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Junette Ranttila

Trishna Shrestha

# UNDERSTANDING DEPRESSION IN CHILDREN AND ADOLESCENTS

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Heikki Ellilä & Mari Lahti

Junette Ranttila & Trishna Shrestha

# CHILDREN AND ADOLESCENTS DEPRESSION

The contents of this thesis were focused in the context of children and adolescents depression. This topic was chosen to help parents and guardians further understand depression in children and adolescents. By understanding and learning to recognize the presence of depression, the possible negative outcomes that this illness brings can be prevented or lessened.

To be able to understand the presence of depression in children and adolescents, varying depressive symptoms experienced by different age groups were identified, including psychopathological symptoms, somatic symptoms and the gender difference symptomology of depression. This thesis also includes the prevalence of depression and the potential risk factors that contributed to the development of depression among children and adolescents. Specified in the risk factors were the genetic and biological vulnerability, environmental factors, negative life events, and the characteristics of the child and adolescent.

Negative consequences may possibly occur if depression remains untreated. These possible negative effects such as impairment of psychological and social functioning that may lead to poor self esteem, poor academic performance, and higher risk of suicide were contained in the thesis. Depression may also affect the family system, parent-child duo, and peer relationships as well.

Possible interventions that are commonly used by professionals in the treatment of depression in children and adolescent were also discussed. The treatments involved were non-pharmacologic and pharmacologic. The non-pharmacologic treatment includes play therapy, psychosocial therapy, family therapy, and cognitive-behaviour therapy while pharmacologic treatment involves the use of anti-depressant medications.

The facts provided in the thesis were taken from several published scientific researched articles; therefore, the target groups that were included were from different conducted research studies. The target groups were children and adolescents, where both boys and girls were included. The information provided by this thesis will be published in Terveysnetti – a webpage provided for the public viewer. The contents will be written in English.

KEYWORDS:

Children, child, childhood, adolescent, adolescents, adolescence, depression

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# LIST OF ABBREVIATIONS (OR) SYMBOLS

| | |
|---|---|
| AACAP | American Academy of Child and Adolescent Psychiatry |
| ADHD | Attention-Deficit/Hyperactivity Disorder |
| CBT | Cognitive Behavioural Therapy |
| CDI | Children Depression Inventory |
| FDA | Food and Drug Administration |
| HONcode | Health On the Net Foundation for Medical and Health Web sites |
| KiGGS | German Health Interview and Examination Survey for Children and Adolescents |
| MDD | Major depressive disorder |
| MFQ | Mood and Feeling Questionnaire |
| NIMH | National Institute of Mental Health |
| ODD | Oppositional Defiant Disorder |
| PCP | Primary Care Provider |
| PTSD | Post traumatic stress disorder |
| SSRI | Selective serotonin re-uptake inhibitor |
| WPI | Wyeth Pharmaceutical, Inc. |

# 1 INTRODUCTION

Depression imposes itself not only on adults but it takes its toll on children and adolescents as well. Normally, parents want their children to be happy. Yet despite doing their best to provide and protect them, children may still encounter disappointments, frustrations, or real heartbreak. At times, children may feel sad and needy. However, some children and adolescents seem to be constantly experiencing sorrow, hopelessness, and helplessness. Depression is an illness where the feelings of depression persist and intervene with the child or adolescent functional ability. (AACAP 2008, www.aacap.org.)

According to Birmaher 1996; Brent and Birmaher (2002, 668), the characteristic of a child and adolescent depression is not always manifested by sadness but by irritability, boredom, or an inability to feel pleasure. Depression is a chronic, recurrent, and mostly an inherited illness. Frequently, the first appearance of depression occurs during childhood or adolescence. Prolonged depressive episodes happen in an individual with dysthymic disorder (a milder depression that is constituted by an insidious onset and chronic course) that gradually progresses into major depression.

The clinical spectrum of the illness can range from simple sadness to a major depressive disorder or sometimes to bipolar disorder (Son & Kirchner 2000, 2297). Bipolar disorder is an illness that is characterized by periods of depression that alternate with manic episodes, “defined by a decreased need for sleep, increased energy, grandiosity, euphoria, and an increased propensity for risk-taking behavior” (Geller 2000; Brent and Birmaher 2002, 668). At least 20 percent of those children and adolescents who experienced early onset of depressive disorders are at high risk for bipolar disorder, especially those who have a history of bipolar disorder in the family, psychotic symptoms, or a manic reaction to anti-depressant medication (Birmaher 1996; Geller 2001; Brent and Birmaher 2002, 668).

Depression in adolescents is a disabling condition that is associated with serious long term morbidities and even suicide (William et al. 2009, 716). About five percent of the general population of children and adolescents may experience depression at any given point in time (AACAP 2008, www.aacap.org) and its prevalence continued to rise (William et al. 2009, 716). Although depression is common among children and adolescents, it is still frequently unrecognized or undetected (Son & Kirchner 2000, 2297).

In many societies, depression has been considered as a major health problem, but the treatment seeking is rare, which mostly includes the non-western societies. People from traditional cultural backgrounds either deny psychological distress; interpret such distress as somatic illness or either take it as physical illness. (Karasz 2004, 1625.) Jacob et al. (1998, 68) further suggests that while western societies may view depression as a medical problem that requires professional attention, more traditional societies assume depressive symptoms as social problems or as emotional reactions to situations.

Depression is treatable but depressed children and adolescents may present a different behavior than those of depressed adults. Hence, child and adolescent psychiatrists caution parents to be acquainted with the signs of depression in their children. (AACAP 2008, www.aacap.org.)

# 2 LITERATURE REVIEW

## 2.1 Prevalence of Child and Adolescent Depression

The occurrence of depression and suicidal behaviour happens earlier in life than it was 50 years ago (Murphy 2004, 19). According to NIMH 2007; U.S. Public Health Service 1999; Herman et al. (2009, 433), one out of ten children is suffering from a severe emotional disturbance that causes impairment. The growing number of studies confirmed that depression commonly and persistently affects young people. The rate dramatically increases as children turn into adolescence. (Saluja et al. 2004; Dopheide 2006, 234.)

Although depression in children is among the most debilitating psychological disorder, "it also one the most overlooked and undertreated illness" (Cicchetti & Toth 1998; Herman et al. 2009, 433). With the high number of children and adolescents suffering from depression, up to 80% of them are not given any form of treatment (Beardslee et al. 1993; Keller et al. 1991; Lewinsohn et al. 1998; Miller et al. 2002; Herman et al. 2009, 434). Depression affected 0.3% of pre-schoolers, 2% of elementary school-age children, and 5-10% of adolescents. The pre-pubertal age depression rates for boys and girls are similar, and doubled in females after puberty. (Birmaher et al. 1998; Costello et al. 2003; Dopheide 2006, 234.)

In a Finnish study by Fröjd et al. (2008, 487), which comprised the target group of $7^{th}$ - $9^{th}$ grade pupils aged 13-17 years attending secondary school in Pori, the rate of depression was found to be 18.4% among girls and 11.1% among boys. Depression was measured using R-Beck Depression Inventory (BDI), which is the Finnish modification of the 13-item version of BDI.

Another separate study in two regions of Finland (Vaasa region and Pirkanmaa) consisted of students from secondary school of $8^{th}$ and $9^{th}$ grade, revealed a total result of 17.2% of students have at least mild depression. The prevalence rate of mild depression among girls was found to be 11.2% and 5.9% among boys, moderate depression was found to be 9.0% among girls and 4.7% among

boys, while severe depression among girls and boys were found to be 2.1% and 1.5%, respectively. (Kaltiala-Heino et al. 2001, 159.)

A recent Finnish diagnostic interview based studies which was conducted in general population showed a corresponding rates of adolescent depression range of 0.9% to 7.8% depending on timeframe (Aalto-Setälä et al. 2001; Haarasilta et al. 2001; Ristkari et al. 2006; Sihvola et al. 2007; Ritakallio 2008, 23 ). Likewise, recent Finnish rating scale based studies estimated adolescent depression from 6% to 14% (Torikka et al. 2001; Kaltiala-heino et al. 2003; Pelkonen et al, 2003; Luopa et al, 2006; Fröjd et al. 2007; Ritakallio 2008, 24.).

In the context of Finland, there is no evidence of vast increase in rates of depressive symptoms among the adolescents (Luopa et al. 2006; Ritakallio 2008, 25) but there may have been some increase in the depressive rates of children in the past decades (Sourander et al. 2004; Ritakallio 2008,25).

According to Maharajh et al. (2005, 30), the overall rate of adolescent depression varied across different countries and cultures. In Sweden, a depression score of 12.3% was found in high school students ages 16-17 (Olsson & Von Knorring 1997; Maharajh et al. 2005, 30). Whereas in Italy, a low rate of 3.8% was found (Canton et al 1989; Maharajh et al. 2005, 30). Canadian (Stavrakaki 1991; Maharajh et al. 2005, 30) and British (Ollendick & Yule 1990; Maharajh et al. 2005, 30) adolescents yielded similar depression score rate of 10%. Separate studies of Chinese adolescents were reported to have score rates of 13% (Dong et al. 1994; Maharajh et al. 2005, 30) and 11% (Shek 1991; Maharajh et al. 2005, 30); while Australian adolescents reported to have a rate of 14.2% (Boyd et al. 2000; Maharajh et al. 2005, 30). In Guatemala, a high rate high rate of 35.1% adolescent depression was found (Berganza & Aguilar 1992; Maharajh et al. 2005, 30). Low rates were reported in Western Europe, Asia and Australia (Maharajh et al. 2005, 30).

## 2.2 Symptoms of Children with Depression

The symptoms of depression can vary with age (Birmaher et al 1998; Brent 2004; Saluja et al. 2004; Dopheide 2006, 234). As noted from previous available literatures, the symptoms of depression in school-age children, adolescents, and adults are similar, with somewhat increase in the frequency in adolescents than in children in the manifestation of hopelessness and some vegetative and motivational symptoms. (Carlson & Kashani 1988; Weiss & Garber 2003; Klein et al. 2005, 415.) Indications of particular depressive symptoms can also vary with the child's level of cognitive and social development. In clinical presentation, it was validated that 3 year-old children have been diagnosed with major depressive disorder. (Luby 2002; NIMH 2005; Dopheide 2006, 234.)

However, systematic researches on depression in pre-school age and infants are limited; therefore, existence of syndromes manifested in school-age children, adolescents, and adults are unclear in very young children (Klein 2005, 415). Depending on the severity of depression, depressive disorder may also be accompanied by psychotic symptoms. In minors, such psychotic symptoms are usually manifested by a feeling of sinfulness, guilt, or failure. (Mehler-Wex & Kölch 2008, 149.)

In the article Recognizing Depression by Kathryn Murphy (2004, 19), the main indication of depression in young children is anhedonia - the lack of interest to engage in enjoyable activities. Persistent shows of suicidal or self-destructive theme in plays displayed by pre-schoolers, or a physically healthy child displaying disinterests in play are example signs of anhedonia (Luby 2002; Dopheide 2006, 234). Some developmental tasks of children can be accomplished through playing but the presence of anhedonia makes the child uninterested towards it, thus hinder developments (Murphy 2004, 19).

Recognizing depressive symptoms in children age 8 and younger may not be easy because they are less likely to verbalize their emotions and instead show symptoms of anxiety (e.g. phobias, separation anxiety), somatic complains, and

auditory hallucinations (APA 2003; NIMH 2005; Dopheide 2006, 234*).* Somatic complaint such as intermittent abdominal pain is commonly seen in primary care offices (Murphy 2004, 19). Depressed children also array signs of irritability, temper tantrums, and other behavioural problems. Children ages 9-12 years and are depressed may talk about running away, showing signs of boredom, guiltiness, or hopelessness, lack of self-esteem, and fear of death. Unlike adolescents with depression, children are less likely to experience delusion or make serious contemplation to commit suicide. (Birmaher et al. 1998; Brent 2004; Saluja et al. 2004; Dopheide 2006, 234.)

Mehler-Wex & Kölch (2008, 150) also added that depressive symptoms in minors are strongly dependent on their age. Table 1 (see table 1 below), shows different age groups with their corresponding psychopathology and somatic symptoms.

Table 1. Age dependent psychopathological symptoms of depression (Mehler-Wex & Kölch 2008, 150).

| Age Group | Psychopathological Symptoms |
|---|---|
| **Toddlers** | Restlessness, screaming; Unprompted crying attacks, irritability, agitation;<br>Disinterestedness, passivity, apathy, lack of expression;<br>Reduced creativity, imagination and stamina<br>Clinginess, silliness; Auto stimulating behavior |
| **Preschool children** | Crying, irritability, aggressive and explosive outbreaks,<br>Hypomimia, reduced gestural activity/passive general motor response, introversion, lack of interest; Joylessness, attention seeking behavior;<br>Low frustration tolerance, aggressiveness<br>Delayed social and cognitive developments |
| **School-children** | Crying, defiant behavior, defense, aggressive behaviors;<br>Self-reported sadness, listlessness and lack of drive,<br>Disinterestedness, withdrawal; Problems concentrating, failure at school<br>Worries, initial thoughts expressing tiredness of life; Attention seeking |
| **Adolescents** | Apathy, despair, refusal, lack of drive, disinterestedness, withdrawal;<br>Thoughts and actions slowed down, problems in performance/achievements, cognitive impairments;<br>Anxiety, disgust, lack of self-confidence, self reproachfulness, brooding, fear of the future, suicidality |

Table 2. Age dependent somatic symptoms of depression (Mehler-Wex & Kölch 2008, 150)

| Age Group | Somatic Symptoms |
|---|---|
| **Toddlers** | Disruptions to falling asleep/sleeping through because of insufficient self-calming strategies<br>Eating disorders and refusal to eat accompanies by weight loss, increased proneness to infections |
| **Preschool children** | Regressive use of language; Delays in motor development<br>Sleeping and eating disorders<br>Secondary enuresis and encopresis |
| **School-children** | Sleeping and eating disorders<br>Somatic complaints; Regressive behavior |
| **Adolescents** | Sleeping and eating disorders<br>Psychosomatic complaints<br>Low morning mood; Early waking; Inability to relax and rest |

There were only few studies conducted to examine the gender-related depressive symptoms in younger school-aged children. In one study, a sample of 122 children from 5$^{th}$ and 6$^{th}$ graders from four suburban middle-class public schools were examined for gender differences in depressive symptoms with the use of Children's Depression Inventory (CDI) (Bailey 2007, 88.) The findings suggested that girls were more into internalizing and negative self-image where as boys were into externalizing and more school problems. Although on average, the depressive symptoms scores were slightly higher in girls than in boys on the 27-item CDI, but the difference was considered as insignificant. (Bailey et al. 2007, 89.)

Furthermore, symptoms of depression can also be similar with other problems in children. For this reason, accurate diagnosis is important to successfully eradicate the illness. Depression caused by mental illness and medical condition must be properly differentiated (Murphy 2004, 28.)

## 2.3 Symptoms of Adolescents with Depression

Adolescence is a critical time of development and it signifies a period of high risk for depression. At this stage of development, depressive symptoms are often dismissed or ignored as signs of adolescence or teenage behaviours. Any abnormal or unusual behaviour shown by them are often linked to the 'temporary phase' that they are going through or occasional bad mood rather than suffering from depression. Depressed mood has been referred as a common experience during adolescence. (Steinberg 1999, Gil-Rivas et al. 2003, 93.)

The pre-pubertal age depression rate for boys and girls are similar, and doubled in females after puberty (Birmaher et al. 1998; Costello et al. 2003; Dopheide 2006, 234). Females are at a higher risk of first onset of major depression from early adolescence until their mid-50's and have a lifetime depression rate of 1.7 to 2.7 fold greater than males. Studies reported that girls are more depressed and more severely depressed than boys. (Crowe et al. 2006, 12.)

The featured article 'Characteristics of adolescent depression' by Crowe et al. (2006, 13) studied the particular characteristics of adolescents attending outpatient mental health service in New Zealand. Among the total number of 105 adolescents, a total of 74 had CDI greater than or equal to 12 and were classified as depressed. Greater percentage of girls was found depressed than boys (see figure 1).

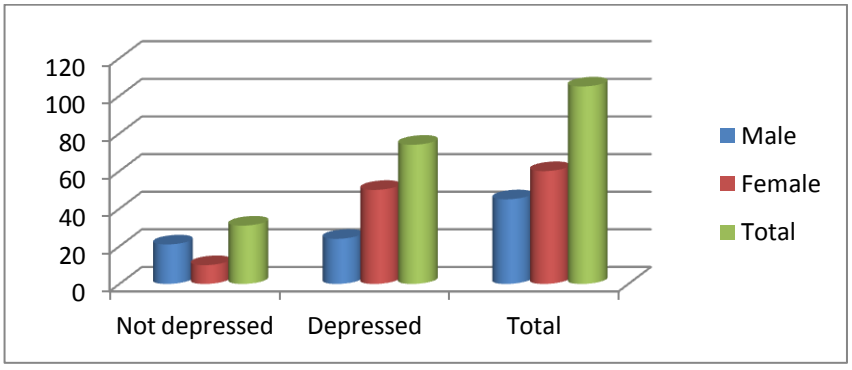


Figure 1: Number of girls and boys classified as depressed according to CDI (Crowe et al., 2006, 13).

According to Crowe et al. (2006, 13), there are some gender differences in the clinical presentation of depressive symptoms. In a Swedish high school study, the most common symptoms for the boys were sadness, crying and suicidal ideation. While symptoms such as, fear of failure, self-dislike, feeling unattractive, guilt, and suicidal ideation were found in girls. (Olsson and Von Knorring 1997; Crowe et al. 2006, 13). Additional study by Marcotte et al. (1999); Crowe et al. (2006, 11) reported a higher frequency of helplessness, fear of abandonment and internalization with girls and externalizing behaviours and self-criticism with boys.

Moreover, Crowe et al. (2006, 15) also confirmed that depressed girls are more likely to have internal symptoms such as feeling lonely and unhappy, crying and hating themselves. The study also concluded that for both the adolescent girls and boys, the most common reported characteristics of depression includes interpersonal (social withdrawal, irritability and loneliness) and thought processing symptoms (concentration and indecisiveness).

Table 3. Symptoms most frequent endorsed by adolescent boys based on the MFQ (Mood and Feeling Questionnaire) (Crowe et al., 2006, 14).

| Symptoms | Mean score for depressed boys (range=0.2) |
|---|---|
| I feel like talking less than usual | 1.50 |
| It was hard for me to make up my mind | 1.38 |
| I found it hard to think properly or concentrate | 1.42 |
| I felt grumpy and cross with my parents | 1.13 |
| I didn't sleep as well as I usually sleep | 1.13 |
| I was very restless | 1.13 |
| I felt so tired I just sat around and did nothing | 1.13 |
| I didn't have any fun at school | 1.05 |
| I worried about bad things I did | 1.04 |
| I felt miserable or unhappy | 0.96 |

Table 4. Symptoms most frequently endorsed by adolescent girls based on the MFQ (Mood and Feeling Questionnaire) (Crowe et al., 2006, 14).

| Symptoms | Mean score for depressed girls (range=0.2) |
|---|---|
| I felt grumpy and cross with my parents | 1.64 |
| I felt lonely | 1.48 |
| I hated my self | 1.46 |
| I cried a lot | 1.45 |
| I didn't sleep as well as I usually sleep | 1.44 |
| I found it hard to think properly or concentrate | 1.41 |
| It was hard for me to make up my mind | 1.36 |
| I thought I looked ugly | 1.36 |
| I didn't have any fun at school | 1.34 |
| I felt miserable or unhappy | 1.44 |

## 2.4 Continuity of Depression

A child diagnosed with depression has an increased risk of developing depression in his or her adulthood (Murphy 2004, 19). However, although there were substantial evidences in the continuity of depression from adolescence to adulthood, the consistency in the result in the continuity from pre-pubertal to adulthood is less (Carlson & Kashani 1988; Klein et al. 2005, 413). Follow-up studies in the group of pre-pubertal children generated varying results. In some studies, the results indicated that depressed children are at high risk of developing depression in adulthood while other results did not indicate evidence of increased risk except for other particular subgroups. (Harrington et al. 1990; Weissman et al. 1999; Klein et al. 2005, 413-414.)

A longitudinal study conducted by Najman et. al. (2007, 696) tried to determine how well depressive and anxiety symptoms in children or adolescence predict adult mental health. Different scales were used for different age level of the target group (N=2563). The tests were given when they were at age 5, 14, and 21. The follow-up test using CIDI-AUTI at the age of 21 years, showed that 508 (19.8%) met the DSM-IV criteria for having ever had depression, while 638 (24.9%) met the DSM-IV criteria for a lifetime diagnosis of anxiety, and 896 (35%) met the DSM-IV criteria for any lifetime mental illness diagnosis.

The study concluded that the increase rate of depression in adulthood is usually associated with the depression experienced during childhood or adolescence. Although the child or adolescent mental impairment predicts mental health problems in early adulthood, the association is not adequately strong enough to recommend either early childhood or possibly early adolescent screening or intervention, thus, screening should be delayed until adolescent period. (Najman et. al. 2007, 699.)

Depressive episode for untreated patients can last from seven to nine months, and within five years of their first episode, 50% will have a relapse (Birmaher et al. 1998; Lewinson et al. 2000; Dopheide 2006, 234). A first episode of depression increases the chance of experiencing a further episode (Kovacs et al. 1989; Watkins 1995; Crowe et al. 2006, 11), and when depression recurs, there is a greater chance of incomplete recovery (Coryell et al. 1993; Paykel 1994 et al. 1997; Crowe et al. 2006, 11).

According to Richardson and Katsenellenbogen (2005, 7), recurrence is very common. For depressed adolescents, about 20 to 40% will have relapses within 2 years, and about 70% will do so within 5 years. There are predictors mentioned that increase the chance of the recurrence of depression and these are; younger age at onset, increased number of previous episodes, increased severity of index episode, increased psychosocial stressors, psychosis, dysthymia or other comorbid disorders, and failed compliance with treatment. (Emslie et al. 1995; Kovacs et al. 1996; Richardson and Katsenellenbogen 2005, 7.)

## 2.5 Potential Risk Factors for Children and Adolescent Depression

### 2.5.1 Genetic and Biologic Vulnerability

Researched studies found that 20% to 50% of youth with a family history of depression or other mental health disorder have depression in early childhood or adolescence. Children with pre-pubertal onset of depression are at higher risk of developing other mental health disorders in adulthood, such as bipolar disorder. (Kovacs et al. 1997; Puig-Antich et al. 1989; Richardson & Katsenellenbogen 2005, 8.) In a family study, the result showed that relatives of depressed children have higher rate of major depressive disorder (MDD) compared to the relatives of healthy children. However, there is an inconsistency in the result in the comparison between the relatives of depressed children and relatives of children with other psychiatric disorder. (Kovacs et al. 1997; Puig-Antich et al. 1989; Klein et al. 2005, 413.)

A study in Germany was conducted to provide an overview of depressive symptoms. Enrolled in the study were young people from ages 7-17. A module of mental health of the German Health Interview and Examination Survey for Children and Adolescents (KiGGS) called BELLA study was used. A part of the result showed that those with high number of psychosocial risks present in the family, depression scores were found higher but it decreased as the number of protective factors at their disposal increased. Half of the boys and girls that were accounted as significantly impaired have high depression scores. Developing additional mental health problem risks were much higher to all of them. Moreover, compared to their peers with low depression scores, their health-related quality of life were limited. (Bettge et. al. 2008, 71.)

Richardson & Katsenellenbogen (2005, 8) stated that psychiatric comorbidity is common in youth with depression. About 40% to 90% of youth with depression have another mental disorder with at least 20% to 50% having two or more disorders. Dopheide (2006, 235) also asserted that a depressed youth is more likely to have other psychiatric disorders and such cases are quite often.

The risk for depression may also increase by two- to threefold in the presence of comorbidities such as substance abuse and anxiety disorders (Dopheide 2006, 235). Other common comorbid conditions involve attention-deficit /hyperactivity disorder (ADHD), post traumatic stress disorder (PTSD), oppositional defiant disorder (ODD) and trauma –related hallucination (Costello et al. 2003; Saluja et al. 2004; Dopheide 2006, 235).

Moreover, certain reproductive-related hormonal change may play a role in placing females at an increased risk of depression. Thus the prevalence of depression rises gradually with age and pubertal development. (Stein 2002; Crowe et al. 2006, 12).

### 2.5.2 Environmental Factors

One factor that affects the development of depression during early childhood was directed into the reciprocal and interactive relationship between parents and child within the context of environmental stressors, this theory was based on the existing models that were formulated to understand depression (Herman et al. 2009, 435). Parenting behaviours and family environment are said to have a huge influence in child's adaptation during the critical years. With successful adaptation, the child is prepared for future developmental challenges. (Connell & Wellborn 1991; Herman et al. 2009, 435.)

Another factor that has a major influence over children's emerging perceptions of themselves is the school. The existing self-system during childhood and adolescents can be nurtured particularly by school contexts (that includes school atmosphere, teacher and peer relations, and academic failure or underachievement) that bestow opportunities for support, autonomy and relatedness. (Connell & Wellborn 1991; Herman et al. 2009, 435.)

Herman (2009, 440) added that children learn to see themselves from how others perceived them. If they are consistently feed with negative perceptions, which usually happen to children with lower academic skills, children will eventually view themselves as incompetent. The child's negative self-

perception can contribute to the development of depressive symptoms (Cole et al. 2001; Herman et al. 2009, 435). Series of studies found consistent evidences that academic problems can be a part of the developmental pathway to depressive symptoms during childhood. However, clarification in the mechanism that links school climate and depressive symptoms still needs additional research. (Puura et al. 1998; Herman et al. 2009, 437.)

A child who is often the target of bullying is subject to peer rejection and low self-esteem. Negative feelings resulted from bullying can become an anchor of negative emotions such as depression, anxiety, loneliness, and insecurity. (Snell et. al. 2002; Herman et.al. 2009, 437.) To some children, chronic bullying leads to life-threatening consequences. The correlation between bully victimization and the later development of suicidal thoughts were supported in studies. (Rigby & Slee 1993; Herman et. al. 2009, 437.)

Peer contagion or co-rumination can also influence negative emotions. Adolescents with peer interaction that focused on sharing, observing, and hearing negative and depressing stories tend to experience consequences of negative moods, than adolescent who are involved in a positive, happy and action-oriented peers. (Herman 2009, 437.) Children are less likely to co-ruminate compared to adolescents (Herman 2009, 438). A longitudinal study conducted to older adolescents in the 11$^{th}$ grade showed that high level of social anxiety experienced by girls during adolescence made them more susceptible to peer contagion, while boys are susceptible to peer contagion by perceived popularity and lower friendship quality (Prinstein 2007; Herman 2009, 438).

### 2.5.3 Negative Life Events

Mehler-Wex and Kölch (2008, 151) affirmed that the pre-morbid risk factors in 70% of depressed children and adolescents were found to be the critical life events. Furthermore, chronic stresses such as problems in social relationships, a lack of friendship and attention, subjective experiences of low attractiveness,

etc., can also play a role in triggering depression (Eley et al. 2000; Mehler-Wex & Kölch 2008, 151). Children and adolescents with depression are found to be more likely to report having experienced negative life events than those without depression. While some of these negative events triggered the onset of depression, other events like loss of friendship or family conflicts may be caused by depression itself. (Richardson & Katsenellenbogen 2005, 9.)

Richardson & Katsenellenbogen (2005, 9) further stated that the negative events such as family conflicts, poor socioeconomic status, and loss of a parent or loved ones that occur in the family and social context where the child is living, are also among the major risk contributors in the development of depression.

A study held in New Zealand followed 1,265 children from birth to age 21. The study monitored the factors that were associated with increased depression rates and suicidal behavior. Findings suggested that those children who were exposed to sexual abuse, physical abuse, inter-parental violence, parental criminality and parental use of illicit drugs had higher rates of depression and suicidal thoughts and behaviour. (Fergusson et al. 2003; Dopheide 2006, 235.)

### 2.5.4 Personality, Temperament, and Vulnerability

Another main contributing factor that increases the risk for developing depression is the characteristic of the child. Individuals with elevated level of anxiety, low self-esteem, cognitive distortions, poor school performance, high self-criticism and social skills deficits are more prone to develop depression. (Kendler et al. 1995; Richardson & Katsenellenbogen 2005, 7.) According to Mehler-Wex and Kölch (2008, 151), “the most important psychological models of depression are based on Beck’s cognitive theory, according to which, the thoughts of depressive people are characterized by a negative fixation on themselves, the world, and the future.”

To some extent, children’s mood during this period of development is directly affected by their negative social circumstances including academic failure, peer rejection, and parent conflict. Children are still incapable of more stable

cognition, therefore, the effects of environmental insults or their depressive symptoms are not completely resolve or moderated by their negative-self perception, this then eventually leads to the development of depression. (Cole et al. 2001; Herman et al. 2009, 435.)

## 2.6 Negative Outcomes of Childhood and Adolescent Depression

Akin to adult depression, depression in childhood also has an impact in every aspect of psychological functioning, including the family system, parent-child duo, peer relationship, school performance, and can possibly lead to life-threatening consequences (Stark & Smith 1995; Herman 2009, 433). Numerous studies were able to identify several negative outcomes and consequences of children and adolescent depression. Given the multiple negative effects depression causes, it is ranked as the fourth leading cause of disability and premature death worldwide. (Murray et al.1996; Hankin 2006, 102.)

Depression in children and adolescents involves developmental process associated with difficulties in concentration and motivation. This then, leads to poor academic performance, impaired social functioning, poor self-esteem and a higher risk of suicide. Even after recovery from depression, young people may still be at greater risk of experiencing psychosocial difficulties such as a reduced capacity for intimacy, loss of social supports and increased use of alcohol and drugs. (Kandel & Davies 1986; Fleming et al. 1993; Ries Merikangas & Angst 1995; Crowe et al. 2006, 11.)

Depressive disorder in adolescents affects the cognitive and social functioning and may causes impairment in academic performance even after recovery (Kovacs and Goldston 1991; Puig-Antich et al. 1993; Heino et al. 2001, 156), which in turn may cause long lasting adverse effects on transition to working life. The earlier the onset of adolescent depression, the more likely it causes severe consequences (Rohde et al. 1994; Crowe et al. 2006, 11). The most serious outcome of depression is suicide (Ries Merkikangas & Angst 1995;

Esposito & Clum 2002; Crowe et al 2006, 11). Several studies found that most suicides and serious nonfatal suicides attempts were committed by depressed individuals who were untreated at the time of death (Oquendo et al. 1999; Grunebaum et al. 2004; Dopheide 2006, 236).

## 2.7 Diagnosing Children and Adolescent Depression

Murphy (2004, 19) stated that there are other problems in children that showed similar symptoms with depression. It is therefore important for the primary care provider (PCP) to accurately differentiate the diagnoses of mental illness and medical conditions. To assess the illness, there are many depression rating scales available for children and adolescents. In addition, a developmental and physical history can be a valuable tool to insure that depressive symptoms are not from a medical etiology. The proper assessment can be used as a tool for developing effective therapeutic and pharmacological interventions.

The diagnostic criteria for depression in children and adolescents and for adults are basically the same, but the expression of symptoms varies with each developmental stage (Bhatia & Bhatia 2007, 73). Because of the related developmental issues, diagnosing depression on these age groups is deemed difficult (Rutter 1995; Cicchetti et al. 1998; Crowe et al. 2006, 11). In some cases, children and adolescents have difficulties in identifying and describing their internal mood states (Bhatia & Bhatia 2007, 73).

The early studies of adolescent depression began in 1970s and 1980s, in which adult criteria for diagnosing depression was used. Comparatively, the history of studies about adolescent depression is shorter than that of adult depression. (Weinberg et al. 1973; Pearce 1978; Puig-Antich 1982; Crowe et al. 2006, 11.) Although the same diagnostic criteria were applied to both adults and adolescents, the clinical manifestation was found to be inconsistent for both age groups. Since adolescent depression may not always have the same symptoms as with adults, the most prominent way to recognize and diagnose the depression is through its symptoms. (Rutter 1995; Cicchetti et al. 1998; Crowe et al. 2006, 11.)

Depression is diagnosed when a child or an adolescent experience at least five of the symptoms listed below for nearly every day for a period of at least 2 weeks (Richardson & Katzenellenbogen 2005, 7). One of the symptoms must be either item 1 or 2. The nine symptoms are listed in table 5.

Table 5. Diagnosis criteria for depression (Richardson & Katzenellenbogen 2005, 7)

| DSM-IV criteria for Depression in child and adolescents |
| --- |
| 1. Irritable /Depressed mood most of the time |
| 2. Loss of interest or pleasure in almost all activities |
| 3. Failure to gain weight as expected with growth, significant weight gain or loss |
| 4. Insomnia or hypersomnia |
| 5. Psychomotor agitation or retardation |
| 6. Loss or energy, fatigue |
| 7. Feelings of worthlessness or guilt |
| 8. Difficulty in concentrating or thinking |
| 9. Suicidal thoughts and ideation, suicide attempts or plan. |

As reported by Choi 2002; Crowe et. al. (2006, 12), the epidemiology of adolescent depression and the diagnostic process can be influenced by culture and ethnicity in two ways, first, personality variables and surrounding social conditions are both affected by culture and ethnicity; which are substantial determinants in the prevalence of depression in adolescents, second, the practitioner may misunderstood and misinterpreted behaviours from other cultures which could lead to bias diagnoses.

## 2.8 Intervention of Childhood and Adolescent Depression

Compared to adults, studies for the treatment of children and adolescents depression are far lesser for reasons of patient availability (the population of depressed children is lower compared to adults), funding availability (only few sources fund children studies), and investigators availability. Due to fewer studies, it leaves a wider gap in confidence interval for deciding whether treatment using antidepressant is more or not effective compared to that of placebo or whether side-effects (e.g. suicidality) is more prominent with antidepressant treatment than with placebo. Hence, it is hard to properly assess if the treatment works or pinpoint an important side-effect. (Ryan 2005, 935.)

### 2.8.1 Non-pharmacologic Intervention

The general core objectives of depression therapy according to Mehler-Wex & Kölch (2008, 153) are: to reduce stress factors, to increase positive activities, to impose a structure on daily life, to promote and raise awareness of the available resources, to train in social competences, to learn solving problem strategies, to modify the negative patterns of perception and interpretation, and to increase self confidence and self esteem.

With efficacy rate of 60-70%, the first-line treatment for depressed children and adolescents is CBT (Jayson et al. 1998; Compton et al. 2004; Dopheide 2006, 237). CBT is one of the widely used psychotherapeutic techniques which focus on changing negative self-defeating thought patterns, increasing positive behaviors and activities, and improving interpersonal effectiveness (Richardson and Katzenellenbogen 2005, 20).

For pre-schoolers and children under the age of eight, psychosocial therapy is the primary intervention used. It begins with family counseling and environmental changes. When it is obvious that the environment is the cause of depression in very young children, psychosocial interventions are distinctively helpful. (Weissman et al. 1999; Klein et al. 2001; Dopheide 2006, 236.)

Small children find it difficult to express their feelings and hard issues through language, hence, a play therapy is recommended for their age level. Play therapy allows the therapist to reflect and assist children in verbalizing their feelings. And through the course of the play, the therapist can also resolve the identified issues. (Murphy 2004, 28.)

Children are still dependent on their family, therefore; familial involvement in the treatment process is important. Family therapy is included in the treatment to yield successful outcome. The goals of family therapy are to resolve or reduce family conflict, enhance the family pattern of communication, improve role performances, and influence positive mental health within the family. (Murphy 2004, 28.)

Other than CBT, effective treatment options for depressed youth include; interpersonal psychotherapy, anti-depressants, psychosocial intervention, or a combination of non-drug and pharmacological interventions (Weissman et al. 1999; Compton et al. 2004; March et al., 2004; Dopheide, 2006, 236). Accurate diagnosis, suicide risk assessment, and use of evidence-based therapies are essential for safe and effective treatment (Bhatia & Bhatia, 2007, 78). Depression treatments such as anti-depressant, CBT, and interpersonal psychotherapy have not evidently showed its effectiveness in pre-schoolers or children less than eight years of age (Emslie et al. 2002; Compton et al. 2004; Birmaher et al. 1998; Dopheide 2006, 236).

### 2.8.2 Pharmacologic Intervention

The basic building blocks of the nervous system are the neurons. In order to communicate, neurons transmit information within itself and from one neuron to the next. This process generates and transmits electrochemical impulses. To send impulses from one neuron to another, neurotransmitters are used as chemical vehicles for smooth transmission. In depression, dopamine, norepinephrine, and serotonin are the major neurotransmitter systems that are involved. (Murphy 2004, 25.)

SSRIs (select serotonin uptake inhibitors) are among the medications used for the treatment of depression. Neurons produced and stored serotonin. Serotonin are released and utilized for impulse transmission. The unutilized serotonin is stored back through a mechanism called “reuptake”. In depressed individuals, their systems might not release enough serotonin. Thus, administering medication that corrects this chemical imbalance reduces depression. SSRI acts by preventing excess serotonin from being stored and make it available for the transmission of impulses. (Murphy 2004, 25.)

However, there is a controversy related to the side effects and suicide identified with the use of SSRI (Murphy 2004, 25). The adverse-effect profile of SSRIs is similar. Ten percent of individuals taking SRRIs experienced the most common side effects such as nausea, diarrhea, restlessness, insomnia, headache and sexual dysfunction. (Birmaher et al. 1998; Emslie et al. 2002; Costello et al. 2003; Dopheide 2006, 241.) The mentioned side-effects were also experienced by children and adolescent who were using SSRIs (Wyeth Pharmaceutical, Inc. 2005; Dopheide 2006, 241).

It has been reported that for children ages 8-15, an increased in bleeding is possible, bruised and epistaxis – nosebleed, were seen developed after one week to three months used of SRRIs (Lake et al. 2000; Dopheide 2006, 241). An increased risk for behavioral changes, hypomania or mania, and occurrence of new suicidal thought and behavior were found higher in youth who were taking anti-depressant than in adults who were also taking it (WPI 2005; Dopheide 2006, 241).

Yet, SSRI medications are not all the same. There are different receptor sites that SSRIs mostly affects. These receptors sites are 5HT1 (when stimulated elevates mood and decreased anxiety), 5HT2 (when stimulated increases anxiety, restlessness, agitation, insomnia, and sexual dysfunctions), and 5HT3 (causes gastrointestinal upset when stimulated). To target symptoms and decrease the untoward side effects, it is best to know which receptor sites the SSRI medication is going to affect. (Murphy 2004, 20.)

Fluoxetine, an antidepressant, is the only FDA approved medication used to treat depression in children from age 8 years and above. The approval was based on two placebo-controlled trials that included children with severe ADHD, ODD, and bipolar II disorder, where results suggested that fluoxetine has greater efficacy than placebo. (Emslie, et al. 1999; Dopheide, 2006, 237.) The treatment for adolescent with depression study, for ages 12-17 years, a combination of CBT and fluoxetine showed superiority over placebo, fluoxetine alone, and CBT alone (March et al., 2004; Dopheide 2006, 237). However, fluoxetine strongly activates 5HT2 so giving it to children with anxiety problems should be avoided (Murphy 2004, 25).

In addition, discontinuation syndrome may occur in the stoppage of the use of SSRI medications. An abrupt discontinuation may cause headache, dizziness, nausea, diarrhea, irritability, insomnia, and lower mood. Hence, it is eminent to slowly decrease the amount of medication when there is a plan for discontinuation or switching to another medication. (Murphy 2004, 25.) In the case of pharmacological treatment, provision of comprehensive information is important, which includes the licensing status of the drug and a close monitoring of the user (Mehler-Wex & Kölch 2008, 154).

# 3 PURPOSE AND AIMS

The purpose of this thesis is to produce evidence based information about the context of children and adolescents depression. Our aim is to provide this useful and important mentioned information to parents and guardians. By understanding depression and learning how to recognize depressive symptoms on their children, parents may be able to seek for early interventions thus negative outcomes caused by depression can prevented or lessened.

The information that this thesis provide will be published in Terveysnetti, an online page which give free health information to the public.

# 4 HEALTH EDUCATION

Although effective treatments for depression in youth are well established (Dopheide, 2006, 234), community care for depression of those affected children and adolescents is still lacking. A primary prevention approach to a child and youth depression requires more attention. Heino et al. (2001, 156) asserted that social support is associated with lower levels of depressive influence. Peers and adults outside one's own family, like teachers are important source of social support especially for adolescents as they gradually become less dependent on their own family. This kind of social support can help adolescents cope up with stressful life events.

Family involvement in the treatment of depression is very important, especially in the case of children and adolescents. Parents should know that recovery from depression is possible but treatments require their commitments. The road to recovery is gradual and it may take time. Families should be educated that depression is common during this age group and it is a common mental illness and not a character defect or weakness. It is also helpful if parents discuss the symptoms with their children because depression is not just in the mind, it also affects the body, behavior and their thinking. (Brent et al. 1998; Richardson & Katsenellenbogen 2005, 15.)

Depressed people often spend more time brooding about their symptoms or sleep and withdraw from the activities they used to enjoy. Physical activities are encouraged because it may help decrease depressive symptoms. It can begin by walking each day or joining in some kind of sport. Parents are advised to engage in activities that can help change the negative thoughts of their children. For example, they can help younger children increase their activities by organizing family outings, or go for a walk, bicycle rides, or trips to places that children might enjoy. (Dwight-Johnson et al. 2001; Richardson & Katsenellenbogen 2005, 16.)

It is also necessary to create a pleasant home environment for the children. Love, understanding and continuous communication are among the most important factors in battling and preventing children and adolescent depression. For children and adolescents, returning to school and having activities with their friends may be helpful in making them feel better. Hopelessness regarding their depression and the treatment should be addressed because hopelessness has been proven to be the main factor for withdrawal from treatment and suicidal behavior. (Paluska and Schwenk, 2000; Richardson & Katsenellenbogen 2005, 15.)

With depression, sleep dysfunction is common. Depressed children and adolescents need good sleep hygiene. Regular sleeping hours should be set and daytime naps should be discontinued. Good eating habits should be established. For the children who have poor appetite, frequent snacks can be more useful than hearty meal. (Bedi et al.2000; Richardson & Katsenellenbogen 2005, 16.)

The health providers should not hesitate to talk about all the potential treatments for depression with the affected youths and their families, so that parties concerned are able to select the appropriate treatment that suits them. Depressed youths are discouraged to use or discontinue substance abuse (drugs, alcohol). Promoting positive thinking is crucial in treating depression since it is the first step of feeling better. (Paluska and Schwenk, 2000; Richardson & Katsenellenbogen 2005, 15.)

Eye on Washington (2009, 171) implies that screening for depression to all adolescents is an opportunity to detect and intervene the illness at the earliest stage, thus, lifelong negative outcome of the illness can be prevented. Also, any adolescents who have positive result for depression should have a follow-up care. Regardless of where a patient is treated, education should begin at the time of diagnosis. Through education and counseling, the patient and families will be encouraged to seek treatment or adhere to the treatment plan and help them overcome their concerns about stigma and depression treatments. (Richardson & Katsenellenbogen 2005, 15.)

# 5 IMPLICATION OF THE PROJECT

The main goal of this project is to produce WebPages for Terveysnetti. Terveysnetti is an online public health education webpage created by the Salo District Health Centre, Salo District Hospital and the Salo Local government with the cooperation of Polytechnic students. The mentioned online page focuses on improving the health and self-care capability of Salo residents and the general population as well. The readers can get information about health and illness related issues of their interest with an easy access to it. This thesis was designed to be used by locals and immigrants in Salo or Finland who are able to understand English.

Terveysnetti provided four different categories. The four categories available are concerned with children & adolescents, working-age population, elderly group, and family or guardian. Some contents of our thesis will be published in Terveysnetti. To date, the information in Terveysnetti is available only in Finnish language and so far only Finnish speakers were able to use them. In connection to this, the goal of our project is to add WebPages in English language so that English speaking individuals in Finland can also benefit from it.

The information that our thesis provide are intended for parents, guardians, adolescents, and other population who are interested to learn about children and adolescent depression. Depression can happen to anyone including children and adolescents, regardless of age, culture, and belief. The focus of our project is to educate concerned parties regarding the mentioned illness through the WebPages provided for us. By doing so, we hope for parents to understand depression if it affects their children and encourage them to promote healthy relationship in the family, introduce healthy lifestyle to their children, and be open for the possibility of treatment if depression is present and end the fear of stigmatization.

# 6 ESTABLISHING WEBPAGES

The first step in establishing WebPages is to prepare the contents and structure of the chosen topic. The information that we are going to provide came from several scientific researched articles. Our target groups are the parents and guardians; therefore, our WebPages should be designed for them. To make it useful and interesting for our readers, we will only provide important and relevant information. We will use short sentences and phrases using layman's terms so that even to those who do not have any health education background will be able to understand it.

Any information we gathered from authors and other source materials will not be replaced by our own opinion or ideas. The author(s) whose information we are going to include on the website will be marked in the reference section. The name and qualification of the authors as well as the name of the publishers will be clearly stated for the general public to assess. Specific HTML links to the sources we used and any organization which has contributed to the making of this project plan will be clearly identified and included as references. (HONcode 2011, www.hon.ch.)

The information provided in our WebPages will be authoritative. It will be clearly presented and made easy to access. Any information which the public can benefit will be included only if it is true and correct in the light of knowledge. They will be backed up with scientific evidence such as medical journals, reports, researches and others. The websites will include quality health information so that the general public can access to the latest and most relevant medical information through the use of the internet. (HONcode 2011, www.hon.ch.)

# 7 RELIABILITY OF THE PROJECT

Only published researched articles and systematic reviews were used as sources of this thesis. By combining data, the systematic review improved the consistency of the study result. Combining all the studies that have attempted to answer the same question considerably improves the statistical power. Furthermore, similar effects across wide variety of settings and designs provide evidence of strength and transferability of the results to other settings. (Glasziou 2001, 1.)

Systematic reviews bring together as much relevant research as possible so as to describe what has already been done, to help ensure that new research learns from the successes and failures of the past, and to identify gaps in the research base (Webb et al 2008, 4). All the sources used on this thesis were collected from different published articles that were considered and accepted as valid and reliable. Our personal opinions were not used in the literature review and being biased is avoided. Several researches were used to provide enough information and to support the theory.

The contents of our WebPages that will be published for the general public are considered as relevant because the information were taken from the contents of our thesis and all the principles proposed by HONcode for creating WebPages were strictly followed. The Health On the Net foundation (HONcode) is one of the most widely accepted reference for online health and medical publishers which are widely used by thousands of certified websites by more than 100 countries. The HONcode for medical and health websites addresses one of the Internet's main healthcare issues: the reliability and credibility of information. (HONcode, 2011, www.hon.ch).

# 8 ETHICAL CONSIDERATIONS

This thesis is a literature review of clinical investigations regarding children and adolescent depression. Several data from published researched articles were involved in building up the contents of this thesis. The recognition of writers were observed and indicated in the reference section. The contents of the thesis include conditions such as causes, effects, symptoms, prevalence, and treatment of children and adolescent depression. The reviews are limited to the studies of those mentioned conditions because the information is sufficient enough to represent the whole context of this thesis.

Ethical considerations provided by HONcode were closely observed so that this thesis will pass the standard for publication. The HONcode is a code of ethics that set the mechanisms to provide quality, objective and transparent medical information which are designed to meet the needs of the readers. It helps in the publication of correct data and reliable information on the website. Thus, by following the HONcode principles, the webpage will also meet the ethical standards in offering quality health information. ( HONcode 2011, www.hon.ch.)

# 9 SUMMARY AND CONCLUSIONS

Depression is an illness where the feelings of depression persist and intervene with the child's or adolescent functional ability. The characteristic of depression is often manifested by irritability, boredom, or an inability to feel pleasure rather than sadness. Depression is often a familial illness, chronic, and recurrent. It can begin from mild to severe depressive symptoms, or even bipolar disorder. Untreated depression can last for seven to nine months and depressive episodes are likely to recur and persist even up to adulthood.

Depressive symptoms are commonly seen in children and adolescents, and because of this matter, it is hard to put a boundary between normal and pathological signs of depression. Depression affects child's or adolescent's daily activities an can cause negative impact on their social functioning, school performance, and overall well-being, as well as putting them at risk for suicide.

In children, the prevalence rate of depression between boys and girls were found to be similar but increased in girls as they reach puberty. The vulnerability of females over males was contributed to the involvement of hormonal and environmental factors. The symptoms of depression can vary with age and child's level of cognitive and social developments. In pre-school age and infants, studies for depression are limited; therefore, the existence of syndromes manifested in very young children is unclear.

There are different contributing factors that promote the development of depression in children and adolescents. Among them are the following; genetic and biologic vulnerability, environmental factors, negative life events, and personality, temperament, and vulnerability of the child. While an early recognition may help prevent the destructing nature of depression to further develop, an early signs of child and adolescent depression may also be difficult to recognize. There are also other problems in children that showed similar symptoms with depression so accurate diagnoses that differentiate mental illness and medical conditions are important. Sometimes, depressive disorders are accompanied by psychotic symptoms.

There are many depression rating scales available for children and adolescents and the most prominent way to recognize and diagnose child and adolescent depression is through their symptoms. A professional with specialized training is needed to properly assess and treat depression. In addition, a developmental and physical history can be a valuable tool to insure that depressive symptoms are not from a medical etiology. The proper assessment can be used as a tool for developing effective therapeutic and pharmacological interventions.

Treatment for the severe case can be hard, hence, it is crucial to understand and consider the risk factors. The first-line treatment for depressed children and adolescents is Cognitive Behavioral Therapy (CBT). CBT is a psychotherapeutic technique which focuses on changing negative self-defeating thought patterns, increasing positive behaviors and activities, and improving interpersonal effectiveness.

For pre-schoolers and children under the age of eight, psychosocial therapy is the primary intervention used. It begins with family counseling and environmental changes. Small children may find it difficult to express their feelings and tell hard issues through language; hence, for their age level a play therapy is recommended. Play therapy allows the therapist to reflect and assist children in verbalizing their feelings. And through the course of the play, the therapist can also resolve the identified issues.

Other than CBT, effective treatment options for depressed youth include; interpersonal psychotherapy, anti-depressants, psychosocial intervention, or a combination of non-drug and pharmacological interventions. Since untreated depression may cause negative outcomes in the future; therefore, an early recognition of the illness is important so proper treatment can be applied thus reduce the global burden of depression.

# 10 DISCUSSION

According to WHO, “Children and adolescents with good mental health are able to achieve and maintain optimal psychological and social functioning and well-being. They have a sense of identity and self-worth, an ability to be productive and to learn, and a capacity to tackle developmental challenges and use cultural resources to maximize growth. Moreover, the good mental health of children and adolescents is crucial for their active social and economic participation.”

But there are variety of factors which influence the mental health of children and adolescents. Their mental disorders manifest themselves in many areas and in different ways which are poorly understood and the affected children are mistakenly viewed as ‘not trying hard enough’ or as troublemakers. It is further made worse by stigma and discrimination in our society today.(WHO, 2001.)

Parents need to consider not only the physical health of their children but also the mental health as well. According to Karasz (2004, 1626), even though depression is common in some societies and is considered as a major health problem, yet seeking for treatment is rare especially in the non-western societies.

This thesis intends to portrait the common mental health problem in children and adolescents around the world. Depression in children and adolescents is a prevailing mental illness which carries a significant burden in terms of social, educational, interpersonal, economic and impaired future developmental outcomes (Hankin et al. 2006, 110). “By age 18, nearly a fourth of all children will experience clinically significant depressive symptoms, making such symptoms among the most prevalent psychiatric problems of young people. Once they appear, depressive symptoms remain present and problematic for many youngsters throughout childhood, adolescence and beyond.” - McLeod et al. 2007, p. 987)

Though the prevalence of depression among children and adolescents has been established, there is still a lack of profound studies concerning the main contributing factors that promote the early development of depression among minors. A future study regarding the most suitable treatment for each age group is still needed. Understanding and recognizing the early signs of depression, as well as the treatment and prevention, helps reduce the global burden that persists from depression among young groups. Families and guardians are in a unique position to provide interventions to promote healthy lifestyles and reduce the likelihood of depression on their children. Promoting a positive family environment has been found to be one of the effective preventive methods for depression among children.

Our WebPages intend to benefit the parents and guardian on some important matters about children's mental health. The WebPages are available on the internet for free so everyone can easily access to it. The information provided came from reliable sources, and source details are listed in case the readers need more clarification. Though there are pros on our WebPages, there are some cons too. Even if they are accessible to the public, the existence of the WebPages may not be known by others who might need it.

The WebPages may not be accessible for those who do not have any knowledge about computer and those who have no internet access. The general public might not know about the existence of Terveysnetti and the purpose of our work will fruitless. Our WebPages were written in English so only those who can understand will be able to benefit from it. Lastly, due to cultural differences, a misinterpretation by the reader on the information we provide is also possible.

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# APPENDICES

Search results for chid/children depression

| Data base | Search word(s) | Result | Selected by the title | Selected by the abstract | Selected by the whole text |
|---|---|---|---|---|---|
| CINAHL | child , children young, youngster, youngsters, kid, kids young kids, young kid | 242,458 | | | |
| | family, families parent, parents guardian, guardians | 131,761 | | | |
| | guide, guides, guidelines, guideline, model, models, design, designs | 347,425 | | | |
| | depression | 44050 | | | |
| | recognize, recognizing, notice, noticing, know, knowing determine, determinig | 113717 | | | |
| EBRARY | After combining | 95 | | | |
| | Year: 2000-2010 | 27 | 8 | 4 | 0 |
| | Depression in Children | 44 | 10 | 5 | 2 |
| **Total** CINAHL + EBRARY | | 71 | 18 | 9 | 2 |

Search result for adolescent with depression

| Data base | Search word(s) | Result | Selected by the title | Selected by the abstract | Selected by the whole text |
|---|---|---|---|---|---|
| CINAHL | 1. Depression | 44050 | | | |
| CINAHL | 2. Adolescence, adolescent, teenager, teenage, youth, young, young people, youngster, youngsters, | 173454 | | | |
| CINAHL | 3. Family, family members, families, parent, parents, parenting, guardian, guardians, carer, carers, caretaker, care takers, caring | 153054 | | | |
| CINAHL | 4. Guidelines, guide, advice, information, education, educating, instructions, instruction, knowledge, knowing, coping, coping mechanisms | 523605 | | | |
| CINAHL | Searched with AND (1,2,3,4,) | 580 | | | |
| CINAHL | **Limiters** - Linked Full Text; English Language; Peer Reviewed; Research Article (2002-2010) | 84 | 18 | 22 | 10 |