Depression and Anxiety
in
Adolescents in Malta

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Declaration

I hereby declare that no portion of the work referred to in this dissertation has been submitted in support of an application for another degree or qualification of this or any other university or other institution of learning.

Antonella Sammut

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Summary

This cross-sectional study explores the prevalence of depression and anxiety in adolescents attending Form 3 class in Malta, these are usually 13 or 14 years of age. The study population was selected via weighted sampling based on gender and school type and was of 625 students. There were 569 respondents, giving a response rate of 91%. The study was conducted in June 2006 in 23 state and non state schools. The students answered a self-assessment questionnaire at school in the presence of the teacher. Anonymity and confidentiality were maintained at all times. The questionnaire contained some demographic data and two validated tools namely the Depression Self-Rating Scale for Children by Dr Peter Birleson to assess depressive symptoms and the Revised Child Anxiety and Depression Scale-25 (RCADS-25) devised by Dr Peter Muris which has four subscales assessing different forms of anxiety and a subscale for depression. Two other questions were included, one concerning bullying and the other pressure to study. The study had the approval of the University Research Ethics Committee and the Education Division and parental consent was obtained.

Results revealed that the overall prevalence of depression in our study population was of 21.3%, although females had more than twice the prevalence of males. Students most at risk of developing depression are:

- Children not living with both parents
- Offspring whose father is unemployed (weakly)
- Children whose mothers are in employment
- Victims of bullying
- Students who are either not pressured to study or those who are very pressured to study.

Adolescents in Malta tended to be more anxious and depressed when compared to their Dutch counterparts. There is plenty of comorbidity between anxiety and depression, with panic disorder and depression being the most common closely followed by social phobia and depression, generalized anxiety disorder and depression and separation anxiety disorder and depression.

These findings indicate that the problem is significant and interventions including health prevention and health promotion must be introduced in various sectors such as schools and primary care clinics. Targeted intervention is the most cost-effective as it yields the highest benefit. Approach to the problem should be multisectoral and commitment by all the stakeholders, namely, health, education, family and social affairs ministries, agencies, health care professionals, educators, students and parents, is necessary. Resources, although scarce, are present but need to be better allocated. This intersectoral approach is indispensable for the intervention to be both effective and efficient. Increasing awareness and promoting mental health are pivotal to decrease the burden of disease and improve the quality of life and psychological well-being of youths most at risk.
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List of Abbreviations

ACE  Adolescents Coping with Emotions
      Wignall, Gibson, Bateman, Rapee, 1998a, 1998b)

ADHD  Attention Deficit Hyperactivity Disorder

BDI  Beck’s Depression Inventory
      (Beck 1967, 1972; Beck and Beamesderfer, 1974)

CASI  Childhood Anxiety Sensitivity Index
      (Silverman, Fleisig, Rabian, Peterson, 1991)

CBT  Cognitive Behavioural Therapy

CDI  Child Depression Inventory (Kovacs, 1981)

DSM-III  Diagnostic and Statistical Manual of Mental Disorders
        (American Psychiatric Association, 1980)

DSM-III-R  Diagnostic and Statistical Manual of Mental Disorders-Revised
           (American Psychiatric Association, 1987)

DSM-IV  Diagnostic and Statistical Manual of Mental Disorders
        (American Psychiatric Association, 1994)

DSRS  Depression Self-Rating Scale for Children
      (Birleson, 1981; Birleson, Hudson, Buchanan, Wolff, 1987)

EU  European Union

FSSC-R  Fear Survey Schedule for Children-Revised (Ollendick, 1983)

GAD  Generalized Anxiety Disorder

KADS  Kutcher Adolescent Depression Scale
      (Brooks, Krulewicz, Kutcher, 2003)

MDD  Major Depressive Disorder

NGOs  Non Governmental Organizations

PD  Panic Disorder

PRP  Penn Resiliency Programme
     (Freres, Gilham, Reivich, Shatté, Seligman, 2002)

PSD  Personal and Social Development
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<td>SPPC</td>
<td>Self-Perception Profile for Children (Harter, 1985)</td>
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<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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<td>STAIC</td>
<td>State-Trait Anxiety Inventory for Children (Spielberger, 1973)</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Chapter 1

Introduction
1.1 Introduction

The World Health Organization describes mental health as: “a state of well-being in which the individual realises his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (WHO 2005). It is worth addressing mental health problems in order to assess the burden of disease in the European Union. Although to date we do not have studies on all member states in the European Union (E.U.), and the epidemiological studies did not use standard criteria, it is estimated that 27% of the adult E.U. population (18-65 years of age) including Iceland, Norway and Switzerland suffer from at least one mental illness. In a 12-month prevalence study it was estimated that 82.7 million individuals are affected. Studies show that almost every second person in the E.U. is, or has been, affected by mental disorders at some point of his lifetime. Females tend to be more affected than males and there is a considerable amount of comorbidity. The commonest mental disorders are anxiety disorders: 12%, followed by mood disorders: 7.8%, somatiform disorders and somatisation disorder: 6.3%, substance dependence: 3.4% and psychotic disorders: 0.8% (Wittchen and Jacobi 2005). It is estimated that 3%-4% of Gross Domestic Product of E.U. countries are spent on mental ill health. This is mainly due to lost productivity, early retirement and disability pensions (WHO 2005). In view of this data the World Health Organization (WHO) proposed a strategy to be adopted in the E.U. to promote mental health and prevent mental ill health, improve the quality of life of people with mental ill health or disability through social inclusion and protection of their rights and dignity.
1.2 Aim:
The study aims to assess the prevalence of depression and anxiety in 13-14 year old students who are in form 3 in Malta.

1.3 Objectives:
The study’s objectives are to assess whether the prevalence of depression and anxiety varies with:

- Gender
- Family set up
- Socioeconomic factors
- History of Bullying
- School factors

1.4 Local Studies
1.4.1 Dissertation entitled Childhood Depression

A dissertation entitled Childhood Depression was conducted in Malta in 1994 by Mr S. Zammit. The sample of 382 boys and 384 girls was selected from a cross section of Maltese schools; it included children from state, church and independent schools. The children were in the first year in Secondary school (Form1) and their age varied between 11 and 13 years. In schools where streaming was present, a selection of classes from all levels was considered. The researcher used the Depression Self-Rating Scale for Children (DSRS) which is also one of the tools used in the present dissertation. The scale was verbally administered to the students by the researcher himself. Results
showed a high prevalence rate of depressive symptomatology in the study population. The percentage of children potentially suffering from a depressive disorder using the DSRS was of 13.2%. However this is likely to be an underestimate since the scale tends to have a bias towards false negative errors. The study also confirmed that there is a higher prevalence of depressive symptoms in girls than in boys.

1.4.2 Dissertation entitled Investigating the Prevalence of Childhood Depression among Maltese Children in Year 5 Primary State Schools

Another study 'Investigating the Prevalence of Childhood Depression among Maltese children in Year 5 Primary State Schools,' was conducted by Ms A.M. Bonello (2002). It was carried out between October and December 2001 in seven state primary schools in Malta. All schools except for one had several streams according to the academic ability of the children. A sample of 519 children; 275 boys and 244 girls, with a mean age of 9 years 5 months was tested using the Children's Depression Inventory (CDI). A cut-off point of a T-score of 70 points was used; children scoring 70 or above were classified as depressed. The inventory was read aloud in a monotone voice and any queries were answered in as uniform a way as possible. Nine students (1.7%) were found to have depressive symptomatology. Results showed that children of lower academic ability obtained a higher mean total CDI score, however no major significant differences in depressive symptoms were found on age and gender (Bonello 2002).
Chapter 2

Literature Review
2.1 Depression and Anxiety

Most studies found in the literature are on depression. The aim of my study is to replicate studies on depression. However, because of the significant comorbidity between depression and anxiety, the dissertation will assess the prevalence of anxiety as an illness on its own and with depression.

2.1.1 Comorbidity

Depression and anxiety are the commonest mental disorders in Europe. The presence of comorbidity may have important implications for classification and treatment of affective disorders. A longitudinal community study conducted in Zurich on 19 and 20 year old adolescents who were followed up for 15 years, revealed that anxiety is much more likely to predict the subsequent onset of depression than vice versa. It was postulated that anxiety and depression may be manifestations of the same diathesis with different expressions along the life span. However, a longitudinal study over 4-5 years on adolescents originally aged 14-24 years favours the notion that there is significant evidence for the separation of various anxiety disorders from major depression with regards to risk factors and natural course. The findings of this study revealed that pure anxiety disorders tend to occur in early adolescence while the proportion of comorbid anxiety and depression cases increase both with age and length of follow-up. Also, some types of anxiety disorders appear to be closer to depression than others. The study also suggests that anxiety disorders could possibly be risk factors for secondary depressive disorders in this age group. In fact adolescents with primary anxiety disorder were at a two- to fourfold increased risk for developing depression when compared to those
without previous history of an anxiety disorder. The possible mechanisms by which these anxiety disorders predisposed to later major depression could be related to the number of anxiety disorders present, the persistence of anxious avoidance behaviour and the degree of psychological impairment conferred by the anxiety disorder (Wittchen et al 2000; Bittner et al 2004). Data also suggest that depression might also be a risk factor for subsequent anxiety disorders. Comorbidity is more common than either anxiety or depression on its own and presents a poorer prognosis. Furthermore, studies suggest that comorbid major depression is more persistent and severe than pure or primary depression. Thus further research in elucidating the aetiological pathways and treatment strategies of comorbidity is needed to help alleviate the disease burden (Merikangas et al 2003). Effective treatment of the anxiety disorders, specifically those associated with extreme disability, might be important for targeted primary prevention of major depressive disorder (Bittner et al 2004).

2.1.2 Depression: Definition, Diagnosis and Prevalence

The Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) classifies the mood disorders into the depressive disorders which include; Major Depressive Disorder, Dysthymic Disorder and Depressive Disorder not otherwise specified and the Bipolar Disorders. This dissertation will be dealing mainly with Major Depressive Disorder. DSM-IV criteria for Major Depressive Disorder state that symptoms cause clinically significant stress or impairment in social, occupational or other important areas of functioning. The symptoms occur for most of the day, nearly every day for at least 2 weeks. Five or more of the following symptoms must be present
with at least one symptom being either depressed mood or loss of interest or pleasure; (i)
depressed mood, (ii) loss of interest, (iii) significant weight loss or gain or decrease or
increase in appetite, (iv) insomnia or hypersomnia, (v) psychomotor agitation or
retardation, (vi) fatigue or loss of energy, (vii) feelings of worthlessness or excessive or
inappropriate guilt, (viii) diminished ability to think or concentrate or indecisiveness, and
(ix) recurrent thoughts of death, recurrent suicidal ideation without specific plan or
suicide attempt or a specific plan. Epidemiological studies on the 18-65 year age group in
Western European countries show the one year prevalence of major depression to be
around 5% with a higher prevalence in women (women to men ratio 2:1), the middle-
aged, less privileged groups and those experiencing social adversity. Depression was
more common in urban than in rural areas. There is high comorbidity with other
psychiatric and physical disorders (Paykel et al 2005).

2.1.3 Anxiety: Definition, Diagnosis and Prevalence

The DSM-IV classifies anxiety disorders into; Panic Disorder, Phobias, Obsessive-Compulsive Disorder, Post-Traumatic Stress Disorder and Generalised Anxiety Disorder. Anxiety is an emotion experienced by all to varying degrees but is difficult to define. It can be described as being similar to fear and apprehension, which help people adapt to stressful situations, but anxiety occurs in the absence of such situations. Anxiety tends to occur in response to anticipated problems or hazards. Symptoms in anxiety disorders are out of proportion with the perceived threat, restrict activity, do not subside with reassurance and may be linked to thoughts or actions which seem excessive or ridiculous (Costello et al 2003). Anxiety disorders are among the most
common mental health disorders in childhood, however these conditions remain understudied partly due to the misconception that anxiety is a transient and innocuous condition. The collective prevalence of anxiety disorders in childhood is estimated to be of 12 to 20% (Langley et al 2002).

2.1.4 Depression and Anxiety in Primary Care

Depressive and anxiety disorders are common in primary care settings, but data show that up to half the patients are not diagnosed while others may not be treated. This could be because they may present with somatic symptoms or because of low index of suspicion. Improving the consultation technique with the use of open questions and more empathy between the clinician and the patient may improve the diagnostic rate. Training of general practitioners in Netherlands and Denmark has resulted in improved recognition of depression. Also campaigns combining public and professional education (UK Defeat Depression Campaign) improved public attitudes to depression and decreased suicide rates (Nuremberg Alliance against Depression) (Paykel et al 2005). The use of screening tools might help to improve the outcome. Also, the provision of mental health services in primary care settings would enhance diagnosis (Ellen et al 1998).

Although the above data relate to an adult population, depression and anxiety are also present in childhood and adolescence. However, such widespread studies on depression and anxiety in childhood and adolescence are not yet available.
2.2 The Development of Depression in Children and Adolescents

The concept of childhood depression has only been recognised in the late eighties. Prior to this, childhood depression was viewed as rare and not amenable to treatment with antidepressants. Cicchetti and Toth (1998) present a developmental psychopathology conceptualization of the depressive disorders of childhood and adolescence.

![Diagram showing integration of biological and psychological systems in the emergence of a depressotypic organization](Fig.1 Integration of Biological and Psychological Systems in the Emergence of a Depressotypic Organization (Cicchetti and Toth 1998)).
It is important to illustrate the integration of developmental processes at multiple levels of biological, psychological and social complexity within individuals over the life course. The Organizational approach provides a framework to conceptualize developmental phenomena as they relate to the evolution of depressive disorders. At each stage of development, children are confronted by a set of stage-salient developmental challenges. The way they tackle each developmental challenge predicts whether a child will be capable of adapting to and resolving later challenges. Children who are unable to resolve a stage-salient developmental challenge, tend to be less likely to adapt positively to later developmental demands. The course of development is marked by considerable variability in outcomes from any one source of influence - *multifinality*. In contrast the same outcome may result from diverse routes - *equifinality*. In order to assess the various pathways leading to depressive outcomes, a model that helps us examine the precursors to depressive illness as well as full blown depressive syndromes is essential.

The Ecological Transactional Model helps us elicit the causative factors leading to depression since it addresses the multiple interactions between dynamic biological (genetic, neurobiological, neurophysiological, neurochemical, neuroendocrine), psychological (affective, cognitive, socio-emotional, socio-cognitive) and social (community, culture) systems. The reciprocal interactions between environmental forces, caregiver characteristics and child characteristics together with current and previous levels of adaptations as well as the developmental period during which risk factors are experienced may exacerbate or decrease the likelihood of a depressogenic organization and the emergence of a depressive illness. Whether a
depressive outcome occurs or not is dependent on the interplay between specific vulnerability and protective factors, current and previous levels of adaptation as well as the developmental period during which risk factors are experienced.

2.3 Development of Anxiety in Children and Adolescents

The prevalence of anxiety disorders in children and adolescents is amongst the highest psychiatric problems. The occurrence of anxiety may be described in terms of psychopathology perspective since it assumes that; (i) most forms of psychopathology are the result of multiple causal influences, (ii) both successful and unsuccessful adaptation help us understand the origins of psychopathology and (iii) the developmental issues play an important role in the pathogenesis of childhood anxiety. Most research on the aetiology and maintenance of childhood anxiety disorders has studied the influence of isolated vulnerability and protective factors. Thus the extent to which such factors overlap is not clear.

Childhood anxiety is genetically transmitted. There are general genetic factors leading to vulnerability to a wide range of anxiety disorders while specific factors only predispose to a limited number of anxiety disorders. Children and adolescents with a temperamental trait characterized by the tendency to be unusually shy and to react with fear and withdrawal in new or unfamiliar situations are said to be behaviourally inhibited and are at increased risk of developing anxiety disorders. Researchers have shown that behaviourally inhibited children have high morning levels of cortisol. This is in keeping with the belief that anxiety-prone children have hyper-excitible subcortical circuits that may promote fear and anxiety. Another vulnerability factor that predisposes to anxiety
disorders, in particular to animal phobias, is the *disgust sensitivity* which is a genetically-based personality trait. Negative learning experiences play an important role in the pathogenesis of childhood anxiety disorders. The Three Pathways theory proposed by Rachman (1991 cited in Muris 2006) hypothesizes that anxiety phenomena are acquired through; (i) classical conditioning, (ii) observational learning or modelling or (iii) negative information transmission. Negative life events such as parental divorce and death of significant family members may also predispose to childhood anxiety. Family factors such as early attachment relationships may also predispose to later anxiety. Insecurely attached children are at greater risk of anxiety disorders.

Protective factors which may shield a child from developing anxiety include *effortful control* which refers to regulative, executive functioning-based processes. These processes involve the focusing and shifting of attention and the ability to inhibit behaviour, when appropriate, thus enhancing the ability of the individual to overcome situations that may lead to anxiety.

Once a child has developed an anxiety disorder, this condition is maintained through *avoidance behaviour* in that the child would minimise exposure to fear provoking conditions; this in turn would lead to cognitive distortions with the consequence that the child becomes unable to perceive that the situation is indeed harmless. However cognitive development may have a beneficial effect in that it might enhance protective mechanisms against negative emotions. Developmental issues play a part in the age of onset of anxiety. A certain level of cognitive maturation must be reached before worry is manifested. This is usually encountered in middle childhood. In
contrast, social fear and anxiety are associated with socio-cognitive development and are more likely to arise during adolescence (Muris 2006).

2.4 Prevalence Studies of Depression and Anxiety

The increase in rates of childhood depression in Western society may be the result of the huge cultural changes in child rearing practices, family structures, lifestyles and education (Timimi 2006).

The British Child and Adolescent Survey conducted in 1999 assessed the prevalence of DSM-IV disorders in a weighted sample of 10,438 British children to be 9.5% (95% confidence interval 8.8-10.1%). Information was sought from the children, their parents and teachers. Results showed that comorbidity is particularly evident between anxiety and depression, between Attention Deficit Hyperactivity Disorder (ADHD) and behaviour disorders, and between depression and at least some behaviour disorders (Ford et al 2003).

A longitudinal community study on 9 to 13-year olds who were followed up till 16 years of age, was conducted in western North Carolina. Results revealed that continuity from one diagnosis to another was significant, namely, from depression to anxiety and anxiety to depression, from ADHD to oppositional defiant disorder and from anxiety and conduct disorder to substance abuse. This relationship was more common in girls than in boys. The 3–month prevalence of any DSM-IV disorder was of 13.3% whereas 36.7% of the participants had at least one psychiatric disorder during the study period. The overall prevalence of any disorder was highest in 9- to 10-year olds, falling to
the lowest value at 12 years of age, after which a gradual rise was observed (Costello et al 2003).

The lifetime prevalence and age-of-onset distributions of DSM-IV disorders were studied in the National Comorbidity survey in the USA carried out among 9,282 English-speaking respondents aged from 18 years upwards. Results show that lifetime prevalence of anxiety is of 28.8% and has the earliest median age of onset of 11 years, while that of mood disorders was of 20.8% with a median age of onset of 30 years. Impulse control disorder and substance abuse disorder had a prevalence of 24.8% and 14.6% respectively and a median age of onset of 11 and 20 years. Lifetime prevalence of any disorder was of 46.4%. This high burden of mental disorder illustrates the need for early intervention in childhood and adolescence in order to, possibly, prevent the progression of primary disorders and the onset of comorbid disorders (Kessler et al 2005).

In a school-based survey in which a self-administered questionnaire was administered to 9,863 children aged 11, 13 and 15 years in the USA, the prevalence of depressive symptoms using the revised Diagnostic and Statistical Manual third edition DSM-III-R criteria was found to be 18%. This study confirmed that prevalence of depression is more common in females, but also showed that this sex difference may emerge earlier than suggested by previous research. Furthermore the increase in prevalence of depressive symptoms with age was far more severe for females than males between the ages of 11 and 13 years (females 12.6 & 29.9%; males (7.1 & 10.2%)(Saluja et al 2004).
2.5 Predisposing Factors in the Development of Depression and Anxiety

2.5.1 Low Socioeconomic Status

2.5.1.1 Socioeconomic Status and Health

Data about the relationship of health and social gradients for the vast majority of health indicators are consistently found in infancy, early childhood and adulthood. An ecological model was hypothesized to explain the influence of socioeconomic disadvantage on child and adolescent adjustment. It poses two pathways; socioeconomic status may influence child and adolescent adjustment either directly or indirectly via more proximal environmental experiences such as heightened levels of parent-child conflict, family disorganisation, negative experiences in school and greater exposure to both acute and chronic stressors. These findings were confirmed by a study conducted by Felner et al (1995) on early adolescents coming from poor rural areas. The findings suggested that everyday family experiences such as parent-child interaction patterns, appear to be involved in mediating effects of socioeconomic disadvantage on the emotional adaptation of adolescents. However, adaptation by the youngster could also be influenced by his/her personal experiences at school and his/her exposure to stressful events. Moreover the findings suggest the presence of multiple ecologically mediated pathways linking conditions of family occupational and educational disadvantage to poorer child and adolescent adjustment.

A possible link between socioeconomic status and health could be mediated through a mechanism called allostasis. The allostatic load is the toll on the organism over time as the organism tries to respond and adapt to its environment. These
findings are consistent with the hypothesis that positive social experiences are associated with lower allostatic load (Seeman et al 2002).

2.5.1.2. Socioeconomic Status and Early Childhood

Low socioeconomic status early in childhood is associated with a higher lifetime risk of depression among both males and females. Children from a lower social background had nearly twice the risk of major depression compared to those from the highest socioeconomic status (SES) background independent of childhood sociodemographic factors, family history of mental illness and adult SES. Also sex differences (female to male ratios) in depression were more pronounced in the lower than in the higher socioeconomic status. Evidence suggests that SES differences in depression originate early in life. Finding the pathways linking early childhood conditions to the development of depression later on in life would be beneficial in halting the progress of the onset of depression (Gilman et al 2002).

2.5.1.3 Socioeconomic Status in Later Childhood

The presence of social class gradient in late childhood and adolescence is less clear. This may be due to the increasing autonomy and involvement of adolescents outside the family as well as the presence of less cultural differences. The range of possible explanations of the relation between social class and health in adolescents is limited (Starfield et al 2002). Although the relationship between social class and health status is not consistent across all health conditions, data from the US National Longitudinal Study of Youth found a progressive decrease in rates of depression with
increases in social class. The findings were consistent regardless of whether social grouping was characterized by mother's education, father's education, highest educated parent or income. The relationship between decreased family income and increased levels of depression was also observed (Goodman 1999). A graded effect was seen between both indicators of SES that is education and income and depression which makes the correlation more significant (Goodman et al 2003). These findings were still significant even when confounding factors such as self esteem, a variety of stressors, health behaviours, social ties and access to medical care were taken into consideration.

In a Finnish study of 15- to 16-year olds, the relationship between the traditional SES factors such as family structure, parental unemployment and educational levels and maladjustment was investigated. Of the traditional SES, family structure was significantly associated with male depression while maternal educational level was associated with male externalizing behaviour such as drunkenness. In females parental unemployment was associated with depression. Besides investigating the traditional measures of SES, the relation between perceived financial difficulties as an indication of the economic hardship of the family and depression was also studied. Financial difficulties as perceived by adolescents were significantly associated with depression in both males and females even when controlling for the traditional SES indicators. Girls reported financial difficulties nearly twice as often as boys and the association between perceived financial difficulties and maladjustment was especially strong for girls. These findings indicate that subjective SES indicators may be more helpful in assessing mental health inequalities in adolescence than objective measures (Fröjd et al 2006).
2.5.2 Family Disruption

2.5.2.1 Family Constitution and Influence on Early Childhood

The presence of family disruption in early childhood is associated with a higher incidence of developing depression. Parental divorce is associated with a higher lifetime risk of depression in subjects whose mothers did not remarry as well as among subjects whose mother remarried. The presence of parental conflict seems to compound the long term effect of childhood family disruption on the development of depression, irrespective of family type (Gilman et al 2003). In a study to elicit the different risk factors predisposing to juvenile depression and juvenile/adult depression in contrast to adult-onset depression, it was found that the former two categories experienced more parent figure changes and were more likely to have lost a parent because of death, divorce or separation. These groups reported more symptoms of depression by 9 years of age in contrast to adult onset depression (Jaffee et al 2002).

2.5.2.2 Influence of Family Constitution on Adolescents

Family constitution affects adolescents’ personal and social adjustment levels. Elmaci (2006) claims that adolescents from unbroken families have much higher adjustment scores than those who are from broken families. However this notion tends to be disputed by other studies. Adolescence is a time of physical, emotional and social change and the social support provided by the family results in better personal and social adjustment and consequently a decrease in depression levels.
2.5.2.3 Family Conflict in Early Childhood

Exposure to a high level of family conflict and lack of cohesion in early childhood is likely to lead to a higher risk of developing affective disorders in the future. The mechanism which leads to this outcome is thought to be through attentional vigilance towards threat cues in offspring of divorced parents. In contrast children coming from intact families showed significant attentional avoidance of threat cues. Individuals rendered vulnerable by an adverse early environment may require less magnitude of threat when compared to those coming from a more supportive environment and are less capable of exhibiting avoidant attentional behaviour. These children may perceive ambiguous or even benign events as potentially threatening, resulting in greater perceived stress making them more vulnerable to developing depression. In the transactional model of stress and coping, individuals are continually engaged in a process of appraising the situation and whether they are capable of coping with it. Problem-solving coping strategies are associated with more positive psychological outcomes and thus decrease the vulnerability to developing depression later on in life (Luecken et al 2006).

2.5.2.4 Maladaptive Parental Behaviour and Parental Conflict

A dysfunctional family in terms of maladaptive parental behaviour may also lead to increased risk of development of psychiatric disorders such as anxiety, a depressive and disruptive personality disorder, and substance misuse disorder during late adolescence and early adulthood. It was also noted that the prevalence of psychiatric disorders in the offspring increased markedly in proportion to the number of maladaptive parental behaviours. Thus maladaptive parental behaviour may play a significant role in
the development of psychiatric disorders in the offspring, independently to whether the parents have psychiatric disorders or not (Johnson et al 2001).

Parental separation and family dysfunction are correlated with the development of childhood anxiety. The mechanism by which family discord could lead to anxiety may possibly be mediated through parental behaviour. It is postulated that it is not divorce per se which leads to poorer outcomes in children, but the influence of interparental conflict. The post divorce coparental relationship influences the way children cope after parental divorce. There are three main types of post divorce parental relationships:

*Conflicted coparental relationships* present in 25-50% of cases, involve frequent conflict, poor communication and failure of one or both partners to disengage emotionally. Thus parents are emotionally drained and consequently have difficulty focusing on their children’s needs and tend to use their children as pawns in their disputes. High conflict marriages result in more erratic parental disciplinary practices. Parents tend to use anxiety or guilt-inducing strategies to discipline their children (Kelly 1998). Modelling of anxiety behaviour makes children believe that they are incapable of solving problems effectively and of devising strategies to reduce anxiety (Whaley et al 1999). Data from various studies show that controlling or critical parenting behaviours during parent-child interactions were consistently linked with shyness and child anxiety disorder status (Wood et al 2003).

The second category which involves 50% of divorced parents is characterized by the *Parallel type of parental relationship*. These parents tend to be
emotionally disengaged, have low conflict and low communication. Each spouse parents his/her own way with little or no sharing of child-rearing issues.

The third category is called *Co-operative coparenting* present in 25-30% of cases. It is characterized by joint planning for their children’s futures, offering of mutual parental support and presence of some flexibility in fixing schedules with regards to when the child can visit the non resident parent. The children’s involvement in planning these visits is also of benefit. Co-operative coparenting promotes resiliency in children and as a result minimises the risk of maladjustment and anxiety, social and academic problems (Kelly 2007).

Whereas 10% of children from continuously married families develop serious psychological problems, between 20-25% of children coming from divorced families have similar problems. Multiple factors may contribute to this scenario including ongoing parental conflict, the divorce proceedings themselves, separation from one of the parents usually the father and consequently limited contact, remarriage of one or both parents and financial problems. The traditional arrangement in which children were allowed to see the non resident parent usually the father (usually every alternate weekend) has been found to be inadequate and harmful (Kelly 2005). In fact research shows that most infants form attachments to both parents when six and seven months of age, even though fathers usually spend less time with them. These attachments consolidate as the child grows older. However children are at risk if parents separate and attachment relationships are weakened or disrupted, leading to infrequent contact or prolonged separation from a parent. Loss of important attachment relationships in childhood has been found to cause a profound sense of loss and a severe risk of
depression in later life. Active involvement of the non resident parent has been shown to have a positive influence on the child’s adjustment and lead to better academic achievement. Studies show that children living in joint physical custody arrangements had better emotional, behavioural and general adjustment and better academic achievement when compared to children living with only the mother (Bauserman 2002).

2.5.2.5 Effects of Interparental Conflict on Gender

The association between interparental conflict, family cohesion and gender in late adolescence was assessed beyond the feelings of internalizing symptoms and feelings of depression. The pervasive negative association between interparental conflict and family cohesion and adolescent adjustment continues throughout adolescence. Females reported loneliness in relation to both interparental conflict and family cohesion whereas males reported loneliness only with regards to conflict between the parents. Thus females tend to perceive emotional bonding and feelings of closeness in the family as protective against internalizing behaviour and loneliness, whereas only interparental conflict resulted in feelings of loneliness in males. These findings suggest that there are different precursors to internalizing behaviour in males and females. Also, loneliness tends to be associated with social avoidance and social anxiety since lonely adolescents may be deficient in social skills thus exhibiting inappropriate self-disclosure, striving for self-attention or an inability to establish intimacy; and these may lead to problems in social adjustment ((Durell Johnson et al 2001).
2.5.2.6 Resilience of Children

The initial period of divorce may be the most stressful for the majority of children. This stress may precede the actual separation because of the high level of family conflict or violence in the family. This may be due to the lack of emotional preparation which leads to distress, anger, anxiety, shock and disbelief. However this initial response to the crisis diminishes and disappears after the first two years. Problems encountered in this period may be brought about because the children are inadequately informed about the impending separation of the parents. Also custody arrangements may not be ideal in that they do not take into consideration the developmental, social and psychological needs of the child and the lack of involvement of the child in devising these arrangements could add to the child’s stress. The change in parent-child relationship especially in the case of the abrupt departure of one parent could be very stressful. This is usually followed by a period of lack of contact during court proceedings or until the necessary custodial arrangements are in place. Also the children must adapt to two households with the consequence that they have to shift from one psychological space to another with different sets of rules, they also have to deal with the distress and anger of the parent.

The long term effects of parental divorce on adolescents showed a higher incidence of anxiety and depression, a lower feeling of well-being and more school related problems. There was no evidence of an association between age at parental divorce and adolescent adjustment and well-being. The effect of divorce seemed to be strongest in mid-adolescence. Anxiety, depression and academic problems were more evident in girls whereas boys reported more conduct problems than girls. Although there is evidence that some adolescents might not be affected negatively by parental divorce,
when divorce is coupled with parental distress, a high prevalence of distress symptoms in adolescents was noted, supporting the notion of 'double exposure' effects. However, after adjusting for the demographic variables and family variables of children of divorced parents or continually married parents, the effects of divorce emerge as quite moderate. The results showed significantly larger variance for all measures of psychological adjustment and well-being in the divorce group than in the continually married one. These findings could be related to the individual reactions to divorce, with some individuals showing a small or no reaction or may even benefit from divorce - when this brings relief from parental conflict - while others may experience severe reactions (Størksen et al 2006).

Data shows that approximately 75-80% of children and young adults do not suffer from major psychological problems including depression. These children and adolescents have reached their educational and career goals, retain close ties with their families and enjoy intimate relationships. Whereas studies in the 1990s depict a slight widening of the differences between children from married and divorced families, the magnitude of this difference remains small. In fact most studies using nationally representative samples and longitudinal studies using widely accepted psychological and social measures and statistics indicate that the majority of children of divorce continue to fall within the average adjustment (Amato 2001). These findings conflict with those of Wallerstein (2000 cited in Kelly and Emery 2003), who carried out a 25-year longitudinal study, which found that children of divorce interviewed in young adulthood, do not survive the experience of divorce and that the negative effects are not subject to change. In fact these young adults are described as being anxious, depressed and burdened, fail to
reach their potential and are fearful of commitment. These diverse findings may be due to defects in the study design and lack of standardized measures used to assess psychological adjustment, depression, anxiety and self esteem. Although divorce may lead to depression and anxiety in some children, the majority of children will eventually adapt successfully to this life transition and have no long lasting ill effects (Kirby and Dean 2002).

2.6 Family factors

2.6.1 Unemployment

Adolescents whose parents are unemployed or on social welfare have a greater tendency to be depressed. Unemployment affects the parent and family climate negatively and might lead to a tendency for depressive symptoms. A study of Norwegian adolescents indicates that adolescents whose mothers did not have a job tended to have more depressive symptoms than those whose mothers had a job (Sund et al 2003). The reason could be that mothers without their own income might appear as helpless role models especially for their daughters and would possibly affect the latter's self worth and view of their own future.

2.6.2 Family Composition

Aspects of family composition such as larger family size, later birth order and older parental age at birth are linked to the development of depression, anxiety and lower self-esteem. It is thought that later-born children in larger families report
estrangement from parents and see their families as punitive and unsupportive. This lack of cohesion could predispose to depression (Reinherz et al 2003).

Higher depressive symptom scores were found in girls coming from large families (Sund et al 2003). This may be attributed to increased interpersonal distress and family responsibilities at the expense of developing important relationships of their own.

2.7 Bullying

2.7.1 Risk of Depression

There is a relationship between depression and bullying. Depression occurs equally frequently among victims of bullying and the perpetrators. The highest risk of depression was noted in students who were bullied and were also bullies, the next highest risk was seen among those who were bullied while those who bullied had the lowest risk. The association of bullying and depression could be explained in two ways; bullying is a source of stress which could lead to depression, and depressed individuals may be introvert and less assertive and may attract the attention of bullies (Kaltiala-Heino et al 1999).

A school based study carried out in Victoria Australia on 13- and 14-year olds showed that victimisation raised levels of subsequent symptoms of anxiety and depression regardless of the coexisting levels of social adversity. The development of anxiety and depression following victimisation was more evident in female adolescents than males. This could be attributed to a difference in the way that boys respond to victimisation (Bond et al 2001). Data from another study supports the relation between anxiety and bullied children whereas bullies were found to be equally or less anxious than
their peers (Salmon et al 1998). The mechanism by which victimisation leads to anxiety and depression might be through the development of negative self-evaluations and low self-efficacy in achieving social goals.

2.7.2 Victimisation

Two different forms of victimisation exist; physical when the victim is subjected to physically aggressive acts or threats and relational victimisation when the individual is the target of peers' attempts to harm or control the victim's relationship with others through hostile rumour or exclusion from activities with peers. In a randomized controlled trial performed in the Netherlands, it was found that boys tended to have higher levels of physical victimisation whereas no sex difference was found in relational victimisation. At 13 years of age, girls reported higher levels of major depressive disorder, generalized anxiety, social anxiety and panic/agoraphobia in association with relational victimisation than boys. In contrast, there was a link between generalized anxiety and panic/agoraphobia with physical victimisation in boys. Given that no sex differences were found in relational victimisation, there are probably sex specific pathways of victimization leading to anxiety and depression. Girls might internalize these relational assaults to a greater degree than boys, whereas boys tend to internalize negative evaluations of other peers based on physical victimisation experiences, resulting in increased levels of psychosocial problems (Vuijk et al 2006).

A cross sectional study by van der Wal et al (2003) revealed that indirect forms of bullying were more likely to lead to depression than direct forms of bullying in both boys and girls. This may be due to the fact that indirect forms of bullying cause
more suffering in the victims, have a greater tendency of going unnoticed, are difficult to prove and with less probability of intervention from an adult to stop the victimisation. In another cross-sectional study carried out in 25 countries, a consistent relationship between bullying and psychosocial adjustment was detected, with both bullies and victims suffering from greater health problems, poorer emotional adjustment and poorer school adjustment (Nansel et al 2004).

2.7.3 Health problems

In a longitudinal study involving 9- to 11-year olds in the Netherlands a survey to measure bullying was given at the beginning and at the end of a school year to assess whether bullying at the beginning of the year is associated with an increased risk of developing health-related problems at the end of the year and to find if health-related problems at the beginning of the school year increase the risk of becoming a bully’s victim at the end of the same scholastic year. Results show that children who are regularly bullied (a few times a month) at the beginning of the school year have a higher risk of developing new health-related symptoms especially depression, anxiety and somatic symptoms such as bedwetting, abdominal pain and feeling tense. There was no significant gender difference for most health problems except for abdominal pain which was commoner in girls. Furthermore children who were depressed or anxious at the beginning of the school year have a greater tendency of becoming new victims of bullying later in the year. This could be a result of less assertive behaviour that made them more attractive targets for aggressive children (Fekkes et al 2006).
2.8 Gender

2.8.1 Conceptual Models

Females have a greater tendency towards depression than their male counterparts. Two conceptual models have been put forward to try and explain the sex difference in depression; the *mediational-stress exposure model* states that girls experience more stressors than boys and as a result girls become more depressed; and the *moderational-stress reactivity model* where girls exhibit greater levels of depression than boys in response to stress (Hankin et al 2007, Schraedley et al 1999).

2.8.2 Age

The gender difference in depression emerges between the ages of 13 and 15 and peaks between the ages of 15 and 18 years. A prospective study over a 10-year period (Hankin et al 1998), revealed that twice as many females as males between the ages of 15 and 18-years experienced a new case of depression. The number of recurrences of depression was the same for both males and females.

2.8.3 Stressors

The higher incidence of depression in females could be associated with the social pressure to conform with gender roles which is thought to increase dramatically as children move through puberty. Girls may perceive a reduction in their opportunities and choices together with restriction in behaviour by their parents. Furthermore, parents tend to have lower expectations regarding girls' competencies and achievements.
Another factor associated with the well-being of girls is an excessive concern about appearance especially among white girls. Dissatisfaction with body image and concern about appearance are more prevalent among depressed girls which might suggest that stress may lead to increased eating and depressive symptoms. On the other hand anhedonia and early morning difficulties with mood and fatigue were relatively more common in depressed boys (Bennett et al 2005).

Further research is required to examine whether concern about appearance and gender roles are risk factors or only correlated to depression (Nolen-Hoeksema 2001). Females tend to have a greater propensity towards assuming the sick role and expressing greater physical symptoms. This greater perception of ill health might in turn lead to symptoms of depression (Williams et al 2002). In another study it was found that depressed girls appear to experience more guilt and related cognitive feelings of depression when social rules are violated such as in situations of social disagreement. Girls might be more sensitive to such situations since they tend to be more sociable and caring, and express emotions from a younger age.

There are two different types of stressors; independent stressors over which the adolescent has no control and dependent stressors to which the adolescent has contributed to some extent. Adolescent girls tend to experience more overall independent, dependent and interpersonal stressors such as family, peers and romantic relationships than boys. Girls’ greater exposure to independent stressors especially those in the family and peer domains could be the main reason for the sex difference in depressive symptomatology. Also, girls not only tend to be exposed to more stressors than boys, but they tend to react with more depressive symptoms to overall stressors, general
achievement stressors and peer stressors than their male counterparts. However, according to Hankin et al (2007), girls only exhibited more depressive symptoms than boys in response to peer stressors. This seems to contradict previous findings that girls are more sensitive to interpersonal relationships, including family relationships. This discrepancy could be explained by the fact that in this study, the stress assessment method focused on episodic, mainly minor, hassles in different domains within a relatively short time frame of one week. In contrast other studies show the relationship between chronic stressors or major negative life events over a longer period of time. Both episodic and chronic stress may lead to depression but episodic stress may be a more important factor than chronic stress in explaining sex difference in likelihood of depression (Shih et al 2006). In view of these conflicting findings, more studies should be undertaken to further explain the gender difference in depression.

2.8.4 Response to Stress

There is also a gender difference in response to stress. Girls respond by using a high degree of ruminative coping which is related to high levels of depressive symptoms and use a low degree of distractive and problem-focused coping, the latter being used more by their male counterparts (Li et al 2006). The gender difference in rumination may partially account for the gender difference in depression. Rumination may not only contribute directly to depression but may also contribute indirectly by impairing problem solving, thus preventing females from taking action to overcome the stressors they encounter (Nolen-Hoeksema et al 1999). Thus rumination prolongs the depressive episode. On the other hand boys tend to distract themselves from their mood
by performing physical activity or by playing a musical instrument. A buffer against depression is social support. Disclosure to parents or teachers when adolescents were upset was found to be beneficial. Those who did not disclose to others when they were upset, were more likely to experience depressive symptoms. This was more evident in girls than boys (Schraedley et al 1999).

2.8.5 Biological Factors

Another plausible explanation why depression is commoner in females may be biological. Females tend to exhibit a higher rate of depression at around mid-puberty. A direct relationship between levels of gonadal hormones and negative affect has been observed. However other factors like the social impact of puberty, cognitive changes and the rising levels of life stress may also play a role. Pubertal status rather than timing of pubertal transition was a better predictor of the emergence of depression. The interaction between pubertal status, genetic factors and gender is responsible for the higher depression rates in adolescent girls suggesting that the genetic predisposition to depression and to stressful events may come into action at puberty in females (Silberg et al 1999).

2.8.6 Anxiety

Girls tend to have a greater propensity to develop anxiety than boys. Since anxiety is three times more common in offspring whose parents both suffer from anxiety, this could be due to a gender-specific differential sensitivity of neurological pathways (Merikangas et al 1999).
2.9 School Factors

2.9.1 School Stress

School stress may contribute to the development of depression especially in girls. This might be attributed to high expectations from adolescents themselves or from others, resulting in a chronic feeling of insufficiency and stress. Teacher support was found to be the strongest school predictor of depressive symptoms since support from teachers helps counteract stressful events in the early adolescent period and thus reduce depressive symptoms. This is more evident in girls since they tend to place a higher emphasis on personal relationships and the formation of attachment bonds. There is a correlation between depressive symptoms and well-being in class, these relationships are stronger for girls than for boys.

A study among Norwegian adolescents explored the relation between school stressors and psychosomatic symptoms. These psychosomatic symptoms may lead to symptoms of depression. Girls attributed greater stress to poor performance at school while boys found conflicts with parents and/or teachers in relation to school matters to be more stressful. Also girls reported more psychosomatic symptoms than boys. The reasons for this could be twofold; either girls tend to report more or they really experience more psychosomatic symptoms. This increase of psychosomatic symptoms in girls was not related to perceived school-stress. However, boys reported psychosomatic symptoms in relation to conflicts with peers. Thus the encouragement of positive social interactions at school could lead to a decrease in the negative effects of stress on health (Murberg and Bru 2004).
2.9.2 Academic Performance

Poor performance at school may be stressful and may lead to depressive symptoms probably because it might represent a threat to the adolescent's goal of learning and of academic achievement. This underachievement may further create conflicts and tension in relationships with parents. On the other hand, the lowered energy and concentration problems inherent in serious depressive conditions could lead to poor school performance (Undheim and Sund 2005). Furthermore, depression affects school performance indirectly, in that depressed individuals tend to be absent from school more often than their counterparts and consequently fall behind academically (Glied and Pine 2002).

Girls tend to consistently report higher levels of anxiety, depression and negative affect, prior to important school exams while boys demonstrate higher levels of self-esteem and positive affect. The reason could be that boys maintain higher expectations of their own abilities and are less concerned if they obtain lower grades, this resulting in lower distress in relation to examinations. Girls tend to underestimate their own academic abilities and have a lower self-esteem; these lead to greater distress during exams and higher scores of depression and anxiety (Locker and Cropely 2002).

2.9.3 School Characteristics

A cross sectional study involving 8,772 English children aged between five and fifteen years was carried out to explore the relationship between school factors and psychological outcomes. No correlation was found between disadvantaged schools and any psychological disorder. This may be because measures of schools were based on
aggregated data which could have missed important school influence that is relatively specific to a particular child. More accurate data would have been acquired if each child had been asked about his/her individual experience in school. However, findings suggest that children with low intelligence quotients or with reading difficulties are more likely to have a psychiatric disorder. In fact poor reading ability was linked to anxiety. These findings emphasize the importance of a multidisciplinary approach by mental health specialists, paediatricians and education-based professionals to tackle mental health problems in children and adolescents (Ford et al 2004).

In contrast, a cross-sectional study to investigate the changes occurring in anxiety, affect, depression and self-esteem levels prior to exams in four different secondary schools in Surrey and Hampshire areas showed that the school type did have an effect on the outcome. The schools varied in their design, status and ethos and included a mixed state comprehensive school, a girls’ grammar school, a boys’ state school and an independent girls’ boarding school. The pupils in the two girls’ schools obtained higher scores for anxiety and depression, revealing that both the mixed and the boys’ schools have a positive effect compared to the two all girls’ schools. Moreover there were no significant gender differences on any measures in the mixed school showing that the type of school could have influenced these findings. Schools have a role to play in increasing the self-esteem of their pupils and help them deal better with stressors at schools with the consequence of decreasing outcomes of anxiety and depression (Locker and Cropley 2004).
Chapter 3

Materials and Methods
3.1 Need for tools

The most common causes of mental illness in the E.U. are anxiety and depression. It is projected that in 2020 anxiety and depression will be the highest ranking cause of disease in the developed world (WHO 2005). A large scale study conducted by the World Health Organization (WHO) in 2005 on psychological disorders in primary care revealed that only half the patients with mental disorders were recognized and only half were offered drug treatment.

In view of the amount of morbidity and the costs, financial and otherwise, that this highly prevalent disease brings about, together with the large number that remain undiagnosed and untreated, it might be beneficial to use screening tests as a diagnostic aid. Screening tests provide a more structured way of interviewing and rating the severity of the illness (Ellen et al 1998). However, there is still much controversy about their reliability and the role they play in aiding the clinician in reaching a diagnosis. Although not enough evidence exists as to whether these tools should be used for routine screening of mentally ill patients, their appropriate use may improve the diagnosis of mental illness.

Critics highlight the limited positive predictive value (35%-50%) of the instruments when used in primary care. Those in favour advise that the performance of these instruments is adequate as long as the screening is followed by a formal diagnostic interview. Caution must be used in interpreting the results of these screening tools since they are not 'diagnostic' tools but only indicators of the need for further diagnostic enquiry (Hickie et al 2002). Although routine administration is not advised, their use
may be of benefit when a two stage procedure is employed; screening followed by a clinical assessment. However, further evaluation is required (Gilbody et al 2005).

3.2 Tools Used

Two tools were used in our questionnaire:

1. The Revised Child Anxiety and Depression Scale-25 which has five subscales, four of which assess different types of anxiety disorders namely; Generalized Anxiety Disorder, Separation Anxiety Disorder, Social Phobia and Panic Disorder and the fifth subscale tapping symptoms of Major Depressive Disorder.

2. The Depression Self-Rating Scale for Children which assesses depression.

3.2.1 The Revised Child Anxiety and Depression Scale-25

3.2.1.1 Evolution of the Tool

The Revised Child Anxiety and Depression Scale-25 (RCADS-25) devised by Muris et al (2002), is an adaptation of the Spence Children’s Anxiety Scale (SCAS). The SCAS was developed to measure the various aspects of anxiety such as panic disorder, social phobia, obsessive-compulsive disorder, generalized anxiety disorder and specific phobia. Research has shown that SCAS is a reliable tool with an internal consistency of Cronbach’s alphas of 0.92 for the total score and between 0.62 and 0.82 for the various subscales. It has a 6-month test-retest correlation of 0.60. Also the factor analytic structure of the SCAS is largely in keeping with the hypothesized categories of anxiety symptoms. The validity of the scale is evidenced by the substantial correlation of the SCAS with other childhood anxiety measures such as the trait anxiety version of the
State-Trait Anxiety Inventory for Children (STAIC), the Revised Children’s Manifest Anxiety Scale (RCMAS) and the Fear Survey Schedule for Children-Revised (FSSC-R) and it has the ability to differentiate satisfactorily between children with and without anxiety disorders and also between the various types of the disorders (Muris et al 2002).

The Scale was revised by Chorpita and Colleagues (2000) and modified in three ways:

- Phobia items were removed as the psychometric qualities of this subscale fell below acceptable levels.
- The generalized anxiety disorder (GAD) subscale contained symptoms related to the autonomic nervous system and research shows that these somatic features are less relevant to the classification of this anxiety disorder in children. These were replaced by items reflecting excessive worry which are more in line with the DSM-IV definition of GAD.
- In view of the frequent comorbidity of anxiety and depression in children, a new set of items to tap symptoms of depression was included.

Two separate studies were performed by Chorpita et al (2000 cited in Muris et al 2002) to explore the reliability and validity of the revision of the SCAS. Once this was confirmed, the scale was termed the Revised Child Anxiety and Depression Scale (RCADS). Factor analysis was performed in order to identify a more suitable factor structure for each subdivision of the RCADS. Inconsistent factors were removed and the five best loading items were retained yielding a brief 25-item questionnaire with five subscales namely, generalized anxiety disorder (GAD), separation anxiety disorder (SAD), social phobia (SP), panic disorder (PD) and major depressive disorder (MDD).
3.2.1.2 Properties of the Tool

Descriptive statistics of the RCADS-25 reveal that:

- Significant gender differences were found for generalized anxiety disorder, separation anxiety disorder, social phobia, panic disorder and major depressive disorder; higher levels of anxiety disorders and depressive symptoms were present in girls.

- Small but significant negative correlations were found between age and most RCADS-25 scales, symptoms decreased with age.

- The internal consistency of the scale was satisfactory with Cronbach’s alphas between 0.65 and 0.83 and corrected item-scale correlations in the 0.31-0.71 range. Substantial correlations were found among anxiety disorder categories and between anxiety disorder categories and depression. These results are very similar to those obtained in the original RCADS.

The above findings by Muris, Meesters and Schouten (2002) are in keeping with the theoretical aspects of anxiety and depression. The test retest stability of the RCADS-25 over a 4-week period was satisfactory.

To examine the validity of the RCADS-25, its subscales were each compared with other self-report questionnaires namely the STAIC, FSSC-R, Childhood Anxiety Sensitivity Index (CASI) and Children’s Depression Inventory (CDI). All the correlations were significant (p<0.001). The RCADS-25 is thus a valid and reliable tool to assess symptoms of DSM-defined anxiety disorders and major depression (Muris et al 2002).
3.2.1.3 Using the Tool

Items have to be scored on a 4-point scale with ‘Never’ scoring 0 points, ‘Sometimes’ scoring 1 point, ‘Often’ scoring 2 points and ‘Always’ scoring 3 points. The score of the relevant subscales can be obtained by summing across the relevant questions. The cut-off scores are then compared with those obtained by the researchers, P. Muris et al (2002) when assessing a sample of 1,748 normal school children.

Children at the 75th and 90th percentile are at high risk of an anxiety and depressive disorder (Muris et al 2002). A parent version of the RCADS-25 is available. It is identical to the child version, the difference being that it is rephrased from the parents’ perspective. The parent version could be compared to the child version to establish the parent child agreement of the RCADS-25.

3.2.2 Depression Self-Rating Scale for Children

3.2.2.1 Evolution of the Tool

The Depression Self-Rating Scale for Children (DSRS) was developed in 1978 by Dr Peter Birleson. The scale evolved from an inventory of 37 items which was tested by giving it to four groups of children aged between 7 and 13 years. One of the groups included depressed children referred to a Child Psychiatry clinic, a comparison group was made up of children attending the psychiatric clinic, the third group of children came from a school for maladjusted pupils and the fourth group was made up of ‘normal’ school children. An analysis of variance was used to determine
which of the 37 self-rating scales distinguished the depressed group from the other three groups. Eighteen items were chosen to form the DSRS. The test-retest reliability of the scale showed a stability of 0.8 and an internal consistency of 0.86.

The scale seemed to have adequate face and factorial validity and was tested for clinical validity on an independent population of 155 children aged between 8 and 14 years. These children attended a Child Psychiatric Out Patient Clinic and were subdivided into two groups; one group suffered from depression and the other had alternative diagnosis. Results show that children scoring 15 points and over on the DSRS were significantly more likely to have a depressive diagnosis. The predictive value of the DSRS score was almost as good as the global score of the history of depression and appearance of depression evaluated at an interview by three child and adolescent psychiatrists. There was agreement in 85% of the cases. Thus the DSRS is highly discriminatory between children receiving a DSM-III diagnosis of Major Depression and those without the disorder. The DSRS was found to be highly correlated with other self-report measures on the Child Depression Inventory (r=0.81; p<0.001) (Birleson et al 1987).

3.2.2.2 Properties of the Tool

The strengths of the DSRS as a psychometric tool to measure depression lie in that it has a sensitivity of 66.7% and a specificity of 76.7%. These are both satisfactory and comparable to those obtained from the history and appearance of depression as evaluated in the interview (Birleson et al 1987). The main disadvantages of the scale are its high misclassification rate (23.9%) and its low positive predictive value
(15%). The above values are obtained when the prevalence of depression is assumed to be 5% (Birleson et al 1987).

3.2.2.3 Using the Tool

The child undergoing the DSRS has to tick ‘Never,’ ‘Sometimes,’ or ‘Mostly’ as s/he thought the particular statement best described her/his feelings over the previous week. Some of the items are in a positive tone such as ‘I sleep very well’, while others have a negative tone such as ‘I feel like crying’. For an item in a positive tone a ‘Mostly’ response scores 0 while a ‘Never’ response scores 2. When the question is in a negative tone ‘Mostly’ scores 2 and ‘Never’ scores 0. A ‘Sometimes’ response always scores 1 point (Birleson et al 1987). A child scoring from 15 upwards is more likely to have a depressive diagnosis. Although children with other forms of psychopathology may obtain the same scores, the authors postulate that a score of 15 or over has six times the probability of leading to a diagnosis of depression (Birleson et al 1987). This outlines the importance that the DSRS is used specifically as a screening tool which is likely to identify a dysphoric mood as a symptom which may lead to other diagnosis besides Major Depression.

The study by Birleson et al (1987) highlighted the items that contributed mostly to the diagnosis. Of note are items ‘I feel so sad I can hardly stand it’ reflecting a depressed mood and ‘I like to go out to play’ illustrating anhydonia. A depressed mood and anhydonia are the two major symptoms for a DSM diagnosis of Major Depression. The scale also has the ability to tap the affective domain through its dysphoric subscale made up of items 3,5,14,15,17, and 18 (on the original scale).
The strengths of the DSRS are that it is fast and easy to administer, it is written in simple language and is easily understood by the respondents. It incorporates the time aspect which is important for diagnosing depression.

3.3 Methodology

3.3.1. Tools Selected

The tools used in the study are:

1. The Revised Child Anxiety and Depression Scale-25 (RCADS-25) devised by Dr Peter Muris

2. The Depression Self-Rating Scale for Children (DSRS) by Dr Peter Birleson.

The authors of both questionnaires were contacted and both kindly granted their consent for the use of their questionnaires. These particular tools were chosen because they are validated tools which are simple and easily understood by our study population. Also they did not contain culturally sensitive questions about sexual abuse or behaviour, suicidal wishes, alcohol and drug intake or smoking practice. They also excluded medically sensitive questions about family history of mental disease. Although the absence of such questions could have limited the research in some ways, this decision was taken in the light of the traditional values held by most schools especially those run by the church. Introducing such material could have led to refusal of permission to answer the questionnaire in the schools. The DSRS considers the time factor which is important in the diagnosis of depression.

Two extra questions, one with regards to bullying and another about the effect of exam pressure on the child were added to the original two tools, at the request of
the University Research Ethics Committee. This addition was made since these two factors might contribute to the development of depression and anxiety in adolescents.

3.3.2 Tools Considered

Other questionnaires were considered for use in the present study. These included the Children’s Depression Inventory (CDI) by Maria Kovacs. However, because of an item about suicidal wishes (Item 9), it was deemed more prudent not to use it. The Kutcher Adolescent Depression Scale (KADS) was also a possible choice. However, the questionnaire had a lot of branching questions making it not very user friendly. Also the presence of an item (12) about sexual thoughts and arousals precluded its choice. Beck’s Depression Inventory (BDI) was another candidate, but unfortunately it was not freely available for use.

3.3.3 Adapting the tool

Although most 13-year old students are bilingual, and conversant in both English and Maltese, it was decided that a Maltese version would be provided. All other surveys carried out in schools by the Health Division are usually conducted in both Maltese and English as more than two thirds of the school population opts for the Maltese version (Calleja 2007). This was done to ensure that there would not be any difference in the ease with which the questionnaire is understood. Moreover, every student would have the option to answer in the more ‘familiar’ language. The questions were translated to Maltese with the help of teachers of Maltese and back translated by another teacher who had not seen the original English version.
Both English and Maltese questionnaires were piloted. They were given to children conversant with both languages and the children were asked to answer both questionnaires in succession obviously without matching the answers. The two questionnaires answered by the same child were tested statistically for overall consistency using the Cronbach’s Alpha which gave a score of 0.774. A threshold of 0.7 is considered satisfactory. A paired T-test was employed to ensure that the same item in English and Maltese conveyed the same message, in fact four items needed to be rephrased to obtain a satisfactory T-test.

3.4 Conducting the study

3.4.1 Permission for study

Permission for carrying out the study was granted by the Assistant Directors of Education, Mr Raymond Camilleri for state schools and Dr Joseph Grima for non-state schools. In order to conduct the questionnaire in church schools, the go ahead from the Curia was obtained. Permission was granted by the University Research Ethics Committee. The questionnaires were validated by a psychiatrist, Dr Anton Grech who excluded the possibility of any psychological harm to the respondents.

The relevant Heads of school were contacted and a meeting was held. During the meeting information about the study was given and the heads assessed the suitability of the contents of the questionnaire and kindly granted their permission for the study to be conducted on the selected class of students.

A cover letter together with the consent form containing a sample of the questions being asked were sent to the parents/guardians of the selected students and
collected by a designated teacher within a stipulated time. Although the information collected from the students was to be analysed, the parents were assured that total confidentiality was to be maintained at all times and the questionnaires themselves were anonymous.

3.4.2 Study population

The study population is made up of Form 3 students attending secondary schools in Malta. It was selected via weighted sampling based on gender and school type. There are four school categories: General State Secondary, Junior Lyceums, Church and Independent. For practical purposes a number of classes from each type of school was recruited to reflect the relative populations in each of the strata. A class from each school was chosen randomly in schools with no streaming while in those with streaming, a ‘median’ class i.e. a class of pupils of median educational ability was chosen. Twenty three secondary schools were selected in order to have a uniform representation of students from all regions in Malta and Gozo. The sample size was of 625 students.

3.4.3 Pilot study

A pilot study was performed to ensure that the instructions given to the designated teacher who was to conduct the questionnaire in class were clear and that the children understood the questions and could mark them as instructed in the questionnaire. The teacher chosen was either the class teacher or the teacher of Personal and Social Development (PSD). This teacher was selected since s/he had a closer relationship with
the students and the latter would consequently feel more comfortable answering the questionnaire. The instructions given to the teacher were that s/he could read out the questionnaire to children who have difficulty in reading any of the items without influencing the answers given by the students in any manner. The children had to complete the questionnaire in class in the presence of the teacher who would in turn collect the completed questionnaires which were then sealed in an envelope and collected from the relevant schools.

The questionnaire was called ‘Psychological Well Being in Adolescence’ and at no time was the word depression mentioned. This was done in view of the negative connotations this word has and the stigma that mental health still carries in the Maltese culture. The two psychometric tools were preceded by some demographic data about the child, the school attended, whether s/he lives with both parents, their occupation and the birth order of the respondent. The questionnaire was anonymous.

The pilot was conducted and analysed. The teacher assigned to carry out the questionnaire found no difficulties in administering it and followed the instructions given. S/he gave out the forms during class and read out the questionnaire to students who had difficulty with some questions without influencing the way they replied. A class of nineteen students participated in the pilot study. They encountered no apparent difficulty in comprehending the questions, in fact they answered the vast majority of the questions. Overall there were only three questions (in separate questionnaires), which were left unmarked; this was probably done inadvertently. Since there were no apparent problems logistic or otherwise with the pilot, the study could be initiated.
3.4.4 Study

The actual study was conducted in June 2006. We estimated the sample to be of 25 students from 25 classes; a class from each school except for two schools from which 2 classes participated. Two classes from the Girls' Junior Lyceum from the Southern harbour district participated in order to have a balanced representation of the catchment area of this school. The other school from which 2 classes participated was an Independent school. In the latter case it did not matter as to which region it was situated in since children from all over Malta attend the school. The average number of students in each class is 25, and the calculated population sample was of 625.

The data collected were input on an excel spreadsheet and analysed using software Statistical Package for the Social Sciences (SPSS). Descriptive statistics were presented as tables and graphs. Significant testing was conducted where needed using the most appropriate test for each situation. Tests used included T-test, Chi-Squared test, Fisher's Exact test and Pearson Correlation test.
Chapter 4

Results
4.1 Response Rate

1. The original study population was of 625 Form 3 students.
2. However the actual number of respondents was 569; 294 boys and 275 girls.
3. This reduction in sample size is attributed to parents not giving their children permission to participate in the study and to children who were absent on the day the questionnaire was administered.
4. Study response rate was 91%.
5. Not all questions in the questionnaire were answered, analyses was performed on completed questions.

4.2 Demographics

4.2.1 Participants by Gender and School Type

![Bar chart showing the distribution of students by gender and school type.](image)

Fig. 2 Participants by gender and school type.
### Number of Respondents in Each School and Category.

<table>
<thead>
<tr>
<th>Schools Chosen</th>
<th>Category</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antonio Bosio Gzira</td>
<td>Boys’ State School</td>
<td>25</td>
</tr>
<tr>
<td>San Frangisk T’Assisi St Venera</td>
<td>Boys’ State School</td>
<td>17</td>
</tr>
<tr>
<td>Dun Karm Psaila Zebbug</td>
<td>Boys’ State School</td>
<td>27</td>
</tr>
<tr>
<td>Ninu Cremona Victoria Gozo</td>
<td>Boys’ State School</td>
<td>25</td>
</tr>
<tr>
<td>Guzeppi Despott Cospicua</td>
<td>Boys’ Junior Lyceum</td>
<td>22</td>
</tr>
<tr>
<td>Dun G. Zammit Hamrun</td>
<td>Boys’ Junior Lyceum</td>
<td>18</td>
</tr>
<tr>
<td>M.A. Vassallli Tal-Handaq</td>
<td>Boys’ Junior Lyceum</td>
<td>22</td>
</tr>
<tr>
<td>St Joseph Kordin</td>
<td>Boys’ Junior Lyceum</td>
<td>15</td>
</tr>
<tr>
<td>St Aloysius College B’Kara</td>
<td>Boys’ Church School</td>
<td>24</td>
</tr>
<tr>
<td>Stella Maris College Gzira</td>
<td>Boys’ Church School</td>
<td>21</td>
</tr>
<tr>
<td>De La Salle College Cottonera</td>
<td>Boys’ Church School</td>
<td>25</td>
</tr>
<tr>
<td>Gozo Seminary Victoria Gozo</td>
<td>Boys’ Church School</td>
<td>27</td>
</tr>
<tr>
<td>Erin Serracino Inglott Cospicua</td>
<td>Girls’ State School</td>
<td>21</td>
</tr>
<tr>
<td>Maria Assumpta Hamrun</td>
<td>Girls’ State School</td>
<td>19</td>
</tr>
<tr>
<td>G.F. Agius de Soldanis Victoria Gozo</td>
<td>Girls’ State School</td>
<td>30</td>
</tr>
<tr>
<td>Maria Regina Blata l-Bajda</td>
<td>Girls’ Junior Lyceum</td>
<td>24</td>
</tr>
<tr>
<td>Santa Tereza Mriehel</td>
<td>Girls’ Junior Lyceum</td>
<td>24</td>
</tr>
<tr>
<td>Sir Adrian Dingli St Andrews</td>
<td>Girls’ Junior Lyceum</td>
<td>21</td>
</tr>
<tr>
<td>Margaret Mortimer Sta Lucia</td>
<td>Girls’ Junior Lyceum</td>
<td>40</td>
</tr>
<tr>
<td>St Monica B’Kara</td>
<td>Girls’ Church School</td>
<td>19</td>
</tr>
<tr>
<td>St Joseph Sliema</td>
<td>Girls’ Church School</td>
<td>25</td>
</tr>
<tr>
<td>St Dorothy’s Zebbug</td>
<td>Girls’ Church School</td>
<td>25</td>
</tr>
<tr>
<td>San Andrea l/o Mselliet</td>
<td>Independent Mixed School</td>
<td>53</td>
</tr>
</tbody>
</table>

(26 males, 27 females)

Table 1. Number of respondents by school name and category.
Twenty three different schools from different localities in Malta and Gozo participated. The students attending these schools hailed from different regions of the Maltese islands.

4.2.2. Participants by Locality of Residence

Fig. 3 Students residing in each district by gender.
SHD = Southern Harbour District, NHD = Northern Harbour District, SED = Southern Eastern District, WD = Western District, ND = Northern District.

The highest number of participants (54%) was from the Northern Harbour area which incorporates Qormi, Birkirkara, Gzira, Hamrun, Msida, Pembroke, Pieta, St Julians, San Gwann, Saint Venera, Swieqi and Ta’ Xbiex. The lowest number of participants (28.5%) resided in Gozo.
4.2.3 Respondents Living / Not Living with Both Parents

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Living with both Parents</th>
<th>Not Living with both Parents</th>
<th>Total No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Male</td>
<td>284</td>
<td>97.3</td>
<td>8</td>
</tr>
<tr>
<td>Female</td>
<td>258</td>
<td>95.2</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>542</td>
<td>96.3</td>
<td>21</td>
</tr>
</tbody>
</table>

Table 2. Students living / not living with both parents

The table shows that 284 male students and 258 female students lived with both parents, while 8 males and 13 females did not live with both parents.

4.2.4 Frequency of Father’s Occupation and Corresponding Socioeconomic Status

<table>
<thead>
<tr>
<th>Father’s Occupation</th>
<th>Socioeconomic Status</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislators, senior officials and managers</td>
<td>1</td>
<td>63</td>
<td>12.4</td>
</tr>
<tr>
<td>Professionals</td>
<td>2</td>
<td>57</td>
<td>11.2</td>
</tr>
<tr>
<td>Technicians and associate professionals</td>
<td>3</td>
<td>84</td>
<td>16.5</td>
</tr>
<tr>
<td>Clerks</td>
<td>4</td>
<td>26</td>
<td>5.1</td>
</tr>
<tr>
<td>Service workers and shop and market sales workers</td>
<td>5</td>
<td>63</td>
<td>12.4</td>
</tr>
<tr>
<td>Skilled agricultural and fishery workers</td>
<td>6</td>
<td>10</td>
<td>2.0</td>
</tr>
<tr>
<td>Craft and related trades workers</td>
<td>7</td>
<td>88</td>
<td>17.3</td>
</tr>
<tr>
<td>Plant and machine operators and assemblers</td>
<td>8</td>
<td>65</td>
<td>12.7</td>
</tr>
<tr>
<td>Elementary occupations</td>
<td>9</td>
<td>54</td>
<td>10.6</td>
</tr>
</tbody>
</table>

Table 3. Frequency of father’s occupation and socioeconomic status.
There were 510 valid answers regarding father’s employment. The father’s occupation gives an indication of the socioeconomic status (SES) of the family. The SES classification used is that of the International Standard Classification of Occupations ISCO-88 (ILO 1988). The commonest occupations were those of technicians and associate professionals (SES 3) and of craft and related trades workers (SES 7). The least common type of employment was that of skilled agricultural and fishery workers.

4.2.5 Students in each Socioeconomic Group

![Students by Gender in each Socioeconomic Status](image)

Fig. 4 Number of students in each socioeconomic status.
4.3 Questionnaire and Frequency of Response to each Question

4.3.1 Revised Child Anxiety and Depression Scale-25 (RCADS-25) Component

<table>
<thead>
<tr>
<th>Items of RCADS-25</th>
<th>Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1 Bad things happening</td>
<td>50</td>
<td>8.8</td>
<td>410</td>
<td>72.2</td>
</tr>
<tr>
<td>2 Something bad will happen</td>
<td>69</td>
<td>12.2</td>
<td>394</td>
<td>69.5</td>
</tr>
<tr>
<td>3 Worry about what will happen</td>
<td>91</td>
<td>16.1</td>
<td>329</td>
<td>58.1</td>
</tr>
<tr>
<td>4 Something awful will happen to family</td>
<td>91</td>
<td>16.1</td>
<td>290</td>
<td>51.2</td>
</tr>
<tr>
<td>5 I think about death</td>
<td>193</td>
<td>34.0</td>
<td>260</td>
<td>45.9</td>
</tr>
<tr>
<td>6 I fear being away from my parents</td>
<td>323</td>
<td>57.2</td>
<td>203</td>
<td>35.9</td>
</tr>
<tr>
<td>7 I am scared to sleep alone</td>
<td>439</td>
<td>77.2</td>
<td>106</td>
<td>18.6</td>
</tr>
<tr>
<td>8 I fear being alone at home</td>
<td>388</td>
<td>68.6</td>
<td>155</td>
<td>27.4</td>
</tr>
<tr>
<td>9 Scared to sleep away from home</td>
<td>414</td>
<td>73.0</td>
<td>128</td>
<td>22.6</td>
</tr>
<tr>
<td>10 Afraid of being in crowded places</td>
<td>387</td>
<td>68.3</td>
<td>143</td>
<td>25.2</td>
</tr>
<tr>
<td>11 I worry about making mistakes</td>
<td>157</td>
<td>27.8</td>
<td>323</td>
<td>57.2</td>
</tr>
<tr>
<td>12 Worried I do badly at school work</td>
<td>148</td>
<td>26.1</td>
<td>293</td>
<td>51.8</td>
</tr>
<tr>
<td>13 Worry about doing poorly at things</td>
<td>116</td>
<td>20.5</td>
<td>338</td>
<td>59.6</td>
</tr>
<tr>
<td>14 Scared when I have to take a test</td>
<td>161</td>
<td>28.4</td>
<td>261</td>
<td>46.0</td>
</tr>
<tr>
<td>15 Afraid to talk in front of the class</td>
<td>285</td>
<td>50.4</td>
<td>205</td>
<td>36.2</td>
</tr>
<tr>
<td>16 Heart suddenly beats too quickly</td>
<td>324</td>
<td>57.0</td>
<td>191</td>
<td>33.6</td>
</tr>
<tr>
<td>17 Suddenly tremble and shake</td>
<td>398</td>
<td>70.1</td>
<td>133</td>
<td>23.4</td>
</tr>
<tr>
<td>18 Shaky when I have a problem</td>
<td>184</td>
<td>32.3</td>
<td>295</td>
<td>51.8</td>
</tr>
<tr>
<td>19 Heart beats fast when I have problem</td>
<td>199</td>
<td>35.1</td>
<td>263</td>
<td>46.4</td>
</tr>
<tr>
<td>20 Trouble with breathing</td>
<td>402</td>
<td>70.8</td>
<td>130</td>
<td>22.9</td>
</tr>
<tr>
<td>21 Nothing is much fun anymore</td>
<td>348</td>
<td>61.4</td>
<td>181</td>
<td>31.9</td>
</tr>
<tr>
<td>22 Feel sad or empty</td>
<td>210</td>
<td>37.0</td>
<td>283</td>
<td>49.8</td>
</tr>
<tr>
<td>23 Feel tired</td>
<td>118</td>
<td>20.7</td>
<td>344</td>
<td>60.5</td>
</tr>
<tr>
<td>24 I don’t want to move</td>
<td>279</td>
<td>49.2</td>
<td>210</td>
<td>37.0</td>
</tr>
<tr>
<td>25 Problems with my appetite</td>
<td>284</td>
<td>50.1</td>
<td>221</td>
<td>39.0</td>
</tr>
</tbody>
</table>

Table 4 Items of the Revised Child Anxiety Depression Scale-25 (RCADS-25) and the frequency of response to each item. The most common response is printed in bold.
### 4.3.2 Bullying and Pressure to Study Questions

<table>
<thead>
<tr>
<th>Items included at request of Research Board of Ethics</th>
<th>Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>26 Bullied in the past year</td>
<td>428</td>
<td>75.5</td>
<td>119</td>
<td>21.0</td>
</tr>
<tr>
<td>27 Pressured to study</td>
<td>128</td>
<td>22.5</td>
<td>212</td>
<td>37.3</td>
</tr>
</tbody>
</table>

Table 5 Items regarding bullying and pressure to study (Items were included at request of University Research Ethics Committee).

### 4.3.3. Depression Self-Rating Scale for Children (DSRS) Component

<table>
<thead>
<tr>
<th>Items of DSRS</th>
<th>Never</th>
<th>Sometimes</th>
<th>Mostly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>28 I look forward to things</td>
<td>56</td>
<td>10.0</td>
<td>286</td>
</tr>
<tr>
<td>29 I sleep very well</td>
<td>25</td>
<td>4.4</td>
<td>166</td>
</tr>
<tr>
<td>30 I feel like crying</td>
<td>298</td>
<td>52.5</td>
<td>238</td>
</tr>
<tr>
<td>31 I like to go out to play</td>
<td>132</td>
<td>23.4</td>
<td>198</td>
</tr>
<tr>
<td>32 I feel like running away</td>
<td>379</td>
<td>66.8</td>
<td>150</td>
</tr>
<tr>
<td>33 I get tummy aches</td>
<td>256</td>
<td>45.1</td>
<td>281</td>
</tr>
<tr>
<td>34 I have lots of energy</td>
<td>28</td>
<td>4.9</td>
<td>258</td>
</tr>
<tr>
<td>35 I enjoy my food</td>
<td>36</td>
<td>6.4</td>
<td>192</td>
</tr>
<tr>
<td>36 I can stick up for myself</td>
<td>34</td>
<td>6.0</td>
<td>211</td>
</tr>
<tr>
<td>37 I think life isn’t worth living</td>
<td>311</td>
<td>55.1</td>
<td>214</td>
</tr>
<tr>
<td>38 I am good at things I do</td>
<td>30</td>
<td>5.3</td>
<td>279</td>
</tr>
<tr>
<td>39 I enjoy the things I do</td>
<td>40</td>
<td>7.1</td>
<td>260</td>
</tr>
<tr>
<td>40 I like talking with my family</td>
<td>76</td>
<td>13.5</td>
<td>245</td>
</tr>
<tr>
<td>41 I have horrible dreams</td>
<td>277</td>
<td>48.9</td>
<td>261</td>
</tr>
<tr>
<td>42 I feel very lonely</td>
<td>332</td>
<td>58.5</td>
<td>199</td>
</tr>
<tr>
<td>43 I am easily cheered up</td>
<td>65</td>
<td>11.5</td>
<td>261</td>
</tr>
<tr>
<td>44 I feel so sad I can hardly stand it</td>
<td>344</td>
<td>60.7</td>
<td>183</td>
</tr>
<tr>
<td>45 I feel very bored</td>
<td>213</td>
<td>37.5</td>
<td>285</td>
</tr>
</tbody>
</table>

Table 6 Items of the Depression Self-Rating Scale for Children (DSRS) and their responses. The commonest response is printed in bold.
4.4 Analysis of Results obtained using the Depression Self-Rating Scale for Children (DSRS)

4.4.1 Depressed Students when using DSRS

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Depressed Students</th>
<th>Total No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>33</td>
<td>275</td>
</tr>
<tr>
<td>Female</td>
<td>80</td>
<td>255</td>
</tr>
<tr>
<td>Total Depressed</td>
<td>113</td>
<td>530</td>
</tr>
</tbody>
</table>

Table 7 Depressed students by gender.

The table shows that a total of 113 (21.3%) out of 530 students showed depressotypic symptoms when using the Depression Self-Rating Scale for Children (DSRS). Nearly one third of the girls and 12% of the boys fell into this category. The ratio of girls to boys is nearly 3:1. A Chi-Squared test showed that this difference in depression between gender is highly significant (p<0.001).

The DSRS incorporates a dysphoric sub-scale in items 30, 32, 41, 42, 44 and 45. Interestingly all these except for item 45 had ‘Never’ as the most common response while that for item 45 was ‘Sometimes.’ The percentage responding to these items as ‘Mostly’ was relatively low - less than 7.1% except for the last item which was the preferred choice for 12.3% of the respondents.
4.4.2 Depressed Students per Region of Residence

<table>
<thead>
<tr>
<th>District</th>
<th>Depressed</th>
<th>Total No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Southern Harbour</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Northern Harbour</td>
<td>2</td>
<td>28</td>
</tr>
<tr>
<td>Southern Eastern</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Western</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>Northern</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>Gozo</td>
<td>6</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 8 Depressed students per region of residence.

The highest percentage of students with depressotypic symptoms was in Gozo. However Pearson correlation analysis showed that there was no significant difference between district of residence and depression ($p=0.759$).

The number of unemployed fathers is greatest in Gozo. The relationship between unemployed fathers and district of residence was assessed using Fisher’s exact test and was not found to be significant ($p=0.092$).
4.4.3 Depressed Students by Region of Residence as Ratio of the Total Number of Depressed Students

<table>
<thead>
<tr>
<th>District</th>
<th>Ratio of Depressed Students (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Harbour</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0.135 (0.072-0.198)</td>
</tr>
<tr>
<td>Northern Harbour</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>0.252 (0.248-0.256)</td>
</tr>
<tr>
<td>Southern Eastern</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>0.117 (0.056-0.178)</td>
</tr>
<tr>
<td>Western</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>0.153 (0.086-0.220)</td>
</tr>
<tr>
<td>Northern</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>0.162 (0.093-0.231)</td>
</tr>
<tr>
<td>Gozo</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>0.180 (0.109-0.251)</td>
</tr>
</tbody>
</table>

Table 9 Depressed students by region as ratio of the total number of depressed students.

The highest ratio of depressed students is found in the Northern Harbour district.

4.4.4 Depressed Students by Father's Employment Status

<table>
<thead>
<tr>
<th>Father's Employment Status</th>
<th>Depressed Students</th>
<th>Total No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Father Employed</td>
<td>100</td>
<td>20.4</td>
</tr>
<tr>
<td>Father Unemployed</td>
<td>10</td>
<td>34.5</td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>21.2</td>
</tr>
</tbody>
</table>

Table 10 Depressed students by father's employment status.

Out of 520 valid answers, 100 (20.4%) students whose father was in employment were depressed whereas 10 (34.5%) offspring of unemployed fathers were depressed. A Chi-Squared test showed this difference approaches statistical significance (p<0.070).
4.4.5 Depressed Students by Socioeconomic Status based on Father’s Occupation

<table>
<thead>
<tr>
<th>Socioeconomic Status based on Father’s Occupation</th>
<th>Depressed Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 11 Socioeconomic status based on father’s occupation.

There is no significant relation between the father’s occupation and depressive symptoms. The students whose father’s occupation is in category 2 (professionals), 3 (technicians and associate professionals), 8 (machinery operators) and 9 (elementary occupations), seem to have more depressive symptoms. Offspring whose father’s employment is in category 6 (skilled agricultural and fishery workers) have the highest incidence of depression, however this figure could be unreliable since only 10 children fell into this category and therefore no conclusions can be drawn.
4.4.6 Depressed Students by Employment Status of Mother

<table>
<thead>
<tr>
<th></th>
<th>Depressed Students</th>
<th>Total No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Mother Employed</td>
<td>50</td>
<td>24.5</td>
</tr>
<tr>
<td>Mother Unemployed</td>
<td>62</td>
<td>19.2</td>
</tr>
<tr>
<td>Total</td>
<td>112</td>
<td>21.3</td>
</tr>
</tbody>
</table>

Table 12 Depressed students by mother’s employment status.

The data show that out of 527 respondents, 62 (19.2%) children whose mother was unemployed were depressed and 50 (24.5%) children whose mother was employed were depressed. Using a Chi-Squared test this difference was found to be statistically significant (p<0.030).

4.4.7 Birth Order and Depression

A student T-test was used to analyse whether the number of children in the family or the birth order of the respondent had any effect on the psychological outcome. The relation between the number of children in the family and a depressogenic outcome did not reach significance (p=0.465), neither did the relation between birth order and depression (p=0.859).
4.4.8 Depressed Students Living / Not Living with both Parents

Fig 5 Depressed students living / not living with both parents.

<table>
<thead>
<tr>
<th>Depressed Students</th>
<th>Total No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Living with both Parents</td>
<td>105</td>
</tr>
<tr>
<td>Not Living with both Parents</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>113</td>
</tr>
</tbody>
</table>

Table 13 Depressed students living / not living with both parents.

Out of 524 respondents, 506 lived with both parents while 18 did not live with both parents. 44.4% of children not living with both parents were depressed compared to 20.8% of those who lived with both parents. A Chi-Squared test showed that the difference is statistically significant (p<0.016).
4.5 Frequency of Bullying and Depression

Fig. 6 Percentage of students and frequency of bullying by gender.

There were 567 respondents for item 26 on the questionnaire which dealt with the frequency of bullying. Three quarters (75.5%) of the children had not been bullied in the previous year, and only one boy (0.2%) claimed he was always being bullied. When testing between bullying and gender using a Chi-Squared test, no significant association was found (p=0.141).

<table>
<thead>
<tr>
<th>Frequency of Bullying</th>
<th>Depressed Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Never</td>
<td>67</td>
</tr>
<tr>
<td>Sometimes</td>
<td>37</td>
</tr>
<tr>
<td>Often</td>
<td>7</td>
</tr>
<tr>
<td>Always</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 14 Frequency of bullying and depression.
There is a significant gradient between frequency of being bullied and depressive symptoms. Results show that students who reported they were often bullied were most depressed (43.8%), followed by those who were only sometimes bullied (33.3%). The only respondent who claimed he was always being bullied, did not happen to be depressed. The relationship between bullying and depression was assessed using the Fisher exact test and was found to be significant (p<0.001).

4.6 Pressure to Study and Depression

![Percentage of Students and Frequency of being Pressured to Study by Gender](image)

Fig. 7 Percentage of students and frequency of being pressured to study by gender.

All 569 participants answered this question. Nearly a quarter of the respondents (22.5%), answered that they were never pressured to study, 212 (37.3%) were only sometimes pressured to study, while 97 (17%) reported that they were always pushed to study. When testing between being pressured to study and gender using a Chi-Squared test, no significant association was found (p=0.342).
Table 15 Frequency of being pressured to study and depression.

<table>
<thead>
<tr>
<th>Frequency of being Pressured to Study</th>
<th>Depressed Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Never</td>
<td>29</td>
</tr>
<tr>
<td>Sometimes</td>
<td>34</td>
</tr>
<tr>
<td>Often</td>
<td>22</td>
</tr>
<tr>
<td>Always</td>
<td>28</td>
</tr>
</tbody>
</table>

The students with most depressive symptoms were at both ends of the spectrum; those who were never pressured to study (24.0%) and those who were always pressured to study (32.2%). The relationship between pressure to study and depressive symptoms was assessed using the Fisher’s Exact test and was found to be significant (p<0.026).
4.7 Analysis of Results of the Revised Child Anxiety and Depression Scale-25 (RCADS-25)

4.7.1 Cut-Off points for Anxiety and Depression

The authors of this scale suggest that children who scored in the top 25% and 10% of the Revised Child Anxiety and Depression Scale-25 (RCADS-25) may be highly anxious and depressed. The top 10% cut-off is indicative of more critically anxious and depressed respondents than the 25% cut-off.

<table>
<thead>
<tr>
<th></th>
<th>Gender of Respondents</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Percentile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GAD</td>
<td>6.0 (5.0)</td>
<td>8.0 (7.0)</td>
</tr>
<tr>
<td>SAD</td>
<td>2.0 (2.0)</td>
<td>3.0 (4.0)</td>
</tr>
<tr>
<td>SP</td>
<td>6.0 (4.0)</td>
<td>7.5 (6.0)</td>
</tr>
<tr>
<td>PD</td>
<td>4.0 (3.0)</td>
<td>5.5 (5.0)</td>
</tr>
<tr>
<td>MDD</td>
<td>5.0 (4.0)</td>
<td>6.0 (5.0)</td>
</tr>
</tbody>
</table>

Table 16 RCADS-25 cut-off points from the current study compared to those obtained by the author P. Muris et al in a study on 1,748 children (819 boys) and (929 girls) in the Netherlands. Figures in brackets are those obtained by Muris et al.

GAD = Generalized Anxiety Disorder, SAD = Separation Anxiety Disorder, SP = Social Phobia, PD = Panic Disorder, MDD = Major Depressive Disorder.

The results obtained in this study are highly comparable to those obtained by Muris et al (2002) on a population of 1,748 students (819 boys and 929 girls) in the Netherlands aged between 8-15 years and with a mean age of 11.3 years. Maltese youngsters seemed to have more anxiety symptoms than their Dutch counterparts except in the case of Separation Anxiety Disorder (SAD), where less boys in Malta scored in the
top 10% of the scale, while the score was equal for the top 75%. The total amount of Maltese students scoring in the top 10 and 25% for SAD was equal to that of the Dutch. Local females tended to have higher scores on all types of anxiety with the exception of the top 10% score for Generalized Anxiety Disorder (GAD) which was equal in the two studies. The Maltese scored higher on all the MDD scores than their Dutch counterparts. Interestingly the difference in cut off scores was uniform throughout.

4.7.2 Assessing Comorbidity on the RCADS-25 and DSRS

The highest 10% and 25% scores obtained on the RCADS-25 for every specific anxiety disorder were compared with the top 10% and 25% scores for Major Depressive Disorder (MDD) obtained on the same scale. Furthermore the students scoring in the top 10% of the RCADS-25 for each anxiety disorder were assessed on the DSRS to find their depressotypic status. These comparisons are made in order to analyse the coexistence of each particular anxiety symptom with depressive symptomatology the latter being assessed on both the RCADS-25 (depression subscale) and the DSRS scales. The presence of both anxiety and depression symptoms gives an idea of comorbidity.
4.7.2.1 Generalized Anxiety Disorder and Major Depressive Disorder

Fig. 8 Coexistence of symptoms of Generalized Anxiety Disorder (GAD) and Major Depressive Disorder (MDD) in children who scored at the top 25 and 10% of the RCADS-25 Scale.

There were 554 students whose comorbid symptoms for GAD and MDD could be calculated. There were 18 (3.2%) children who scored in the top 10% of both of these categories on the RCADS-25; 9 from each gender, whereas 84 (15.2%) of the children scored in the top 25% of these two RCADS-25. Of these, 36 (12.7%) were males and 48 (17.7%) were females.

The number of students who scored in the top 10% for GAD on the RCADS-25 and also obtained a score of 15 upwards on the DSRS was 25 (4.8%); with 11 (4.1%) males and 14 (5.6%) females.
4.7.2.2 Separation Anxiety Disorder and Major Depressive Disorder

Fig. 9 Coexistence of symptoms of Separation Anxiety Disorder (SAD) and Major Depressive Disorder (MDD) in children who scored in the top 25 and top 10% of the RCADS-25 Scale.

Out of a total of 553 valid answers, 48 (8.7%) scored in the top 25% of the RCADS-25 for both SAD and MDD and 6 (1.1%) scored in the top 10% for both subsets. Females outnumbered males in both the 75th and 90th percentile.

When the students who scored enough points to be categorized in the 90th percentile for SAD were examined for MDD using the DSRS, a total of 15 (2.9%) students fell into this category with 2 (0.74%) being males and 13 (5.2%) females.
Coexistence of Symptoms of Social Phobia and Major Depressive Disorder

Fig. 10 Coexistence of symptoms of Social Phobia (SP) and Major Depressive Disorder (MDD) in children who scored in the top 25 and 10% of the RCADS-25 Scale.

Coexistence of symptoms of Social Phobia (SP) and Major Depressive Disorder (MDD) was present in 82 (14.9%) students. These had scored in the top 25% for both factors on the RCADS-25. Females outnumbered males; there were 43 (16.1%) females and 39 (13.7%) males. However, out of the 24 (4.3%) respondents who scored in the top 10%, the incidence of males was twice that of females; 16 (5.6%) males and 8 (3.0%) females.

The number of respondents who were in the 90th percentile for SP and also fell in the depressed category on the DSRS was 26 (5%); 12 (4.4%) were males while 14 (5.7%) were females.
4.7.2.4 Panic Disorder and Major Depressive Disorder

Fig. 11 Coexistence of symptoms of Panic Disorder (PD) and Major Depressive Disorder (MDD) in children who scored in the top 25 and 10% of the RCADS-25 Scale.

A total of 85 respondents (15.2%), 39 (13.5%) males and 46 (16.9%) females, obtained the top 25% of the score for both Panic Disorder (PD) and Major Depressive Disorder (MDD). 27 (4.8%) students were in the top 10%; of these 12 (4.2%) were males and 15 (5.5%) were females. Girls scored higher than boys in the two percentiles.

The amount of children scoring in the top 10% on the RCADS-25 scale for PD who also fell in the depressed category on the DSRS was of 32 (6.1%); 13 (4.7%) males and 19 (6.1%) females.
Chapter 5

Discussion and Conclusions
5.1 Comparing Prevalence of Depression with other Studies

The overall prevalence of children with depressotypic symptoms assessed using the Depression Self-Rating Scales for children (DSRS) was of 21.3%. This is a staggering increase from 12.3% found in the study conducted by Zammit in 1994 also using the DSRS. The age difference could have contributed to this outcome since depressive disorders increase markedly after puberty; the 1994 study population was between 11 and 12 years of age while in the present study the ages varied between 13 and 14 years.

In the longitudinal Rocky Mountain study depressive disorders were noted to increase gradually till 11 years of age, dipped at 12 years and rose substantially by 15 years of age (Costello et al 2003). Another possibility could be that older adolescents nowadays are willing to disclose their depressive symptoms more readily than 12 years ago. The greater openness in today’s youth is also supported by the school environment through the introduction in the curriculum of Personal and Social Development (PSD) which provides an opportunity for the child to discuss such delicate subjects. The presence of school counsellors and psychologists also encourage children to seek advice when required and promote further debate on such topics which could lead to a decrease in the stigma associated with these conditions.

The prevalence rate for depression (21.3%) is relatively high when compared with data from the British Child and Adolescent Mental Health Survey conducted in 1999 which found the total prevalence of childhood psychiatric disorders to be 9.5% (Ford et al 2003). This discrepancy could be because of the wide variation in sampling, measures, diagnostic criteria and methods of combining informants’ reports.
and because of the different age groups. A review of 52 studies in 20 countries carried out in the last 40 years demonstrated an estimated prevalence ranging from 1% to 51%, with a median prevalence of 12% for prepubescent school-age children and 15% for adolescents. Although not all studies support an increase in trend in psychological disorders, comparisons between studies is very difficult (Roberts et al 1998). In the Rocky Mountains longitudinal study in children aged 9-16 years the prevalence of any psychiatric disorder at any one time was 1 in 6 (16.7%). The higher figure obtained in the present study could be attributed to the instrument, the Depression Self-Rating Scale (DSRS), which could have detected other forms of psychopathology such as conduct and emotional disorders and because of the relatively high misclassification rate of 23.9% (Birleson et al 1987).

5.2 Analysis of Results

In the present study two tools were used:

1. Revised Child Anxiety and Depression Scale-25 (RCADS-25) which had 5 subscales; 4 assessing different types of depression namely generalized anxiety disorder, separation anxiety disorder, social phobia and panic disorder and the fifth subscale assessing major depressive disorder.

2. Depression Self-Rating Scale for Children (DSRS) which assessed depressive symptomatology.

Comorbidity was assessed by taking the top 10 and 25% of the scores for each anxiety disorder on the relevant RCADS-25 subscale and comparing them with the top 10 and 25% scores for depression on the RCADS-25, and by taking the students
obtaining the top 10% scores for anxiety on the RCADS-25 and assessing them on the DSRS for depressive symptoms.

5.2.1 Analysis of Response to DSRS

When the responses to the DSRS of the present study were analysed, there was an equal distribution of the highest frequency of responses to each answer variety; 'Never,' 'Sometimes,' and 'Always.' However one has to see whether the item depicted a positive or negative mood. Birleson (1981) considered item 44 'I feel so sad I can hardly stand it' as having the greatest correlation to depression. The commonest response to this item was 'Never,' (60.7%), while 32.3% chose 'Always' and 7.1% ticked 'Mostly'. The latter 7.1% are highly at risk for depression. The other item which the author deemed to be important in depicting anhydonia is item 31, 'I like to go out to play.' A relatively high percentage of children (23.4%) marked the 'Never' box, while 35.2% ticked 'Sometimes' and 41.4% chose the 'Mostly' response. This answer could rightly detect anhydonia but it could also have different interpretations. For example children do not go out to play any longer either because of the limited safe, recreational spaces available or because it is less common practice since they are more accustomed to sedentary ways of playing such as with play stations and computer games. Another reason could possibly be attributed to the amount of school work and extra curricular activities that children have to cope with.

Scoring on the dysphoric subscale of the DSRS showed that dysphoric symptoms are only present in a relatively small minority in the study population.
5.2.1.1 Gender

The study showed that females suffer from more depressive symptoms than males, in fact the ratio is more than 2:1; 31.4% females and 12.0% males. This is borne out by the literature available. Age groups differ markedly in the development of depression. In childhood there is no difference in the rate of depressive symptoms in males and females. Girls tend to show higher rates of depression by age 13 and this rate increases sharply, whereas boys' rate of depression remains low. This ratio continues into adulthood (Nolen-Hoeksema 2001).

The reasons for this disparity could be that girls experience many stressors or rather that they have limited ability to cope with stress and the different biological responses to these stressors. Girls tend to respond by rumination and are more likely to maintain depressive symptoms whereas boys use distraction strategies which limit depressive symptoms (Nolen-Hoeksema 2001). Another factor which tended to precipitate depression in the female sex was the lack of disclosure of their feelings to others, in fact depressive feelings in girls were inversely related to the social support available (Schraedley et al 1998).

5.2.1.2 Area of Residence

The highest rate of depressive symptoms was found in Gozo, although the difference between localities of residence did not reach statistical significance. It is difficult to hypothesize a reason why this is so. It could be that living in a relatively isolated closely knit community might expose adolescents to more pressures to conform
with traditional values. Father's employment rate in Gozo was the lowest from all the 6 districts, this could be a possible reason for the highest incidence of depression.

5.2.1.3 Employment Status of Parents

Students whose father was unemployed (34.5%) were more likely to exhibit depressive symptoms than those whose father was employed (20.4%), although this did not reach statistical significance. An unemployed father may lead to financial hardships and stress due to the perceived disparity between needs and resources. This perceived economic stress affects emotions and parenting strategies thus detrimentally altering the developmental environment of the offspring. Also the stress itself may directly affect the well-being of the child (Fröjd et al 2006). The inability to be employable could be the result of mental ill health, thus the increased genetic predisposition for a psychological problem in the offspring.

In contrast employment of the mother seems to be related to higher psychological stress in the offspring. In fact 24.5% of the children whose mother was employed were at risk of depression compared to 19.2% of those whose mother was unemployed. This finding was statistically significant.

In Malta female activity rate is quite low (35.5%) by European standards (NSO 2007). In this study 38.7% of women were employed this discrepancy could be attributed to the fact that some mothers work unofficially. When the mother has to spend time away from home, the children might have to assume greater responsibilities, help with the household chores and spend more time on their own at home. These factors might result in less child mother interaction and perhaps less time to communicate.
leading to more perceived loneliness and stress by the child. This could in turn precipitate psychological stress.

The father's occupation was assessed with child's depressive symptoms using Fisher's exact test but no significant correlation was noted. However there seems to be a higher rate of depressive symptomatology in children whose fathers are professionals, associated professionals or technicians. A possible reason could be due to lack of time and communication between the father and offspring as a result of the long hours fathers spend at work. The trend of higher depressive symptoms is also found in offspring whose father is a non skilled worker or is in elementary employment in categories 8 and 9. The reason could be that these occupations are related to low income and consequently financial stress.

The high level of depression encountered in those whose fathers work in category 6; craft and related trade, could be attributed to the fact that only 10 students fell into this category and the depressive rate is inflated.

5.2.1.4 Living / Not Living with both Parents

The amount of the children not living with both parents amounted to only 21 (3.7%). This number is relatively low when one considers the number of marital separations. Although only unofficial statistics for the last three years are available and trends may be difficult to analyse, the figures for Consensual and Court Judgement separations are as follows; there were 485 cases in 2004, 709 in 2005 and 698 in 2006 (Registry of Family Court 2007). Although these do not reflect the total amount of separations in Malta, they may give some indication of the size of the problem.
The low amount of separations represented in the study could presumably be because children misinterpreted this question in that they could still be living with both parents, spending some days of the week with one parent and the rest of the week with the other parent, but not with both parents in the same house. Also, the respondents could have deliberately answered that they lived with both parents when in fact they did not because marital separations are still viewed with some prejudice in Malta, and divorce is not legal. The number of depressed adolescents was relatively higher in those not living with both parents together (44.4%) than in those living with both parents (20.8%). Children of separated parents are exposed to increased stresses and risk, more so locally because of our culture and beliefs and these factors may lead to an increased predisposition to depression.

5.2.1.5 Bullying

Nearly a quarter of the respondents reported having been bullied in the past year. However, only 3.4% claimed they were often being bullied and only one male respondent said he was always being bullied. The correlation between bullying and depression is the same in both genders.

Frequency of bullying was related to depressive symptoms, with those who are sometimes and often bullied experiencing most depressive symptoms. This could be because bullying is a source of stress which could lead to depression and depressed individuals may be introvert and less assertive thus attracting the attention of bullies.
5.2.1.6 Pressure to Study

Nearly three quarters of the students claimed to be pressured to study to some extent, just under a quarter said they often felt pressured while 17% reported that they were always pushed to study. There was no difference between genders.

This relatively high percentage of people being pressured to study reflects the importance that parents and educators attribute to academic achievement. The students who were not pressured to study and those who were often pressured both had higher rates of depression. Those in the first category could have felt they lacked attention from their caregivers and thus felt depressed. On the other hand students who were constantly under pressure to study could have felt depressed either because they were not performing at the required level and thus felt inadequate and had lower self-esteem or else because their parents or educators had very high expectations, the child’s efforts were never appreciated and so the child tended to give up.

5.2.2 Results of the Revised Child Anxiety Depression Scale-25

5.2.2.1 Comparison with another Study

The students answered the Revised Child Anxiety Depression Scale-25 by Peter Muris et al (2002) and the results from the local population were compared to those obtained by the author on a population of 1,748 students aged between 8-15 years in the Netherlands. The results were highly comparable although Maltese youngsters tend to be overall more anxious and more depressed. This could be because of the relatively older population (13-14 years of age) in the local study compared to the Dutch study (8-15 years of age). A female preponderance was present in all types of anxiety disorders and in
major depressive disorder. Since anxiety and depression commonly coexist, analysis of the commonest forms of comorbidity was done by taking the top 10 and 25% of the scores for each anxiety disorder and comparing them with the top 10 and 25% scores for depression on the RCADS-25, and by taking the students scoring in the top 10% for anxiety on the RCADS-25 and assessing them for depression on the DSRS.

5.2.2.2 Panic Disorder and Major Depressive Disorder

The commonest anxiety disorder that coexists with MDD is Panic Disorder (PD), this was evident both at the 75th percentile and the 90th percentile. Interestingly this association between PD and MDD was highest even when the DSRS was used to assess depressive symptomatology.

Panic Disorder and Major Depressive Disorder were slightly commoner in females. Panic disorder is a severe and persistent mental disorder associated with a high degree of distress and occupational and social disability. A panic attack is the core syndrome of panic disorder and is defined as a discrete period of intense fear or discomfort accompanied by somatic and psychological symptoms, which may or may not be precipitated by exposure to a phobic stimulus. DSM-IV criteria for diagnoses of PD requires both recurrent unexpected panic attacks and at least one of the following; persistent concern of having additional attacks, worry about the implications of the attacks and consequences and a significant change in behaviour as a consequence of the attack. PD is highly comorbid with a wide range of other mental disorders, most frequently with depressive disorders followed by other anxiety disorders. In fact more than half of the individuals suffering from panic attacks were found to have at least one
full blown anxiety, mood or substance use disorder (Goodwin et al 2004). This could be explained by the ‘symptom progression model’ that hypothesizes that panic is a temporally primary condition, leading ultimately to depression and subsequently to self-medication, which predisposes to substance misuse disorders. However, studies show that PD might occur either as a temporally primary condition, or a secondary condition or concomitantly with major depression.

Studies confirm that rates of PD are higher in females (1.0-5.6%) compared to males (0.6-1.5%). Age of onset varies between males and females. Data suggest that females experience a steady increase in panic attacks and these occur after the age of 10 and up to 28 years, whereas in males there tends to be a bimodal distribution, with a second period of increased risk in the late 40s (Goodwin et al 2005).

5.2.2.3 Social Phobia and Major Depressive Disorder

The second commonest anxiety disorder coexisting with MDD is Social Phobia (SP), also known as Social Anxiety Disorder. When the highest 25% of the scores for SP and MDD were considered, females tended to predominate. However, in the highest 10% scores for both SP and MDD a male preponderance was noted. When those scoring in the top 10% for SP were also assessed for MDD using the DSRS, it transpired that 5% of them had depressive symptoms. Thus the correlation between the two scales for comorbidity holds.

The presence of comorbidity with SP is very common, individuals with early SP and depressive disorder are not only at higher risk of subsequent depression but also experience a more malignant course of depressive illness. Also the presence of SP in
adolescence and early adulthood is a strong risk factor for subsequent development of depression (Murray et al 2001).

Studies show that females are more frequently affected by social phobia than males. This is reflected in the present study in that there is a female preponderance at both the 10% and 25% cut-off points for SP alone on the RCADS-25.

The actual incidence of SP is not known, furthermore it tends to be under diagnosed in primary care and under treated. Early detection and treatment are important because of its association with higher risks of suicide and with the development of other psychopathology (Fehm et al 2005).

5.2.2.4 Generalized Anxiety Disorder and Major Depressive Disorder

The coexistence of Generalized Anxiety Disorder (GAD) and MDD using the RCADS-25 was evident with a female preponderance at the 75th percentile and an equal susceptibility of males and females at the 90th percentile. This correlation was also present when the top 10% scores on the RCADS-25 for GAD were assessed on the DSRS. In fact the level of comorbidity between GAD and depression obtained on both scales was comparable.

The DSM-IV describes GAD as the presence of excessive and uncontrollable anxieties, worries or tension in a number of everyday events. In children, these are related to at least one of the following; vigilance, motor symptoms or impairment in important areas of daily function.

The present study showed a female preponderance for GAD both when assessed on its own and when in conjunction with MDD. Females tend to have a two-
three-fold increased risk compared to males. It was previously thought that GAD generally precedes and eventually develops into MDD. This belief was challenged in a prospective study carried out in New Zealand which revealed that in at least the first three decades of life, up to 37% of cases of depression were preceded by an anxiety disorder, but at least 63% were not. Also, results show that 32% of anxiety disorder cases were either preceded by depression or emerged concurrently with it (Moffitt et al 2007). This comorbidity was also seen in the German General Health Survey-Mental Health Study which showed that 59% of respondents with a 12-month DSM-IV diagnosis of GAD also had MDD (Carter et al 2001).

5.2.2.5 Separation Anxiety Disorder and Major Depressive Disorder

In the present study the comorbidity of Separation Anxiety Disorder (SAD) and MDD was the least frequent with only a very few students (1.1%) scoring in the top 10% of both SAD and MDD. This low association of SAD and MDD was confirmed when the top 10% in the RCADS-25 were examined for MDD using the DSRS. Also a great female preponderance was present. This low association between SAD and MDD could be attributed to the fact that SAD tends to decrease in prevalence after childhood. Therefore it is to be expected that older children with SAD might be expected to have more severe disorders.

The main features of SAD are excessive worry about separation from home or major attachment figures, sleep disturbance and nightmares involving themes of separation, crying and pleading when parents do leave, disruptions in behaviour and/or somatic complaints during separation, persistent fears of being alone and avoidance of
separation from caregivers. DSM-IV criteria state that at least three of eight SAD symptoms must be present, onset of disorder must be before 18 years and symptoms must be present for at least 4 weeks leading to clinically significant impairment in the child’s functioning (Silverman and Treffers 2001).

The National Comorbidity Survey Replication in the US, revealed that the prevalence of childhood separation disorder is 4.1%, has its onset in early childhood and is more prevalent among women than men. This female preponderance when considering SAD on its own, was also noted in the present study. One third of the participants with SAD in the US study had their condition persist into adulthood. Although the US study population involved an older population, it revealed that the strength of the comorbidity between estimated SAD and other anxiety disorders was similar to the strength of comorbidities with mood disorders (Shear et al 2006). The coexistence of SAD with other anxiety disorders was confirmed in a longitudinal study on twins 8-17 years of age. A substantial number of children with persistent SAD 18 months after the first interview were found to have developed overanxious disorder. Also persistent SAD was correlated with new depressive disorders (Foley et al 2004). The longitudinal comorbidity study by Kovacs et al (1989), in a population of 8-13-year olds clinically suffering from depression showed that anxiety was present in 41-44% and that the most frequent type of anxiety was SAD. Among the MDD cases with comorbidity the anxiety disorder preceded depression in about two thirds of the study population.
5.3 Limitations

- The study was a self-assessment questionnaire and thus depended only on the participant’s subjective response; this information could have been consolidated by parental input or teacher input but unfortunately logistic problems and time constraints did not allow this.

- The study was a one-time cross-sectional study thus assessing only the point prevalence of depressive and anxiety symptomatology. A longitudinal study would have provided more information about comorbidity and outcome of the children at risk.

- Although the response rate was high, the students who were absent from school on the day of the questionnaire, could have been those most at risk of psychological symptoms and their contribution could have been very valid. In fact adolescents with high levels of depressive symptoms miss on average nearly one day a month more than their counterparts (Glied and Pine 2002).

- The researcher had to rely on the cooperation of educators, thus the response from various schools could have been hampered if the commissioned teacher lacked enthusiasm.

- The translation of the questionnaire to Maltese although tested, could have altered the original meaning to some extent.

- Although clear instructions were given on how the questionnaire had to be conducted, there is no way one can ascertain that uniformity was maintained.

- Adolescents attending opportunity centres were not included in the study. Although the relative population of these schools is very small, these children
who are coming from a problematic social background or have challenging behaviour are predisposed to greater psychological sequelae.

- The cohort included foreign students attending Maltese Schools.

5.4 Conclusions

5.4.1 Current Evidence

An overall prevalence of 21.3% of depressive symptomatology in children aged between 13-14-years attending Form 3 class is quite disconcerting. Anxiety and depression commonly occur concurrently and the commonest comorbid symptoms were those of depression and panic disorder, closely followed by social phobia and generalized anxiety disorder. The problem is real and is escalating. Therefore the necessary intervention is important to stop the trend and possibly reverse it. Students most at risk are:

- Females
- Students not living with both parents
- Students whose father is unemployed (weakly)
- Students whose mother is employed
- Bullied children
- Students who are either never pressured or always pressured to study.

5.4.2 Disease Burden in our Cohort

The student population attending Form 3 class in Malta amounts to 5,621 (Education Division 2005), so everything remaining equal, approximately one fifth i.e.
about 1,100 (CI: 1002, 1394) of students would be affected. These figures highlight the extent of the problem and underline the need for action to alleviate the suffering and decrease the morbidity of those involved, their families, their friends and the community at large.
Chapter 6

Recommendations
6.1 Intervention

This study reveals that the burden of depression and anxiety in our adolescents is considerable and intervention is not an option but a must. If we are committed to safeguard the well-being of our youngsters, we cannot remain complacent to this reality and a concerted effort by all the stakeholders is necessary in order to mitigate this situation and possibly reverse it. As mental health is strongly determined during the first years of life, promoting mental health in children and adolescents is an investment for the future.

6.1.2. Prevention

Girls have a higher prevalence of depression and several studies of prevention seem to focus on the female gender. A pilot study to address issues on how to improve intervention programmes for girls was conducted by Chaplin et al (2006). It explored the effectiveness of the Penn Resiliency Programme (PRP) which is a cognitive-behavioural and social-solving intervention designed to reduce and prevent depressive symptoms in children and adolescents. Girls’ groups were more effective than co-ed groups in reducing young adolescent girls’ hopelessness. However contrary to what was predicted, girls’ groups were as effective as co-ed groups in reducing depressive symptoms. These results still favour intervention to all girls’ groups since the PRP programme benefited girls across more outcomes than did co-ed PRP, highlighting the possibility that when depressive prevention programmes are addressed to all girls’ groups they may be more effective.
6.1.3 School-Based Intervention Programmes

6.1.3.1 School-Based Intervention targeting Depression

There are three kinds of interventions:

- **Universal interventions** address all students. These have been shown to be effective on behaviour management in that they encourage positive acceptable behaviour. These interventions include social skills programmes which provide children with cognitive skills to help them cope with difficult social situations and multimodal interventions which tend to include multiple interventions within the school setting or multiple interventions across settings such as school and home. Universal health prevention programmes enhance the participation of apparently healthy students who would otherwise not have participated in such studies, with the benefit of improved recruitment and decreased attrition and stigmatisation.

- **Selective programmes** which include school or community-based programmes for children at risk and have dealt with child social and problem-solving skills and/or parent management skills proved to be effective in decreasing negative parent-child interactions and teacher ratings of conduct problems at school.

- **Indicated interventions** to prevent conduct disorders target children who have been identified by teachers and/or parents as clearly displaying significant conduct problems. These programmes have been effective in decreasing conduct problems.

A meta-analysis of the types of prevention programmes available claims that predictors of a positive outcome include:
• Prevention programmes with more than eight sessions were found to be more effective. This could be due to the fact that a certain amount of time should be allowed in order for the participants to be able to internalize methods and processes offered by the interventions. Sessions of between 60 and 90 minutes' duration were found to be the most effective probably because there was enough time for interaction and group processes.

• Programmes combining three or more intervention methods were found to be more effective. Both cognitive techniques and competence methods enhance a positive outcome.

• Programmes were more effective when conducted by trained personnel with or without the intervention of lay people. This is probably due to the skills of qualified people in dealing with depressed people.

• When the intervention aims were well-defined and any attrition accounted for, the programmes led to better outcomes (Jané-Llopis et al 2003).

Schools could provide an ideal environment to conduct universal health prevention programmes. A school-based randomised controlled trial assigned students to either one of two intervention groups; Resourceful Adolescent Programme-Adolescents (RAP-A), Resourceful Adolescent Programme-Family (RAP-F) and a control group. Unfortunately parental participation was poor and its effects could not be analysed. Results revealed that RAP-A seems to be effective in lowering rates of clinical and sub-clinical levels of depressive and hopelessness symptoms post intervention and even after a 10 month period. Also the participants considered the programme to be beneficial (Shochet et al 2001).
Studies conducted by Kowalenko (2005), confirm that targeted school-based programmes for adolescents with sub-clinical depression carried out by professional people are the most beneficial and most cost-effective given limited resources. Short-term effectiveness of a school based programme called ‘Adolescents Coping and Emotions’ carried out on girls who scored above the Children’s Depression Inventory (CDI) cut-off point was beneficial with a decrease in depressive symptomatology even at 6 months after the intervention.

6.1.3.2 School-Based Programme targeting Bullying

The present study shows that victims of bullying are at risk of developing depression. A school-based intervention could be potentially effective in reducing this problem. Studies show that bullied girls report less control over bullying and that these perceptions of control are greatest when bullying first starts. This highlights the importance of early intervention (Hunter and Boyle 2002). Identifying individuals who are involved in bullying and intervening at an early stage could prevent the onset of depression and associated psychosocial problems. A systematic review of school-based anti-bullying interventions suggests that a whole-school approach may be more successful and more cost-effective. These involve modification of the school’s whole environment with the participation of children, teachers, administrators and parents (Fekkes et al. 2004; Vreeman and Carroll 2007). In fact school staff’s commitment to implement the intervention is crucial to its success (Vreeman and Carroll 2007). Many approaches targeting bullying are available but their success is sometimes debatable. In Maltese schools anti-bullying interventions are carried out, but this is usually at
classroom level. This type of intervention should be evaluated in order to provide the best approach.

6.1.4 Intervention at Primary Care Level

Literature shows that in up to half of patients presenting with anxiety and depression, the diagnosis is missed and in those who are recognized a significant proportion are not treated (Ellen et al 1998). Enhancing the training of doctors in mental health might contribute for better detection. Goldberg et al (1998) have suggested three fundamental approaches to the problem;

- Improving the interview technique
- The use of screening tools
- Bringing mental health services into the primary care settings.

A randomized controlled study in a health maintenance organization (HMO) on offspring of depressed parents was carried out. The intervention group was provided with usual care combined with a 15-session cognitive intervention while the control group was submitted to usual care. Results showed that the preventive effects were clinically significant. However these effects faded over time so the possible introduction of periodic boosters following intervention may be advantageous (Clarke et al 2001).

Another randomized controlled trial on patients aged between 13 and 21 years with depressive symptoms was conducted in a primary care setting. The control group was provided with usual care by primary care physicians who had been trained in evaluation and treatment of depression while the intervention group had expert leader
teams which ran the intervention, had care managers trained in cognitive-behaviour therapy (CBT) and also supported the primary care clinician. Furthermore, in the intervention group the treatment modality i.e. CBT, medication, combined CBT and medication, referral etc., was decided between patient and clinician. Results at 6 months post intervention revealed a clinically significant improvement in the intervention group, not only from the depression aspect but also on quality of life and patient satisfaction (Rosenbaum Asarnow et al 2005). These findings suggest that screening and psychotherapy in a primary care setting are feasible, beneficial and could be more cost-effective than the traditional approach. Moreover, it satisfies patients' expectations. Thus there is sufficient evidence to recommend it.

A meta-analysis by Zuckerbrot and Jensen (2006) on improving the recognition of depression in primary care by paediatric professionals suggests that adolescent self-reported tools would identify more patients with depression and that some adolescent depression screening tools have adequate psychometric properties and feasibility characteristics for use in primary care. However, caution should be practised since ideally these should be compared to a gold-standard diagnosis and, secondly, if not used judiciously, they could lead to over identification and increase in burden of false-positive results. Findings confirmed that training of physicians improved their ability in identifying depression through interview but not to levels as high as when self-report tools were administered, suggesting that systematic use of adolescent self-reports with depression-specific questions may be a useful diagnostic aid to paediatric professionals in primary care.
6.1.5 Family Intervention

Although the majority of children of divorced parents fare well, this study indicates that some may be more vulnerable to depression. Measures that alleviate this tendency include:

- Contention of parental conflict
- Encouragement of authoritative and close relationships between children and both parents
- Involvement of children in parental access arrangements.

Intervention should focus on parent education programmes aimed at skill development, programmes for children to build up their resiliency, divorce mediation, collaborative lawyering and family and group therapy. Although mediation is locally available, the presence of programmes for parents and offspring might be essential to mitigate the effects of divorce. These sessions could either be done in the court sector, in the community or in schools (Kelly and Emery 2003). A six-year follow-up of preventive programmes consisted of two interventions; one focused on the custodial mother and the other focused on both custodial mother and child. The two interventions lead to a reduction in externalizing problems and also in diagnoses of mental disorder. These programmes seem to benefit those most at risk for long-term problems and possibly these interventions should focus on this subgroup. However further evaluation of these programmes should be undertaken to estimate their cost-benefit ratio (Wolchik et al 2002).

Another intervention on families where parents suffer from depressive disorders showed that family specific clinician-facilitated intervention and family non
specific intervention both lead to positive results although these were more favourable in the former group. Both programmes led to a significant change in parents’ child-related behaviours and attitudes and children reported increased understanding of parents’ illness because of the intervention. These effects were still present two and a half years post intervention. Children reported decreased internalizing symptomatology which in turn leads to a decreased risk of development of future depression. By providing psycho-educational information, enhancing the child’s resilience, analysing the family’s unique experience together with long-term follow-up could lead to a positive outcome (Beardslee et al. 2003).

6.2 Resources

The next consideration would be how to allocate scarce resources in order to yield the maximum benefit. To be able to answer this question an operational analysis should be undertaken. The available human resources who already offer their services in schools should be listed. These include:

- School health services made up of teams of doctor and nurse
- School psychologists
- Guidance teachers
- Personal and Social Development teachers
- Other available agencies such as Sedqa, anti-bullying intervention personnel

It is crucial to carry out a critical evaluation of the services offered and whether their services are being used effectively and efficiently without overlap between
the different professional interventions. The services offered have to be modified in order to shift the emphasis to maximum health gains to address the current needs.

6.3 Lisbon Agenda

The Lisbon strategy aims to make the European Union the 'most competitive and dynamic knowledge-driven economy in the world,' by 2010, capable of sustainable economic growth with more and better jobs, greater social cohesion and respect for the environment. Its main aim is to create wealth in Europe, through a globalised market and a knowledge society. To reach this target, investment in education is a must. In this scenario one must see whether children suffering from depression and other psychological problems do in fact benefit from this education system in view of some possible hindrance from their condition. In our very competitive education system, students who fall by the wayside unfortunately have no opportunity to make up for time lost, remain at an academic disadvantage and fail to reach their potential. Intervention targeted at those with psychological problems would lead to a decrease in depression which would in turn result in a better educational attainment.

6.4 Training

Ad hoc training of the required health care and educational workers is essential. Training must be an ongoing process with continuous evaluation. Awareness in a positive way through talks and the media among all the stakeholders, that is, teachers, children, parents and the public in general would make the prevention programme more
acceptable and decrease any related stigma with the consequence that more people would be willing to participate thus enhancing its positive effect.

6.5 Intersectoral Policy

In order for the prevention programme to achieve its full benefit, collaboration between the different sectors such as the relevant ministries, health, education and family and social solidarity, and all the different agencies and Non Governmental Organizations (NGOs) which in some way contribute towards the psychological well-being of adolescents should be enhanced. The Minister of health is committed to this intersectoral approach and to the promotion of mental health in all policies, services and activities (Department of Information 2006).

6.6 Social Policy

The Lisbon Agenda strives to increase the female workforce to 60% by 2010. At present Malta’s female activity rate stands at 35.5% (NSO 2007) and is still way behind the European average. To enhance female participation in the workforce the government is offering certain tax benefits and encouraging the opening of quality child care centres. On the other hand, this study revealed that female respondents whose mothers were employed were at increased risk of depression. This could be due to more responsibilities borne by the children and also to the long time spent on their own at home. Thus a sort of paradox is being created where on the one hand female participation in the workforce contributes to the economy and on the other hand their offspring may need more social or medical support. A revision of the existing social
policy would help alleviate this problem by either creating jobs that can be done from home or by introducing flexitime and job sharing to enable mothers to spend more time with their offspring. Furthermore, from the educational aspect increasing the number of schools running after hours programmes containing educational support and fun activities would also help to reduce the time children spend alone at home and, instead, provide an environment where children can grow socially, academically and psychologically.

The policy document 'The Vision behind the Health Sector Reform' reiterates that all reforms in the health sector should be client-based, cost-effective and shifts the concept from a 'health repairer' to 'health maintenance.' A multidisciplinary Working Group in the mental health sector has been set-up and is currently targeting 11-15-year old school children. Part of its work has been focused on developing skills to empower adolescents to be better equipped to deal with stressors, the provision of psychological services in schools, launching programmes against substance abuse and mental awareness campaigns to de-stigmatise mental health and to inform children about common mental health problems such as depression and the importance of early treatment (Jané-Llopis and Anderson 2006).

Although evidence suggests that interventions are all effective for reducing depressive symptom, only a few have been demonstrated to actually reduce the incidence of depression. Thus efforts must go beyond prevention to the promotion of a healthy lifestyle. While mental health prevention has as its main targets the reduction of symptoms and, ultimately, of mental disorders, mental health promotion promotes positive mental health by increasing psychological well-being, competence and resilience and by creating supporting living conditions and environments. Health promotion could
lead to a decrease in incidence of mental disorders. The implementation of effective mental health prevention and promotion programmes needs to be based on evidence of what works and how cost-effective the policies are, what human and financial resources the country has and the commitment of the policy makers for such action to be taken (WHO 2004).

Intervention would not be possible without the constant commitment and collaboration of all the stakeholders; the health, education and family and social policy ministries, agencies, NGO s, health care workers, educators and the community. An intersectoral approach is instrumental for the effective implementation of mental health policies which would help alleviate the burden of disease and improve the quality of life of people with mental illness, their families and society. The promotion of social inclusion and protection of the rights of people with mental health problems will enhance social cohesion and solidarity, leading to a better quality of life and the physical and mental well-being of the most vulnerable in our society.
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Masters in Education University of Manchester.

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Appendix 1

Approval by University Research Ethics Committee
Ref No: 21/2006

2nd May 2006

Dr Antonella Sammut MD
20 Triq it-Twila
Zebbug ZBG 04

Dear Dr Sammut

Please refer to your application submitted to the Research Ethics Committee in connection with your research entitled:

MENTAL HEALTH IN ADOLESCENTS IN MALTA

The University Research Ethics Committee at its meeting of 7th April 2006 approved the above-mentioned Protocol on condition that a psychiatrist must be involved to validate questionnaire in view of the subject matter.

Yours sincerely

Dr M Vassallo
Chairman
Research Ethics Committee
Appendix 2

Validation of Questionnaire by Psychiatrist
15 June 2006

Fr. Paul Pace
Faculty of Theology
University of Malta

Dear Fr. Paul,

Re: Mental Health in Adolescents in Malta, Dr. Antonella Sammut

As part of the MSc Public Health Course, Dr. Antonella Sammut is going to conduct the research entitled 'Mental Health in Adolescents in Malta'. She submitted this research for approval by the ethics committee.

Following the request of this committee I have assessed the questionnaires she is going to use for this research, i.e. a shortened version of the Revised Child Anxiety and Depression Scale and Depression Self-Rating Scale for Children (Birleson).
The questions in these questionnaires are similar to the ones used when assessing children clinically, and thus in my opinion they are not harmful to adolescents.

If you have any queries please do not hesitate to contact me.

Dr. Anton Grech M.D. M.Sc. (Psychiatry) (Lond) M.R.C.Psych. (UK)

Consultant Psychiatrist
Appendix 3

Authorisation from Education Division
B. Tutor’s Approval

The above research work is being carried out under my supervision.

Tutor’s Name: Dr. Neville Callao
Signature: [Signature]

C. Education Division – Official Approval

The above request for permission to carry out research in Non-State Schools is hereby approved according to the official rules and regulations.

Assistant Director
Non-State Schools

Date: 24/02/2006

Official Stamp

Conditions for the approval of a request by a student to carry out research work in Non-State Schools

Permission for research in Non-State Schools is subject to the following conditions.

1. Application forms are obtainable from the Customer Care, Education Division, Floriana or the Faculty Officer, Faculty of Education, University of Malta, Msida. Requests, on the prescribed application form, must be presented well in advance and are to be addressed to:

   The Assistant Director (Non-State Schools)
   Education Division
   Floriana CMR 02

2. The request form is to be accompanied by a copy of the questionnaire and/or any relevant material intended for use in schools during research work.

3. The original request form, showing the relevant signatures and approval, must be presented to the Head of School.

4. All research work is carried out at the discretion of the relative Head of School.

5. Researchers are to observe strict confidentiality during their work in schools, especially if the results are to be published.

6. The Education Division reserves the right to withdraw permission to carry out research in Non-State Schools at any time and without prior notice.

7. Students are expected to restrict their research to a minimum of students/teachers/administrators/schools and to avoid any waste of time during their visits to schools.

8. The Education Division assumes the right to a copy of the results/findings of the research work carried out in Non-State Schools. As soon as the research in question is completed, researchers/students are to forward a copy of their findings to the Assistant Director Non-State Schools.
Appendix 4

Authorisation from Curia
Dissertation Questionnaire

To Heads of Church Schools -
St Aloysius College
De La Saile College
St Monica School, B’Kara
St Joseph’s School, Sliema
St Dorothy’s School, Zebbug
Sacred Heart Seminary, Gozo
Stella Maria College, Gzira

Dr Antonella Sammut MD, DCH, reading for a MSc in Public Health, has requested permission to carry out a questionnaire with Form Three students in the above captioned Church schools.

Kindly note that there is no problem on the part of the Secretariat for Dr Sammut to conduct the said exercise subject to adhering to directives and policies of the schools concerned; the required attention to the matter will be greatly appreciated.

fr Dominic V Scerri OP
Archbishop’s Delegate for Church schools.

http://mail.google.com/mail/?ik=3e64401e5d&view=cm&search= inbox&th=1ada7c... 19/08/2007
Appendix 5

Authorisation for Use of the Revised Child Anxiety and Depression Scale-25
Dear Dr Muris,

I am following an MSc course in Public Health at the University of Malta and for my dissertation I would like to find the prevalence of anxiety and depression in 13-year olds in Malta. I came across your questionnaire "RCADS-25" and would like to use it with your kind permission. I would really appreciate if my request is granted since the questionnaire would be a great asset for my study.

Many thanks for your help.

Regards
Antonella Sammut

http://mail.google.com/mail/?ik=3e64401e5d&view=cv&search=inbox&th=10ac8980... 21/08/2007
Appendix 6

Authorisation for Use of the Depression Self-Rating Scale for Children
Dear Dr. Birleson,

I am a student [date]

Birleson, Peter (MH)  
show details [date]  
Reply

Hi Antonella

Of course you can use the DRSC, with appropriate acknowledgement/referencing. If you are looking for the prevalence of depression as a syndrome the scale should suffice. If you are looking for the prevalence of a depressive disorder, you’ll need to ask kids or parents about impairment and impact of the symptoms as well as getting them to complete the scale.

Best wishes with your study.

Peter Birleson
Clinical Director, Eastern Health CAMHS
Adjunct Professor, School of Psychology, Deakin University

<mailto:Peter.Birleson@maroondah.org.au>
Ph: (613) 9871 7701  
Mob: 0408-544-556

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http://mail.google.com/mail/?ik=3e64401e5d&view=ct&search=inbox&th=10a01a51... 19/08/2007
Psychological Well Being in Adolescence

Name of School __________________________

You are a: Boy ☐ Girl ☐

Age _______

In which town/village do you live? __________________

You live with both your parents? YES ☐ NO ☐

Does your father work? YES ☐ NO ☐ Occupation __________________

Does your mother work? YES ☐ NO ☐ Occupation __________________

Circle the correct answer:

Number of children in the family  1 2 3 4 5 6 __

Which child are you? First Second Third Fourth Fifth _______

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<th></th>
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<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
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<td></td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>I am worried that something bad will happen to myself</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>I worry about what will happen</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>I am worried that something awful will happen to my family</td>
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<tr>
<td>5</td>
<td>I think about death</td>
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<tr>
<td>6</td>
<td>I fear being away from my parents</td>
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<tr>
<td>7</td>
<td>I am scared to sleep alone</td>
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<td>8</td>
<td>I fear being alone at home</td>
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<td>I am worried that I will do badly at school work</td>
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<td>13</td>
<td>I worry about doing poorly at things</td>
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<td>14</td>
<td>I am scared when I have to take a test</td>
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<td>I am afraid to talk in front of the class</td>
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<tr>
<td>16</td>
<td>My heart suddenly beats too quickly for no reason</td>
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<tr>
<td>17</td>
<td>I suddenly tremble and shake for no reason</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Never</td>
<td>Sometimes</td>
<td>Often</td>
<td>Always</td>
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<td>I suddenly have trouble with breathing for no reason</td>
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<td>I feel that nothing is much fun anymore</td>
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<td>22</td>
<td>I feel sad or empty</td>
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<tr>
<td>23</td>
<td>I feel very tired</td>
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<td>I feel like I don’t want to move</td>
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<td>I have problems with my appetite</td>
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<td>Have you been bullied in the past year</td>
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<td>Do you feel pressured to study</td>
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<td>33</td>
<td>I get tummy aches</td>
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<td>34</td>
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<td>I enjoy my food</td>
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<td>36</td>
<td>I can stick up for myself</td>
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<td>37</td>
<td>I think life isn’t worth living</td>
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<td>38</td>
<td>I am good at things I do</td>
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<td>39</td>
<td>I enjoy the things I do as much as I used to</td>
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<td>40</td>
<td>I like talking with my family</td>
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<td>41</td>
<td>I have horrible dreams</td>
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<td>42</td>
<td>I feel very lonely</td>
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<td>43</td>
<td>I am easily cheered up</td>
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<td>44</td>
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<td>45</td>
<td>I feel very bored</td>
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Circle the answer that describes your feelings over the past week

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<th>Mostly</th>
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<td>I feel very bored</td>
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Appendix 8

Questionnaire – Maltese Version
Is-Sahha Psikologika Fiz-Żgħażagħ

Isem ta’ l-iskola ____________________________

Inti Tifel □ Tifla □

Eta ____________

Isem tar-rahal jew belt fejn toqghod ____________________________

Tghix m’ommok u missierek? IVA □ LE □

Missierek jahdem? IVA □ LE □ Jahdem ta’ ____________________________

Ommok tahdem? IVA □ LE □ Tahdem ta’ ____________________________

Aghmel ċirku madwar it-twegiba t-tajba:

<table>
<thead>
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<th>Liema tiġi fil-familja?</th>
<th>L-ewwel, it-tieni, it-tielet, ir-raba,’ il-hames,</th>
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<td>Qatt</td>
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<td>3</td>
<td>Nibża minn x’jista’ jiġri</td>
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</tr>
<tr>
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<td>Naħseb fuq il-mewt</td>
<td>Qatt</td>
</tr>
<tr>
<td>6</td>
<td>Nibża meta ma nkunx mal-ġenituri tieghi</td>
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<td>Qatt</td>
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<td>Qatt Xi Drabi Ta’ Spiss Dejjem</td>
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<td>Inhossni imdejjaq / imdejqa u nhoss vojt kbir go fija</td>
<td>Qatt Xi Drabi Ta’ Spiss Dejjem</td>
</tr>
<tr>
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<td>Inhossni ghajjien / ghajjiena hafna</td>
<td>Qatt Xi Drabi Ta’ Spiss Dejjem</td>
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<tr>
<td>24</td>
<td>Inhoss li ma rridx nićcaqlaq</td>
<td>Qatt Xi Drabi Ta’ Spiss Dejjem</td>
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<tr>
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<td>Naqasli l-aptit</td>
<td>Qatt Xi Drabi Ta’ Spiss Dejjem</td>
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<tr>
<td>26</td>
<td>Qatt kont ‘bulled’ f’din l-ahhar sena</td>
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<tr>
<td>27</td>
<td>Thossok maghfus bl-istudju</td>
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_Aghmel čirku madwar it-tweġiba li tiddeskrivi kif hassejtek f’din l-ahhar gimgha_

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<td>38</td>
<td>Jien tajjeb / tajba f’dak li naghmel</td>
<td>Qatt Xi Drabi Kważi Dejjem</td>
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<td>39</td>
<td>Ghadni niehu gost naghmel l-affarijiet daqs kemm kont niehu gost qabel</td>
<td>Qatt Xi Drabi Kważi Dejjem</td>
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<td>Niehu gost nitkelem ma’ tal-familja</td>
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<tr>
<td>44</td>
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<td>Qatt Xi Drabi Kważi Dejjem</td>
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<td>45</td>
<td>Inhossni xbajt u ddejjaqt</td>
<td>Qatt Xi Drabi Kważi Dejjem</td>
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Appendix 9

Cover Letter and Parental Consent Form
English Version
Dear Parent

I am conducting a study on students in Form 3. The study will be in the form of a short questionnaire and will assess the way adolescents react to everyday situations and thus will show their psychological abilities to deal with everyday life. The questionnaire is anonymous and although the information given by your child will be analysed, at no time is your child’s identity going to be known or revealed. The questionnaire takes less than ten minutes to complete and is made up of simple questions such as:

- I am scared of having to take a test
- I worry about making mistakes
- I am afraid of crowded places
- I sleep very well
- I am good at things I do

For each question the child has to circle one of the following: Never, Sometimes, Often and Always.

This study has been approved by both the Director of Education and the Board of Ethics. I am enclosing a consent form which you are kindly asked to sign to allow your child to participate.

Thanking you for your cooperation.

Yours faithfully

Dr Antonella Sammut
Consent Form

I allow my child to participate in a study entitled “Psychological Well Being in Adolescents”. I am aware that the study is in the form of an anonymous questionnaire.

By signing this consent form, I hereby allow Dr Antonella Sammut to use the information given by my child for scientific purposes and for the outcome of the study to be published. I am assured that the identity of my child will not be known or revealed at any point in the study.

I am freely allowing my child to participate but I retain the right to withdraw my consent without giving any reason.

I am not being reimbursed for letting my child take part in the study.

If I have any queries I can contact Dr Antonella Sammut on: 21468900; 79702220.

Signature of Parent/Guardian

Name in block letters

Identity Card Number

Name of Child in block letters

Date
Ghezież Ġenituri,

Jien qed naghmel studju fuq studenti li jattendu l-Form 3. Dan l-istudju jikkonsisti fi kwestjonarju qasir li jaghti hijiel kif it-tfal igibu ruħhom f’sitwazzjonijiet li jiltaqghu magħhom ta’ kuljum u hekk juri kemm ġhandhom hila psikologiċi biex jaffrontaw il-hajja ta’ kuljum. Il-kwestjonarju huwa anonimu u għalkemm l-informazzjoni li tinghata mit-tfal tigi analizzata, fl-ebda mument l-identita’ tat-tifel/tifla m’hi se tkun magħrufa. Dan il-kwestjonarju jieħu inqas minn għaxar minuti biex jitwieġeb u hu magħmul minn mistoqsijiet sempliċi bhal:

- Nibża meta jkolli test
- Nibża nieħu żball
- Nibża nkun fil-folol
- Norqod tajjeb hafna
- Jien tajjeb/tajba f’dak li naghmel

Għal dawn il-mistoqsijiet it-tfal iridu jaghmlu ċirku madwar waħda minn dawn il-kliem: Qatt, Xi drabi, Ta’ Spiss u Dejjem biex jirju liema twegiba hija l-ahjar fil-fehma taghhom.


Nirringrazzjak tal-koperazzjoni.

Dejjem tieghek

Dr Antonella Sammut
**Formola Tal-Kunsens**


Jien naghti il-kunsens tiegħi lil Dr Antonella Sammut biex tuża l-informazzjoni li tingħata minn ibni/binti.

Jiena nifhem li r-rizultati ta’ dan l-istudju jistgħu jintużaw għal skopijiet xjentifigi u jista’ jiġi ppublikat rapport bil-miktub; jekk isir hekk l-identita’ ta’ ibni/binti qatt ma tkun magħruża jew mikkufa.

Jiena ma għandi l-ebda obbligu li nhalli lil ibni/binti jieħu/tieħu sehem fl-istudju u dan qed nagħmlu minn raja.

Jien nista’, meta rrid, ma nħallix lil ibni/binti jkompli/tkompli jieħu/tieħu sehem fl-istudju, u mingħajr ma naghti raguni.

Jiena miniex nitħallas biex inħalli l’ibni/binti jieħu/tieħu sehem f’dan l-istudju.

Jekk ikolli xi diffikulta’ waqt l-istudju, nista’ nistaqsi għal:

Dr Antonella Sammut fuq 21468900 jew 79702220.

Firma tal-genitur/gwardjan

______________________________

Isem b’ ittri kbar

______________________________

Numru ta’ l-identita’

______________________________

Isem ibni/binti b’ittri kbar

______________________________

Data ________________________