689	.861	.024	.011	.003		.000	.000	.000	.000
	N	18	18	18	18	37	37	48.000	48	48	48	48
CBCL Depression	Pearson Correlation	.009	.456	.303	-.495*	.177	.162	.586**	1.000	.381**	.474**	.756**
	Sig. (2-tailed)	.971	.057	.222	.037	.295	.338	.000		.008	.001	.000
	N	18	18	18	18	37	37	48	48.000	48	48	48
CBCL Aggressive	Pearson Correlation	.006	-.261	.174	-.104	.345*	.199	.625**	.381**	1.000	.721**	.589**
	Sig. (2-tailed)	.981	.295	.490	.682	.037	.238	.000	.008		.000	.000
	N	18	18	18	18	37	37	48	48	48.000	48	48
CBCL Thought	Pearson Correlation	-.281	.134	-.013	-.496*	.352*	.380*	.703**	.474**	.721**	1.000	.702**
	Sig. (2-tailed)	.259	.595	.960	.036	.033	.020	.000	.001	.000		.000
	N	18	18	18	18	37	37	48	48	48	48.000	48
CBCL Internalising	Pearson Correlation	-.030	.242	.009	-.606**	.365*	.422**	.924**	.756**	.589**	.702**	1.000
	Sig. (2-tailed)	.906	.333	.971	.008	.026	.009	.000	.000	.000	.000	
	N	18	18	18	18	37	37	48	48	48	48	48.000

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

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

Correlations

			Agegroup	Ethnicity	Gender	TAU	BYIAnxiety	BYIDepression	CBCL Anxiety	CBCL Depression	CBCL Aggressive	CBCL Thought	CBCL Internalising
Spearman's rho	Agegroup	Correlation Coefficient	1.000	.042	-.175	-.019	-.040	-.084	.175	.015	.026	-.299	.024
		Sig. (2-tailed)	.	.824	.355	.920	.846	.684	.487	.952	.919	.228	.926
		N	30	30	30	30	26	26	18	18	18	18	18
	Ethnicity	Correlation Coefficient	.042	1.000	.229	-.194	-.035	-.056	.108	.401	-.233	.183	.267
		Sig. (2-tailed)	.824	.	.224	.304	.867	.786	.669	.099	.353	.468	.284
		N	30	30	30	30	26	26	18	18	18	18	18
	Gender	Correlation Coefficient	-.175	.229	1.000	.201	.427*	.108	-.043	.291	.183	.054	.075
		Sig. (2-tailed)	.355	.224	.	.288	.030	.600	.865	.241	.468	.831	.767
		N	30	30	30	30	26	26	18	18	18	18	18
	TAU	Correlation Coefficient	-.019	-.194	.201	1.000	-.057	.005	-.414	-.437	.003	-.125	-.460
		Sig. (2-tailed)	.920	.304	.288	.	.784	.979	.088	.070	.992	.620	.055
		N	30	30	30	30	26	26	18	18	18	18	18
	BYIAnxiety	Correlation Coefficient	-.040	-.035	.427*	-.057	1.000	.778**	.464**	.270	.430**	.385*	.405*
		Sig. (2-tailed)	.846	.867	.030	.784	.	.000	.004	.105	.008	.019	.013
		N	26	26	26	26	63	63	37	37	37	37	37

BYIDepression	Correlation Coefficient	-.084	-.056	.108	.005	.778**	1.000	.469**	.180	.229	.334*	.332*
	Sig. (2-tailed)	.684	.786	.600	.979	.000	.	.003	.286	.174	.043	.044
	N	26	26	26	26	63	63	37	37	37	37	37
CBCLAnxiety	Correlation Coefficient	.175	.108	-.043	-.414	.464**	.469**	1.000	.613**	.614**	.708**	.919**
	Sig. (2-tailed)	.487	.669	.865	.088	.004	.003	.	.000	.000	.000	.000
	N	18	18	18	18	37	37	48	48	48	48	48
CBCLDepression	Correlation Coefficient	.015	.401	.291	-.437	.270	.180	.613**	1.000	.380**	.457**	.809**
	Sig. (2-tailed)	.952	.099	.241	.070	.105	.286	.000	.	.008	.001	.000
	N	18	18	18	18	37	37	48	48	48	48	48
CBCLAggressive	Correlation Coefficient	.026	-.233	.183	.003	.430**	.229	.614**	.380**	1.000	.729**	.572**
	Sig. (2-tailed)	.919	.353	.468	.992	.008	.174	.000	.008	.	.000	.000
	N	18	18	18	18	37	37	48	48	48	48	48
CBCLThought	Correlation Coefficient	-.299	.183	.054	-.125	.385*	.334*	.708**	.457**	.729**	1.000	.716**
	Sig. (2-tailed)	.228	.468	.831	.620	.019	.043	.000	.001	.000	.	.000
	N	18	18	18	18	37	37	48	48	48	48	48
CBCLInternalising	Correlation Coefficient	.024	.267	.075	-.460	.405*	.332*	.919**	.809**	.572**	.716**	1.000
	Sig. (2-tailed)	.926	.284	.767	.055	.013	.044	.000	.000	.000	.000	.
	N	18	18	18	18	37	37	48	48	48	48	48

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

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

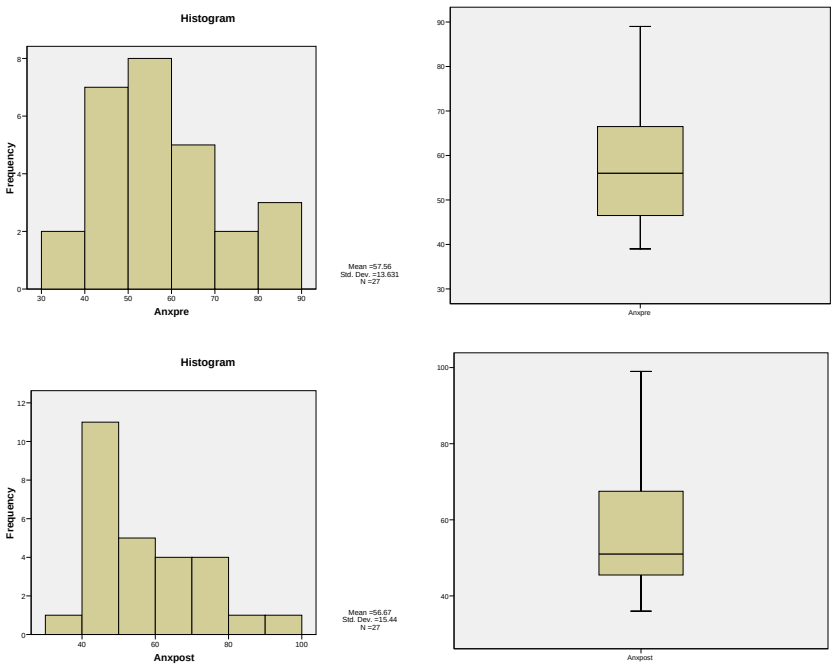
Appendix 5: Testing data distribution

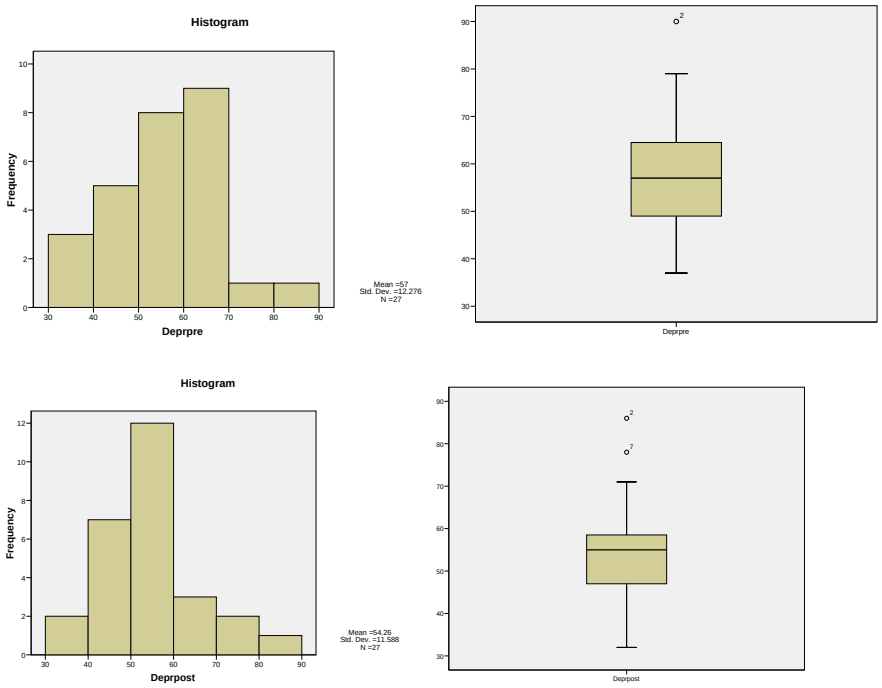
Child-rated measures

a) Beck Youth Inventories

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Anxpre	.129	27	.200(*)	.946	27	.174
Anxpost	.198	27	.008	.885	27	.006
Deprpre	.111	27	.200(*)	.960	27	.366
Deprpost	.125	27	.200(*)	.952	27	.243

* This is a lower bound of the true significance.
a Lilliefors Significance Correction



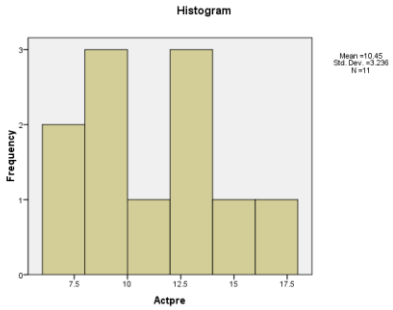


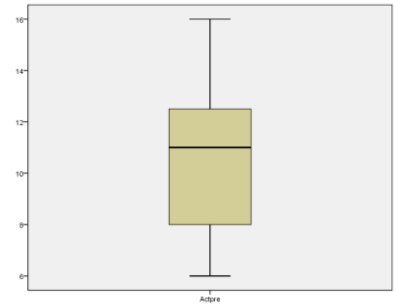
b) Occupational Questionnaire

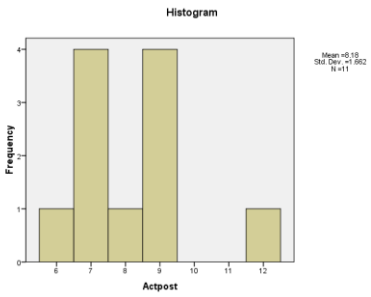
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Actpre	.200	12	.200*	.955	12	.713
Actpost	.204	12	.178	.911	12	.217
Awakepre	.180	12	.200*	.913	12	.231
Awakepost	.142	12	.200*	.931	12	.390
Comppre	.180	11	.200*	.964	11	.825
Comppost	.203	11	.200*	.856	11	.050
Impppre	.221	11	.139	.869	11	.075
Imppost	.133	11	.200*	.978	11	.956
Enjpre	.098	11	.200*	.969	11	.881
Enjpost	.220	11	.144	.866	11	.070

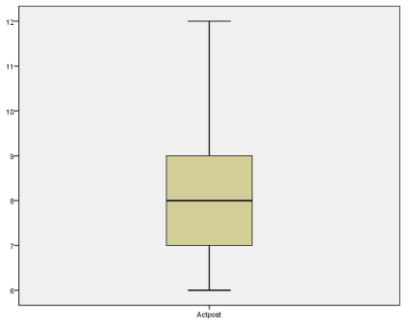
a. Lilliefors Significance Correction

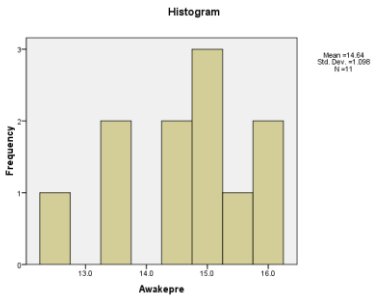
*. This is a lower bound of the true significance.


Histogram
Mean =10.45
Std. Dev. =3.236
N =11
Frequency
Actpre


Actpre


Histogram
Mean =8.18
Std. Dev. =1.662
N =11
Frequency
Actpost


Actpost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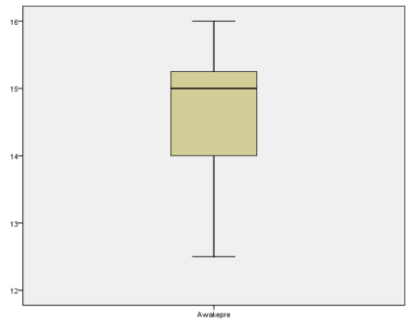
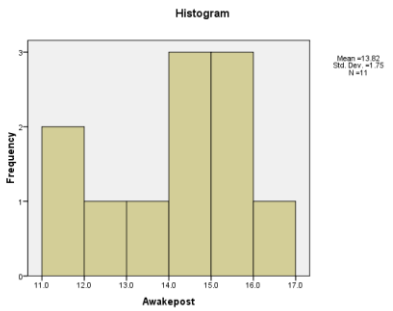
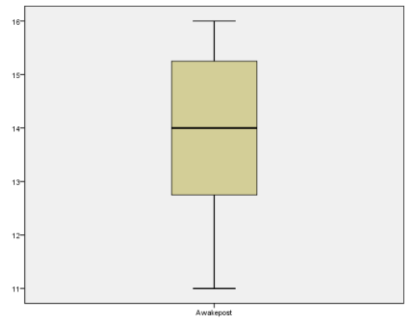
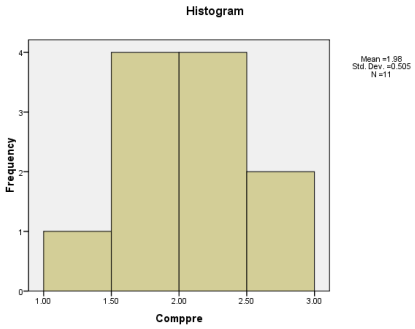
Mean =14.64
Std. Dev. =1.096
N =11
Frequency
Awakepre


Awakepre


Histogram
Mean =13.82
Std. Dev. =1.75
N =11
Frequency
Awakepost


Awakepost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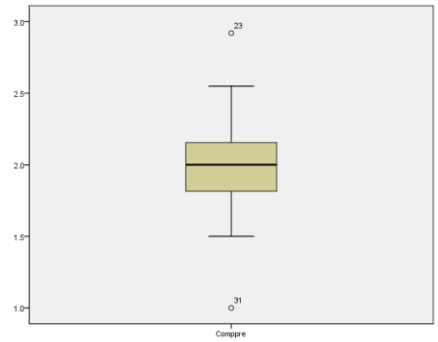
Std. Dev. =0.505
N =11
Frequency
Comppre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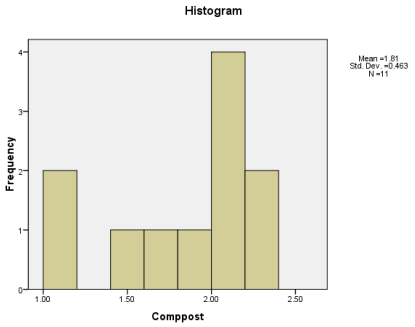
Comppre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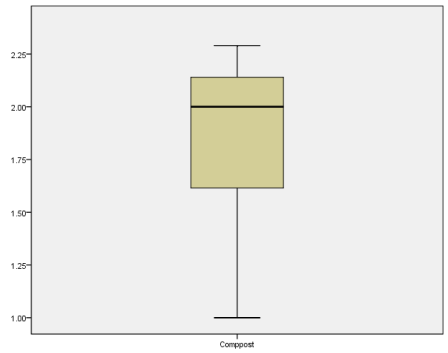
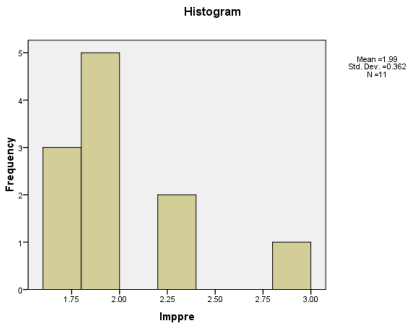
Frequency
Comppost


Comppost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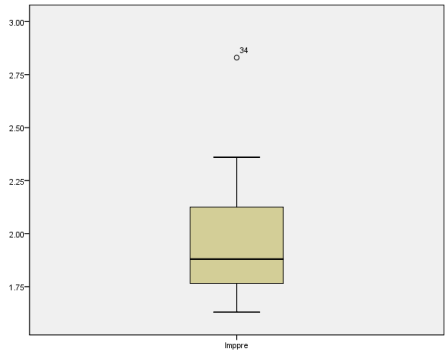
Frequency
Imppre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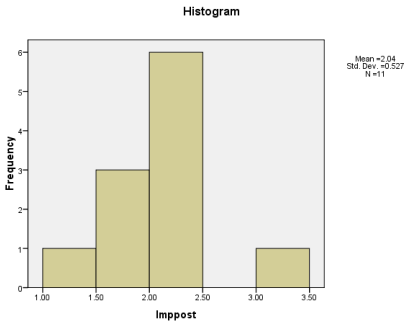
Imppre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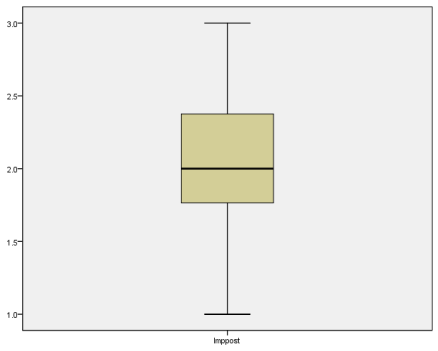
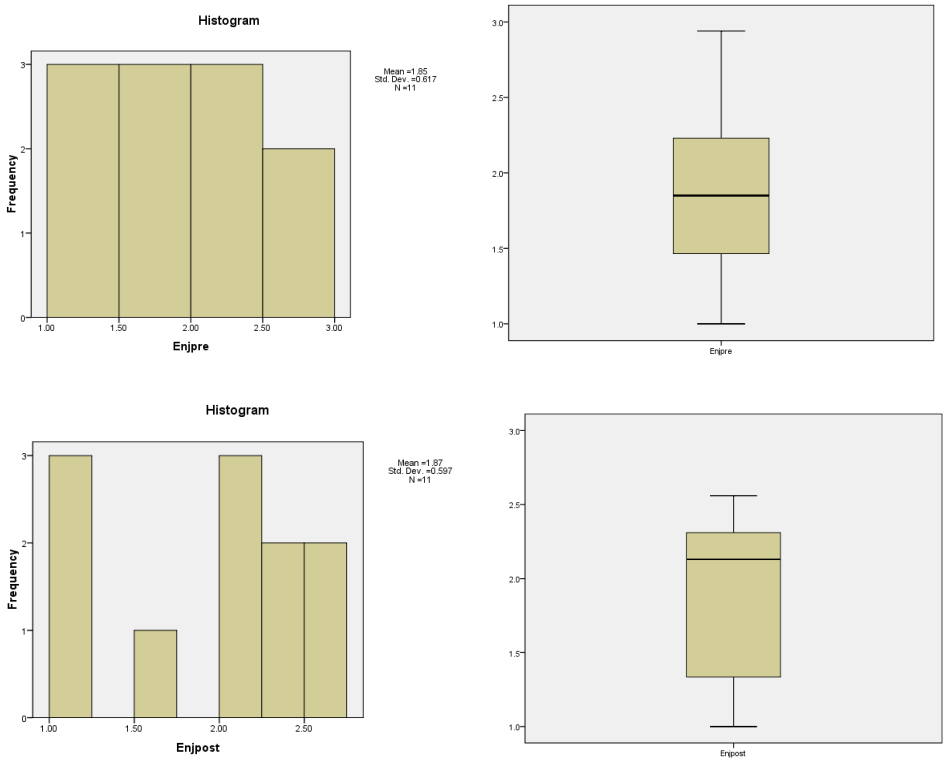
Frequency
Imppost


Imppost

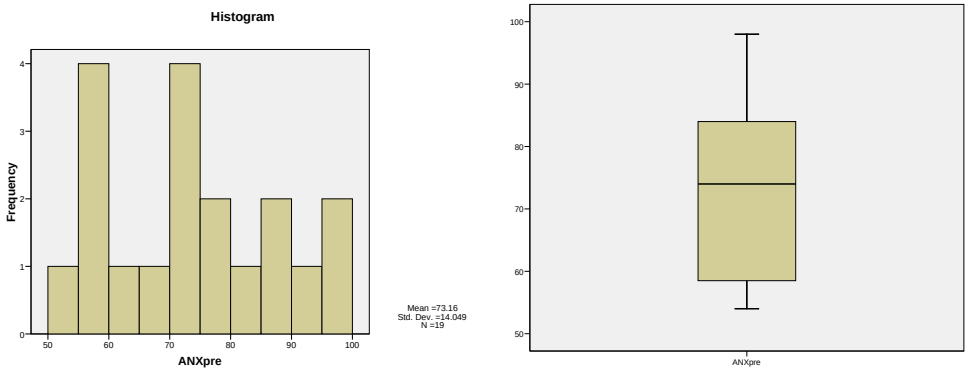


Parent-rated measures

c) Child Behaviour Checklist

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ANXpre	.141	19	.200(*)	.933	19	.199
ANXpost	.158	19	.200(*)	.915	19	.092
WITHpre	.113	19	.200(*)	.940	19	.261
WITHpost	.130	19	.200(*)	.912	19	.080
THOUpre	.280	19	.000	.890	19	.032
THOUpost	.108	19	.200(*)	.939	19	.257
AGGpre	.128	19	.200(*)	.953	19	.447
AGGpost	.166	19	.175	.909	19	.071
INTpre	.165	19	.185	.929	19	.168
INTpost	.125	19	.200(*)	.914	19	.089

* This is a lower bound of the true significance.
a Lilliefors Significance Correction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Frequency
ANXpre
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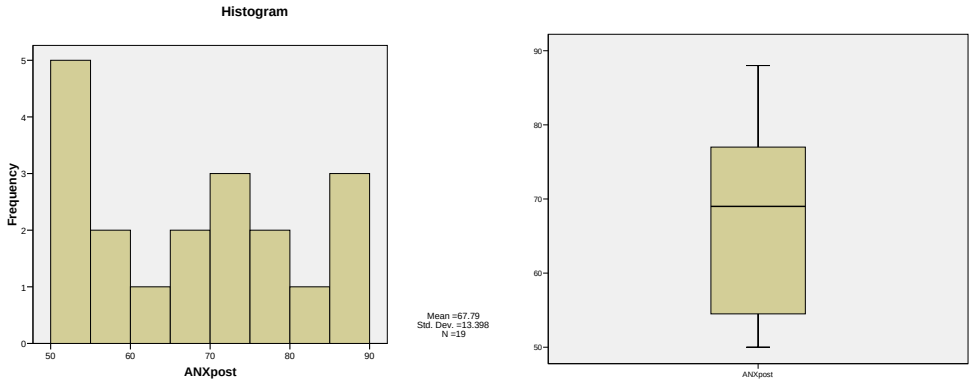
Std. Dev. =14.049
N =19
ANXpre


Histogram
Frequency
ANXpost
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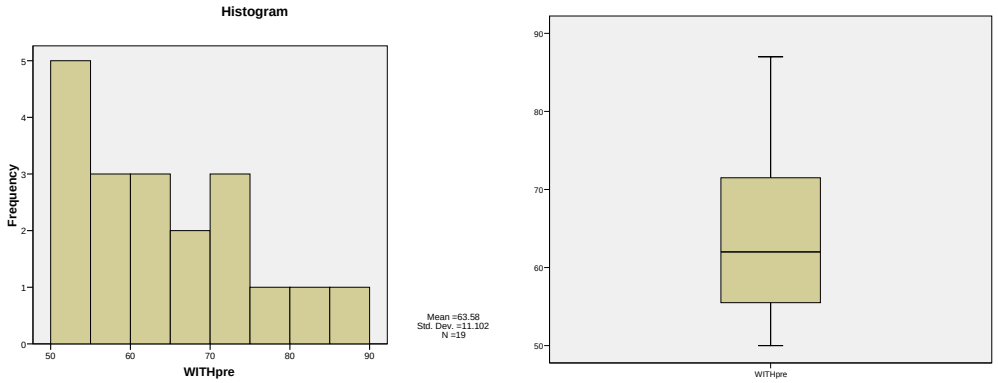
Std. Dev. =13.398
N =19
ANXpost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Frequency
WITHpre
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Std. Dev. =11.102
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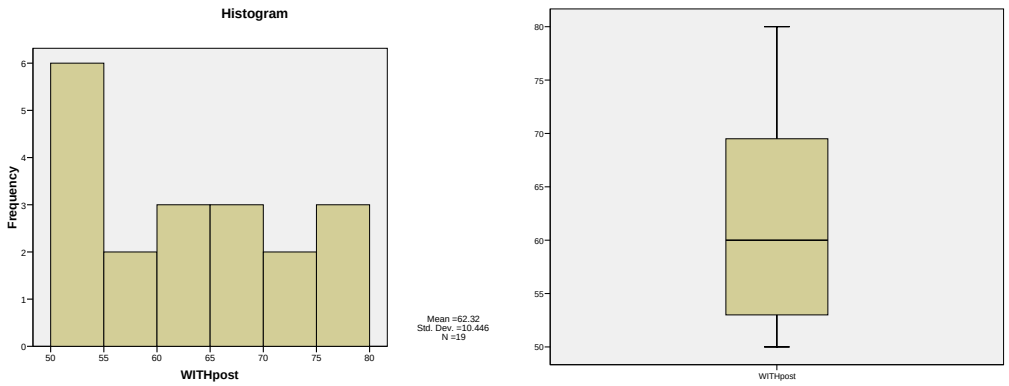
WITHpre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Frequency
WITHpost
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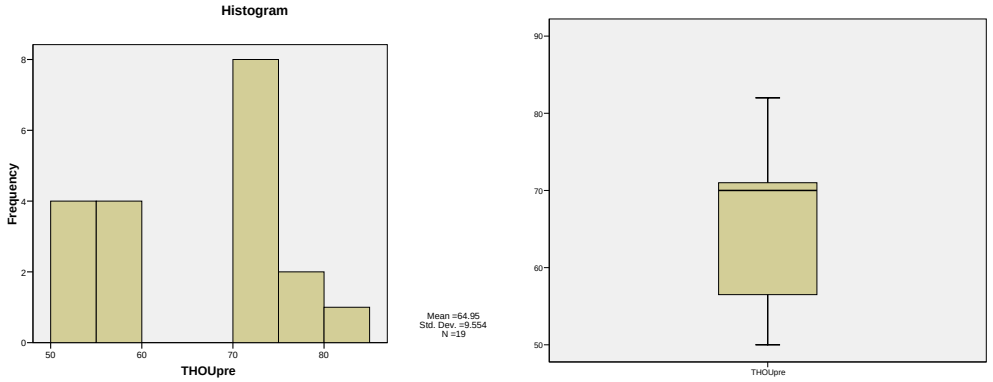
WITHpost


Histogram
Frequency
THOUpre
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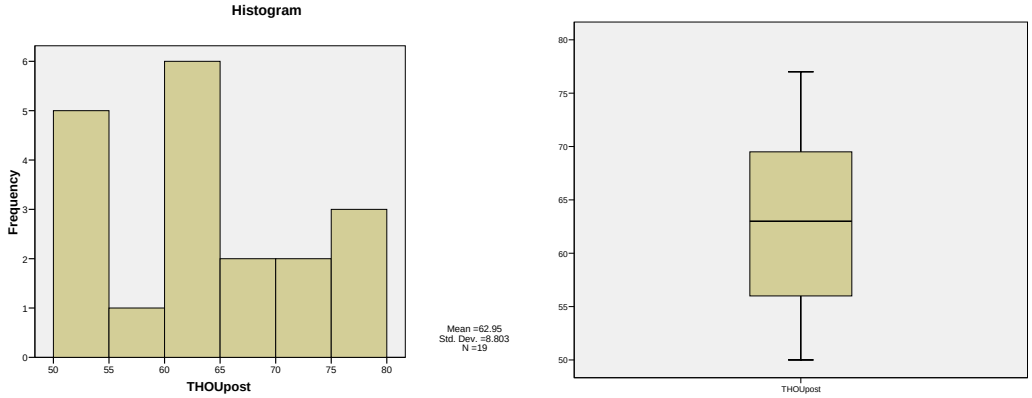
Std. Dev. =9.554
N =19
THOUpre


Histogram
Frequency
THOUpost
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Std. Dev. =8.803
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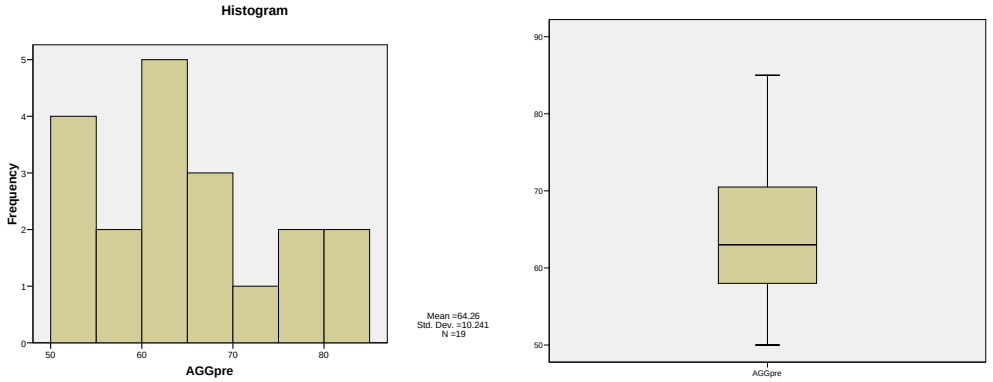
THOUpost


Histogram
Frequency
AGGpre
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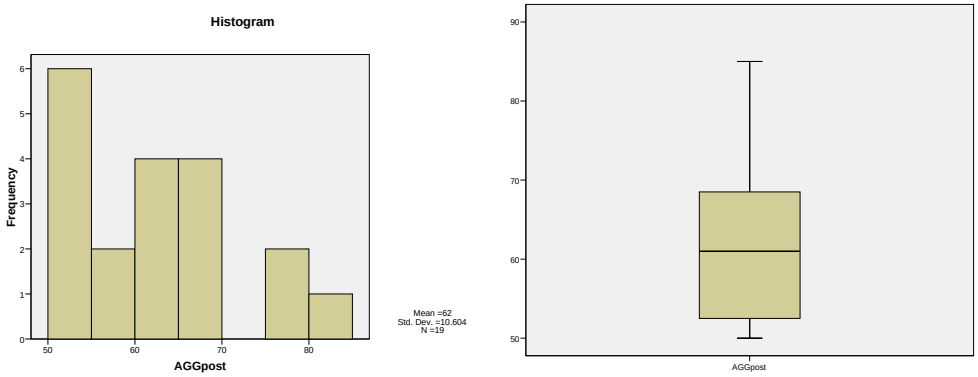
Std. Dev. =10.241
N =19
AGGpre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Frequency
AGGpost
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Std. Dev. =10.604
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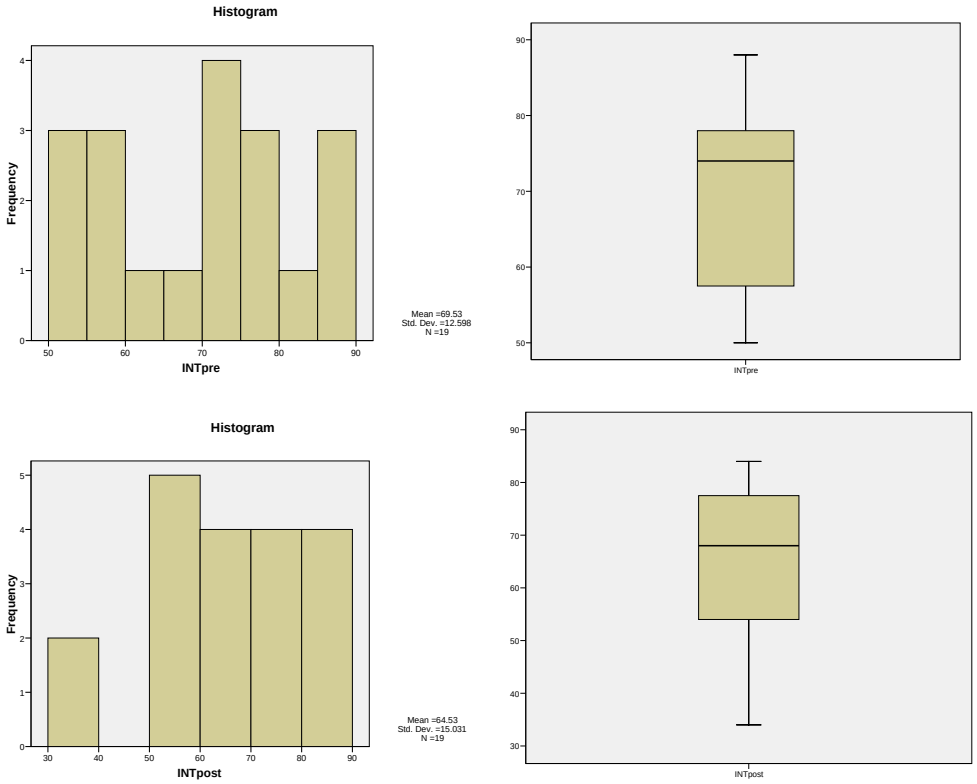
AGGpost



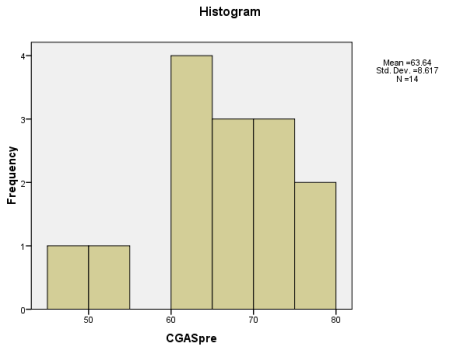
Clinician rated

d) CGAS and HoNOSCA

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
CGASpre	.193	14	.165	.923	14	.241
CGASpost	.185	14	.200*	.949	14	.547
HoNOSCApre	.199	14	.137	.841	14	.017
HoNOSCApost	.195	14	.153	.918	14	.203

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.


Histogram
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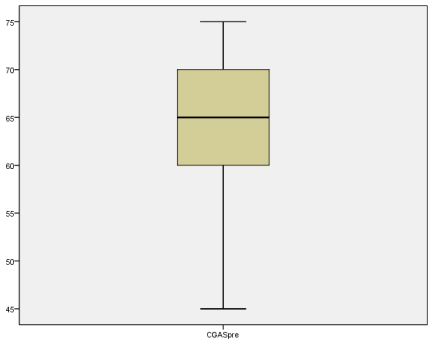
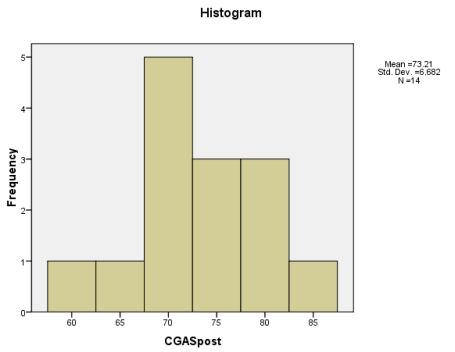
Std. Dev. =8.617
N =14
Frequency
CGASpre


CGASpre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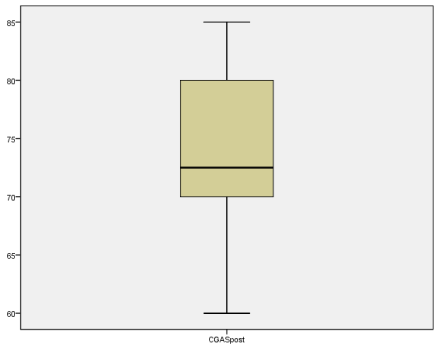
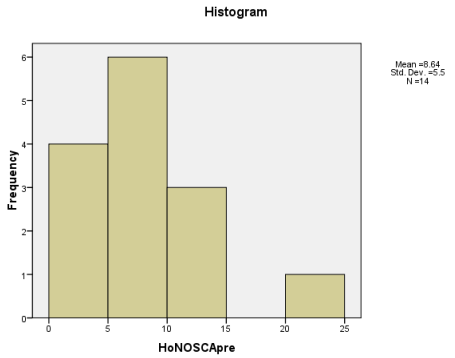
Std. Dev. =6.682
N =14
Frequency
CGASpost


CGASpost


Histogram
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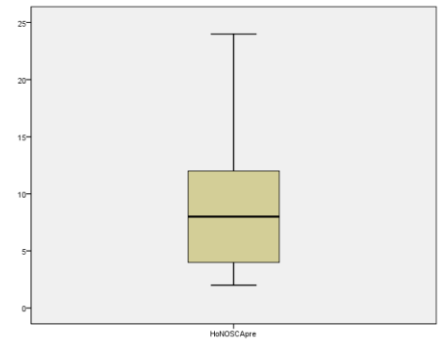
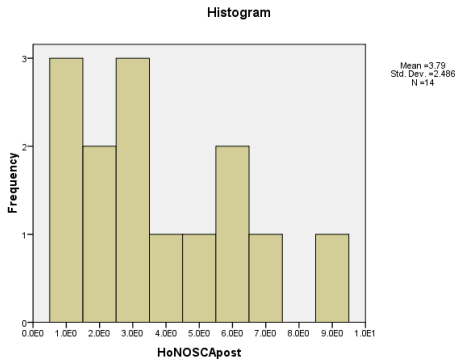
Std. Dev. =5.5
N =14
Frequency
HoNOSCApre


HoNOSCApre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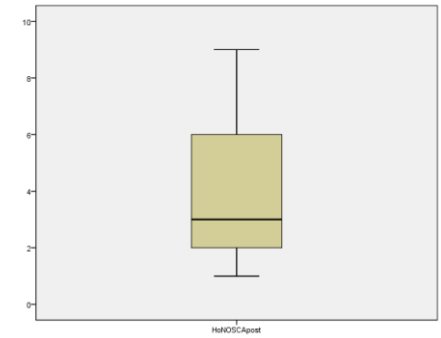
Std. Dev. =2.486
N =14
Frequency
HoNOSCApost


HoNOSCApost

Appendix 6: Descriptive notes (confidential)

Participant 4

1 - 4 (Prefers to be known as 4) actively participated in today's group. 4 has a school class-mate in the group therefore facilitators emphasised confidentiality. 4 engaged in all group activities, her psychometrics require completion for next week. She named her highlight of the group as the spiderweb activity.

2 - 4 participated well in all the group activities and was responsive to rules and boundaries being reinforced. She chose to keep her goal private from the group and struggled to identify what might be hard about overcoming her fear (of death) or what resources she has in place to tackle this fear. Her emotions for the day and group were "happy" and "happy".

3 - 4 participated well in all activities and actively contributed to group discussions. She was particularly relaxed and trusting of others during the wind in the willows warm-up and began the relaxation exercise with a floppy, spread-out posture. She listened to instructions well, was assertive in expressing her views and followed directions appropriately. 4 was an active and friendly participant in the group.

4 - 4 participated well in all activities and actively contributed to group discussions. She identified her biggest fears/worries as - death, snakes and war. She identified her coping strategies as- imagining pogo sticks, and building a bridge and getting over it. She actively contributed to the discussion in the group. She appeared relaxed and cheerful all through the group. She began the relaxation exercise with a floppy, spread-out posture. She listened to instructions well, was assertive in expressing her views and followed directions appropriately. 4 was an active and friendly participant in the group.

5 - 4 participated well in all activities and actively contributed to group discussions. She appeared relaxed and cheerful all through the group. She began the relaxation exercise with a floppy, spread-out posture. She listened to instructions well, was assertive in expressing her views and followed directions appropriately. 4 was an active and friendly participant in the group.

6 - 4 arrived to the venue, with her mother and sister. She appeared worried and anxious. However, after receiving the safety instructions, she appeared more relaxed and cheerful. She participated well in all activities and actively contributed to group discussions. She appeared relaxed and cheerful all through the activities.She listened to instructions well, was assertive in expressing her views and followed directions appropriately. 4 was an active and friendly participant in the group. 4 took the personal challenges sheet for Homework. During the closing round, she reported that she enjoyed the activity and wished it was for longer.

7 - 4 participated well in all activities and actively contributed to group discussions. She appeared relaxed and cheerful all through the group. She began the relaxation exercise with a floppy, spread-out posture, but corrected her posture on prompting.She needed verbal prompts and encouragemnts during the identification of bheavioral changes activity. She listened to instructions well, was assertive in expressing her views and followed directions appropriately. 4 was an active and friendly participant in the group.

8 – no notes but did attend.

Participant 7

1 - 7 was talkative from the start of the group and quick to spell out words she pronounced that may not have been heard clearly. She was quick to initiate and sustain interactions with another girl who also seemed to like spelling. 7 was eager to chose her 'symbols' card and required prompting (along with others) to wait until instructed to do so. During the discussion afterwards 7 appeared to be distracted by these cards which she tidied neatly into piles. 7 worked rapidly and completed both questionnaires within the time given. She appeared confident in asking for assistance when needed. 7 participated fully in the spider's web activity and was very enthusiastic about this. She identified that an important goal for her is to get to know each of the group members, which is something she identified as a highlight for her day. When the group ended and we met up with the parents 7 hugged each of the facilitators and many of the group members when saying goodbye.

2 - 7 completed her homework for session 2. Her goal is to make friends with people within the leaping hurdles group. She actively participated in all group activities and communicated well with facilitators and other group members.

3 - 7 was talkative throughout the group, she required several prompts to attend to instructions due to distraction of others. She was eager to vocalise her thoughts about her responses to anxiety and sought attention from facilitators eagerly. Due to her speech impediment, it was difficult at times to understand what she was talking about, however 7 made a lot of effort to re-phrase and repeat her words for others to understand more clearly.

4 - 7 identified her goal as getting to know others in the group. When demonstrating how she had achieved this goal already, 7 demonstrated she had constructed judgements about each group member e.g., she's funny, she talks too much, and encouragement may be needed for 7 to learn information/facts about each group member as a way to achieve this goal. 7 engaged well in all group activities, she is beginning to respond better to verbal directions and is mindful of others when they're speaking.

5 - 7 readily engaged in the group activities and actively contributed to the group discussions. She does appear to get distressed when asked to regulate and monitor her behavious in the group. She exhibited disruptive behaviours in the group and needed redirections. She also exhibited lack of social skills in social scenarios. For instance during the break, she filled two cups with food and refused to share it with other group members. Also after the group finished , she went into the parents group and filled the cup with food from the table.

6 - 7 set her self a goal to get over her fear of heights and despite stating she felt 'very anxious' believed she would be able to achieve this well. Afterwards she was not able to identify a skill she had used to successfully achieve her goal - in future sessions 7 will need encouragement to slow down and process her successes more carefully. 7 was eager to take part in the activity and appropriately sought support and additional information when unsure what to do with the equipment. At the end 7 hugged all the group facilitators and was somewhat inappropriate in her reluctance to let go of me (as I will be away for the last 2 groups) despite being reminded by

her mum they had to catch a bus for netball. She appeared to enjoy the climbing and was encouraging of others and occasionally competitive.

7 – DNA

8 – No notes but did attend

Participant 14

1/9 14 participated and contributed well in all group activities, he was open about his anxiety, saying that he would like to be able to develop better concentration and not let anxiety overwhelm his thinking. 14 was the oldest in the group which he appeared to conscious of, though facilitators did inform him that there would be other people in the same year joining the group next week which he appeared pleased about. 14 described having to do a lot of homework and having to do things with his family. After discussion with other facilitators, our goal is to encourage playfulness and fun with 14.

2/9 14 presented as somewhat defensive at the group start, introducing himself with a shrug and reluctantly engaging. As the group progressed 14 became more vocal, he expressed negative thinking "I can't do that - its impossible", and was quick to point out others not following instructions exactly. He made useful and insightful contributions to the group. Group leaders would like to encourage 14 to be more playful and less serious in future groups as he tends to take-on a particularly adult attitude/role.

3/9 14 arrived 5 minutes late but was able to join in with the group activity quickly, picking up the idea easily. During less active components of the group 14 was noted to be tapping his foot loudly on the floor and seemed not to notice that others noticed this. He volunteered to be blindfolded and work through the obstacle course as well as volunteering several times to take part in the role plays - he seemed more keen to engage and less negative in his expressed thoughts this week. 14 volunteered insightful contributions and was more expressive throughout the group this week. 14 reported enjoying more than just the food this week i.e., obstacle course too, which was noted to be a potential stregnthening in his commitment to the group.

4/9 14 was a little more talkative today and seemed to develop a bond with one of the other boys, particularly during the break discussing a computer game. 14 was somewhat dismissive of the group and quick to point out his plane had flown the furthest. While brainstorming 14 made several suggestions regarding barriers to change, including being "unwilling", which possibly represents his own position. 14 identified a change he would like to make is regarding passing his exams and studying more. 14 appeared tearful when describing the high expectations he has for himself (15 minutes study/day/subject i.e., 1.5hours as a minimum to start) and how he gets easily distracted by computer games and worries. He was encouraged to think about looking after himself in this process and he agreed that getting a good night sleep is important to enable him to study more effectively so included this on his hierarchy as the first thing he needs to work on. Encouragement to break self-care into smaller steps and shift focus from just performing well academically may be helpful.

5/9 14 had not completed his homework and participated well in all activities. He was assertive in his attempts to convince a staff member how to solve the 'thinking error game', demonstrating some humour. 14 reported enjoying the mindfulness task, the role playing and the food. Though bossy at times, 14 was observed to be more playful and sociable during group today.

6/9 14 was keen to demonstrate his skills rock climbing and was highly motivated to challenge himself to perform well - he challenged another peer to a race and was keen to match the skills of another peer. He anticipated using the skills of cooperation, perseverance and determination and afterwards reported he felt he did so. He was observed to give and receive instructions well to/from peers and staff. He reported not quite meeting his goal and reported feeling that his actual performance was very good and better than expected.

7/9 absent

8/9 14 appeared withdrawn today, perhaps still ill with cold as he sat with the hood up on his hoody for much of the group. He did not participate in the ABC game, impacting on his partner's ability to participate fully but did

appear to understand the concepts discussed. He seems to enjoy opposition as a vehicle for motivating himself.

9/9 absent

Participant 18

2/9 18 was one of the new people in the group today and was explicit in expressing her dislike about being in group: she was reading a magazine, playing with her cellphone and introduced herself as "don't wanna be here 18". 18 set herself a goal with minimal support and was able to identify potential challenges and skills to support this. Once the group activities began 18 quickly warmed up and also offered insightful contributions to the group discussions. She appeared to relate well to both emotions discussed in more detail: anxiety and anger. In her closing round she commented on having expected the group to be boring but that she had learned something and enjoyed it.

3/9 18 was motivated to be part of the group and quick to volunteer for each of the activities along the way. She offered frequent, relevant and insightful contributions to the group discussions and was recalling some of the information presented - in advance - as it covered some of the content of our 1:1 sessions. 18 seems to be growing in confidence and may need some encouragement to consider the needs of others as a means of supporting her social skills.

4/9 18 arrived to group using crutches having hurt her leg the day before. She seemed to enjoy the additional attention this attracted, however, was unhappy about not being able to participate in the warm up activity. 18 continues to be quick to volunteer to give answers or take part in activities and seems unaware of the impact of her behaviour for others in the group. 18 reported not wanting to make any changes in her life as it is 'perfect' now she confronted peers about why they are not friends with her and they have become friends. With much encouragement she wrote down some ideas of how she can maintain this change. It is unclear if 18' reluctance was due to her lack of forward-planning skills regarding potential changes in friendships, or regarding difficulty breaking the hierarchy down into steps or

her resistance to writing. Otherwise, her contributions were relevant and enhanced group discussions.

5/9 18 arrived late for the group and though hadn't completed her homework offered that some personal changes of hers were her attitude, friendships and hair colour. She participated well in the activities and offered insightful contributions. She made several comments relating to 'boy problems' and tolerated some playful teasing from another (male) group member about this. She reported enjoying the mindfulness activity and the evidence for and against activity. She was initially unsure about being able to participate in the adventure activity next week because of her knee - this will need to be followed up.

6/9 18 arrived late for the group as her mum had missed the time. She was keen to have a go on the climbing walls and listened to directions from the instructors well. 18 challenged herself to climb to the top of 7 walls and anticipated doing so would require her to believe in herself. She identified that learning to belay was a new skill for her and while she could have climbed more walls she felt she did very well. When jumping down one of the walls 18 knocked herself in the face and developed a nose-bleed for less than a minute. She seemed amused by this and after it stopped required several prompts to sit down for a while before getting back into the climbing. Message left for parents to return call to ensure they are aware and to report any concerns.

7/9 absent

8/9 18 participated actively in all activities - she was somewhat flirty at times, making several remarks about a boy she fancies but not inappropriately so. She tolerated times of not being centre of attention well and was more group oriented than previously. She twisted her ankle prior to coming to the KC but did not make a big fuss of this or try to gain too much attention from it (as she has done previously). She reported liking the Johari window information in particular.

9/9 18 had not completed her homework but was able to recall two things she had done during the week that increased her open johari window (i.e., get feedback about her singing, tell her friend about a crush). She had

brought fudge as her personal item which she shared with the group. She reported that through the group she had learned to be less shy and stand up for herself.

Participant 21

1 - 21 was initially quiet within the group, however warmed up and was able to contribute his ideas to brainstorming activities. He completed the BYI and took the OQ to take home to complete. He has started to formulate a goal in which he will complete next week at the group. Overall appeared settled and engaged well with other group members.

2 - 21 seemed to enjoy the name game, but when it came time for the emotional charades quickly wanted to give up, saying he couldn't do the action and that he didn't know how. His action was to make a bed, and his reluctance could be due to lack of knowledge around how this is done. He formulated his FEAST goal quickly and was able to talk quite a bit around the different aspects of his goal.

3 - 21 contributed well to the group today, he still appears to lack confidence at the beginning of each group, however once warmed up does offer to assist. He was reluctant to be blindfolded in the warm-up game, asking only to be the person giving instructions, however with encouragement was able to successfully complete the activity. 21 was noted to be engaging in some conversations with other group members, laughing and enjoying himself. He completed his OQ today.

4 - 21 came in to the group feeling good about himself, saying he came fourth in the school cross country race. He did although, appear very tired throughout the group and participated on a minimal level. He identified one of his goals is to be in a premier soccer team so that he can gain more respect from peers. 21 engaged well in the relaxation activity.

5 - Initially very quiet, however engaged well in group activities. When reading out thinking errors, 21 offered to begin reading and assisted another group member with this also. He understood the concept of anxiety and how it develops and potential ways to reduce it. Highlight was learning more about anxiety.

6 – DNA

7 - 21 very tired in today's group, He sat quietly as other's debriefed on the rock-climbing activity. He offered to problem solve the crossing the rover game however as he lacked confidence in getting his voice heard, it took a lot of time. He engaged well with the PMR exercise. 21 did not complete his homework.

8 - 21 was again very quiet in today's group, he engaged well in all group activities, particularly that of the balls and pipes game. He was able to identify conflict within the group process and manage this appropriately.

9 – DNA

Participant 23

1 – DNA

2 – DNA

3 - This was 23's first group of the series and he was visibly anxious at first. He chose to have his dad stay with him for the first part of the group but after the name game was accepting of his dad joining the parent's group. He participated well in the activities, volunteering to draw on the board, answering questions and chatting with peers. He reported being eager to take part in the obstacle course and named this as his highlight of the day. 23 completed an OQ and took the BYI home to complete also.

4 - 23 participated well in the group activities and was noted to be using a high pitched, child-like voice on a number of occasions. Frequently sought reassurance from adults that what he was doing was correct. Made good contributions to the group.

5 – DNA

6 - 23's plan was to actually climb and he believed he would achieve this reasonably well, despite stating on several occasions that he was too scared, that he didn't want to do it and that he was afraid of heights. 23 sought adult reassurance on several occasions and though tried to be supportive of another peer who was struggling he came across as teasing at times. He was receptive to setting small goals and working towards these,

though was reluctant to step outside his comfort zone. He was noted to use a childish voice at times, but less often than last week. Afterwards he rated himself as performing better than expected.

7 - 23 participated in the group activities and continues to frequently seek reassurance from group facilitators. He was noted to use a child-like voice, though less often than previously and approaches some activities with mock reluctance. Good contributions.

8 - 23 was 10-15 minutes late and participated well in all activities. He had a particularly positive outlook during the group and was happy to follow the lead of others. Good contributions.

9 - 23 arrived 5 minutes late and was quick to immerse himself into the group. He chose a card with a dog, like his, to describe something about himself and reported learning about how to make good choices. He seemed unaware of some of the more challenging group dynamics (tension between two group members) and cheerful continued with the tasks - frequently seeking adult reassurance and opinions. 23 seemed really pleased to recieve his certificate which he showed to his mum and left quickly to attend a school event.

Appendix 7: Intervention manual