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Preventing depressive symptomatology in children aged eight to eleven years : Application of the positive thinking program

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Preventing Depressive Symptomatology in Children Aged Eight to Eleven Years:

Application of the Positive Thinking Program

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Abstract

Recent research has demonstrated that exposure to prevention programs can decrease the incidence of depressive symptomatology in children. Universal prevention programs for children younger than 10 years of age are scarce. The current study examined the effectiveness of an eight week cognitive-behavioural prevention program in decreasing depressive symptoms and anxiety and, promoting a more optimistic explanatory style in children aged 8 to 11 years. Effectiveness of the program for children with initially low or high scores based on the pre-intervention median score of the Children's Depression Inventory (CDI; Kovacs, 1992) scores was also examined. Children were matched on grade and initial CDI score. Forty four children were allocated to the experimental group and participated in the program and 47 children were allocated to the wait-list control group. Comparisons of the experimental and control groups CDI, Revised Children's Manifest Anxiety Scale (Reynolds & Richmond, 2000) and Children's Attributional Style Questionnaire (Seligman et al., 1984) scores at post intervention and the six months follow-up found no significant differences. Additionally no significant differences were found between the initially high and low symptomatic children across time. It was concluded that the current program had little effect in preventing depressive symptoms in children when applied at an universal level. Future research on the Positive Thinking program will clarify the effectiveness of the current program in decreasing depressive symptoms in children.

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Submitted: 26th February 2004

Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

i.   incorporate, without acknowledgement, any material previously submitted

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Chapter 1

Introduction

Childhood depression has emerged as a major health concern in recent years with parents and teachers in Western Australia reporting that 3% to 4% of 4 to 11 year old children are exhibiting clinically significant depressive symptoms (Zubrick et al., 1995). The increase in the incidence of childhood depression has lead to the investigation and development of effective treatments for child and adolescent depression. These treatments have often been based on those treatments found to be successful in treating adult depression and include psychopharmacology and psychological therapies such as cognitive-behavioural and family therapy (Brent et al., 1997; Stark, Laurent, Livingston, Boswell, & Swearer, 1999). However, the most widely used and researched treatment for childhood and adolescent depression is cognitive-behavioural therapy due to its demonstrated effectiveness in treating adult depression (American Academy of Child and Adolescent Psychiatry [AACAP], 1998).

Initial research on the treatment of childhood and adolescent depression has focused on individual treatment for depression (Brent et al., 1997; Wood, Harrington, & Moore, 1996). Following the successful implementation of individual therapy for child and adolescent depression researchers turned their focus to the development of group treatment programs so that treatment would be more cost effective and accessible to an increased number of children (Lewinsohn, Clarke, Hops & Andrews, 1990). Cognitive-behavioural therapy administered in either a group or individual format has been demonstrated to be an effective and efficient treatment of childhood and adolescent depression (Lewinsohn & Clarke, 1999). Similar strategies have often been implemented in both group or individual settings

over a short time frame (often under 12 weeks) (Lewinsohn & Clarke, 1999).

Furthermore treatment protocols emerged based on treatment manuals thereby

leading to more structured treatment programs which could be reproduced

effectively by other therapists with other children (Lewinsohn & Clarke, 1999).

Encouraged by the positive results from treatment programs for depressive

disorder, the focus has recently shifted to developing programs aimed at preventing

depressive symptoms (Birmaher, Ryan, Williamson, Brent, & Kaufman, 1996b;

Clarke et al., 1995). This shift occurred in response to the view that depressive

symptoms and depression appear to exist on a continuum with elevated depressive

symptoms being a good predictor of future depression (Eley, 1997; Lewinsohn,

Solomon, Seeley, & Ziess, 2000; Nolen-Hoeksema, Girgus, & Seligman, 1992).

Consequently the development of prevention programs was based on the contention

that successful adaptation of treatment programs aimed at children identified as

being at risk of developing future depression (e.g., elevated depressive symptoms)

would decrease the incidence and development of childhood depression (Gillham,

Shatte, & Freres, 2000; Offord, Chmura, Kazdin, Jensen, & Harrington, 1998). In

addition prevention programs allow a greater number of children to have access to

strategies that will help them deal with potential situations that may increase their

risk of developing depression (Beardslee & Gladstone, 2001). To ensure that a

greater number of children with varying degrees of depressive symptoms were

included in studies addressing prevention programs recruitment of participants

shifted from outpatient clinics to schools (Reinecke, Ryan, & Dubios, 1998).

Initially treatment programs were adapted to address depressive symptoms in

adolescents who were at risk of developing future depression (Clarke et al., 1995;

Reynolds & Coats, 1986). These prevention interventions were labelled "targeted"

or "selected". The effectiveness of targeted programs encouraged clinical researchers to apply prevention programs to all adolescents regardless of their exposure to risk factors. It was thought that addressing all adolescents, regardless of risk, would result in a reduction in the incidence of future depression in adolescents (Andrews, Szabo, & Burns, 2002). These prevention programs were labelled "universal" as they were seen as the first step in providing effective strategies for adolescents to help them deal with potentially distressing situations. From the research into prevention programs targeting adolescents, researchers have adapted effective adolescent prevention programs to pre-adolescent children deeming that prevention programs implemented during this developmental period are more beneficial as they have the potential to reduce the incidence of future rates of depression (Offord et al., 1998). However, few prevention programs exist that target younger children. Those prevention programs involving children tend to focus on children older than 10 years old.

The importance of prevention programs has become evident in recent years with government policies, such as the Second National Mental Health Plan 1998-2003 (Department of Health and Aged Care, 1999), focusing on early intervention and prevention programs for mental health problems. The implementation of prevention programs targeting depression is viewed as an effective strategy in preventing the development of depressive symptomatology in children (Greenburg, Domitrovich, & Bumbarger, 2001). Treatments targeting childhood depression will have little effect on the reduction of these rates as they are implemented following the diagnosis of depression (Offord et al., 1998). Therefore a progression of intervention has been suggested so to decrease childhood depression beginning with effective universal programs. This can then be followed by targeted intervention for

those children identified as requiring further intervention following participation in universal programs. Finally, clinical treatments can be applied to those children who do not appear to benefit from the previous intervention due to the severity and intensity of their symptoms (Offord et al., 1998).

In reviewing the literature related to depression and depressive symptomatology in children this study aims to identify the characteristics of effective prevention programs as well as identify those universal programs that currently exist that have been found to be effective in decreasing and preventing depressive symptomatology in children and adolescents. The current literature review will examine in detail the risk and protective factors associated with depression and depressive symptomatology, the course and nature of depression and various approaches for treating depression. Reviews of effective treatment and prevention programs are also conducted with a particular focus on cognitive-behavioural therapeutic approaches.

Aim of Present Study

The current study was designed to implement and evaluate the effectiveness of a universal cognitive-behavioural program aimed at decreasing depressive symptoms in children aged 8 to 11 years old. The effectiveness of this program in significantly decreasing depressive symptomatology and anxiety and, creating a more optimistic explanatory style for events is examined in relation to the immediate and long-term effectiveness of the program for children including those with elevated and low levels of depressive symptomatology.

Chapter 2

Over the past decade depression in children has emerged as a major mental health concern due to the increase in its incidence and the negative effect it has on a child's emotional well-being (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999). This has been highlighted in recent research examining the mental health and well-being of children in Western Australia. This research found that 3% of 4 to 11 year old children exhibited anxiety or depressive symptomatology within the clinical range, as rated by their parents and teachers (Zubrick et al., 1995).

Depression is characterised by a number of symptoms which co-occur and result in a depressed mood (American Psychiatric Association [APA], 2000). The basic clinical presentation of symptoms of childhood depression is similar to the adult presentation with a few developmental differences (Birmaher et al., 1996b). Symptoms of depression can be categorised as affective, cognitive, motivational and physical (Stark, Vaughn, Doxey, & Luss, 1999). Affective symptoms include dysphoric mood and the loss of pleasure in activities (anhedonia) (Stark, Vaughn et al., 1999). In children mood disturbance may manifest as irritability and anger rather than sadness (APA, 2000; Stark, Vaughn et al., 1999). Other common affective symptoms associated with childhood depression include social withdrawal, low self-esteem and a feeling of worthlessness (Stark, Vaughn et al., 1999). Cognitive symptoms include negative self-appraisal, hopelessness and morbid thoughts (Stark, Vaughn et al., 1999). In addition, cognitive symptoms frequently include attributional style or, how a person explains why negative or positive events have occurred to them (Gladstone & Kaslow, 1995; Stark, Vaughn et al., 1999). Children often express attributional style in their behaviour for example, through comments that they make about events such as "I'll never be able to do that" or, through their

written expression (Stark, Vaughn et al., 1999). Motivational symptoms include suicidal ideation and behaviour (Stark, Vaughn et al., 1999). Physical symptoms often reported include physical changes such as fatigue, appetite and weight fluctuations, sleep disturbances and psychomotor activity (e.g., fidgeting, slowed speech) (Stark, Vaughn et al., 1999).

Developmental differences in the expression of depression have also been reported. For example, typical depressive symptoms reported in eight year olds include withdrawal and pessimism (Kashani, Rosenberg, & Reid, 1989). In 12 year olds the most frequently reported depressive symptoms include pessimism and physical symptoms such as stomachaches, difficulty sleeping and decreased appetite, whereas in 17 year olds internalising behaviours such as bad dreams and suicidal ideation are commonly reported (Kashani et al., 1989).

Subthreshold Depressive Symptoms and Major Depression

Frequently individuals may experience a number of depressive symptoms causing them some distress, however the cluster of depressive symptoms that are present may be below the diagnostic threshold for a major depressive episode (Lewinsohn et al., 2000). This has led some researchers to suggest that depression and depressive symptoms appear to exist on a continuum, with Major Depression being at the extreme end (Eley, 1997; Lewinsohn et al., 2000). Furthermore, the presence of elevated depressive symptoms in children has been shown to be the best predictor of experiencing future major depressive episodes (Nolen-Hoeksema et al., 1992). It has also been suggested that depressive symptoms and depression may originate from similar risk factors such as negative life events and explanatory style (Nolen-Hoeksema et al., 1992).

Diagnosis, Prevalence and Assessment

Diagnosis

The diagnosis and assessment of depressive disorders in children should include evaluation of depressive symptoms as well as symptoms of co-morbid conditions so that the most appropriate diagnosis can be formulated (Birmaher et al., 1996b). Currently childhood depression is diagnosed according to the criteria used to diagnose adult depression but with modification of some criteria to reflect specific depressive disorders in children (e.g., irritability, failure to make expected weight gains, somatic complaints and social withdrawal) (APA, 2000; McClure, Kubiszyn, & Kaslow, 2002). As outlined in the Diagnostic Statistical Manual (DSM-IV-TR), for a child to receive a diagnosis of Major Depression the child must have experienced a major depressive episode for at least two weeks in duration. The symptoms must not be due to another psychiatric disorder and there must be no manic features (APA, 2000). A Major Depressive Episode is diagnosed if five or more symptoms previously outlined have been present in the past two weeks and have caused a significant impairment in social, educational or occupational functioning (APA, 2000).

Assessment

A vast variety of clinical assessments exist to assist with the measurement of depressive symptoms and the presence of depression. Clinicians use different devices depending on whether they are seeking to diagnose a disorder or to screen for the presence of symptoms of co-morbid conditions. The Children's Depression Inventory (CDI; Kovacs, 1992) is the most commonly used self-report scale for screening depressive symptoms in clinical and research contexts (Brady & Kendall, 1992). It can provide an index of severity of symptoms, allow the clinician to

monitor clinical improvement and it has also been found to possess good psychometric properties (Brady & Kendall, 1992). Behavioural scales such as the Child Behaviour Checklist (CBCL; Achenbach, 1991) are useful in screening for co-morbid disorders and symptoms (Brady & Kendall, 1992). However many measures have overlapping items leading to high correlations between them. The CDI has shown to be moderately to highly correlated with other measures of comorbid conditions such as anxiety and explanatory style. Correlations of .53 to .80 between the CDI and the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 2000) have been reported (Cole et al., 1998). In addition low, but significant, correlations ranging from .37 to .44 has also reported between the CDI and the Children Attributional Style Questionnaire (CASQ; Seligman et al., 1984; Yu & Seligman, 2002).

Diagnosis of Major Depression requires a more structured assessment involving checklists and interviews (Birhamer et al., 1996b). Relying solely on self-report measures to diagnose Major Depression is inappropriate due to their low specificity (Birhamer et al., 1996b). Commonly used diagnostic interviews include the Schedule for Affective Disorders and Schizophrenia for School Age Children (K-SADS; Puig-Antich & Chambers, 1978), the Diagnostic Interview for Children and Adolescents – Revised (DICA-R; Welner, Reich, Herjanic, Jung, & Amado, 1987) and the Diagnostic Interview Schedule for Children (DISC; Costello, Edelbrock, Dulcan, Kalas, & Klaric, 1984). All three of these interview protocols follow the DSM-IV criteria for diagnosis (Brady & Kendall, 1992).

Individual and developmental variation in cognitive maturity often make the assessment of childhood depression complicated (Clarizio, 1994; McClure et al., 2002). Children who are less cognitively mature have difficulty reporting

behaviours and emotions (Clarizio, 1994; McClure et al., 2002). To minimise this effect it has been recommended that information be gathered using various methods and informants (ACCAP, 1998; Clarizio, 1994; McClure et al., 2002). Children appear to provide more accurate information related to covert symptoms such as suicidal ideation and self-esteem, whereas parents and teachers provide more accurate information related to behavioural symptoms (McClure et al., 2002). Also a teacher may be more reliable in providing information regarding concentration whereas parents may be better able to report on behaviours such as anger and irritability (Cole, Truglio, & Peeke, 1997). Omitting information from one of these informants may provide an incomplete assessment of a child's symptoms (Cole et al., 1997). However, even though multiple sources assist with formulation, there tends to be low agreement between child and parent ratings (Birmaher et al., 1996b). Such discrepancies may be the result of parent psychopathology or, a parental tendency to make their child look either more favourable or flawed thereby influencing ratings of their children (Birmaher et al., 1996b).

Prevalence

Researchers have found that the prevalence rates of depression in children can range from 0.4% to 2.5% and 0.4% to 8.3% in adolescents (Birmaher et al., 1996b). In Western Australia research examining the prevalence of depression has found 3% of 4 to 11 year old children have depressive symptoms or anxiety within the clinical range, as rated by their parents and teachers (Zubrick et al., 1995). Other researchers have found that approximately 10% of US and British children reported depressive symptoms above the clinical cut off score of 19 on the CDI (Ollendick & Yule, 1990). An Australian study found that 14.2% of adolescents in a study sample (n= 1299) reported depressive symptoms above the clinical cut off score (Boyd,

Kostanski, Gullone, Ollendick, & Shek, 2000).

Age and Gender

The prevalence of depression and depressive symptoms in children is similar across genders, however, during adolescence, females tend to report more depressive symptoms (Cole, Peeke, Martin, Truglio, & Seroczynster, 1998; Cole et al., 2002; Hankin et al., 1998; Piccinelli & Wilkinson, 2000). Although rates for both males and females increase during adolescence, twice as many females to males report having depression during adolescence (Hankin et al., 1998).

Comorbidity

Many behavioural, emotional and cognitive symptoms are common to a number of disorders thereby increasing the possibility of co-morbid disorders occurring with depression (Hammen & Compas, 1994). Cicchetti and Toth (1998) reported that 40% to 70% of children and adolescents develop co-morbid disorders with 20% to 50% having two or more diagnoses. The most common co-morbid diagnoses are anxiety disorders (e.g., separation anxiety, obsessive compulsive disorder, phobias and overanxious disorder) and dysthymia with 30% to 80% of children with depression often reporting these co-morbid disorders (Birmaher et al., 1996b). Other common co-morbid disorders include behavioural disorders such as Conduct Disorder which are often reported in 10% to 80% of children with depression and, Attention Deficit Disorder and substance use being reported in 20% to 30% of children with depression (Birmaher et al., 1996a; Hammen & Compas, 1994; Jaffee et al., 2002).

Course of depression and prognosis

The length of a depressive episode in children has been reported as lasting seven to nine months with children unlikely to recover from depression within the

first three months following onset (Kovacs, Feinberg, Croise-Novak, Paulauskas, & Finkelstein, 1984a). Although a gradual process, rate of recovery appears to be high with a 92% remission rate peaking at 15 to 18 months following onset (Kovacs et al., 1984a). Age of initial onset appeared to influence the length of remission, with those experiencing onset at a younger age having longer remissions (Kovacs et al., 1984b).

It is generally accepted that one episode of depression will lead to further episodes and that episodes of childhood depression recur (Kovacs et al. , 1984b; Weissman et al., 1999). Kovacs' et al. (1984b) longitudinal study examining the risk of subsequent depressive disorder in children found that those children with major depression had an increased risk of recurrence. They found that 26% of the children who had experienced depression had a new episode of depression within one year of recovery, 40% had a second episode within two years, and up to 72% of the cohort had a second episode within 3 years (Kovacs et al., 1984b). It was concluded that in a percentage of the cohort depression was cyclic (Kovacs et al., 1984b).

Although short-term prognosis of depression appears optimistic, research has shown that clinically diagnosed childhood depression significantly increases the risk of depression in adult life (Harrington, Fudge, Rutter, Pickles, & Hill, 1990). It has been found that 62% of children reported a recurrence of depression during adulthood (Fombonne, Wostear, Cooper, Harrington, & Rutter, 2001; Weissman et al., 1999). There was also an increased risk of other problem behaviours such as higher suicide attempt rates, social impairment, higher rates of substance abuse and, conduct disorder, particularly in males during adulthood (Fombonne et al., 2001; Weissman et al., 1999). Childhood depression has been shown to also impact on schooling and peer relationships (Birmaher et al., 1996a).

Risk Factors

Research into the causes of childhood depression is still inconclusive (Stark, Vaughn et al., 1999). A number of factors have been identified as increasing a child's risk or vulnerability to developing depression (Cicchetti & Toth, 1998; Stark, Vaughn et al., 1999). Roberts (1999) has grouped risk factors associated with childhood depression into the categories of cognitive factors, personal competence, negative life events, family factors and individual child characteristics. Depression usually occurs when a number of these risk factors co-occur (Cicchetti & Toth, 1998). Research has consistently found that certain risk factors, such as previous episodes of depression, elevated depressive symptoms and family cohesiveness are correlates or predictive of future depression (Lavinge et al., 1998; Nolen-Hoeksema et al., 1992). The impact of risk factor reduction or long-term course and prognosis is still unclear (Jaffee et al., 2002; Nolen-Hoeksema et al., 1992). Longitudinal research is needed to clarify the causal nature of particular risk factors and how they influence the course of the disorder (Gladstone & Kaslow, 1995). Currently research does not clearly outline whether particular risk factors cause depression or whether depression causes, or increases, the likelihood of particular risk factors (Gladstone & Kaslow, 1995; Kistner, Ziegert, Castro, & Robertson, 2001).

Cognitive Factors

Cognitive risk factors include negative cognitions, attributional style and negative self-perceptions (e.g., negative thoughts about self) (Roberts, 1999). Research has indicated that negative cognitions and attributional style (e.g., blaming oneself for events) has been associated with increased risk of developing depression (Birmaher et al., 1996a). In contrast to younger children who tend to interpret situations in a concrete way, older children (i.e., grade eight and above) have

developed their own explanatory style, and this in turn influences their appraisal of an event (Turner & Cole, 1994). An established pessimistic explanatory style for negative and positive events has been linked to increases in depressive symptoms (Nolen-Hoeksema et al., 1992, Turner & Cole, 1994). In addition, a child's explanation of the cause of an event may increase the likelihood that they respond to certain events with helplessness (Nolen-Hoeksema et al., 1992). Helplessness is the tendency to give up quickly when presented with failure, attributing failure to insufficient ability, having low expectations of future success and experiencing negative affect when presented with a challenge (Kistner et al., 2001). Those children who interpret negative events as being caused by internal (i.e., within the child), stable (i.e., will remain constant) and, global (i.e., across all conditions) factors and good events as being caused by external (i.e., outside child's control), unstable (i.e., changing and not constant) and specific factors are more prone to a helplessness response (Nolen-Hoeksema et al., 1992; Turner & Cole, 1994). Research has suggested that children who respond to challenges with helplessness may be more at risk for elevations in depressive symptomatology and have lower levels of self-efficacy (Kistner et al., 2001). Kistner et al. (2001) also demonstrated that helplessness assessed in kindergarten was found to be associated with an increased risk of depressive symptoms and negative self-worth in middle childhood.

Elevations in depressive symptomatology have also been found in children who have negative self-perceptions and tend to underestimate their ability (McGrath & Repetti, 2002; Stark, Humphrey, Laurent, Livingston &, Christopher, 1993). Although the causal mechanism is not clear, McGrath and Repetti have suggested that depressive symptoms may result in a negative self-view which is not consistent with the reality of a situation (McGrath & Repetti, 2002).

Personal competence

Personal competence includes a child's level of acceptance by their peers, friendship difficulties, social skills and social problem solving ability (Roberts, 1999). Research has shown that children with poor peer relationships have a more negative view of themselves (Gladstone & Kaslow, 1995; Rudolph, Hammen &, Burge, 1997). In addition, poor peer relationships and helplessness in social and educational settings have been shown to increase a child's risk for future depression and impact negatively on their emotional well-being (Hecht, Inderbitzen, & Bukowski, 1998; Nolen-Hoeksema et al., 1992; Lavinge et al., 1998). Lavinge et al. (1998) found that children with peer problems reported more symptoms of depression by age nine and that they were more temperamentally inhibited. One explanation for this may be that aggressive children who have been rejected by their peers may have poor interpersonal skills, leading to poor peer relationships, lack of positive social reinforcement and subsequently, depression (Hecht et al., 1998). Whereas submissive children who are rejected by their peers may be socially withdrawn and avoid initiating interpersonal interactions due to feeling inadequate in this area leading to an increase in depressive symptoms (Hecht et al., 1998).

Negative Life Events

Negative life events include chronic daily stress and stressful life events, such as deaths, divorce and separations (Roberts, 1999). Increases in negative life events have been associated with elevations in depressive symptoms (Nolen-Hoeksema et al., 1992). It has been suggested that family related events (such as parental divorce or death) may contribute to an increase in depressive symptoms in younger children as they often cause major disruptions in a child's life and affect a parent's ability to care for their child (Nolen-Hoeksema et al., 1992). Alternatively, this early negative

experience and how a child responds to it may influence future responses to difficult situations (Nolen-Hoeksema et al., 1992). If a child has previously responded to negative events with a maladaptive or pessimistic explanatory style this response style may become established and influence how a child will respond to future stressful events (Nolen-Hoeksema et al., 1992).

Family factors

Family factors include a family history of depression, parental conflict, poor parenting style, impaired interactions between parents and child and, insecure attachments (Roberts, 1999). Low family cohesion has been shown to increase the risk for developing depression (Garrison et al., 1997; Lavigne et al., 1998). Other family factors that have been associated with childhood onset of depression include parents with criminal convictions, parent figure changes and loss of a parent (Lavigne et al., 1998).

Birmaher et al. (1996a) in their review of child and adolescent depression stated that children of parents with depression are three times more likely to experience a depressive episode throughout their lifetime. Examination of family environments of children with depression found that these families often experienced high levels of conflict between parents or other family members (Birhamer et al., 1996b; Gillham et al., 2000). Children with depression also experienced more rejection from their parents, communication difficulties with parents, low expressions of affect from mothers, less support from parents, more negative life events, high maternal negative affect and more abuse (Birhamer et al., 1996a; Birhamer et al., 1996b; Lavigne et al., 1998). Research with children whose parents have a psychiatric disorder has found that parents are less available to children and have difficulty with parenting (Gillham et al., 2000). It has been demonstrated that

parents with mental health issues often display a depressive cognitive style and model maladaptive coping strategies (e.g., giving up when confronted with a stressor) thereby predisposing children to depression (Birmaher et al., 1996a; Cicchetti & Toth, 1998; Gillham et al., 2000). Such unpleasant early interactions with caregivers may lead to deficits in a child's ability to handle stress effectively increasing the child's risk for developing depression (Birmaher et al., 1996a; Cicchetti & Toth, 1998).

Individual child characteristics

Individual child characteristics include age, gender, illness, prior episodes of depression and other psychopathology (Roberts, 1999). As previously noted prior episodes of depression predict later episodes and often increase the likelihood of future depression (Birmaher et al., 1996b; Nolen-Hoeksema et al., 1992). In addition co-morbid disorders such as anxiety also increase the risk of developing depression (Birmaher et al., 1996b). Furthermore, adolescents, particularly females, are at increased risk of developing depression (Hankin et al., 1998).

Poor interpersonal skills also contribute to increased depressive symptoms (Hecht et al., 1998). Children with poor interpersonal skills may misinterpret peer interactions thereby increasing the likelihood of problematic peer relationships (Goodyer et al., 1997; Hecht et al., 1998). This could result in alienation or withdrawal from peer groups and lead to social and emotional difficulties such as depression and loneliness (Goodyer, Herbert, Tamplin, Secher, & Pearson, 1997; Hecht et al., 1998).

Genetic Influences

Family and twin studies have suggested that genetic factors are influential in the development of childhood depression (Eley, 1997; Rice, Harold, & Thapar,

2002). Increased incidences of depression have been found in relatives of individuals with early onset depression compared to adult onset depression (Rice et al., 2002). In addition higher levels of depression have been identified in children of parents who also have depression (Rice et al., 2002).

Some research has suggested that childhood depression is influenced by both genetic and early psychosocial risk factors (Jaffee et al., 2002). Eley (1997) found that genetic influences contributed moderately to depressive symptoms in both children and adolescents, however, specific environmental influences (e.g., common, shared environments) appeared to be associated with higher levels of depressive symptoms (Eley, 1997). Rice, Harold and Thapar (2002) concluded that environmental factors are more influential in older children as they are becoming more independent and are more involved in choosing their environment whereas in younger children this is still in the parents' control.

Protective Factors

Protective factors that reduce the development of depression have received little attention in the literature. Often, however, the reverse of the risk factors discussed above are seen as the protective factors. Of the research that exists social skills, peer support, a more optimistic explanatory style and family cohesion have been identified as important protective factors against depression (Garrison et al., 1997; Lavigne et al., 1998).

Children who do not develop depression have been found to report increased family cohesiveness and decreased negative events (Garrison et al., 1997; Lavigne et al., 1998). In addition children whose depression remitted reported increased family cohesion (Lavigne et al., 1998). High self-efficacy has also been found to increase prosocial behaviour and academic achievement leading to children engaging in less

problem behaviours than those children with low self-efficacy (Bandura et al., 1999).

This in turn is associated with lower rates of depression (Bandura et al., 1999).

The identification of risk and protective factors is important in understanding

childhood depression. Greater understanding of these factors will provide valuable

information in relation to the particular areas that need to be addressed in prevention

or treatment programs (Roberts, 1999). Treatment and prevention programs that

target relevant risk factors will ensure that children are taught strategies that will

increase their competency in dealing with events that may predispose them to the

development of depression (Greenburg et al., 2001; Roberts, 1999).

Treatment

The high prevalence of depression observed in children and adolescents has

highlighted the need for an effective treatment of childhood and adolescent

depression. Given the success of adult treatment programs, these techniques and

programs have been adapted in order to treat childhood and adolescent depression.

Treatment programs that target adolescent depression (e.g., Brent et al., 1997; Clarke

et al., 1992; Lewinsohn et al., 1990) have shown promising results in terms of their

effectiveness in decreasing and preventing depression. Research which targets the

treatment of depression in younger children is limited, however in recent years there

has been an emergence of studies investigating the effectiveness of treatments aimed

specifically at childhood depression (e.g., Brent et al., 1997; Vostanis, Feehan,

Grattan, & Bickerton, 1996; Wood et al., 1996).

Difficulties with Treating Childhood Depression

Effective treatment of childhood depression is made difficult due to a number

of factors specific to childhood depression. Until recently there has been relatively

limited knowledge of the course, prevalence and aetiology of childhood depression

making it difficult for these factors to be addressed in treatment. In addition the various risk factors for depression such as attributional style, negative life events, low family cohesion and elevated depressive symptoms also impact on treatment efficacy. The fact that risk factors for depression differ across children makes it difficult to determine which approach may be more appropriate (Stark, Laurent et al., 1999). Likewise co-morbid disorders such as anxiety impact on the effectiveness of a treatment (Stark, Laurent et al., 1999), as co-morbid disorders often require specific intervention (York & Hill, 1999).

Developmental changes which children go through also impact on treatment efficacy. A child's developmental level or age needs to be considered and specifically targeted to ensure that treatment is effective (AACAP, 1998). As children move from concrete to formal operational thinking they are more capable of implementing cognitive strategies whereas children in the concrete stage may respond better to more behavioural techniques. Furthermore as children enter adolescence they become more independent and gain increased control over their environment whereas younger children continue to rely on parents for the maintenance of a stable and nurturing environment (Rice et al., 2002).

Treatment Approaches

Treatments targeting childhood depression have included pharmacology and psychological treatments, such as cognitive-behavioural therapy, interpersonal psychotherapy, psychodynamic psychotherapy and family therapy. Choice of an appropriate treatment is dependent on a number of factors such as severity of the depressive episode, the age of the child, adherence to treatment, previous response to treatment, the child's and family's motivation for participating in treatment and, specific contextual issues such as family conflict, academic problems and negative

life events (AACAP, 1998). Regardless of the therapy, the main goal of therapy is to provide the child with skills to assist them to overcome current and subsequent depressive episodes (Stark, Laurent et al., 1999).

Pharmacological

The successful treatment of adult depression with antidepressants, particularly tricyclics (TCAs) and selective serotonin reputake inhibitors (SSRIs), has lead to the use of antidepressants in treating childhood depression (Stark, Laurent et al., 1999). Due to the potential for severe side effects (e.g., mortality) if not monitored closely medication is often not the first treatment preference for children (Geller, Reising, Leonard, Riddle, & Walsh, 1999).

Antidepressants work by influencing the action of the neurotransmitters in the brain particularly serotonin, dopamine, actetylcholine and norepinephrine (Stark, Laurent, et al., 1999). Studies examining the usefulness of medication in treating childhood depression are relatively new. Emslie et al. (2002) conducted a study examining the efficacy and tolerance of various dosages of the SSRI, fluoxetine, in treating childhood depression ($N = 219$). The study found that the children and adolescents who received the medication showed a significant decrease in the severity of depressive symptoms when compared to a control group not receiving medication. Other research on the effectiveness of fluoxetine in treating depression in children and adolescents has also shown it to be superior to a placebo control group in decreasing depressive symptoms (Emslie et al., 1997; Waslick et al., 1999).

In contrast, research on TCAs has shown this medication is not as effective in treating depression in children. Birmaher et al. (1998) compared a group of adolescents receiving amitriptyline to a placebo control group of adolescents ($N= 27$). This study found that both groups reported decreases in depressive symptoms,

however, no significant differences were found between the two groups. Stark, Vaughn and colleagues (1999) have suggested that TCAs may not be effective for children as neurotransmitter systems in children are not fully developed until early adulthood and may not react in a similar way as fully developed adult neurotransmitters (Stark, Vaughn et al., 1999).

Although both types of antidepressants were shown to be well tolerated in the treatment of childhood depression a number of adverse effects such as headaches (which was a major side effect), mild levels of anxiety, insomnia, dry mouth and decreased attention and dizziness were reported (Birmaher et al., 1998; Emslie et al., 1997; Emslie et al., 2002; Waslick et al., 1999). In addition long-term effects of using such medications has not been investigated and it is unknown whether further adverse side effects may emerge after extended use. Furthermore, studies on antidepressants tend to include small samples, consist mainly of adolescents and, complete remission of depression rarely occurred following the use of antidepressants (Birmaher et al., 1998; Emslie et al., 1997; Emslie et al., 2002; Waslick et al., 1999). The effectiveness of medication for younger children is yet to be demonstrated and further research is required in this area to determine the usefulness, effectiveness and safety of using antidepressants with children.

Psychological Treatments

A number of psychological interventions have been utilised to treat childhood depression. In general these treatments aim to teach children and their families how to improve self-esteem and social skills and cope with existing stressors, conflicts and problems associated with depression such as academic progress, familial and social relationships (AACAP, 1998).

Interpersonal Psychotherapy

Interpersonal psychotherapy is based on the notion that depression occurs when there are conflicts in interpersonal relationships (Harrington, Whittaker, & Shoebridge, 1998). The primary goal of this therapy is to improve interpersonal functioning by focusing on the five problem areas in significant relationships (Stark, Laurent, et al., 1999). These include grief, interpersonal role disputes, role transitions, interpersonal deficits and single parent families (AACAP, 1998; Harrington et al., 1998; Stark, Laurent, et al., 1999). Interpersonal psychotherapy focuses on dealing with current difficulties and increasing an individual's competence and resiliency to stressful life events thereby decreasing future depressive symptoms (Harrington et al., 1998; Mufson & Fairbanks, 1996).

Studies examining the effectiveness of interpersonal psychotherapy are limited. A study by Mufson and Fairbanks (1996) examined the effectiveness of a 12-week interpersonal psychotherapy program for depressed adolescent girls ($N = 14$). The study found that there were significant decreases in depressive symptoms and the incidence of depression, which were maintained at the one year follow-up.

In a subsequent study conducted by Mufson, Weissman, Moreau and Garfinkel (1999) a controlled 12-week trial of interpersonal psychotherapy was administered to clinic referred depressed adolescents ($N = 48$). It found that adolescents who participated in the intervention group reported fewer depressive symptoms and had a lower incidence of depression and, improved social functioning at the end of 12 weeks.

The results of these studies need to be interpreted with caution due to the absence of a control group in the Mufson and Fairbanks (1996) study, small sample sizes, high attrition rate and the sample characteristics (i.e., predominantly female,

Latino, late adolescent with anxiety as a co-morbid disorder) (Mufson, Weissman, Moreau, & Garfinkel, 1999). No long-term follow-up measures were conducted to illustrate whether the reported gains were maintained over time. Further research which includes larger and more diverse sample sizes, long-term and short-term follow-ups, and comparisons to other interventions is needed to further examine the effectiveness interpersonal psychotherapy.

Psychodynamic psychotherapy

Psychodynamic psychotherapy has also been used by clinicians to treat depression in children, however, controlled studies evaluating the effectiveness are scarce as they are difficult and expensive to design (AACAP, 1998). Bemporad (1988) presented two case studies related to the use of psychodynamic psychotherapy in treating depression in two adolescents. The aim of therapy in these two case studies was to create a more realistic sense of self (Bemporad, 1988). The therapy focused on the therapist providing a safe, non-judgemental holding environment prior to proceeding to more introspective therapy (Bemporad, 1988). Therapy resulted in increased social interaction and decreased dysphoric and pessimistic feelings (Bemporad, 1988). Given the specificity of this therapy it would be difficult to generalise to other depressed children. It is not seen as a short-term therapy option as it may involve an extensive period of support and building of therapeutic alliance prior to any intervention (Bemporad, 1988). Given that only adolescent case studies have been reported, psychodynamic psychotherapy may not be effective or appropriate for children in the concrete operational period due to the introspective nature of the therapy.

Family Therapy

Family therapeutic approaches for the treatment of depression are popular

due to the significant amount of research that has linked family psychopathology and environment to the development of depression in children (e.g., Garrison et al., 1997; Jaffee et al., 2002). Such approaches involve working with family members to alter their interactions with each other so to hopefully improve the family environment for the child (Harrington et al., 1998).

Harrington et al. (1998) examined the effectiveness of family therapy with a group of depressed adolescents who had attempted suicide by poisoning. These adolescents were randomly allocated to the treatment group ($n= 85$) or the usual routine care ($n=77$) associated with this suicidal method. The family therapy program focused on communication, problem-solving and adolescent issues and, the impact on the family. At the conclusion of the intervention it was found that family therapy was not significantly better at decreasing suicide ideation in depressed children compared to the control group.

Cognitive-behavioural therapy

Cognitive-behavioural therapy is the most frequently used and widely researched therapy for treating depression in children (AACAP, 1998). It is based on the principle that children with depression have a distorted view of themselves and the world. It aims to modify these distortions by identifying and challenging unhelpful thoughts that have a negative effect on the child's mood.

Studies which focus on clinically depressed children tend to utilise individually administered cognitive-behavioural programs as often there are not enough clinically depressed children to form a group (Brent et al., 1997; Wood et al., 1996). Individual programs used in these studies are occasionally based on group programs which have found to be effective in reducing depressive symptoms (e.g., Lewinsohn et al., 1990; Wood et al., 1996). The modification of these programs for

individual administration allows for therapy to target a child's specific presentation. This places limitations on the generalisability of the intervention and may also be time consuming due to the individual work required (Lewinsohn & Clarke, 1999).

Children with clinical depression included in the research are usually recruited from outpatient clinics and often include children or families willing to participate in intervention. Due to this, these studies include a smaller number of participants. In addition, the intensity of depressive symptoms may warrant different interventions for individual children. The findings from these studies cannot be generalised to children with clinical depression who are hospitalised involuntarily, do not access outpatient facilities or do not have a supportive family.

Many of the randomised studies that target children with clinical depression include children who are 13 years old and older (e.g., Brent et al., 1997; Clarke et at., 1992). Research which targets children with clinical depression younger than 13 years are rare (e.g., Vostanis et al., 1996; Wood et al., 1996).

Studies that include children and adolescents with clinically diagnosed depression have yielded contradictory results with respect to the effectiveness of individually administered cognitive-behavioural therapy in reducing the incidence of depression (e.g., Vostanis et al., 1996; Wood et al., 1996). Case studies are more consistent in their findings of the effectiveness of cognitive-behavioural intervention due to the fact that the therapy used in these can be modified to suit the needs of the child (e.g., Asarnow & Carlson, 1988; Verduyn, 2000).

Wood, Harrington and Moore (1996) reported on the effectiveness of individually administered cognitive-behavioural therapy ($n= 24$) compared to a relaxation control group ($n=24$) in treating depression. The cognitive-behavioural therapy intervention focused on cognitive strategies to modify thoughts, social

problem solving and strategies to deal with depressive symptoms. Wood et al. (1996) found that those participants who received cognitive-behavioural treatment experienced a significantly greater reduction in their depressive symptoms compared to those who received the relaxation training. In contrast Feehan and Vostanis (1996) compared the effectiveness of an individually administered cognitive-behavioural therapy for children and adolescents with depression to a non-focused intervention (N=57). The nine session cognitive-behavioural therapy focused on self-monitoring, cognitive restructuring and enhancement of social skills. The study found that both groups showed similar rates of recovery from depression at the end of a five month period. Interestingly only 50% of children in the cognitive-behavioural group received information on cognitive restructuring as many had recovered by the time this was introduced in the treatment. It is unclear whether the previous strategies taught were sufficient for treating depression thereby decreasing the need for cognitive restructuring at this stage or, whether children recovered due to the natural course of depression.

In another study, fourth to sixth grade children (N=23) with elevated levels of depressive symptomatology (Asarnow, Scott, & Mintz, 2002) were allocated to either a cognitive-behavioural treatment program aimed at reducing depressive symptoms in children or a wait-list control group. The 10 session intervention combined cognitive-behavioural therapy, problem-solving and social skills training and a family education session. The results of the study indicated that those children in the treatment group showed greater reduction in their depressive symptoms, negative cognitions and internalising coping (e.g., withdrawing from others, crying and worrying) as measured by the CDI and questionnaires examining children's negative automatic thoughts and coping strategies (e.g., problem-solving and seeking

social support) related to specific problems (Asarnow et al., 2002).

Long-term follow-up of the effectiveness of cognitive-behavioural programs in treating clinical depression in children have shown that recovery rates from depression tend to be maintained. However, it should be noted that children in the control groups also experienced a decrease in their reported depressive symptoms in the long term. Three and six month follow-ups conducted by Wood et al. (1996) found that the significant reduction in depressive symptoms of the children in the cognitive-behavioural group remained stable, whereas the relaxation group continued to show a decrease in depressive symptoms across these times with depressive symptoms of children in the relaxation group decreasing to a similar level as those in the treatment group at the six month follow-up.

Vostanis, Feehan, Grattan and Bickerton (1996) nine month follow-up of the participants included in the Feehan and Vostanis (1996) study found that both groups maintained their treatment effects and continued to show a reduction in the presence of depression. Neither treatment was found to be superior.

Comparison of Various Treatment Modes

Few studies exist that compare various treatment modes for treating childhood depression. Those that have compared various modes tend to focus on cognitive-behavioural and family therapy (e.g., Brent et al., 1997; Lewinsohn et al., 1990). Brent et al. (1997) compared individually administered cognitive, family and non-directive supportive therapy. In the study adolescents (N=107) with clinically diagnosed depression were randomly assigned to one of the three treatments. Treatments consisted of 12 to 16 sessions and a booster phase. Cognitive therapy involved monitoring and modifying automatic thoughts, social skill training, affect regulation and cognitive restructuring. Family therapy focused on communication

and problem-solving skills to alter family interactions. Non-directive supportive therapy provided support through reflective listening and empathy. The study found that cognitive-behavioural therapy yielded a more rapid treatment response with lower remission rates compared to the other two treatments and it was more effective than the other two modes of treatment in decreasing depressive symptoms. Due to the lack of follow-up measures, it is not possible to determine whether these improvements were maintained.

An earlier study (Lewinsohn et al., 1990) compared a group cognitive-behavioural therapy intervention for adolescents only, a combined cognitive-behavioural therapy and family therapy intervention for adolescents and their parents and, a wait-list control group in relation to their effectiveness in reducing depressive symptoms in adolescents with clinical depression (N=59). The cognitive-behavioural therapy program consisted of 14 sessions conducted over seven weeks. The parent module included an additional seven sessions for parents only and focused on informing the parents of the content of the adolescent sessions. At the end of treatment less than 60% of the adolescents in either treatment group met the criteria for depression whereas 95% of the adolescents in the wait-list group continued to meet the criteria for depression. The combined cognitive-behavioural and family therapy group showed greater improvement than the adolescent only group, however, the difference was only slight and not significant. These improvements were maintained at the two year follow-up. The adolescent only group also showed continued improvement at follow-up. Although promising, the results of this study need to be interpreted with caution as the study included older adolescents and it may be difficult to generalise results to younger children (Lewinsohn et al., 1990).

This research provides some support that cognitive-behavioural therapy may be more effective in treating depression when compared to other psychological treatments. Further research with various treatment modes including interpersonal psychotherapy and psychopharmacology is needed to support this finding.

Prevention

Encouraged by the positive results from research examining the treatment of childhood depression, researchers have started to focus on developing programs aimed at preventing depressive symptoms in children (e.g., AACP, 1998; Birmaher et al., 1996b; Clarke et al., 1995; Harrington et al., 1998). Prevention programs differ from other types of treatment programs in that they aim to educate all individuals about strategies that may reduce the likelihood of risk factors leading to the development of depression (Gillham et al., 2000). In addition, prevention programs are implemented prior to the onset of a disorder whereas treatment programs for children are implemented once a disorder or risk factors have been identified (Gillham et al., 2000). There are two types of prevention programs: universal and targeted (Andrews et al., 2002). Universal programs are aimed at the whole population, regardless of whether risk factors exist (Andrews et al., 2002). Targeted, also known as selective or indicated, prevention programs are those programs that are aimed at a population who have been exposed to some risk factors or exhibit early symptoms of a disorder (e.g., elevated depressive symptoms) (Andrews et al., 2002). There are a number of advantages and disadvantages pertaining to the use of these approaches. Targeted prevention can be effective if appropriate screening procedures are used, however, there is a high attrition rate in these programs and children involved in these programs may find it difficult to change a behaviour if others around them continue to exhibit it (e.g., aggressiveness)

(Offord et al., 1998). On the other hand, universal prevention programs can reach more children especially those who would not normally seek or have access to treatment in addition to not being stigmatising (Offord et al., 1998). They are proactive in their approach and focus on enhancing protective factors rather than focusing on risk factors (Greenberg et al., 2001). However, their length and intensity may not be sufficient to assist children who are at an increased risk for developing depression (e.g., extremely elevated depressive symptoms, exposed to many risk factors) (Offord et al., 1998). Nevertheless, both of these types of prevention programs, as well as treatment, have a role in reducing depression in children (Offord et al., 1998). Improving the mental well-being of children and adolescents begins with universal programs, proceeding to more specialised and specific interventions such as targeted preventions and finally treatment, for those children who do not respond to previous intervention methods (Offord et al., 1998).

Importance of Prevention Programs

Research examining depression in children has identified a number of risk and protective factors (e.g., problem-solving, explanatory style) associated with the development of depression (Spence, Sheffield, & Donovan, 2003). Prevention programs that focus on increasing protective factors and decreasing risk factors are seen as an effective means to decrease the risk for developing depression and increasing a child's resiliency to negative events (Pattison & Lynd-Stevenson, 2001; Spence et al., 2003). Furthermore, if depressive symptomatology exists on a continuum, strategies learnt from prevention programs that focus on decreasing elevated depressive symptoms can reduce the amount of suffering an individual may experience across their lifetime and decrease and prevent subsequent relapses (Gillham et al., 2000).

From a public health perspective, prevention programs, particularly universal programs, are extremely important (Beardslee & Gladstone, 2001). They have the potential to reach children who do not usually access mental health services and may benefit greatly from such programs (e.g., children of parents with depression) (Beardslee & Gladstone, 2001). They teach children protective strategies which can be implemented with future stressors they may encounter such as those experienced during adolescence. They are also in keeping with current government policies such as the Second National Mental Health Plan 1998 – 2003 (Department of Health & Aged Care, 1999) which promote strategies focusing on prevention of mental health problems and early intervention.

Implementation of Prevention Programs

Clinicians and researchers have differing views as to the timing of exposure to prevention programs. As they are seen as a proactive approach to decreasing and preventing depressive symptoms some researchers suggest that prevention programs are most beneficial when implemented in late childhood prior to the anticipated increase in depressive symptoms during adolescence for some children (e.g., Hannan, Rapee, & Hudson, 2000; Pattison & Lynd-Stevenson, 2001; Roberts, 1999). Prevention programs which are implemented prior to this developmental stage are in keeping with the notion that for a program to be truly preventative it needs to be implemented prior to the onset of depression so to prevent it from occurring (Hannan et al., 2000; Jaycox, Reivich, Gillham, & Seligman, 1994). This period is also seen as a time when children may be more receptive to strategies aimed at changing cognitions compared to adolescents (Pattison & Lynd-Stevenson, 2001). During this developmental period cognitive style is not fixed and is still being moulded by a child's development (Nolen-Hoeksema et al., 1992). Intervention may counteract a

potential fixing of cognitive style that may result from prolonged exposure to negative events or risk factors (Nolen-Hoeksema et al., 1992). Negative events, if not dealt with effectively in childhood, often remain and may intensify during adolescence (Zubernis, Cassidy, Gillham, Reivich, & Jaycox, 1999). The strategies learnt in prevention programs will be useful in shielding children from developing pessimistic explanatory styles thereby decreasing depression (Gillham et al., 2000).

In contrast other researchers have argued that it may be more beneficial to implement intervention during adolescence rather than childhood due to the increased prevalence of depression during adolescence and the likelihood of detecting differences in levels of depression. (Spence et al., 2003). In addition, future episodes of depression may be prevented if intervention is implemented during and following a first episode of depression (Nolen-Hoeksema et al., 1992). Implementing an intervention program during adolescence would ensure that adolescents would be more capable of understanding and implementing the more abstract cognitive techniques used in a program (Gillham et al., 2000). Even though there are differences with respect to the timing of implementing programs research on the prevention of depression at each of these developmental stages has yielded positive results.

Prevention Studies

Many of the current prevention programs utilise a cognitive-behavioural approach (Gillham et al., 2000). This is due to the fact that the treatment literature has indicated that cognitive-behavioural approaches are most effective in treating clinical depression. As a result most prevention programs are based on those developed to treat clinical depression in children (e.g., Clarke et al., 1995) thereby allowing for the investigation of whether treatment programs can be successfully

adapted to prevent the development of depressive symptoms in children (Pattison & Lynd-Stevenson, 2001). Prevention studies have targeted a number of risk factors associated with depression (e.g., parental psychopathology, elevated depressive symptoms) (Clarke et al., 1995). The majority of children who participate in the studies have been recruited from schools, providing the potential for the recruitment of a larger, more diverse sample (e.g., varied age range, socio-economic status, ethnicity). In addition studies tend to focus on multiple outcome measures such as anxiety, social skills, attributional style and loneliness (Pattison & Lynd-Stevenson, 2001; Quayle, Dziurawiec, Roberts, Kane, & Ebsworthy, 2001; Roberts, Kane, Thomson, Bishop, & Hart, 2003) but specify depressive symptoms as the major variable of investigation. Prevention studies also tend to use longitudinal data to assist in establishing a program's efficacy in preventing and reducing the incidence of depression during a period that it would be expected to increase or remit, such as adolescence (Gillham et al., 2000). Longitudinal data allows for the monitoring of depressive symptoms across the lifespan as well as a program's ability to reduce depressive symptoms or risk factors directly associated with depression (Greenburg et al., 2001).

Levels of Depressive Symptomatology in Preventative Research

A clear distinction needs to be made between clinical depression and depressive symptoms and their assessment in prevention studies. The symptoms of depression are usually assessed by mass screening by a self-report measure such as the CDI to identify those children with a higher incidence of depressive symptomatology rather than through the use of a thorough assessment used to diagnose depression. This type of screening does not rule out that some children included in a sample may actually met the criteria for clinical depression but have

not been previously identified. This complication may influence the effectiveness of a program which specifically targets depressive symptomatology rather than depression. Prevention programs may not include the specific intervention requirements needed for treating clinical depression. Also one time screening may be indicative of how a child felt on a particular day rather than being a true indication of their persistent depressive symptoms. Furthermore depressive symptomatology differs from clinically diagnosed depression in terms of severity and complexity and it cannot therefore be assumed that treatments found to be effective in treating children with depressive symptomatology will be effective in treating those with clinical depression and vice versa. In addition, depressive symptoms are not only indicative of potential depression but may also be present in a variety of other conditions such as grief and anxiety (Clarizio, 1994).

Targeted Prevention

Much of the research aimed at the prevention of depression involves targeted prevention programs (Spence et al., 2003). These tend to target children or adolescents exposed to one or more of the risk factors associated with developing depression. Children or adolescents with elevated depressive symptoms are most commonly targeted (e.g., Clarke et al., 1995; Hannan et al., 2000; Gillham, Reivich, Jaycox, & Seligman, 1995; Jaycox et al., 1994; Roberts et al., 2003; Yu & Seligman, 2002). However children of divorced parents (Zubernis et al., 1999), children of parents with depression (Beardslee et al., 1997; Clarke et al., 2001) and various ethnic groups (Cardemil, Reivich, & Seligman, 2002; Yu & Seligman, 2002) have also been the focus for targeted prevention. Family oriented prevention programs with children of parents with depression have also been conducted (Beardslee et al., 1997). Initially prevention programs targeted adolescents and in more recent times

these have been adapted and applied to younger children (e.g., Clarke et al., 1995).

Penn Program.

One of the most researched targeted prevention program that exists is the

Penn Prevention Program. The program, aimed at 10 to 13 year old children, was

developed at the University of Pennsylvania by Seligman and colleagues and focuses

on increasing a child's resiliency in terms of cognitive style and problem solving in

the face of negative events (Jaycox et al., 1994). It was viewed as a proactive way to

teach children coping and cognitive-behavioural strategies that would assist them to

deal with negative life events and prevent future depressive symptoms in children at

risk (Jaycox et al., 1994). The program included a cognitive and social problem-

solving component (Jaycox et al., 1994). The cognitive component focused on

linking thoughts to feelings, evaluating thoughts, providing alternatives as to why

certain events occurred and developing a more optimistic and accurate explanatory

style. The social problem solving component focused on teaching children skills

such as perspective taking, assertiveness and decision making (Jaycox et al., 1994).

Children were also taught how to decatastrophise, relax, distract themselves in

stressful situations and seek social support (Jaycox et al., 1994). The program was

delivered in a group format over 12 sessions with each session targeting a specific

skill. Research on the Penn Program has shown that it can prevent and decrease

depressive symptoms in children when compared to a control group who did not

participate in the program (Jaycox et al., 1994). It significantly reduced depressive

symptoms immediately following the program and these effects were maintained at

the six monthly follow-up periods over two years after completion of the program

(Gillham et al., 1995; Jaycox et al., 1994). In addition the program was found to

decrease the amount of children who developed clinically significant depressive

symptoms as measured by the CDI (i.e., CDI greater than 15) (Jaycox et al., 1994). Children's explanatory style was also found to significantly improve and become more optimistic at the 12, 18 and 24 month follow-up assessments (Gillham et al., 1995).

The positive results demonstrated by the original Penn Program has lead to its modification so to make it more applicable to other populations such as lower income minority children, various ethnic backgrounds and children who have experienced the divorce of their parents (Cardemil et al., 2002; Yu & Seligman, 2002; Zubernis et al., 1999). Researchers have also shortened the program or had teachers, rather than Psychologists, administer it (Hannan et al., 2000; Yu & Seligman, 2002).

Coping with Stress Course.

Clarke and colleagues (Clarke et al., 1995; Clarke et al., 2001) implemented the Coping with Stress Course in their prevention research. This program was based on a cognitive-behavioural group program which was shown to be effective in treating depressed adolescents (Lewinsohn et al., 1990). The prevention program consisted of 15 sessions aimed at teaching adolescents problem-solving skills and cognitive restructuring techniques which focused on modifying irrational and negative thoughts (Clarke et al., 1995; Gillham et al., 2000). The rationale for developing the prevention program from the treatment program was based on the belief that by teaching adolescents new coping strategies it would provide them with a buffer against the development of depression in the future (Clarke et al., 1995). Short-term and long-term follow-up assessments conducted showed that the program was effective in decreasing depressive symptoms in the group of adolescents who participated in the program (Clarke et al., 1995).

Immediate effects of targeted prevention programs

In many of the prevention program studies, the effectiveness of the program is measured in terms of the program's ability to provide immediate relief from existing depressive symptoms. Research has shown that children and adolescents who participated in the prevention programs reported significantly less depressive symptoms immediately following the intervention when compared to a control group, however, results are contradictory (Cardemil, Reivich, & Seligman, 2002; Hannan et al., 2000; Jaycox et al., 1994; Yu & Seligman, 2002; Zubernis et al., 1999).

Cardemil et al. (2002) in their study with Latino and African-American children ($N = 168$) found that their modified Penn program significantly reduced reported depressive symptoms in their Latino cohort at post-intervention. However, these findings were not supported in that section of the study utilising African-American children. Although this group showed a trend towards fewer depressive symptoms it was not significantly different from the control group at post-intervention (Cardemil et al., 2002). Research with Chinese children ($N = 220$) by Yu and Seligman (2002) provided more support for the effectiveness of the Penn Program in different cultural contexts. Specifically, following participation in 10 intervention sessions delivered by teachers at the school, Chinese children with elevated depressive symptoms (CDI $\geq$ 15) at pre-test reported significantly less depressive symptoms at post-test compared to the control group. An Australian study with a shortened Penn program of eight sessions has also demonstrated the program to be effective in decreasing depressive symptoms (Hannan et al., 2000). The program targeted Australian children ($N = 20$) with a low level of depressive symptoms (mean CDI = 8.9 at pre-test) (Hannan et al., 2000). The study found that

there was a significant decrease in depressive symptoms in those children that participated in the prevention program compared to the control group immediately following the program (Hannan et al., 2000). In contrast an Australian study that administered an Australian adaptation of the Penn Program to a group of rural children ($N = 189$) with elevated depressive symptoms (mean CDI = 11.89) did not find a significant reduction in depressive symptoms in children who participated in the intervention (Roberts et al., 2003).

The Clarke studies which administered the Coping with Stress course also found that this prevention program had immediate effects on decreasing depressive symptoms in adolescents who had elevated depressive symptoms or parents with a depressive disorder. These studies found that adolescents with elevated depressive symptoms reported a decrease in depressive symptomatology although this was not significantly different from the control group (Clarke et al., 1995). When this same program was applied to a group of adolescents who had parents with affective disorders the short-term results were more promising (Clarke et al., 2001). The researchers found that adolescents in the treatment group were more likely to report lower levels of elevated depressive symptoms immediately following the program (Clarke et al., 2001).

Studies utilising other prevention programs have also demonstrated contradictory results. Reynolds and Coats (1986) randomly allocated adolescents ($N = 30$) with depressive symptoms to either a cognitive- behavioural therapy, relaxation or control group. The cognitive-behavioural therapy consisted of self-control skills such as self-monitoring, self-evaluation and self-reinforcement whereas the relaxation group focused simply on teaching relaxation. Although both treatment groups reported significant decreases in depressive symptoms the relaxation group

showed the greatest decrease in depressive symptoms immediately following the 10 session interventions.

Stark, Reynolds and Kaslow (1987) compared self-control, behavioural problem-solving therapy and a control group in regards to their effectiveness in decreasing depressive symptoms. Children aged nine to twelve years old ($N = 29$) with high levels of depressive symptoms (CDI $\geq$ 13) were randomly assigned to one of the three groups. The self-control therapy group consisted of combined cognitive and behavioural techniques used to teach children self-monitoring, self-evaluating and attributional styles. The behavioural problem-solving therapy used self-monitoring, pleasant event scheduling and problem–solving. At post-intervention children in both intervention groups demonstrated decreases in depressive symptoms as measured by the CDI and Children's Depressive Rating Scale – Revised (Poznanski et al., 1984) compared to the control group. However, neither intervention was found to be superior over the other.

In an Australian study, Liddle and Spence (1990) randomly assigned children ($N = 31$) with elevated depressive symptoms (CDI$\geq$19) to either a social competence training, attention placebo or control group. The social competence training group included social skills training, cognitive restructuring and interpersonal problem-solving. The attention placebo control involved the children participating in drama classes. The study did not demonstrate the social competence training group to be superior to the other conditions even though children in the intervention group reported decreased depressive symptoms at post-intervention.

In contrast a study by Weisz, Thurber, Sweeney, Proffitt and LeGagnoux (1997) found that children in the intervention group reported significantly less depressive symptoms at post-intervention compared to the control group. In their

study, Weisz et al. (1997) randomly assigned children ($N = 48$) with high depressive symptoms (CDI $\geq$ 18) to either the control group or the intervention group which focused on teaching children skills such as coping methods, pleasant activities scheduling, goal setting, thought modification and relaxation.

Although results from studies examining the effectiveness of prevention programs are contradictory, it has generally been found that prevention programs yielded positive results with respect to decreasing depressive symptoms immediately following an intervention. The longer term benefits of such programs will become evident when examining whether children implement the strategies learnt to deal with future stressors.

Longitudinal impact of targeted prevention programs

Much of the research on targeted prevention programs has also included long-term follow-up thereby allowing for the examination of how effective such programs are at maintaining their immediate reduction in depressive symptomatology and preventing increases in depressive symptomatology. Maintenance of initial gains is seen as indicative of enduring effects of a prevention program. Overall there is evidence that many of the prevention programs are effective in providing enduring relief from depressive symptoms in both children and adolescents (Gillham et al., 1995; Jaycox et al., 1994)

Jaycox, Reivich, and Seligman (1994) found that at the six month follow-up children who participated in the Penn prevention program continued to report less depressive symptomatology than the control group. The authors continued to conduct six monthly follow-ups over two years. It was found that, overall, those children in the prevention group reported less depressive symptomatology at each follow-up period (Gillham et al., 1995). In their final follow-up measure, the authors

found that prevention effects were diminished after 2 years (Gillham & Reivich, 1999). It was demonstrated that depressive symptomatology increased in both groups of children as they became older and moved into adolescence (Gillham et al., 1995). Depressive symptomatology in children assigned to the prevention group tended to remain relatively stable whereas those children in the control group continued to report increases in depressive symptomatology across each follow-up period. Currently the results show that the program is effective in preventing elevations in depressive symptomatology in the short-term but may require booster sessions to maintain its effectiveness in the long term (Gillham & Reivich, 1999). Given that the intervention was relatively short and not followed by additional sessions children may have forgotten the strategies learnt in the earlier intervention sessions (Gillham & Reivich, 1999).

Significant decreases in depressive symptomatology were also reported in other studies that utilised the Penn program. At the six month follow-up in both the Hannan et al. (2000) study and Yu and Seligman (2002) study those children who participated in the prevention program reported significantly less depressive symptomatology than the control group at the follow-up period. Latino children who participated in the prevention group in the Cardemil et al. (2002) study also reported significantly less depressive symptomatology at the six month follow-up. In contrast the African-American group showed a trend towards fewer depressive symptoms, however, it was not significantly different from the control group (Cardemil et al., 2002). The authors provided a number of suggestions as to why this may have occurred; including that the two groups responded to different aspects of the program, depressive symptoms may have been expressed differently in the two populations or the results were an example of regression to the mean (Cardemil et

al., 2002). Future research addressing various cultural issues will assist in clarifying why these differences occurred.

Reynolds and Coats (1986) found treatment effects were maintained at a five week follow-up, where the cognitive-behavioural therapy group continued to show a further decrease in symptoms. However, this was not significantly different from the relaxation groups' level of depressive symptomatology. Weisz et al. (1997) found that children in the intervention group had significantly less depressive symptomatology following treatment and that this effect was maintained at the nine month follow-up. An eight week follow-up by Stark and colleagues (1987) found that treatment effects were also maintained with the self-control group showing a greater decrease in depressive symptoms.

In contrast to these studies which have reported a beneficial effect a study by Zubernis, Cassidy, Gillham, Reivich and Jaycox (1999) failed to demonstrate the maintenance of gains. Zubernis et al. (1999) found that the effects of the prevention program were not enduring for children of divorce. These children's depressive symptoms did not decrease as much over time and they reported four times more moderate to severe depressive symptoms at the 24 month follow-up (Zubernis et al., 1999). However, it should be noted that the children in this study commenced the program with more elevated levels of depressive symptomatology and there was a high attrition rate at the follow-up. Given that the children encountered many familial risk factors (e.g., continued familial conflicts) known to be associated with depression it is possible that the influence of the family environment may be too overpowering for the buffering effect produced by the program in the long term, particularly if parental support of the skills learnt is lacking (Zubernis et al., 1999). In addition to this study, Roberts et al. (2003) did not find a significant difference in

depressive symptomatology in the intervention group compared to the control group at the six month follow-up.

The Clarke studies have also demonstrated that decreases in depressive symptomatology are maintained in those adolescents who participated in the prevention program. Adolescents with elevated depressive symptomatology reported a decrease in symptoms across a 12 month period although, this was not significantly different from the control group (Clarke et al., 1995). Adolescents of parents with affective disorders who also participated in this prevention program reported less depressive symptoms after a 12 month follow-up compared to the control group (Clarke et al., 2001). However, these effects were not maintained at the longer follow-up periods of 18 and 24 months (Clarke et al., 2001).

Results of longer term follow-up periods indicate that effects of the prevention program are maintained for a short while, up to two years in some cases, however, they diminish after an extended period (Clarke et al., 1995; Gillham & Reivich, 1999). A number of researchers have suggested that periodic booster sessions, particularly during stressful events such as school transitions, may be necessary in the long term to maintain the positive gain effects (Clarke et al., 2001; Gillham & Reivich, 1999).

Low versus high depressive symptoms.

In order to determine how effective prevention programs were at preventing the development of depression many prevention studies divided their sample into two groups, according to the severity of their depressive symptoms (Cardemil et al., 2002; Jaycox et al., 1994). Specifically two methods of dividing research samples into those with high or low levels of depressive symptomatology have been used. Jaycox et al. (1994), Roberts, Kane, Thomson, Bishop and Hart (2003) and Spence

et al. (2003) have divided the sample according to a set criteria based on the CDI such as those above a CDI score of 15 and those below this score. Cardemil et al. (2002) and Gillham et al. (1995) divided their sample into high on depressive symptomatology if they scored above the median score for the group and those who scored below the median were assigned to the low depressive symptomatology group. In examining the elevation of symptoms across a time period the researchers could determine whether their program was effective in preventing depression. Those children with low levels of depressive symptomatology that did not go on to report an increase in symptoms and those children with elevated levels of depressive symptomatology that reported a decrease in symptoms or continued not to met the criteria for a depressive disorder were considered to provide evidence that the program was effective in preventing depression (Cardemil et al., 2002).

Jaycox et al. (1994) found that those children with higher levels of depressive symptomatology (CDI>15) benefited more from the program than those with lower levels. Those classified as belonging to the "higher symptoms" group showed a greater decrease in symptoms compared to those in the "lower depressive symptoms" group and control group. Jaycox et al. (1994) suggested that treatment gains in the "higher symptoms" group may have been the result of a motivation in this group to change. These children had the opportunity to practise techniques and experience the benefits of the strategies taught (Jaycox et al., 1994). However, the study did find that children with initially low levels of depressive symptomatology continued to report low levels of depressive symptomatology in the follow-up assessments following the completion of the program (Gillham et al., 1995; Jaycox et al., 1994). Also those children with high levels of depressive symptomatology continued to report lower levels of depressive symptomatology and fell within the

low to moderate symptom range, compared to the control group who obtained scores in the severe symptom range (Gillham et al., 1995; Jaycox et al., 1994).

Roberts et al. (2003) found that the "high depressive symptoms" group who received the program did not show a significant difference in their reported levels of depressive symptomatology compared to the control group. However, the "low depressive symptoms" group did show a significant difference in their reported levels of depressive symptomatology compared to the control group immediately following the intervention.

Studies with culturally diverse populations have also found the programs to have a preventative effect. Cardemil et al. (2002) study found that there was a trend towards prevention of depressive symptoms in Latino children who had initially reported low levels of depressive symptoms across follow-up periods. In addition those children with elevated depressive symptoms reported significantly less symptoms following the program, indicating an enduring relief (Cardemil et al., 2002). Yu and Seligman (2002) study with Chinese children also supported the contention that the program provided relief from symptoms in those children who initially reported elevated levels of depressive symptomatology and prevented depressive symptoms in those children who reported lower levels of depressive symptoms at a baseline measure.

Limitations of targeted prevention research.

Although studies examining the effects of targeted prevention programs have yielded quite positive results there are a number of limitations in these studies. Specifically, many did not include an alternative intervention control group (e.g., Hannan et al., 2000; Jaycox et al., 1994) to compare the effectiveness of cognitive-behavioural prevention programs against, while others had small sample sizes (e.g.,

Hannan et al., 2000) or high attrition rates (e.g., Gillham et al., 1995). In addition

certain program adaptations did not produce positive findings as demonstrated in the

Cardemil et al. (2002) study. Much of the research that exists is aimed at older

children or adolescents (Clarke et al., 1995; Clarke et al., 2001; Jaycox et al., 1994)

and targets specific risk factors making it difficult to apply these programs to

different populations. Often these programs rely on self-report measures or measure

limited variables such as anxiety or depressive symptoms (Gillham et al., 2000).

However, continued research and identification of strategies that enhance

maintenance of skills will provide further support for the effectiveness and

importance of targeted prevention programs.

Universal Prevention

In light of the positive results targeted programs have yielded with respect to

preventing the development of depressive symptomatology in children with initially

low levels of symptomatology (e.g., Cardemil et al., 2002; Gillham et al., 1995;

Jaycox et al., 1994) it may be beneficial to implement such programs at a universal

level. Interestingly, most of the universal programs that have been published are

Australian and often based on targeted prevention programs that have been

developed by researchers in the United States of America (e.g., Penn Prevention

Program; Coping with Stress Course).

Adolescent research on universal prevention programs.

As with treatment and targeted prevention programs, universal programs for

children have evolved from programs aimed at adolescents, such as the program

developed by Rice, Herman and Petersen (1993). This earlier work on the

application of universal programs with adolescents appeared promising. Rice et al.

(1993) developed a program for adolescents aimed at preventing the development of

depression. It was based partly on the programs used by Clarke et al. (1995) and also included a social problem-solving component. It targeted adolescents in year seven and consisted of 16 sessions aimed at teaching the adolescents adaptive responses to stressors (Rice et al., 1993). The study found that there was a significant increase in reported coping abilities in response to negative events thereby lending support to the notion that universal prevention programs can be effective. No follow-up data was obtained and as a consequence it is difficult to say whether program gains were maintained. Following on from this early study, other studies have emerged which focus on the universal delivery of programs to prevent depressive symptomatology.

More recently Australian researchers Shochet and colleagues (2001) have evaluated the effectiveness of a universal program aimed at preventing depression in adolescents. The program, loosely based on that developed by Clarke et al. (1995), is known as the Resourceful Adolescent Program (RAP) and was administered to a group of adolescents (N= 260) in year nine. It consisted of 11 sessions and incorporated cognitive-behavioural strategies as well as targeting interpersonal and familial risk factors (Shochet et al., 2001). A parent component concentrating on family conflict and protective factors associated with a supportive family was also included (Shochet et al., 2001). Adolescents participated in either the RAP-A program which targeted adolescents only, or in the RAP-F program which targeted adolescents and their family. A control group was also included. The study found that both RAP-A and RAP-F conditions were effective in reducing reported depressive symptoms in adolescents compared to the adolescents assigned to the control group. The two prevention groups did not differ from each other in terms of effectiveness and results were maintained at the 10 month follow-up. Furthermore

participation in the RAP program was associated with less adolescents falling into the clinical range (i.e., CDI>20) compared to those adolescents in the control group.

Immediate effects of universal programs for children.

More recently research examining the effectiveness of universal prevention programs for children has emerged. This research has produced mixed results in relation to the immediate effects of a prevention program. However, there appears to be evidence that participation in programs assists children with their well-being.

Spence et al. (2003) evaluated the effectiveness of a teacher implemented, school-based prevention program in a group of pre-adolescent children in Australia ($N = 1500$). The program, Problem Solving for Life, ran for eight weeks and included techniques aimed at teaching problem-solving and optimistic-thinking through cognitive restructuring and problem-solving. Participants were divided into a "low risk" and "high risk" group based on their scored obtained from the Beck Depression Inventory (BDI; Beck & Steer, 1993). A score equal to or greater than 13 resulted in the adolescent being classified as "high risk," and they were compared to a monitored control group. Those children in both the "high-risk" and "low risk" intervention groups reported significant reductions in depressive symptoms compared to the control group immediately following the intervention, lending support that this program provided relief from elevated depressive symptoms.

Two further studies have administered the Penn program in a universal format to Australian populations with mixed results. Pattison and Lynd-Stevenson (2001) utilised the Jaycox et al. (1994) program with a group of Australian children aged nine to 12 years old ($N=66$). Children were placed in either the normal Penn Program group, a variation of the program (with the social component administered first rather than the cognitive component) or the attention control group. The study

found that participation did not significantly reduce depressive symptomatology in the treatment group.

Another Australian study has implemented an Australian adaptation of the Penn Program to prevent depressive symptoms in children aged 10 to 13 years old (Quayle et al., 2001). Quayle and colleagues (2001) administered an eight session shortened version of the original program which continued to focus on cognitive restructuring and social problem-solving. The program was administered to a group of year seven girls (N= 47). Compared to the control group, girls in the intervention group did not report significantly less depressive symptoms immediately following the program (Quayle, et al., 2001).

An additional universal program available in Australia is the FRIENDS program (Barrett, Lowry-Webster, & Holmes, 1997). This is an anxiety prevention program which uses cognitive-behavioural techniques to teach children how to better cope with their anxiety. It is used to build resilience, coping skills and problem-solving and is based on the work of Kendall (Lowry-Webster, Barrett, & Dadds, 2001). In studies that utilise the FRIENDS package depression and anxiety are typically both addressed due to the high comorbidity that exists between the two disorders. Lowry-Webster et al. (2001) study incorporated 594 children aged 10 to 13 years. Pre and post-intervention analyses were conducted on the whole sample as well as separate analyses for those children with high levels of anxiety, as measured by the RCMAS (Reynolds & Richmond, 2000). The study found that although the program was effective in reducing anxiety it had little effect on decreasing levels of depressive symptomatology. However, those children in the "high anxiety" group showed a significant decrease in depressive symptoms. The result may be due to the fact that the measurement devices used to assess outcome, that is the CDI and

RCMAS, shared similar items (e.g., sleeping pattern). Consequently, when children's symptoms improve, reductions in scores for both instruments is expected. Also the control group showed a decrease in their symptoms indicating that some of these results may be attributable to regression to the mean. No long-term follow-up was conducted, however, the authors were in the process of conducting such evaluations.

Immediate effects of universal prevention programs are promising, however, types of intervention for this condition that specifically address depressive symptomatology appear to be most effective. Generic programs or programs that address other disorders (e.g., anxiety) do not appear to have the same effects as those that specifically target depression even though components of these interventions are similar. It can be speculated that it is the particular skills and situations (e.g., negative life events rather than stressful situations) addressed in certain programs that lead to significant changes in reported depressive symptoms.

Long-term prevention effects.

Long-term effects examining the preventative value of programs have been conducted in most of the universal prevention studies mentioned above. Once again these results are varied. Spence et al. (2003) conducted a 12 month follow-up of children in their study. The study did not find long-term benefits at the 12 month follow-up indicating that the program did not have enduring effects in preventing depression in either the high or low risk group.

Likewise Pattison and Lynd-Stevenson's (2001) study did not support the hypothesis that the program will prevent the development of future depressive symptoms at the eight month follow-up. This finding was contrary to the results obtained by Jaycox et al (1994) and Gillham et al. (1995) on American children who

incidentally had higher scores on a measure of depressive symptomatology (CDI) than the children in the Pattison and Lynd-Stevenson (2001) study. The observed differences in the scores on the CDI potentially impacted on the results of these studies. Low scores as obtained by Pattison and Lynd-Stevenson (2001) may have established a floor effect and changes in scores would not be expected. However, lengthier follow-up periods which spanned into adolescence may have demonstrated the preventative effects of the program (Pattison & Lynd-Stevenson, 2001). In contrast Quayle et al. (2001) did demonstrate a significant decrease in depressive symptomatology in girls from the intervention group at the six month follow-up indicating that the program provided short-term relief and prevented the development of future elevations in depressive symptomatology.

Overall, it appears that the initial effects of universal prevention programs tend to fade after a short period of time. A number of suggestions have been put forward in order to explain why this may be the case. Specifically it has been suggested that this type of prevention may need to include more sessions, comparable to the targeted prevention programs or that these types of programs need to be implemented with adolescents to be seen to be more effective (Pattison & Lynd-Stevenson, 2001; Spence et al., 2003). Although results from the universal prevention programs are not as encouraging as targeted prevention programs, children who participated now possess foundation skills which may be useful in addressing depressive symptomatology. Whether they put them into practise when faced with increased risk factors, particularly during adolescence, will determine whether such programs are useful in promoting well-being in the future.

The current results from the research are encouraging given that many of these studies have only emerged in the last few years. Future research addressing

limitations in current research protocols is needed to clarify the effectiveness of universal prevention programs.

Current Study

Universal prevention programs have the potential to be effective in reducing depressive symptomatology in children. These programs are beneficial as they have the potential to reach a wide variety of children as they can be administered to all children regardless of their level of depressive symptoms or exposure to various risk factors for depression. They are also a cost effective means to address the growing rate of depression in our children. By pro-actively targeting children and teaching them skills and strategies to improve their emotional well-being it is expected that there will be a decrease in the incidence of depression in later years.

Current research on universal programs has demonstrated that they have the potential to decrease depressive symptoms in the short term for adolescents (Shochet et al., 2001; Spence et al., 2003). In addition both adolescents with elevated and low levels of depressive symptoms benefit from such programs in the short-term (Quayle et al., 2001; Spence et al., 2003).

Research into universal prevention programs is new and there are many aspects that need to be investigated further. In particular there is a distinct need to investigate the usefulness of such programs particularly in an Australian context and with younger children. At present the effectiveness of universal prevention program for younger children is yet to be demonstrated as studies examining this age group have failed to report significant decreases in depressive symptoms (Lowry-Webster et al., 2001; Pattison & Lynd-Stevenson, 2001). In addition many of the universal intervention programs available have not been subjected to extensive evaluations in terms of their effectiveness over a long period of time.

The current study aims to address these gaps by applying a universal prevention program to younger children and evaluating its effectiveness in reducing depressive symptomatology in a group of children aged 8 to 11 years old. It is felt that by introducing and teaching younger children strategies to deal with negative life events and cognitions it will provide a buffer for them when faced with future stressors. Also by introducing these skills at an earlier stage the children will have the opportunity to practise and master these strategies prior to negative events occurring which may require them to utilise these strategies. In addition research has indicated that those children who are non-symptomatic also benefit from a prevention program (e.g., Jaycox et al., 1994; Yu & Seligman, 2002) therefore including all children, regardless of their current level of depressive symptomatology, will be beneficial to all. Not only will low symptomatic children learn new skills but they will also act as role models for appropriate coping and decrease the stigmatising nature of being involved in such a group.

The universal prevention program to be used in the current study is the Australian Modified Cognitive-Behaviour Therapy for 8 to 9 year olds (Positive Thinking Program). It was developed by Curtin University and Edith Cowan University (2001) in Perth, Western Australia and is a downward extension of the Program developed by Roberts and colleagues for children aged 12 years old (Quayle et al., 2001; Roberts et al., 2003). It has been based on the Penn Prevention Program developed by Jaycox et al. (1994) and consists of eight sessions which aim to teach children cognitive and social problem-solving strategies to help them deal with daily stressors.

Several research hypotheses will be tested. Firstly, given that this is a universal program it was hypothesised that those children who participate in the

prevention group will report lower levels of depressive symptomatology than those in the control group at post-intervention and, secondly, these effects will be maintained at the six month follow-up. In addition it was also hypothesised that those children with low or non-existent depressive symptoms who were exposed to the program will continue to display low levels of depressive symptomatology. Furthermore those children in the intervention group with high levels of depressive symptomatology will report a reduction in depressive symptoms compared to those in the control group immediately following the program and at follow-up indicating that the program has a preventative effect on the development of depressive symptoms. Due to the high co-morbidity between anxiety and explanatory style these factors will also be examined. It was hypothesised that the prevention group will report lower levels of anxiety than those in the control group at post-intervention and these effects will be maintained at the six month follow-up. Furthermore, it was hypothesised that the prevention group's explanatory style will become more optimistic than the control group's at post-intervention and these effects will also be maintained at the six month follow-up.

Chapter 3

Method

Study Design

The study incorporated a 3 x 2 repeated measures design to examine the effectiveness of a cognitive-behavioural program to reduce depressive symptomatology with time at three levels (pre-intervention, post-intervention and follow-up) and two study groups (experimental and control). In addition to time and experimental group the participants were divided into those who scored high and low on measures of depressive symptomatology consistent with the procedures of Cardemil et al. (2002) and Gillham et al. (1995). A 3 x 2 x 2 repeated measures design was used to determine the effectiveness of the program for high and low scorers. This involved time at three levels (pre-intervention, post-intervention and follow-up), the initial CDI score (high and low scorers based on the median of the CDI score) and group (experimental and control). The study consisted of an initial screening phase where children were screened on the Children's Depression Inventory (CDI; Kovacs, 1992) to elicit a baseline measure of their depressive symptoms. This was also used to determine high and low scorers on the CDI (based on the $Mdn = 9$) consistent with past studies (Cardemil et al., 2002; Gillham et al., 1995). Children also completed the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds, & Richmond, 2000) and Children's Attributional Style Questionnaire (CASQ; Seligman et al., 1984). Scores on these two questionnaires were not used for group allocation.

Following completion of the CDI, the CDI was scored and children were matched according to school and grade. It was attempted to match children according to their CDI score. Matching according to exact CDI scores was not

always possible and in these circumstances matching according to the closest CDI score was attempted. Extreme scores on the CDI, as determined by clinical cut off score outlined by Kovacs (1992) were the most problematic to match due to the small numbers of children ($n = 14$)with extreme scores (CDI ≥ 19) and the variability between the scores. In this case children with extreme scores were matched to another child with an extreme score. Children in each matched pair were allocated to either the intervention or wait-list control group ensuring that the baseline CDI mean of each group was equal.

The eight week program was administered to the intervention group. Following this the children again completed the CDI, RCMAS and CASQ to determine the short-term effectiveness of the program. A six month follow-up was also conducted to determine the longer term effectiveness of the program. At the follow-up the children completed the same battery of questionnaires.

Participants

All children (n= 360) in year 4 and year 5 (age range 8 to 11 years) at two southern metropolitan government schools in Perth, Western Australia were invited to participate in the study. From this initial group, a total of 100 children from the two schools participated in the study. Children and their parents volunteered to participate in the study. Demographic details of the children involved in the study can be found in table 1.

Table 1

Demographic Details of the Initial Study Sample at Pre-Intervention (N=100)

	Experimental		Control		Total
Group	Males	Females	Males	Females	
School 1[a]					
Year 4	5	7	6	7	25
Year 5	7	4	6	6	23
Total	12	11	12	13	48
School 2[b]					
Year 4	3	7	3	5	18
Year 5	10	7	10	7	34
Total	13	14	13	12	52
Total	25	25	25	25	100
Mean age	9.72	9.48	9.68	9.52	9.6
SD age	.46	.51	.61	.59	.55

Note. [a]School 1 received the program October through to December 2001 with the six month follow-up in June 2002. [b]School 2 received the program August through to November 2002 with the six month follow-up in May 2003.

As the program utilised a pre-intervention, post-intervention and follow-up research methodology a portion of children were lost to the study. The attrition rate included six children from the experimental group and three from the control group, as outlined in figure 1. A total of 91 children completed the entire research protocol and these children were used for analysis. Demographic details of the 91 children used for the analysis can be found in table 2.

Pre-intervention measure
All children (*N* = 100) complete CDI, RCMAS & CASQ.
Matched on grade and school and divided into experimental and control group.

Experimental group	Control group
n = 50	n = 50

Intervention for eight weeks

Post-intervention measure	Post-intervention measure
Children complete CDI, RCMAS & CASQ	Children complete CDI, RCMAS & CASQ
n = 46	n = 49

Six Month Follow-Up Measure	Six Month Follow-Up Measure
Children complete CDI, RCMAS & CASQ	Children complete CDI, RCMAS & CASQ
n = 44	n = 47

	Intervention

Figure 1. Summary of the Current Study's Procedure

Table 2

Pre-intervention Demographic Details of the Children With Full Data Sets Who Were Included in the Analysis (N=91)

Group	Experimental		Control		Total
	Males	Females	Males	Females	
School 1[a]					
Year 4	5	6	6	7	24
Year 5	7	3	6	6	22
Total	12	9	12	13	45
School 2[b]					
Year 4	2	6	3	5	16
Year 5	10	5	9	5	29
Total	12	11	12	10	45
Total	24	20	24	23	91
Mean Age	9.75	9.40	9.67	9.48	9.58
SD age	.44	.50	.64	.59	.56

Note. [a]School 1 received the program October through to December 2001 with the six month follow-up in June 2002. [b]School 2 received the program August through to November 2002 with the six month follow-up in May 2003.

Materials

The following instruments were used in the study:

The Children's Depression Inventory.

The Children's Depression Inventory (CDI; Kovacs, 1992) is a modified version of the Beck Depression Inventory. The CDI is a 27 item self report measure

of depressive symptomatology in children aged 7 to 17 years old. Items are answered in relation to behaviours experienced during the previous two weeks. For each item children were asked to choose one statement out of three that best describes how they felt over the past two weeks. Items are scored on a 0 to 2 point-scale and then all items are summed to produce a total score. A maximum score of 54 can be obtained. For the purpose of this study the item pertaining to suicidal ideation was removed making a maximum score of 52 possible. Higher scores indicate the presence of more depressive symptomatology. The CDI assesses symptoms such as low mood, somatic symptoms, behavioural problems, low self-worth and anhedonia. A CDI score lower than 9 indicates mild depressive symptomatology, a CDI score ranging from 10 to 18 indicates moderate depressive symptomatology and a CDI score equal to and higher than 19 indicates severe (high) depressive symptomatology. A score of 19 has been recommended as the cut-off score for those children who are at risk of clinically diagnosed depression (Kovacs, 1992). This score has also been recommended as the clinical cut off score for Australian children (Knight, Hensley, & Waters, 1988).

The inventory has an internal consistency ranging from 0.87 to 0.71 (Kovacs, 1992). Test - retest yielded correlation coefficients range from 0.72 to 0.84 (Kovacs, 1992). The CDI has been standardised for children of 7 to 17 years of age. In the standardisation study Kovacs (1992) obtained a group mean of 9.81 for the entire sample. Means have also been calculated for reported depressive symptoms across genders. The mean CDI total score for females was 9.00 and for males the mean was 10.76 (Kovacs, 1992).

An Australian study utilising the CDI reported means and standard deviations higher than those quoted for the US sample (Spence & Milne, 1987). Spence and

Milne (1987) administered the CDI to 386 Australian children aged 7 to 12 years old. The mean CDI score for year 4 school-aged children was found to be 14.13 with the standard deviation being 8.72. For year 5 children the mean CDI score was 10.11 with the standard deviation being 6.78. No gender differences were found.

Children's Attributional Style Questionnaire.

Children's Attributional Style Questionnaire (CASQ; Seligman et al., 1984) is a 48 item forced choice questionnaire which assesses children's explanatory style. Forty eight hypothetical situations are presented with two possible explanations for why they occurred. Children are instructed to imagine that the situation happened to them and then choose one of the two explanations that best describes why the situation happened. Sixteen questions target each of the three attribution dimensions of globality, stability and internality with eight statements describing positive events and eight statements describing negative events. The questions measure whether a child's attributions about positive and negative events are stable or unstable, global or specific and internal or external.

Scores can be calculated for individual scales related to negative events (e.g., permanent, pervasive and personal bad events) and positive events (e.g., permanent, pervasive and personal good events). These scores range from 0 to 8. Composite explanatory scores for positive (CP) and negative (CN) events can also be calculated. These scores are calculated by adding the child's scores on each of the three subscales for positive or negative events. Scores for these range from 0 to 24. Higher scores in the CN score indicates that a child internalises bad things that happen, views negative events as stable over time and global (generalises). Lower scores on the CN score indicates a child who externalises negative events, views negative events as transient over time and specific to certain situations rather than

always occurring. Higher scores on the CP score indicates that a child internalises good things that happen and views good events as global (generalises) and stable over time. Lower scores on the CP score indicates a child who externalises good events, views good events as transient over time and specific to certain situations rather than always occurring. The total optimism score is calculated by subtracting the CN score from the CP score. This score ranges from –24 to 24. Higher scores indicate a more optimistic explanatory style and lower scores indicate a more pessimistic explanatory style. Nolen-Hoeksema, Girgus and Seligman (1992) report internal consistency for CP scores as ranging from 0.47 to 0.64 and for CN scores 0.42 to 0.61. No other normative data currently exists for this scale.

Revised Children's Manifest Anxiety Scale.

The Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds, & Richmond, 2000) is a self-report questionnaire designed to measure anxiety in children aged 6 to 19 years. The RCMAS contains 37 items. The scale includes 28 anxiety items and 9 lie items. Children are required to answer yes or no to each item. The total anxiety score is calculated by adding responses to each of the items. Scores can range from 0 to 28 with higher scores indicating greater anxiety. A score greater than 13 indicates a high level of anxiety.

The RCMAS yields three anxiety subscales: worry and oversensitivity, physiological anxiety, and social concerns/concentration. To calculate subscales or total scales the number of yes responses relating to a subscale are summed. Kuder-Richardson 20 estimates for the questionnaire ranged from 0.83 to 0.85 (Reynolds, & Richmond, 1978). In the standardisation study a total group mean and standard deviation for the anxiety items were calculated ($M = 13.84$, $SD = 5.79$). Means and standard deviations were also calculated for anxiety items across genders (girls $M =$

14.97, *SD* = 5.60; boys *M* = 12.58, *SD* = 5.75). Reynolds (1981) reported a test-retest correlation coefficient of 0.68 for the anxiety items over 9 months.

Australian Modified Cognitive Behaviour Therapy (Positive Thinking Program).

The Australian Modified Cognitive Behaviour Therapy for 8 to 9 year olds (Positive Thinking Program) was developed by Dr Rosanna Rooney at Curtin University and Dr Lisbeth Pike at Edith Cowan University in Perth, Western Australia (2001). It is a downward extension of the Australian modification of the Penn Prevention Program (Jaycox et al., 1994) developed by Dr Clare Roberts and colleagues at Curtin University (Quayle et al., 2001; Roberts et al., 2003). The Positive Thinking Program consists of eight one and a half hour sessions. It contains cognitive and social problem-solving components. An outline of the session components and objectives can be found in Appendix A. There are no norms, validity or reliability data available for the Australian program, however, pilot studies are currently being conducted in Western Australia.

Procedure

The procedure for recruitment of children and administration of the program was identical for both schools. A summary of this process can be found in Figure 1.

Following approval from the Ethics Committees from Edith Cowan University and the School of Psychology, Principals from the schools were invited to participate in the study. Once consent from the Principals was obtained letters and information sheets with consent forms and return envelopes were distributed to all year four and five children at both schools (see Appendix B, C, D, E and F). These were distributed with the school's newsletter. The letter invited parents and their children to participate in the study. The information sheet assisted in determining

whether children had significant medical or mental health problems which may impact on their depressive symptoms (e.g., recent trauma, school difficulties). If this was found to be the case the child was still eligible to participate in the study. Consent forms and information sheets were requested to be returned by the parents two weeks following distribution.

All children whose parents gave consent for participation were administered the CDI, CASQ, and, RCMAS at an initial screening stage prior to intervention. These were administered one week prior to the first group session. Questionnaires were administered in a group setting to all the children from the same year group. The researcher described the purpose of the study and the questionnaire instructions were read to the group by the researcher prior to the children completing the questionnaires. Children were permitted to complete the questionnaires in any order. The researcher was present whilst the children completed the questionnaires to answer and clarify questions the children had. The majority of students completed the questionnaires in one hour.

Children's CDI scores were then calculated to determine their current level of depressive symptomatology. Principals and Deputy Principals were informed of the children with extremely high CDI scores in the control group. These children were monitored throughout the study and their parents were informed if it was felt they required a referral to a mental health professional or agency. Once the children's levels of depressive symptomatology was established children were matched according to year group and CDI score. Once matched, one child in the pair was assigned to the wait-list control group and the other to the treatment group. It was attempted to allocate equal numbers of children with high levels of depressive symptomatology and low to normal levels of depressive symptomatology to each

group. Siblings were either both allocated to the control or experimental group ensuring that both were either in the program or wait-list control group. The distribution of children included in the study can be found in table 2.

An independent samples t-test on the pre-intervention CDI scores between the treatment and control groups (N=100) on the entire group of children was not significant, $t(98) = .14, p = .89$ (two-tailed). Furthermore an independent t-test on the pre-intervention CDI scores between the treatment and control group for those 91 children with full data sets also found no significant differences between the two groups, $t(89) = 2.46, p = .74$ (two-tailed).

Once children were allocated to the treatment group they were assigned to smaller groups of approximately 11 to 14 children according to year group. There were four treatment groups across the two schools: two year 5 groups, one year 4 group and one year 4/5 group.

The children in the experimental groups participated in eight one and a half hour sessions over eight weeks. The program was run at the school during school time. The program started one week following the administration of the screening measures. Children from the first school received the program from October to December 2001 (term 4) over 8 consecutive weeks. The children from the second school received the program from August to November 2002 (term 3 and 4) over 11 weeks. School holidays and a sports carnival meant that the children in the second school did not receive the program over 8 consecutive weeks.

The researcher administered the Positive Thinking program to the four treatment groups in both schools, according to the manual's instructions. Each session ran for 90 minutes and all materials required for the groups were provided by the researcher.

Following the completion of the intervention all children in both the experimental and control groups completed the questionnaires. Post-intervention measures took place one to two weeks following session eight. The post-intervention questionnaires included the CDI, RCMAS and CASQ and identical administration procedures adhered to in the pre-intervention were utilised.

A six month follow-up was conducted with the children. The children were required to complete the same battery of questionnaires at this time. The same instructions were read out and the researcher was present during administration to answer questions. Questionnaires were scanned by the researcher after each child completed them to ensure all questions were answered.

Children found to have high depressive symptomatology at the completion of the program were discussed with the Principal to determine whether the child had previously been identified as being at risk. If necessary a referral was made to an appropriate mental health professional or agency. Following the final assessment the control group was administered the program.

Chapter 4

Results

Data Screening

For the purpose of the current study total CDI, RCMAS and CASQ scores were used in the analysis so to reduce the number of analyses. This is consistent with previous studies which have also used total scores in their analyses (Cardemil et al., 2002; Jaycox et al., 1994; Lowry-Webster et al., 2001; Quayle et al., 2001; Roberts et al., 2003; Yu & Seligman, 2002)

Prior to analysis, CDI, RCMAS and CASQ scores were examined for accuracy of data entry, missing values and assumptions of univariate and bivariate analysis using various SPSS (version 11) programs. Missing data from incomplete questionnaires was substituted with the mode response obtained by each individual case. There were no more than two items per questionnaire (i.e., CDI, RCMAS and CASQ) omitted by the nine children with incomplete data sets.

One case in the experimental group was identified as an univariate outlier due to its high z score on the pre-intervention CDI. It was decided to retain this case as extreme cases are expected to be obtained in community samples. In addition including an extreme score would be acceptable in this sample as its impact would be minimal given the sample size (Tabachnick & Fidell, 2001).

Sample and Attrition

For the purpose of this analysis the children from the two schools were combined to form one sample. This was done as the two schools were in the same geographic location, had similar socio-economic status and cultural backgrounds and, the children were in the same year group when they participated in the study. In addition pooling the schools into one sample provided a larger overall sample size

and facilitated statistical analysis.

Children in the experimental group attended at least six sessions from the program. The majority of children (86%) attended all eight sessions.

As highlighted earlier, a 9% attrition rate was observed. Due to the nature of the design and the use of the repeated measures MANOVA the nine cases with incomplete data were excluded. Only the 91 children with complete data sets were included in the analysis. Analysis of the pre-intervention CDI scores of those 91 children with full data sets indicated that there were no significant differences between the children's CDI scores in the experimental group and control, $t(89) = 2.46, p = .74$ (two-tailed). As groups were divided according to their initial CDI score and the current study was examining decreases in depressive symptoms comparisons of pre-intervention RCMAS and CASQ scores were not calculated.

Cohen's (1988) power and effect size tables were consulted to determine whether the sample size in the study provided adequate power. With power set at .8 the sample size of 91 used in this study was adequate for detecting small effects in the data (Cohen, 1988).

Group Comparisons

Descriptive statistics for the CDI, RCMAS and CASQ questionnaires completed by the children in both the experimental and control groups, across time, are shown in table 3.

Table 3 indicates that there were some variations in the mean scores for the CDI, RCMAS and CASQ. Decreases in anxiety (RCMAS) and depressive symptoms (CDI) scores were evident for all children in both the experimental and control groups across time. Increases in CASQ scores across time indicate that the experimental group had a more optimistic explanatory style for events across time.

Table 3

Means and Standard Deviations for CDI, RCMAS and CASQ for the experimental and control groups, across time

Time	Experimental[a]		Control[b]		Total[c]	
	M	*SD*	*M*	*SD*	*M*	*SD*
Pre-intervention						
CDI	10.05	8.38	10.55	6.34	10.31	7.36
RCMAS	10.05	6.25	10.62	6.07	10.34	6.13
CASQ	5.34	5.88	5.51	4.56	5.42	5.21
Post Intervention						
CDI	8.89	8.55	11.94	9.52	10.46	9.14
RCMAS	8.11	6.43	10.79	7.52	9.49	7.10
CASQ	4.61	5.88	3.96	4.84	4.27	5.35
Follow-up[d]						
CDI	7.75	6.52	9.69	7.77	8.75	7.22
RCMAS	6.52	5.25	8.83	6.92	7.71	6.24
CASQ	5.52	5.28	3.83	4.66	4.65	5.02

Note. CDI= Children's Depression Inventory, RCMAS = Revised Children's Manifest Anxiety Scale, CASQ = Children's Attributional Style Questionnaire. [a] n = 44. [b] n = 47. [c] N=91. [d] Follow-up conducted at six months following the post-intervention measure.

Group Comparisons Across Time

In order to test the hypothesis that the intervention program would decrease symptoms of depression and anxiety and enhance positive thinking, a series of

individual MANOVAs were conducted on children's reported symptoms as measured on the CDI, RCMAS, and CASQ. These measures were assigned as the dependent variables of each of these independent MANOVAs. This allowed for an analysis examining time, group and interaction effects. Reported symptoms, as measured by CDI, RCMAS and CASQ, were compared between the intervention and control group at pre-intervention, post-intervention and the six month follow-up.

MANOVA's were deemed more appropriate due to the repeated measures design and the decrease in the possibility of type I error rate (Hair, Anderson, Tatham, & Black, 1995). In addition a MANOVA is more powerful in detecting combined differences due to acknowledging correlations between variables (Hair et al., 1995). Pearson correlations indicated that the variables were moderately correlated supporting MANOVA as an appropriate analysis. Table 4 outlines the intercorrelations between the variables. Bonferroni adjustments were made to the alpha level due to the multiple comparisons. The alpha level was set at .01 following adjustments. Correlations yielded in table 4 indicate that there are modest relationships between many of the major variables (CDI, RCMAS and CASQ) included in the study. High to moderate relationships were evident among the individual measures across time for RCMAS, CDI and CASQ with scores ranging from .38 to .70, as well as between the CDI and RCMAS and, CDI and CASQ with scores ranging from -.22 to .63.

Table 4

Pearson Correlation Coefficients for Main Study Measures

Measure	CDI[b]	CDI[c]	RCMAS[a]	RCMAS[b]	RCMAS[c]	CASQ[a]	CASQ[b]	CASQ[c]
CDI[a]	.54**	.38**	.65**	.54**	.37**	-.38**	-.50**	-.25*
CDI[b]	_	.58**	.44**	.55**	.46**	-.38**	-.62**	-.39**
CDI[c]		_	.36**	.45**	.63**	-.29**	-.47**	-.50**
RCMAS[a]			_	.70**	.56**	-.26*	-.29**	-.04
RCMAS[b]				_	.61**	-.32**	-.39**	-.22*
RCMAS[c]					_	-.23*	-.22*	-.32*
CASQ[a]						_	.54**	.43**
CASQ[b]							_	.53**

Note. CDI = Children's Depression Inventory, RCMAS = Revised Children's Manifest Anxiety Scale, CASQ = Children's Attributional Style Questionnaire. [a] Pre-intervention measurement time. [b] Post-intervention measurement time. [c] Follow-up measurement time. * = significant correlation, $p < .05$, two-tailed. ** = significant correlation, $p < .01$, two-tailed.

Individual 2 x 3 (group x time) repeated measures MANOVA designs were performed for each variable (CDI, RCMAS and CASQ). Group was the between subjects variable and CDI, RCMAS and CASQ scores across time were the within subjects variables. Due to the multiple comparisons Bonferroni adjustments were made to the alpha level. The alpha level was set at .01 following adjustments.

Depressive symptoms.

Tests for assumptions of homogeneity of variance, homogeneity of intercorrelations and sphericity were conducted and were not violated. The

MANOVA revealed that the main effect of time on CDI scores was not significant, $F(2,88) = 2.64$, $p = .08$. The interaction effect of time x group was also not significant indicating that CDI scores in the experimental group were not significantly different from the control group across time, $F(2,88) = 1.14$, $p = .32$. Although trend analyses indicated that CDI scores across time were showing a linear trend, this was not significant, $F(1,89) = 3.46$, $p = .07$.

Anxiety.

Tests for assumptions of homogeneity of variance, homogeneity of intercorrelations and sphericity were conducted and were not violated. The MANOVA revealed that the main effect of time on RCMAS scores was significant, $F(2,88) = 9.45$, $p = .00$. The interaction effect of time x group was not significant indicating that RCMAS scores in the experimental group were not significantly different from the control group across time, $F(2,88) = 2.13$, $p = .12$. Trend analyses indicated that RCMAS scores across time showed a significant linear trend, $F(1,89) = 19.09$, $p = .00$.

Explanatory style.

Tests for assumptions of homogeneity of variance, homogeneity of intercorrelations and sphericity were conducted and were not violated. The MANOVA revealed that the main effect of time on CASQ scores was not significant, $F(2,88) = 2.28$, $p = .11$. The interaction effect of time x group was also not significant indicating that CASQ scores in the experimental group were not significantly different from the control group across time, $F(2,88) = 1.34$, $p = .27$. Trend analyses indicated that CASQ scores across time were showing a quadratic trend, however, this was not significant, $F(1,89) = 2.904$, $p = .09$.

Determining Initially High and Low Symptomatic Children Based on Pre-

Intervention CDI

To determine the effect the program had on initially high scorers and low

scorers on the CDI, groups were divided into high and low scores based on the

median (*Mdn* = 9) of the pre-intervention CDI score. It was decided that the median

score would be used to split data consistent with other research studies such as those

by Cardemil et al. (2002) and Gillham et al. (1995). The reasons for adopting this

method for allocation of high and low scores were firstly the study was not looking

at how effective the program would be for those children with clinically significant

depressive scores rather at its effectiveness across the range of depressive symptoms.

In addition the median is not affected by extreme values and is more representative

of the central tendency of a group (Bryman & Cramer, 1999). Splitting data

according to the median produced a more equal distribution of the children across

the groups ensuring that the groups were of an adequate size. If the scores were split

based on the suggestion by Kovacs (1992) of CDI greater than 19 to indicate

clinically significant scores then the distribution of the sample would have been

uneven and subsequent results from these analyses would have been based on

extremely uneven sample sizes.

Percentage of children above and below median split

Figures 2 and 3 demonstrate the percentage of children in each experimental

condition who scored higher or lower than the median across the three measurement

periods. The figures demonstrate that the number of children reporting higher levels

of depressive symptomatology appeared to decrease across time with more children

tending to report levels lower than the median at follow-up.

Initially high children.

There was a tendency for children who initially scored higher than the median at pre-intervention to report levels lower than the median at post-intervention (43.96%) and follow-up (38.46%).

Some differences in the incidence of children with CDI scores above the median in the control and experimental groups could be observed. Those who were above the median in the experimental group were classified as belonging to the "High Experimental" whereas those that fell above the median score of nine for the control group were referred to as the "High Control." Initially 59.57% of the control group reported depressive symptoms higher than the median but this decreased to 51.06% at post-intervention and 40.42% at the follow-up. In comparison the experimental group appeared to remain more consistent with 38.64% of children reporting depressive symptoms higher than the median at pre-intervention and decreasing to 36.36% at both post-intervention and follow-up. Although the experimental group had less children who reported depressive symptoms higher than the median at follow-up it should be noted that the control group had a larger percentage of children reporting depressive symptoms higher than the median at pre-intervention compared to the experimental group.
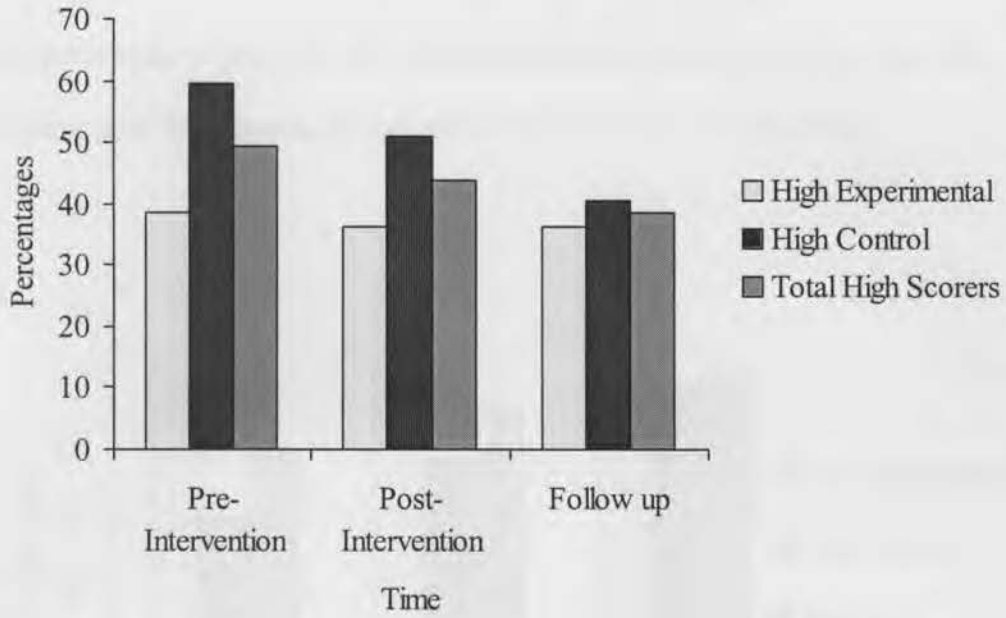
Figure 2. Percentage of children in each group who scored higher than the CDI

pre-intervention median (*Mdn* = 9) across time.

Initially low children.

The percentage of children who reported depressive symptoms lower than the

median appeared to increase across time. Those children who were below the

median in the experimental group were classified as belonging to the "Low

Experimental" whereas those that fell below the median score of nine for the control

group were referred to as the "Low Control." At pre-intervention 50.55% of the total

sample reported depressive symptoms below the median, increasing to 56.04% at

post-intervention and 61.54% at follow-up. Once again there was a large difference

between the experimental (*P* = 61.36%) and control group (*P* = 40.43%) at pre-

intervention in relation to percentage of children reporting depressive symptoms

lower than the median. For the experimental group the percentage (*P* = 63.64%) of

children reporting depressive symptoms lower than the median remained stable at

post-intervention and follow-up. The control group continued to report an increase

in the percentage of children who reported depressive symptoms lower than the

median at post-intervention ($P = 48.94\%$) and follow-up ($P = 59.57\%$).
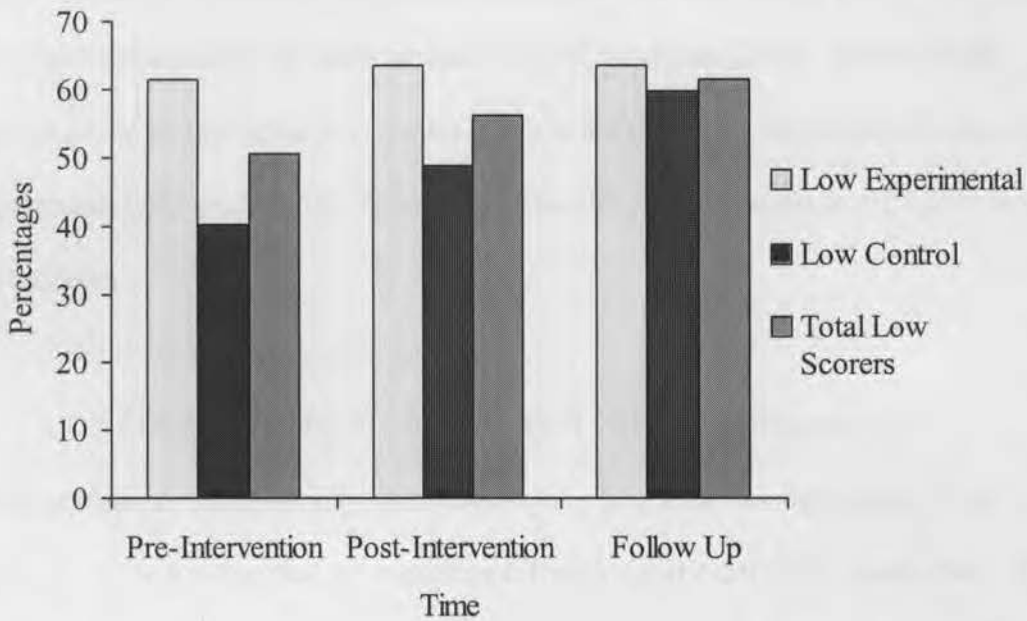
Figure 3. Percentage of children in each group who scored lower than the CDI pre-

intervention median (*Mdn* = 9) across time.

It is acknowledged that children with extremely high levels of depressive

symptomatology who may be classified as clinically significant or have undiagnosed

depression, would be included in a community sample. Those children who scored

higher than 19 on the CDI pre-intervention and their distribution of scores across the

three measurement points can be found in Appendixes G and H.

Group Comparisons for Initially High and Low Symptomatic Children Based on

Pre-Intervention CDI Score

A repeated measures MANOVA (3 x 2 x 2) (time x median split x group) design was used to examine the effectiveness of the program for children initially reporting high or low levels of depressive symptomatology. Group and median split were the between subjects variables and CDI, RCMAS and CASQ scores across time were the within subjects variables. Due to the multiple comparisons Bonferroni adjustments were made to the alpha level. The alpha level was set at .01 following adjustments.

Depressive symptomatology.

Tests for assumptions of homogeneity of variance, homogeneity of intercorrelations and sphericity were conducted. Box's M was significant, $F(18) =$ 2.64, $p < .01$ indicating that the variances differed significantly from each other. As the Box M test is an extremely sensitive test and given that the sample sizes are equal and the robustness of the significance tests the outcome of the Box M can be disregarded (Tabachnick & Fidell, 2001). In addition as the smaller samples produced larger variances than the larger samples the null hypothesis can be retained that is, the variance between groups is equal, and Pillai's criteria will be used to evaluate multivariate significance (Tabachnick & Fiddel, 2001). The sphericity assumption and other MANOVA assumptions were not violated. Distributions of mean depressive symptoms across time for each group based on the median split and the mean for the total data can be found in Figure 4.

Figure 4. Mean CDI scores across time for experimental and control groups based on the pre-intervention CDI median split (*Mdn*=9)

The MANOVA demonstrated that for CDI scores the main effect of time was significant, $F(2, 86) = 4.52$, p = .01. This indicates that reported CDI scores differed significantly across time. The time x group interaction was not significant, $F(2, 86) = 1.96$, $p = .15$ indicating that CDI scores did not differ significantly between the two groups over time. The time x median split interaction effect was significant, $F(2, 86) = 10.37$, $p = .00$, indicating that CDI scores for those children who reported CDI scores higher than the median at pre-intervention differed significantly across time. This was also the case for those children with CDI scores lower than the median. The three way interaction between time x group x median split was not significant, $F(2, 86) = 2.46$, $p = .09$. The results from the MANOVA can be found

in Table 5. These results demonstrate a significant effect of time indicating that in general, the entire sample of children differed over time in relation to their CDI scores.

Table 5

3x2x2 MANOVA results for CDI scores across time for High and Low Scoring Children based on the Pre-Intervention CDI median split (Mdn = 9)

Source	df	F	η^2	p*
Time	2	4.52	.09	.01
Time x Group	2	1.96	.04	.15
Time x Median Split	2	10.37	.19	.00
Time x Group x Median Split	2	2.46	.05	.09
Error	86			

Note. F = F ratio; η^2 = Eta squared. * $p < .01$

Anxiety.

Likewise a 3 x 2 x 2 MANOVA was conducted on RCMAS scores to determine if the program was beneficial for those children with CDI scores above the median. Tests for assumptions of homogeneity of variance, homogeneity of intercorrelations and sphericity were conducted and were not violated. Distributions of mean RCMAS scores across time for each group based on the median split (CDI *Mdn* = 9) and the mean for the total data can be found in Figure 5.
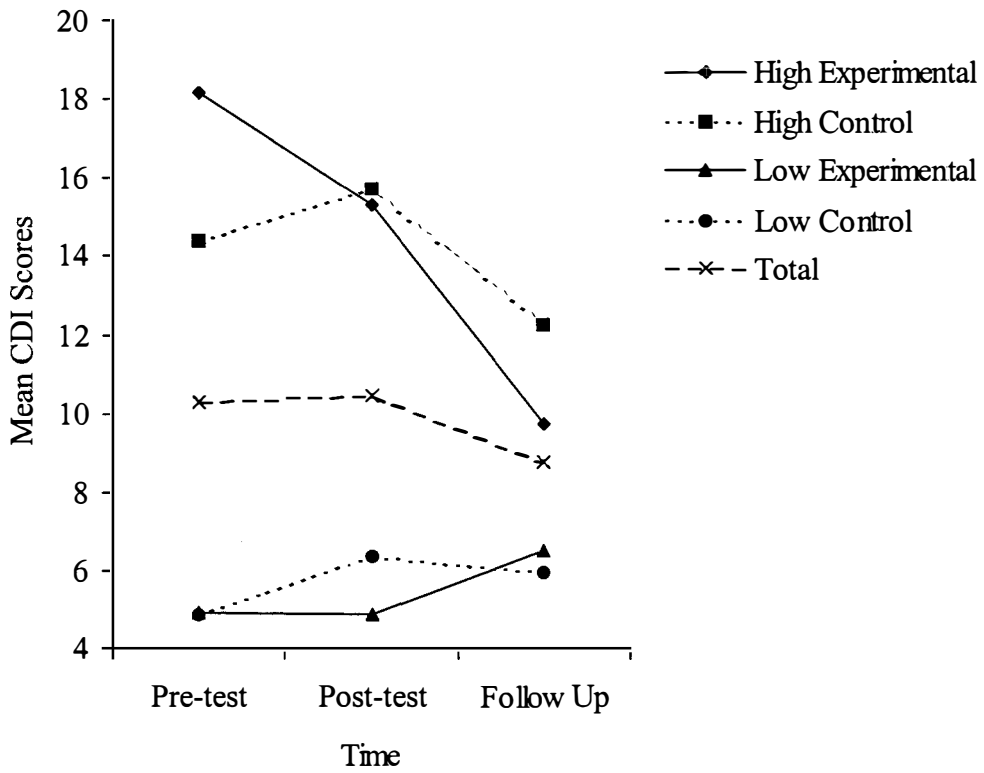
Figure 5. Mean RCMAS scores across time for experimental and control groups

based on the pre-intervention CDI median split (*Mdn*=9)

The results from the MANOVA are printed in table 6 and reveal RCMAS

scores differed across time, $F(2, 86) = 9.48$, p = .00 and that there was a non-

significant time x group interaction, $F(2, 86) = 2.10, p = .13$. Likewise, the time x

median split interaction effect was not significant, $F(2, 86) = 1.76, p = .18$, again

demonstrating that RCMAS scores for those children in the higher median split did

not differ significantly across time. This was also the case for those children in the

lower median split. The three way interaction between time x group x median split

was not significant, $F(2, 86) = .42, p = .66$, indicating RCMAS scores for children

in both groups, who where in the higher median split did not differ significantly

across time. This was also the case for those children in the lower median split.

Table 6

3 x 2 x 2 MANOVA results for RCMAS scores across time for High and Low Scoring

Children based on the Pre-Intervention CDI median split (Mdn = 9)

Source	df	F	η^2	p*
Time	2	9.48	.18	.00
Time x Group	2	2.10	.05	.13
Time x Median Split	2	1.76	.04	.18
Time x Group x Median Split	2	.42	.01	.66
Error	86			

Note. F = F ratio; η^2 = Eta squared. * $p < .01$

Explanatory Style.

A 3 x 2 x 2 MANOVA was conducted on CASQ scores to determine if the program was beneficial for those children with CDI scores above the median. Tests for assumptions of homogeneity of variance, homogeneity of intercorrelations and sphericity were conducted and were not violated. Distributions of mean CASQ scores across time for each group based on the CDI median split and the mean for the total data can be found in Figure 6.
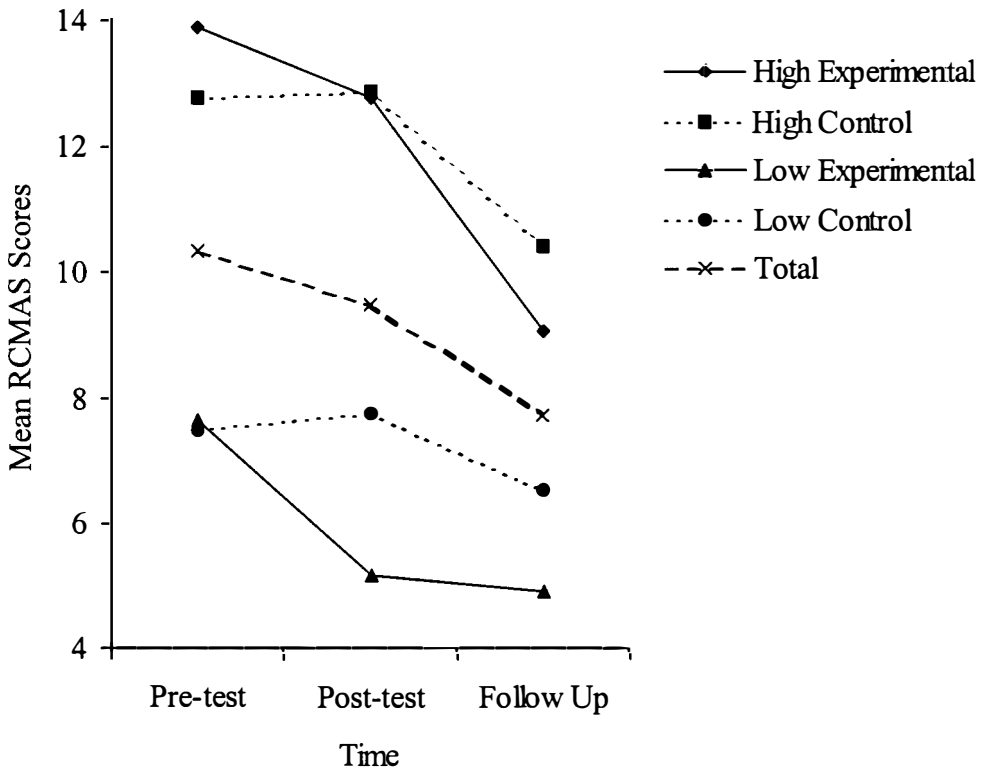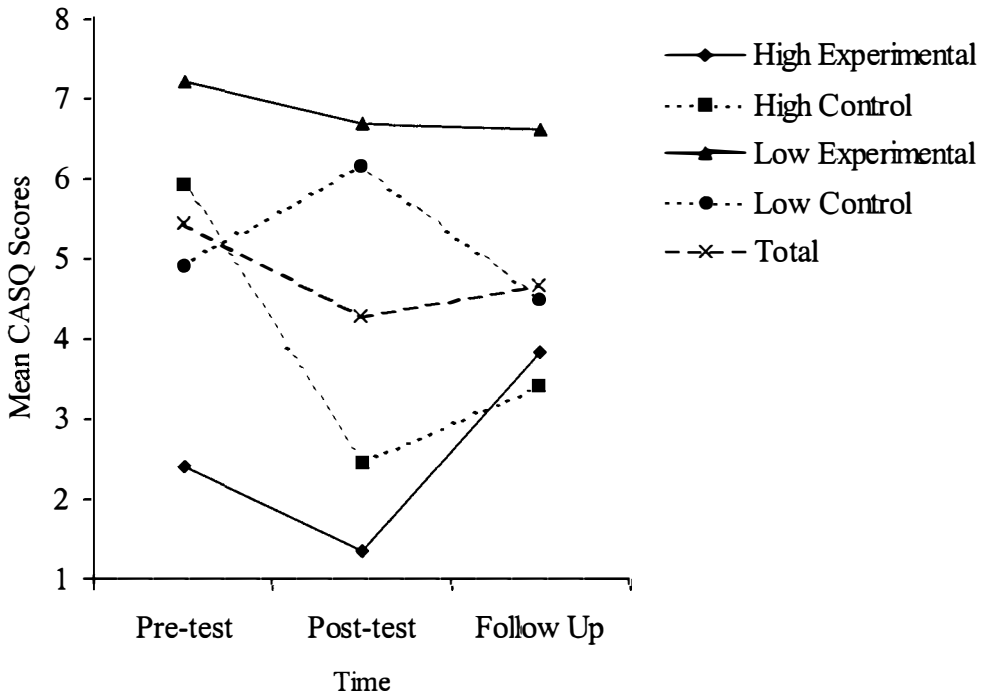
Figure 6. Mean CASQ scores for across time for experimental and control groups across time based on the pre-intervention CDI median split (*Mdn*=9)

The results for the MANOVA are presented in table 7 and demonstrate that CASQ scores did not differ across time, $F(2, 86) = 1.63$, p = .20, nor was the time x group interaction significant, $F(2, 86) = 1.56$, $p = .22$, indicating that CASQ scores did not differ significantly across time for the entire sample. The time x median split interaction effect approached significance, following Bonferroni adjustments, $F(2, 86) = 4.36$, $p = .02$. The three way interaction between time x group x median split was not significant, $F(2, 86) = 2.34$, $p = .10$, again demonstrating no significant difference in CASQ scores across time regardless of which experimental group or median split the child was allocated to.

Table 7

3 x 2 x 2 MANOVA results for CASQ scores across time for High and Low Scoring

Children based on the Pre-Intervention CDI median split (Mdn = 9)

Source	df	F	η^2	p*
Time	2	1.63	.04	.20
Time x Group	2	1.56	.04	.22
Time x Median Split	2	4.36	.09	.02
Time x Group x Median Split	2	2.34	.05	.10
Error	86			

Note. F = F ratio; η^2 = Eta squared. * *p* < .01

Chapter 5

Discussion

Summary of Results

The results from this study do not support the hypothesis that exposure to the Positive Thinking program would produce a difference in measures of depressive symptomatology following intervention. The experimental group did not differ from the control group with respect to CDI, RCMAS and CASQ scores. In addition the results from the six months follow-up did not support the premise that there would be a difference in CDI scores between the experimental and control groups at this time. A non-significant difference in CDI, RCMAS and CASQ scores between the groups at the six months follow-up was obtained.

The current study also examined the effects of the Positive Thinking program on those children who were initially identified as high or low scorers, based on their pre-intervention CDI score. Those who scored above the median on the CDI at pre-intervention or "high scorers" did not demonstrate significant adjustment in their CDI scores at post-intervention or at follow-up. In addition RCMAS and CASQ scores for children with initially elevated CDI scores did not decrease significantly at post intervention nor at the six month follow-up. One of the most significant findings of the study was that all children irrespective of group tended to report significant decreases in depressive symptoms and anxiety across time.

Effectiveness of Prevention Programs in Reducing Depressive Symptomatology

There are two types of prevention programs that have been developed which aim to decrease and prevent the development of depressive symptoms and anxiety and improve explanatory style in children. These programs are known as either targeted or universal prevention programs. Targeted prevention programs target

specific children who have been exposed to one or more of the risk factors associated with developing depression such as elevated depressive symptoms or familial conflict whereas universal programs are those programs that are aimed at all children regardless of exposure to risk factors (Andrews et al., 2002). Studies on targeted and universal prevention programs has yielded mixed results with respect to reducing depressive symptoms and anxiety and improving explanatory style.

Overall the results from this current study support the results obtained from the study by Pattison and Lynd-Stevenson (2001). In Pattison's and Lynd-Stevenson's (2001) study children who were assigned to the experimental group did not record significantly lower scores on the CDI post-intervention, nor were these scores different to the control group. Similarly, Quayle et al. (2001) and Lowry-Webster et al. (2001) also found that reported depressive symptomatology did not differ across groups at post-intervention.

Studies that have produced positive results or reductions in depressive symptomatology have tended to use targeted intervention strategies and involved older children or adolescents (year 5 and older) with elevated depressive symptoms (e.g., Jaycox et al., 1994; Roberts et al., 2003; Shochet et al., 2001; Spence et al., 2003; Yu & Seligman, 2002). These differences may have had a significant effect on the outcome of these studies hence the inconsistency with the current study's results. The impact of developmental issues and symptom severity on the effectiveness of a prevention program is an important issue which is addressed later.

The current study is also consistent with results from Roberts et al. (2003), Lowry-Webster et al. (2001) and Reynolds and Coats, 1986) with respect to the finding that decreases in anxiety over time were observed. Roberts et al. (2003) and Lowry-Webster et al. (2001) found that anxiety decreased significantly for children

in the intervention group at post-intervention. Similarly, Reynolds and Coats (1986) found that children in a group receiving relaxation showed a significant reduction in anxiety at post-intervention and at a five week follow-up. However, it needs to be noted that studies that have led to a significant improvement in anxiety levels have tended to utilise targeted programs with slighter older children (Reynolds & Coats, 1986; Roberts et al., 2003) or have been primarily an anxiety prevention program (Lowry-Webster et al., 2001).

With respect to CASQ the current study is consistent with results from a number of previous studies (e.g., Cardemil et al., 2002; Jaycox et al., 1994; Quayle et al., 2001; Roberts et al., 2003) which did not find that the explanatory style of the intervention group significantly improved or became more optimistic following intervention. However, these studies have employed different methods of scoring the CASQ. For example, some studies that have utilised the CASQ tend to focus on the separate CASQ composite scores for positive and negative events rather than the overall composite score (Jaycox et al., 1994; Roberts et al., 2003). Whereas the current study used the overall composite score, consistent with scoring procedures employed by Cardemil et al. (2002) and Jaycox et al. (1994).

Long-term Benefits of Exposure to the Prevention Program

One of the main aims of the study was to examine the long-term benefits of exposure to the program. The results from the study at the six month follow-up are again consistent with Pattison and Lynd-Stevenson (2001), who found no significant differences in depressive symptoms and anxiety, and Roberts et al. (2003) and Quayle et al. (2001) who also found no significant improvement in explanatory style between the two groups at follow-up. In contrast other researchers have found significant differences at their follow-ups with respect to depressive symptoms

(Jaycox et al., 1994; Quayle et al., 2001; Shochet et al., 2001), anxiety (Reynolds & Coats, 1986; Roberts et al., 2003) and explanatory style (Gillham et al., 1995; Jaycox et al., 1994). Those studies which noted a significant improvement in their measures often included older children and utilised targeted preventions (e.g., Jaycox et al., 1994), whereas others had smaller sample sizes consisting of girls only (Quayle et al., 2001). Previous studies also reported higher levels of depressive symptomatology and anxiety (Roberts et al., 2003) than the current study which would have left less room for improvement for children with low depressive symptomatology (Patterson & Lynd-Stevenson, 2001). Follow-up periods in those studies reporting significant differences in their measures also varied from three months to two years post intervention (Gillham et al., 1995; Quayle et al., 2001). Follow-up length may have impacted on results as it is possible that effects of the program may have a latency effect on explanatory style. Gillham et al. (1995) found that improvements in explanatory style emerged during the longer follow-up periods, exceeding 12 months.

The longitudinal nature of the data collected in the current study enabled the course of depressive symptoms, explanatory style and anxiety to be mapped across time. When comparing the distribution of the mean CDI scores obtained by the two groups across time, two distinct patterns emerge. That is, children in the experimental group report decreases in depressive symptoms across each measurement point, however, those in the control group reported an increase in depressive symptoms at post-intervention prior to reporting a decrease at the six months follow-up. This pattern of results found in the current study is consistent with previous studies (e.g., Quayle et al., 2001; Roberts et al., 2003) that reported decreases in symptoms of depression in both groups.

Comparison of high and low reported depressive symptoms.

Consistent with the methodology adopted by Cardemil et al. (2002) and Gillham et al. (1995) this study divided the sample into participants who initially scored higher or lower than the pre-intervention median CDI score (*Mdn* = 9) so to examine the effectiveness of the program for high and low CDI scorers. The results obtained from this study demonstrated that those children who yielded high scores initially did not show significant changes in their CDI score post-intervention. Previous studies utilising targeted prevention programs aimed at children or adolescents with elevated depressive symptoms have found intervention effects (e.g., Cardemil et al., 2002; Gillham et al., 1995; Jaycox et al., 1994; Spence et al., 2003). Little research has been conducted examining the effectiveness of a universal prevention program on high and low reported depressive symptoms in younger children so it is difficult to compare the current results with previous research. Cardemil et al. (2002) found that Latino children in the intervention group who reported high levels of depressive symptoms reported less depressive symptoms pre-intervention than the control group at post-intervention and at the three month and six month follow-up periods. Jaycox et al. (1994) found no significant differences in depressive symptomatology at post-intervention between high scoring children in the intervention group and the control group. However, at the six month follow-up and subsequent follow-ups the researchers found a significant decrease in depressive symptomatology between high scorers in the intervention group and control group (Gillham et al., 1995).

Consistent with previous research (e.g., Cardemil et al., 2002; Spence et al., 2003) the current study demonstrated that initial low scorers continued to report less depressive symptomatology and the amount of children who reported depressive

symptoms lower than the median increased over time. Subsequently those with higher depressive symptomatology decreased over time. This may indicate that some children may have experienced spontaneous remission from elevated depressive symptomatology. Interestingly children in the control group appeared to make the greater shifts across the median indicating natural recovery from depressive symptoms or a regression to the mean. The current program also appeared to delay the development of increased depressive symptoms. Children in the control group tended to report an increase in depressive symptoms post-intervention however the experimental group continued to report a decrease in depressive symptoms across all measurement points.

The anxiety scores obtained in this current study indicated that anxiety decreased over time irrespective of which group or median split the children were assigned to. These findings are consistent with other studies (Pattison & Lynd-Stevenson, 2001; Roberts et al., 2003). Anxiety results appear to mirror the distribution pattern of the CDI scores highlighting a number of issues deserving further investigation. Specifically the connection between anxiety and depression, the influence of co-morbid disorders such as anxiety on the distribution of scores and the effect overlapping items in the RCMAS and CDI have on children's self-reports.

Furthermore, children in the current study with depressive symptomatology had less optimistic explanatory styles. In contrast, low scorers had a more optimistic explanatory style, lending support to the notion that children with higher depressive symptoms tend to have a less optimistic explanatory style for events compared to those children with lower depressive symptoms (Nolen-Hoeksema et al., 1992). As noted by Nolen-Hoeksema et al. (1992), children with depressive symptomatology may develop a pessimistic explanatory style that persists once depressive symptoms

decrease.

Factors Influencing Results Obtained and Current Study Limitations

There are a number of factors that may have influenced the results obtained in the current study. These include developmental factors and the nature of depression in children, comorbidity and, methodological and program characteristics. These factors impact on the study and underpin some of the study limitations. The study limitations will also be reviewed in light of these factors.

Nature and Course of Depression in Children and Developmental Factors

Research examining the effectiveness of prevention programs with children younger than 11 years old is relatively new (McClure et al., 2002). Currently there is a gap in the literature examining the effectiveness of cognitive-behavioural therapy for preventing depressive symptoms in children of this young age range. Researchers have indicated the importance of investigating the effectiveness of a cognitive-behavioural therapy program for younger children, however, what constitutes an effective program is yet to be established. Many programs are based on a downward extension of programs aimed at adolescents or older children. In developing programs for younger children a number of developmental issues specific to the course and nature of childhood depression need to be considered. The current study implemented an adapted version of a prevention program for older children to younger children. It is interesting to examine younger children's responses to such programs as researchers have indicated that younger children may not have the cognitive maturity to cope with the cognitive concepts (Stark, Laurent et al., 1999). In addition children's ability to maintain what they have learnt and successfully apply it to future situations requires a certain amount of maturity and self-awareness (Stark, Larent et al., 1999). Children may not be able to successfully do this until

they are older, perhaps when they are in the formal operational stage of development at approximately age 12 (Stark, Laurent et al., 1999). Potentially cognitive maturity may be a factor underlying the current results. During the implementation of the program the researcher noted that the younger children (i.e., those in year 4) found the cognitive components (e.g., distinguishing between permanent and temporary thoughts, identifying alternative causes for negative events) more difficult to grasp and needed more instruction on these concepts. The older children (i.e., those in year 5) coped better with the cognitive components, however, they still required some additional explanation of the concepts such as identifying alternative causes for negative events. In contrast the behavioural strategies included in the program, such as relaxation, were understood fully by all the children irrespective of age.

The impact of a child's maturity on their ability to differentiate between different types of feelings also needs to be considered (Cole et al., 1997; McClure et al., 2002). Younger children's (i.e., younger than grade six) difficulty in differentiating between two emotions which produce similar physiological reactions may lead to a child classifying two differing emotions as the same (Cole et al., 1997). This may have occurred in the current study given that the current study relied solely on children's self-reports rated on measures with overlapping items.

Although younger children may have difficulty differentiating between emotions, as they mature they become more competent at this which will impact on their self-reports. In addition anxiety and depressive symptoms may start to manifest differently as children grow older (Ollendick & King, 1994). This needs to be considered when examining longitudinal data of depressive symptoms and anxiety as older children may find it easier to report and differentiate between anxiety and depressive symptoms hence providing very different ratings to their previous ratings.

Given the longitudinal nature of the current study it would be expected that some children's depressive and anxiety symptoms changed over time due potentially to their maturity and increased self-awareness.

In addition to a child's development, the course of depression over time would also impact on self-reports and the subsequent results. Depressive episodes in children have often been found to be cyclic and tend to remit naturally after a period of time (Stark et al., 1999). This could account for the results obtained in the current study particularly when examining fluctuations in depressive symptoms in the control group. Previous research has also considered the effects of time and the episodic nature of depression putting forward the contention that depression can remit naturally over time (Cardemil et al., 2002; Jaycox et al., 1994; Liddle & Spence, 1990). Children's depressive symptoms in the current study may have been on the downward spiral when symptoms were measured and the fluctuations in symptoms may have resulted in children not exhibiting symptoms at each measurement point (Nolen-Hoeksema et al., 1992; Stark et al., 1999). In addition measurement points may have been too few and distant to detect whether children exhibited more depressive symptoms at another point in time (Nolen-Hoeksema et al., 1992). This poses the question whether more frequent administration of the CDI, as done by Nolen-Hoeksema et al. (1992), would detect variations in reported depressive symptoms. However, this presents another problem as frequent measures of symptoms across time may lead to a child becoming overly familiar with the instruments used thereby influencing future ratings (Nolen-Hoeksema et al., 1992).

Another explanation for the lack of significant differences between children's reported depressive symptoms is variation in children's self-reports of symptoms. Children may have reported different symptoms at each measurement but the total

CDI score remained constant. Alternatively a child's level of depressive symptomatology may have changed, however, the change may not have been large enough to register a significant difference in their score (Cole et al., 1998). Furthermore, regression to the mean may have also influenced results with scores at post-intervention being indicative of random variation in children's ratings.

Comorbidity

The results from the current study demonstrated that in the current study anxiety decreased significantly over time. Given its comorbidity with depression this is not surprising. Some researchers (e.g., Brady & Kendall, 1992; Hammen & Compas, 1994) have suggested that anxiety precedes depression and that both exist on a continuum of depression. If this is the case then the decreases in anxiety over time may have prevented the emergence of increases in depressive symptomatology. Another explanation for the significant effect on anxiety is that younger children may not be able to differentiate between various feelings (e.g., fear and sadness as in the case of anxiety and depression) and they view these feelings as indicative on anxiety alone rather than depression as well (Brady & Kendall, 1992). It has also been suggested that anxiety and depression are indistinguishable in younger children (i.e., younger than year six) and that younger children may not appear to differentiate between the two until sixth grade (Cole et al., 1997). This has particular implications for this current study as the children were at an educational level lower than grade six.

Another consideration of comorbidity is the number of common symptoms of anxiety and depression which often overlap in self-report measures such as the RCMAS and CDI (e.g., tiredness, sleeping, worrying) (Cole et al., 1998). Due to the moderate to high correlations between these measures, when a child scores high on

other self-reports (e.g., RCMAS) it is difficult to determine whether a child is exhibiting depressive symptoms or whether their condition is due to another comorbid disorder, such as anxiety (Brady & Kendall, 1992; Cole et al., 1998; Lowry-Webster et al., 2001; Stark, Laurent, et al., 1999). The use of self-report measures may also lead to children rating themselves so to appear favourable. Ratings from parents and teachers or significant others may have provided a clearer indication of how the children were functioning.

Cognitive-behavioural therapy has been shown to be effective in treating childhood anxiety (Compton et al., 2002). These treatments often include the same strategies used in the current program aimed at teaching children effective coping strategies (Compton et al., 2002). Relaxation was taught in the current program, a strategy regularly used in the treatment of anxiety (Ollendick & King, 1994) and the inclusion of such interventions may explain why reductions in anxiety were significant compared to reductions in depressive symptoms.

Explanatory style.

The relationship between children's explanatory style and depressive symptoms may have also impacted on the results of the current study. Consistent with Nolen-Hoeksema et al. (1992) a number of those children with depressive symptomatology in the current study continued to exhibit elevations in their depressive symptomatology at follow-up. A child's interpretation of events impacts on their emotional well-being. Children with depressive symptomatology may have learnt to be pessimistic in their thinking and when they encounter a negative event they continue to use maladaptive coping strategies thereby maintaining the severity of their symptomatology (Nolen–Hoeksema et al., 1992).

Methodological and Program Characteristics

A number of factors related to the program, research process and sample may have also influenced the results. These include life circumstances of children, homework compliance, attendance, program characteristics, parental involvement and sample characteristics.

Life circumstances.

In addition the impact of life circumstances may have influenced the results obtained in the current study. Children need strategies that they can use to deal with their current depressive symptoms as well as future symptoms that may emerge (Stark, Laurent et al., 1999). In the current study it may have been likely that life circumstances may have made it difficult for children to generalise strategies or, new circumstances did not lend themselves to the successful implementation of these strategies (e.g., circumstances out of the children's control) (Stark, Laurent et al., 1999).

A child's social environment such as family conflict and peer relationships may have also impacted on the results obtained. Follow-up and post-intervention measures during the current study occurred just prior to school holidays and children may have been feeling quite happy due to the upcoming holidays. In addition the current study focused on only one risk factor, depressive symptomatology. Although previous research (e.g., Nolen-Hoeksema et al., 1992) has indicated the importance of this risk factor in the development of depression, there are many other factors (e.g., familial factors) that also impact on the development of depression which have not been examined in the current study.

Homework compliance.

One of the major tasks in the prevention program was homework and repeated exposure through practise (Harrington et al., 1998). Children in the current study frequently reported that they practised relaxation for homework. Rarely did children in the current study report that they practised cognitive strategies outside the group. As there was no formal assessment of this it was quite easy for children to say they practised the strategies and to provide a general example of what they did (e.g., practised relaxation). Low homework compliance in the current study may have been due to the difficulty they had with these concepts or the extra effort required by them to implement and master these strategies on their own. Children's difficulty with the cognitive component of the program may have influenced the strategies they practised for homework. In order for children to use the strategies learnt in the program they need to develop a feeling of self-efficacy in terms of being able to deal effectively with depressive symptoms (Stark, Laurent et al., 1999). The current program was able to provide this, however, children initially need support to implement and practise the strategies so that they believe they can implement these strategies effectively and achieve success in changing how they feel. Children may require more time to do this so that they fully understand the concepts being taught and feel competent implementing them. As noted by Feehan and Vostanis (1996), children appear to be able to formulate simple cognitive restructuring statements demonstrating that they had understood the concept at the simplest level however they tend to require further practise and support to fully developed this skill. This appeared to be the case in the current study.

It is also possible that, when faced with a stressful event, children may revert to their usual coping strategy rather than using the new strategies taught. This may

be due to the children's lack of experience and support in implementing cognitive strategies. Children may have also found it difficult to apply their simple level of cognitive restructuring to alternate situations.

Attendance.

Most (86%) of the children in the current study attended all of the eight sessions of the program. At most children missed two sessions. Given the length of the program if one session was missed then a number of strategies and how to implement them were not learnt. Children may have also missed important information necessary to successfully implement a cognitive strategy and the opportunity to practise new skills and receive feedback on their performance, which would have provided them with the confidence required to implement these strategies in the future. Due to time constraints little opportunity was given to children to catch up on what they missed, hence the importance of attendance consistency and its impact on therapeutic gain from the sessions.

Program characteristics.

There are a number of factors relating to the program that may have influenced the results. The program was trialed as a universal school based program which meant that the children included in the program, although representative of a community sample, would have various levels of depressive symptomatology which may require different intervention strategies to be treated effectively (Feehan & Vostanis, 1996). Universal programs are less intensive as they target a large and varying group of children compared to targeted interventions that may be more specific and intensive (Gillham et al., 2000). In addition due to the different strategies taught in the various programs it is often difficult to determine what aspect of the program (e.g., relaxation) children are responding to (Drinkwater & Stewart,

2002). The fact that the current program was implemented as a universal program is also a limitation. Although a large number of children were able to participate, the effectiveness of this program in decreasing depressive symptomatology in children with moderate levels of symptomatology was difficult to determine due to the preponderance of children with low levels of symptomatology reported in the current study.

Program duration may also be another issue that impacted on results. The current program was not as long as those used in previous studies (e.g., Reynolds & Coats, 1986; Stark et al., 1987). Liddle and Spence (1990) have affirmed that more frequent and intensive sessions as well as higher homework compliance and increased parental involvement are viewed as beneficial for children participating in prevention programs. Although the current program was designed to fit into a school term, more than eight weeks may be required for younger children as more time may be needed explaining and practising cognitive concepts.

As mentioned previously the program used was an adaptation of a program aimed at older children. In addition to this, the program was based on the Penn program developed in the US and adapted for Australian children. This study, along with other Australian studies, has attempted to adapt or apply the Penn Program to an Australian sample (e.g., Pattison & Lynd-Stevenson et al., 2001; Roberts et al., 2003). In general Australian studies have reported results indicating little benefit in the program's ability to decrease the level of depressive symptomatology. As a consequence, the Penn Program adaptation may not be suitable for the Australian context.

Parental involvement.

The current program did not include a parent program nor was parental

support for the strategies taught encouraged. Children were expected to implement the strategies independently which may have been beyond their cognitive capacity and maturity. Parental involvement would be beneficial as parents could encourage children to complete homework tasks, practise strategies learnt when faced with a negative event, monitor their children's behaviour and note any changes. However, Feehan and Vostanis (1996) have noted that parents rarely help children complete homework nor remind their children if they forget to complete it. This may be due to the family situation or parents not feeling competent in explaining or grasping the cognitive tasks so they fail to encourage their use (Feehan & Vostanis, 1996). It is important that parents be educated in the use and benefits of these strategies if they are to encourage their children to use them (Feehan & Vostanis, 1996).

Sample characteristics.

Similar to the Pattison and Lynd-Stevenson (2001) study, participants in the current study volunteered consequently the current sample may have been self-selecting . The current sample may have included children with relatively stable depressive symptoms or those who have had limited exposure to risk factors. In addition, due to the large sample size and the relatively small number of children with extremely high levels of depressive symptomatology, the effect that these children would have been minimal on the total mean score. Consequently how children with higher levels of symptomatology benefited could be explained by examining program effects on high and low scorers separately. Previous research (e.g., Cardemil et al., 2002; Jaycox et al., 1994; Roberts et al., 2003) often had a larger cohort of children with a CDI score greater than 16 whereas the current study had very few children in this category.

One of the major limitations of the study was the method of allocation of

children to groups. This resulted in the majority of children identified as low scorers being allocated to the experimental group. This made it extremely difficult to demonstrate the benefits of the program for children with higher levels of depressive symptomatology. In addition the low levels of reported depressive symptoms at pre-intervention provided less opportunity for improvement compared to children with higher depressive symptoms, as noted by Pattison and Lynd-Stevenson (2001). Consequently, a floor effect of reported depressive symptoms may have occurred for subsequent reports of depressive symptoms. Given that initial CDI scores were low there was limited scope for children to indicate an improvement. In addition the median split produced a relatively low CDI score on which high and low scorers where based on, with the majority of high scoring children reporting mild to moderate depressive symptoms.

An additional limitation was the sample size, particularly when the sample was split into the high and low scorers based on the initial CDI median. The smaller sample size of the median split groups may not have been adequate to detect prevention effects. A larger sample would have allowed for the detection of larger effect sizes and provided more statistical power in the median split analyses. In addition a larger sample may have provided a more diverse sample with respect to reported levels of depressive symptomatology.

Motivation to practise strategies may have also been influenced by the initial level of depressive symptoms. Those children with elevated depressive symptoms had the opportunity to practise the strategies taught whereas those children with low levels of depressive symptomatology may be less motivated to practise the strategies as they were coping well and did not see the need to implement strategies (Jaycox et al., 1994).

Finally the inclusion of children from two schools may be problematic. Children in the control and intervention group were from the same school so there may have been some discussion of the program and its contents between the two groups.

Strengths of the Current Study

The current study also had a number of strengths. Longitudinal data on depressive symptomatology, including a long-term follow-up, was obtained from children. This allowed for the developmental course of depression to be identified in the study. The sample size was relatively large and both an intervention and control group were included in the study. Children were randomly assigned to the groups and the sample was representative of a community sample. Furthermore the intervention was administered during school time so children would attend and overall there was a very low attrition rate. As the program used a manual, delivery to the two intervention groups was consistent as the manual was followed verbatim for both groups. Multiple outcome measures were employed to determine whether conditions known to be associated with depressive symptomatology (e.g., anxiety and explanatory style) would demonstrate beneficial effects of the intervention.

Recommendations for Future Research

Following the investigation of the Positive Thinking program a number of issues emerged which could be addressed in future research to further clarify its effectiveness in decreasing depressive symptoms in younger children. Alterations to sample characteristics, the prevention program, assessment procedures and the inclusion of a comparison group should be considered in future research.

Future research may wish to involve a larger sample with varying levels of depressive symptomatology so to detect larger intervention effects and clarifying the

effectiveness of the program for extremely high scoring children. Demonstrating the effectiveness of the current program for the treatment of clinically depressed children would be seen as beneficial as it would provide clinicians with another viable intervention when treating clinically depressed children both in a group and individual setting. Implementing the current program to a targeted population of children with depressive symptomatology is consistent with previous research (e.g., Gillham et al., 1994; Roberts et al., 2003; Yu & Seligman, 2002).

Alterations to the prevention program may also improve its effectiveness. Formalised homework tasks similar to those used by Quayle et al. (2001) and Roberts et al. (2003) may increase the completion of these tasks. In addition the opportunity for children to participate in missed sessions or increasing the number or length of sessions will provide children with the opportunity to further practise and master the skills learnt and allow for children to spend more time on areas they find difficult. Including a parent component which educates parents about the program and the strategies taught and provides some psychoeducation about depressive symptoms and anxiety may prompt parents to encourage their children to use the strategies taught in the program. A number of researchers have suggested that family or parent involvement would be beneficial for future research as this will create a more powerful intervention (Asarnow et al., 2002; Gillham et al., 2000).

Adopting research protocols used in previous studies (e.g., Jaycox et al., 1994; Quayle et al., 2001; Roberts et al., 2003) will also be useful. This includes investigation of subscale scores (e.g., on the CDI, RCMAS and CASQ) so to determine specific changes and variations in symptoms across time, assessment of other risk or protective factors such as family functioning and peer relationships and their relationship to depressive symptoms and including other assessment measures

across various informants, such as the CBCL and Teacher Report Form so to monitor behaviour and other's perceptions of children's improvements. In addition assessing extremely high scoring children with a diagnostic interview will identify those children who meet the criteria for depression and will enable conclusions to be made as to whether the current program is beneficial for depressed children. Increased monitoring of children's symptoms as in the Jaycox et al. (1994) and Gillham et al. (1995) studies will further clarify the course of depressive symptoms and the effectiveness of the program in the short-term and long-term. Longer term follow-up will determine whether fluctuations in depressive symptoms occur and whether there is a cyclic trend to these fluctuations. Longer term follow-up spanning more than six months would also produce a clearer indication of whether the program is effective and whether gains are maintained in both high and low CDI scoring children. However developmental issues will need to be considered when conducting longer term follow-ups.

Examining issues of co-morbidity between depressive symptomatology and anxiety as suggested by Brady and Kendall (1992), may provide a clearer picture of the relationships between anxiety and depressive symptoms and whether anxiety and depression exist on a continuum. Furthermore, due to the inconsistent results related to explanatory style across various studies further research is needed to clarify the effect explanatory style has on depressive symptoms. Finally, it would be beneficial to compare the program to other therapies and include an attention control group as well as a wait-list control group.

Clinical Implications

The results of the current study have a number of clinical implications. As the current study is an initial implementation of the program, there appears to be

some evidence that the current program may be useful in alleviating anxiety and, to a lesser extent, depressive symptoms. However, the usefulness of implementing a universal program with inconclusive results relating to its effectiveness is questionable. Often universal programs are expensive to run and require a large input of resources (e.g., time, personnel) hence the importance of demonstrating the effectiveness of such programs. Nevertheless, the strategies taught in the program have previously been identified by researchers as beneficial in decreasing depressive symptomatology (Harrington et al., 1998). Clinicians may adopt these strategies for individual children but need to take into consideration the distinct possibility that not all children will benefit from them and further intervention may be required. Additionally, clinicians may need to teach children skills specific to their clinical presentation rather than implementing general problem-solving and cognitive strategies. It is also important that developmental issues of childhood, comorbidity and, the course of depression in children are considered so that intervention is appropriate (McClure et al., 2002). The effectiveness of this program for a targeted population is yet to be determined. Children in the current study exhibited mild to moderate depressive symptoms and conclusions related to extreme, clinically significant CDI scores could not be made due to the small sample of these children.

Conclusion

The current study examined the effectiveness of the Positive Thinking Program in decreasing depressive symptoms in children aged 8 to 11 years old. The results do not allow for conclusions to be made relating to the program's effectiveness in preventing and providing enduring relief from depressive symptoms or anxiety nor improve explanatory style. The current study has attempted to fill the gap in research related to preventing depressive symptoms in younger children.

Most of the research in this area targets older children and adolescents. This is one of the few studies that involved children younger than 10 years old. Although the study had a number of limitations it also had a number of strengths which can be addressed and expanded in future research.

Results in the current study are consistent with a number of other Australian studies (e.g., Lowry-Webster et al., 2001; Pattison & Lynd-Stevenson, 2001) examining the effectiveness of various cognitive-behavioural universal prevention programs aimed at decreasing depressive symptoms in children. It adds support to the notion that cognitive-behavioural intervention that focuses on problem-solving, social skill deficits and maladaptive beliefs can be useful in alleviating depressive symptoms (Reinecke et al., 1998). Given that the prognosis of childhood depression can be quite bleak, any intervention that can alleviate depressive symptoms is worthy of further exploration and development (Reinecke et al., 1998). Programs such as the one in the current study may facilitate or speed up recovery from a depressive episode regardless whether episodes naturally remit (Stark, Larent et al., 1999). At a community level, the benefits of the current program could be far reaching and it is deserving of further investigation.

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Appendix A

Positive Thinking Program Objectives and Content

Each session revised the previous session's main points and summarised the essential ideas of the current session at the conclusion of the session. Children were encouraged to practise their good thinking and strategies learnt during the sessions for homework but this was not formally monitored.

Session One

1. Introduction to program including purpose, rules and confidentiality.

2. Identification of a range of feeling names.

3. Linking feelings to thoughts.

4. Relaxation Methods

5. Explanation of homework activities

Session one involved the establishment of the group rules in collaboration with the children and the explanation of confidentiality. The session introduced the children to a range of feelings through two activities where they disclosed a time when they felt a particular way or concluded how a child may feel in a particular situation. The link between thoughts and feelings was also explained using a cartoon scenario. Relaxation was introduced as a technique that would be practised every session. In this session deep breathing and thinking of a happy situation was used.

Session Two

1. Linking feeling bad to thinking the worst

2. Evaluating thoughts to see how true they are

3. Recognise thoughts that make us feel good

This session elaborated on the objective focusing on how thoughts affect feelings. Children worked as a group to elicit thoughts that may eventuate from a particular situation when different scenarios were presented. They then assigned feelings that may arise from these thoughts. Thoughts were also evaluated in relation to how true (realistic) they were. Children then completed this task individually with their own situation. Relaxation for this session was identical to session one.

Session Three

1. Identifying accurate thoughts

2. Generating worst and true thoughts to real life situations

3. Generate temporary and permanent thoughts for real life problems

4. Identify when need to generate true and short while thoughts

This session focused on different types of thoughts children could have including thinking that a situation will always be the same compared to only lasting for a shortwhile and thinking the worst initially rather than having a more realistic explanation for a situation. A story was used to illustrate these concepts and to elicit responses from the children. Relaxation in this session introduced muscle relaxation.

Session Four

1. Look for evidence to confirm or refute bad thoughts

2. Generate alternative thoughts for things that happen

This session taught children to look for evidence to support their thoughts through the use of a story and a role-play. Children were also taught to elicit alternative thoughts/causes to a situation (upsetting thought). The group provided alternative thoughts/causes to a scenario and then worked individually on their own situation.

Session Five

1. Use three different types of arguments against thinking the worst thoughts

2. Argue against the worst thoughts quickly

Children were taught to challenge worst thoughts using the strategies learnt in previous sessions, however, they were to do this on the spot rather than writing it down. A game was used to practise this. Children were presented with a worst thought to a situation and had to challenge that thought or detail how they would deal with the situation. The children practised this game together prior to doing it individually. Relaxation introduced counting to ten as well as the muscle relaxation.

Session Six

1. Recognise that thinking the worst about the future can make you feel bad

2. Identify times when thinking the worst made them feel bad in the past

3. Exaggerate thinking the worst to see how "crazy" it seems.

4. Recognise thinking the best about the future

5. Think of ways to help the best things happen

This session involved looking at what happens if the children always think the worst in a situation and how they can make the best things happen. A story was used to illustrate the consequences of thinking the worst. Role-plays were used to illustrate consequences of the worst and best thinking in a situation. Relaxation was identical to session five.

Session Seven

1. Recognise the best, worst and most likely outcomes of parents fighting
2. Plan strategies to deal with unavoidable worst outcomes

This session introduced strategies to deal with family conflicts and determining the worst, most likely and best outcomes to a situation (decatastrophising) as well as planning for the worst outcomes. This was done in a group setting to a present scenario. Children were then instructed to elicit things they could do to cope if the worst outcome eventuated. Relaxation was identical to session five.

Session Eight

1. Apply best, worst, most likely thinking about the future to peer and sibling conflicts
2. Revise the content of the program

This session involved applying decatastrophising to peer and sibling situations and eliciting discussion related to this through the use of role-plays. Children also

participated in a quiz which summarised all the strategies learnt throughout the

program. Feedback regarding the program was sought from the students. Children

were presented with certificates and enjoyed a small party to celebrate their

participation in the program.

Appendix B

Letter to Principal

XX April 2002

Principal

XXX Primary School

XXX Drive

XXXXXXX WA 6169

Dear Principal

I am writing to invite your school to take part in a study I wish to conduct. The purpose of the study is to investigate the effectiveness of the Positive Thinking Program in increasing positive thinking in children in years four and five. Children will participate in the Positive Thinking Program and complete a survey. This survey will be completed prior to the program, at the completion of the program and at four months follow-up. The program will run for 8 one and a half hour sessions. Children will participate in the program in small groups of approximately 10. It is envisaged that the program will be run during school time at the school. The sessions involve activities to help children develop a more positive view of themselves, solve problems, develop social skills and enhance their self-esteem. Please find attached a copy of the objectives of the eight sessions.

Parents will be informed about the purpose of the study in a letter that children will take home from school. A parent information sheet and consent form will be included with this letter. Parents will be asked to complete and return both the parent information sheet and the consent form to the school. A box marked with

"Positive Thinking Program" will be provided for returns. Parents will also be asked for consent to access previous data collected from students in 2001 by Dr Elizabeth Kaczmarek and Dr Lisbeth Pike, from Edith Cowan University. This previous study examined the well being of children from mobile and military families.

As the research hopes to evaluate the effectiveness of the program there will be two groups: one group that will receive the program this year and another who will receive the program next year. However, both groups will be required complete the surveys on the three occasions this year. Children will be randomly allocated to groups.

All information obtained will be confidential. A copy of the results can be forwarded to you on completion of the study. The study has received approval from Edith Cowan University Faculty Ethics Committee.

If any child is identified as needing help you and/or a Deputy Principal will be informed and the student monitored. Parents will be informed if it is deemed that a referral to a mental health professional or agency is necessary.

If you have any questions regarding the research or program please contact me on xxxx xxxx on Tuesdays or Thursdays. Alternatively you may contact my supervisor, Dr Elizabeth Kaczmarek on xxxx xxxx.

I greatly appreciate your help to make this study possible.

Thank you

Parma Barbaro

Doctor of Psychology Student

Edith Cowan University

Appendix C

Parent Letter

XX July 2002

Dear Parent/Guardian

My name is Parma Barbaro and I am currently completing a Doctor of Psychology at Edith Cowan University. As part of this course I am required to complete a research project. This project will be conducted at XX Primary School. It involves running a school based program (Positive Thinking Program) aimed at increasing children's positive thinking. Children from years 4 and 5 will be invited to participate in this study. The study has been approved by Edith Cowan University Ethics Committee and is supported by the Principal.

If you decide to give permission for your child to participate in the Positive Thinking Program they will complete three surveys in the next few months. The first survey will be completed prior to program, another at the conclusion of the program with a final follow-up six months later. The survey will include questions about how children feel about themselves and their mood. The Positive Thinking Program includes 8, one and a half hour sessions. Sessions will be run during school time on school grounds and will involve activities to help children develop a more positive view of themselves, solve problems, and enhance social skills and self-esteem. Children participating in the group may practise some of the skills they have learnt at home and may act more assertively towards parents. If this occurs and you feel that you require support in dealing with your child's behaviour please do not hesitate to contact me on the number listed below.

As the research hopes to evaluate the effectiveness of this program there will be two groups: one group will participate in the Positive Thinking program during this year and the second group will complete it next year. However both groups will need to complete the surveys this year. Children will be randomly allocated to the groups for the 2002 and 2003 programs.

The Principal and/or Deputy Principal will be informed about those children who do not receive the program this year and are identified as needing help. These children will be monitored throughout the study. If it is felt that a referral to a mental health professional or agency is necessary then parents will be informed. These children will still be able to remain in the study.

I am also interested in determining whether children's views of themselves change over time. In order to explore this I need your permission to access your child's results from a study that was conducted by Dr Elizabeth Kaczmarek and Dr Lisbeth Pike at XX Primary School last year. This previous study looked at the well being of children from mobile and military families. Access to this information is not essential for joining the Positive Thinking Program.

Your participation is voluntary and you and your child are free to withdraw from the study at anytime. All information that is obtained is strictly confidential and any reports stemming from the study will only discuss overall results.

It is important that all parents who wish their children to be involved in the study complete the information sheet and consent form attached to this letter and return them to the school in the envelope provided by XX August 2002. Please place the envelope in the box marked Positive Thinking Program which can be found at the Administration Office of XX Primary School.

Please retain this sheet for future reference.

If you have any questions regarding the research please contact me at on xxxx xxxx. Alternatively you may contact my supervisor, Dr Elizabeth Kaczmarek on xxxx xxxx. If you have any concerns about the project or would like to talk to an independent person, you may contact Dr Craig Speelman on xxxx xxxx.

Parma Barbaro

Doctor of Psychology Student

Edith Cowan University

Appendix D

Parent Consent Form

Positive Thinking Program

If you would like your child to participate in the Positive Thinking Program please complete the following form and return it with the information sheet to the school by xx August 2002.

Please tick which of the following you consent to:

☐   I would like my child to participate in the study.

☐   I consent to Parma Barbaro accessing results from the previous study (if available)

☐   I am aware that my child will participate in the Positive Thinking Program either this year or next year.

Child's Name: _____

Parent/Guardian's Name: _____

Parent/Guardian's Signature: _____

Date: _____

Thank you

Appendix E

Student Consent Form

Positive Thinking Program

Student Consent Form

Please complete the following form.

Please tick the following:

☐   I would like to take part in the study.

☐   I am aware that I will take part in the Positive thinking Program either this

year or next year.

I _____(student) have been told what the study

is about and all of my questions about the study have been answered.

Child's Name: _____

Child's Signature:_____

Date: _____

Thank you

Appendix F

Parent Information Sheet

I am interested in finding out about your child's background. Below is a list of

questions I would like you to complete. The answers you provide are strictly

confidential.

(1)   Your Child's name: _____DOB: _____

(2)   How would you describe your family? Please tick.

        [   ]   Single parent family

        [   ]   Nuclear family (e.g. mother, father and children)

        [   ]   Blended family (e.g. remarried or repartnered and children)

(3)   Who is your employer? Please list agency, department or industry.

        Father's employer: _____

        Mother's employer   _____

(4)   During the last 12 months has a parent been absent from home due to work

(or personal) commitments? (please circle)   YES / NO

        If yes, who (please tick)

        [ ]   Father   How many months approximately?   _____

        [ ]   Mother   How many months approximately?   _____

        [ ]   Both   How many months approximately?   _____

(5)   Does your child have any problems with the following areas. Please circle:

        Physical Health (e.g. asthma, diabetes, vision, hearing)   YES / NO

        Schoolwork (e.g. reading, writing, maths)   YES / NO

        Behaviour (e.g. sleeping problem, tantrums, soiling)   YES / NO

        Social skills (e.g. mixing with other children, adults)   YES / NO

(6)   Has your child been diagnosed with a specific disorder?   YES / NO

If yes please provide more information

_____

_____

_____

_____

(7)   Has your child received help in the past or currently for any emotional or

behavioural problems?   YES / NO

If yes, what agency or professional did you consult?_____

For what reason?_____

What interventions or help were recommended to you?

_____

_____

_____

_____

(8)   Is you child currently taking any medications   YES / NO

Please provide some information about the medication your child is taking

_____

_____

_____

_____

Thank you for your time in completing this information sheet. If you have any more questions concerning the study feel free to contact Parma Barbaro on xxxx xxxx or my supervisor Dr Elizabeth Kaczmarek on xxxx xxxx. This information sheet can be returned to the school in the envelope provided.

Appendix G

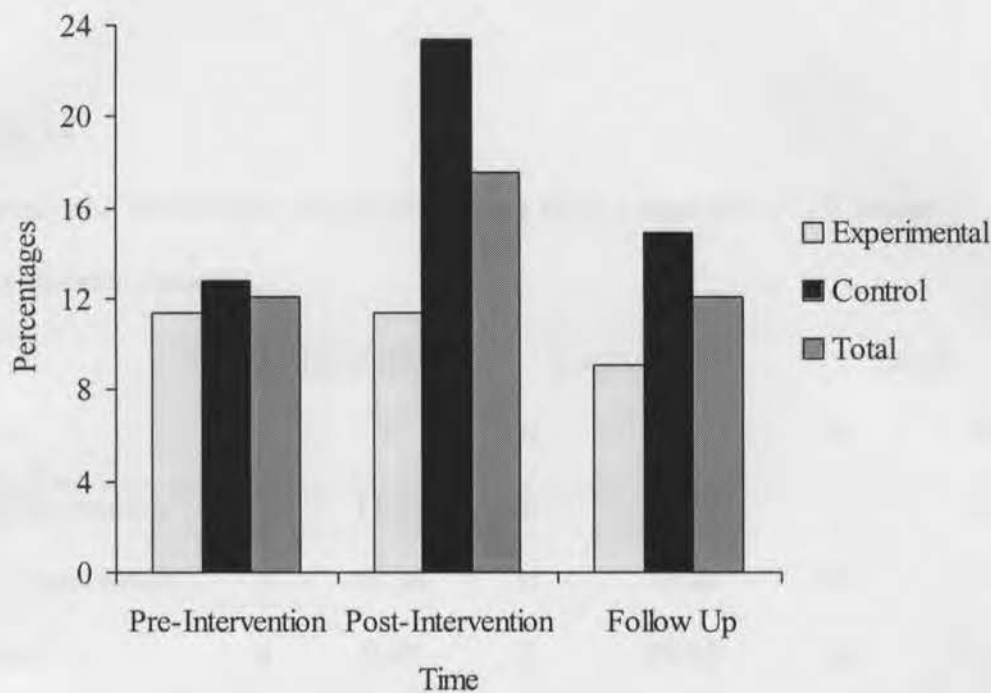Children Scoring 19 or Above on the CDI

Figure A7. Percentage of all children and children within the experimental and

control groups scoring 19 and above on the CDI across time.

Appendix H

Percentages of Children Scoring Above 19 on CDI Across Measurement Periods

Table A8

Number and Percentage of Children Scoring Higher than 19 on CDI Across

Measurement Periods

Time	Experimental[a]		Control[b]		Total[c]	
	n	*P*	*n*	*P*	*n*	*P*
Pre-intervention	5	11.36	6	12.77	11	12.09
Post-intervention	5	11.36	11	23.40	16	17.58
Follow-Up	4	9.09	7	14.89	11	12.09

Note. [a] n = 44 for experimental group. [b] n = 47 for control group. [c] N = 91 for

sample.