

AN INVESTIGATION INTO THE RELATIONSHIPS
BETWEEN LOCUS-OF-CONTROL AND BEHAVIOURAL
CORRELATES FOR MALE AND FEMALE DEPRESSED
ADOLESCENTS

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ADOLESCENTS

by

Mary Prabha Kuriyan

B.A. (Hons)

Dip. Couns. Psych.

Dip. Ed.

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I hereby certify that this thesis contains no material which has been accepted for the award of any other degree or diploma in any university, and that, to the best of my knowledge and belief, the thesis contains no copy or paraphrase of material previously published except when due reference is made in the text of the thesis.

Kuriyan

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M. Kuriyan.

DEDICATED

to my children

Dileep and Zareen

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ABSTRACT

Despite earlier debate about depression for children and adolescents, there is growing agreement in the concept and symptomatology of depression for younger persons. It has also been suggested that clinical manifestations of depression may differ according to the developmental level of the child. While there has been little empirical research directly focussing on this area, the critical rates of depression reported for adolescents demands closer examination.

Common variables have been described for depression in children and adults. It was considered necessary to determine whether these would also apply to adolescent depression thereby confirming the consistency of the depressive syndrome across the various age levels.

Several theoretical reports have been proposed and this study centers on Beck's and Seligman's models which focus on feelings of self-blame, hopelessness, helplessness and negative cognitive set. The concept of locus of control in relation to depression was introduced and examined in this light. Sex differences and two behaviours of aggression and absenteeism in a depressed adolescent population were investigated.

Using the Lang-Tisher Children's Depression Scale, 180 subjects were obtained, 90 representing the 'high' depressed group and 90 controls the 'low' depressed group. Following this, the Nowicki-Strickland Locus of Control scale was given. The behaviour of aggression was assessed by a Teacher Rating scale and of absenteeism was assessed by school record cards.

It was hypothesized that (a) there would be a significant relationship between depression and locus of control for adolescents.

(b) there would be a significant relationship between depression and sex for adolescents.

(c) there would be a relationship between sex and locus of control.

(d) there would be a relationship between depression and the behaviours of aggression and absenteeism.

The results partially support the hypotheses. There was a significant relationship between depression and external locus of control. This lends further support to the cognition of helplessness and lack of control in the depressive but not to self-blame and personal responsibility. The higher number of female depressives found in this study is congruent with previous research. However the negative relationship between sex and locus of control contradicts earlier reports that males were more external. This study found a similar proportion of males to females for both external and internal locus of control. Implications of this in relation to cognitions of male and female adolescent depressives were discussed.

The positive correlation found between depression and rated aggression clearly supports the notion that aggression is part of the adolescent depressive picture. Relationships between absenteeism and depression and between absenteeism and aggression were nonsignificant. Future work should attempt to examine more stringently the definition and interpretation of absenteeism in relation to depression. Despite some limitations, valuable insights for clinicians and teachers can be gleamed from this study.

CHAPTER 1.

INTRODUCTION : ADOLESCENT DEPRESSION

INTRODUCTION : ADOLESCENT DEPRESSION

The study of childhood and adolescent depression is still in its infancy with regard to nosology and epidemiology. Though the prevalence of childhood and adolescent depression is now acknowledged (Cytryn & McKnew, 1974; Kovacs & Beck, 1977; Inamdar, Siomopoulos, Osborn, Bianchi, 1979; Kashani, Hussain, Shekim, Hodges, Cytryn & McKnew, 1981; Poznanski, 1982), research in the area of definition and diagnosis remains non-specific.

Although depression is a major emotional disorder in human beings, the mention of childhood depression has been studiously avoided in many psychology and psychiatry textbooks until the past ten years. It is classified under the broader spectrum of diseases known as affective disorders which include depression, mania and manic-depressive illness (Brumback & Weinberg, 1977). According to genetic studies, depression exists in up to 70% of families of depressed adults (Winokur et al, 1969 in Brumback & Weinberg, 1977), but the actual incidence of adolescent depression remains unestablished.

It has also been argued that childhood and adolescent depression is only a developmental phase (Rie, 1966; Gittelman-Klein, 1977; Lefkowitz & Burton, 1978). However, because of this attitude many behavioural problems may be overlooked and underdiagnosed. If clinicians only look for the depressive phenomenon in children as if identical to adult depression (Feighner, Robins & Guze, 1972; Welner, 1978), children may yet again be underdiagnosed.

Growing concern to recognise and accept the existence of childhood and adolescent depression became apparent by the 1971 congress of the Union of Pedopsychiatrists. The theme was "Depressive states in children and adolescents", and the conclusion reached was that the depressive state was an important facet in mental disorders in children and adolescents (Kashani et al, 1981).

Background:

Various attempts have been made to define and bring to light the depressive syndrome as it exists in children and adolescents. Some of the earliest attempts to describe the dynamics of depression by psychoanalysts were 'melancholia and loss of a loved object' (Abraham, 1912 & Freud, 1956 in Kashani et al, 1981; Klein, 1960 in Connors, 1976), inadequate superego formation (Bibring, 1953 in Robertson, 1979), unavailability of early attachment figure of 'anaclitic depression' (Spitz, 1946; Bowlby, 1973).

Conversely, other studies maintained that this lack of a well-internalized superego is unlikely to develop into depression because the child is unable to experience or feel guilt and because self esteem is not developed until adulthood when an ego identity is established (Rie, 1966).

As the classical picture of childhood and adolescent depression was difficult to conceptualize, the notion of depressive equivalents or "masked depression" was conceived (Toolan, 1962; Glasser, 1967; Cytryn & McKnew, 1974; Leese, 1979). These authors all held the view that in children and adolescents the depressive picture could not be readily identified and would instead be masked by a variety of symptoms, such as delinquent behaviour, school achievement problems, phobias, psychosomatic reactions like constipation, weight loss, fatigue, insomnia.

The more recent etiological considerations of childhood depression seem to use a socio-behavioural-cognitive-learning framework (Ferster, 1965; Beck, 1967; Lazarus, 1968; Seligman, 1974). Causes attributed to the depressive syndrome include reduced reinforcement, illogical cognitive patterns of thinking, negative relationship between activity and outcome. The outcome then is described as a feeling of helplessness and loss of control over life's contingencies that results in depression.

As the area was becoming more complex, a uniform classification of the disorder was proposed. This was discussed at the 1975 National Institute of Mental Health (NIMH) conference of childhood and adolescent depression. The resulting proposal will be described briefly in the next section.

The theoretical frameworks used to interpret depression are distinguished under various headings:- psychological - psychoanalytical, cognitive, behavioural/learning; genetic or biochemical.

This present study is focussed on the psychological framework in which the socio-behavioural and cognitive models lie. These models will be discussed in Chapter 2.

The Search for Identifying Features of Childhood and Adolescent Depression.

Depressive mood may occur in children faced with environmental stress and parental rejection. There is often a family pattern of depression (Poznanski & Zrull, 1970; Brumback & Weinberg, 1977; Pearce, 1977; Phillips, 1979). This mood of sadness, feelings of guilt, self-destructive urges and low self-concept often lead to problems in school. Depressive children may also have difficulties relating to others and may become hostile, anti-social, aggressive and exhibit somatic symptoms such as sleep disturbance, poor appetite, enuresis, phobias (Frommer, 1968; Ling *et al*, 1970 in Cytryn & McKnew, 1980; Baker & Wills, 1978).

However, diagnosis is not a simple matter. Although the Research Diagnostic Criteria (R.D.C.) of Spitzer and Endicott (1975) has been widely accepted for diagnosis of adult psychiatric disorders because of its high reliability (Puig-Antich *et al*, 1978), studies on childhood and adolescent depression, in attempting to bring about an operational approach have established various criteria for diagnosis.

At the National Institute of Mental Health (NIMH) congress meeting held in 1975, the members proposed the following features for childhood depression:-

1. dysphoria, and
2. generalized impairment in response to previously reinforcing experiences, without the concomittant introduction of new sources of reinforcement (Kashani et al, 1981).

The Third Edition of the Diagnostic and Statistical Manual of Mental Disorders (D.S.M. III) states that the criteria used for adult affective disorders are to be employed in diagnosing children and adolescents (in Kashani et al, 1981). Four of the following eight features are to be met for diagnosis to be established.

1. change in appetite.
2. sleep difficulty.
3. psychomotor agitation or retardation.
4. loss of interest or pleasure in usual activities.
5. loss of energy.
6. feeling of self-reproach or guilt.
7. complaints or evidence of dimished ability to concentrate.
8. recurrent thought of death or suicide.

These criteria provided by D.S.M. - III have been accepted by clinicians in recent reviews on childhood and adolescent depression (Carlson & Cantwell, 1980; Kashani et al, 1981; Treece, 1982). However, most studies have also referred to conduct (delinquency, aggressiveness, hyperactivity) and somatic (headaches, enuresis, insomnia, tiredness) complaints (Kovacs & Beck, 1977), and school problems (phobia, poor school performance, truancy)(Brumback & Weinberg, 1977; Inamdar et al, 1979). In Chapter 2 an attempt will be made to examine depression as it is conceptualized in children and adolescents.

Despite attempts at unifying and simplifying the concept of depression in children and adolescents, the very complexity of the lists of behaviours and symptoms associated make the task ominous. The interrelatedness of some of these variables has not been clearly established. This current study hopes to investigate some particular behavioural variables (aggression and absenteeism) of the depressive syndrome with other features.

It has already been suggested that much of the difficulty in diagnostic activities is due to the fact that depressed children and adolescents may exhibit quite different behaviours and symptoms from each other. Some authors (e.g. Burks & Harrison, 1962) conclude that aggression is an overt behaviour covering the depressive phenomenon "as a means of avoiding depression". They describe feelings of helplessness, worthlessness and hopelessness in the depressed person. The notion of self-blame and hopelessness in relation to the locus of control construct and depression will be explored in Chapter 3. Others (e.g. Vranjesvic et al, 1972 in Kovacs & Beck, 1977; Lesse, 1979) describe the behaviour absenteeism in such terms as "running away from unpleasant feelings of rejection", "concealing underlying depression". These behaviours (aggression and absenteeism) are being proposed as possessing similar negative affect though they may differ in manifestation. This study will attempt some clarification of this issue. Does symptom patterns change at various stages of the adolescent's development, as queried by Pearce (1977). In order to have a more precise concept of adolescent depression we need to look at whether there is a relationship between some of these behaviours. Chapter 4 will treat more thoroughly these two behaviours (aggression and absenteeism) as they are seen in the depressive syndrome; and Chapter 5 will discuss possible sex differences.

The overall intention of this study is (a) to examine some of the characteristics commonly associated with depressed adolescents and (b) to investigate whether there exists any sex differences for adolescent depressives with particular attention to the locus of control.

CHAPTER 2.

THE DEPRESSIVE SYNDROME AT IT
RELATES TO CHILDREN AND ADOLESCENTS

THE DEPRESSIVE SYNDROME AS IT RELATES TO CHILDREN & ADOLESCENTS

While depression in adults has been described as the "common cold of psychopathology, at once familiar and mysterious" (Seligman, 1974), the same cannot be said for depression in children.

Critics argue that childhood and adolescent depression lack accurate measurement and reliable epidemiological evidence. Yet the symptoms associated with childhood and adolescent depression are so varied and omnipresent that few can escape the classification (Lefkowitz & Burton, 1978).

Descriptions of childhood depressive disorders vary widely and have been described as "amorphous non-specificity" (Petti, 1978); "lacking developmental perspective" (Malmquist, 1977); "unspecific and undocumented" (Gittelmeier-Klein, 1977). However, despite the prolonged uncertainty about childhood and adolescent depression, mental health professionals are now starting to concur in their description of symptoms most commonly associated with childhood and adolescent depression.

The typically depressed child is described variously as being of sad affect, socially withdrawn, engaging in self-deprecation, having poor school performance or being aggressive, having somatic complaints like headaches, enuresis, stomachaches (Joffe & Sandler, 1965; Weinberg et al, 1973; Malmquist, 1975 in Malmquist, 1977; Kovacs & Beck, 1977; Poznanski, 1982).

These characteristics have been mainly derived from clinical samples. To substantiate the work that has already been done for this limited population we need to extend the study of proposed symptoms of depression in children and adolescents to non-clinical populations.

Are Adult and Childhood Theories of Depression Synonymous?

Early literature on the etiology of childhood depression had centered round the concept of lack of bonding, separation anxiety and the loss of attachment figures especially the mother, for the infant (Spitz, 1946; Klein, 1960 in Conners, 1976; Bowlby, 1969). While psychoanalysts today may still hold that view, more recent research has emphasized a social learning or cognitive-behavioural model (Beck, 1967; Seligman, 1974; Lewinsohn, 1974).

Some of the cognitive signs of adult depression are described in terms such as self-blame, low self-esteem, helplessness, hopelessness.

The conditions of helplessness and low self-esteem which are found in adult theories of depression may also pertain to childhood and adolescents (Anthony, 1977). Rutter et al (1976) also appears to endorse the notion that adult and childhood depression may be similar when he says that in order to shed more light on the origins of adult depression, it is important to get answers on childhood and adolescent depression.

Diagnostic Approaches:

Early diagnosis was strongly influenced by the classic Abraham-Freud notion that melancholia and a 'rigid ego state' were the key features. It was suggested by Abraham (1948, in Anthony, 1977), that a narcissistic love-hate expression exists and can take the form of delusional self-esteem and delusional self-hatred. Freud's model was based on constructs like repressed love, anger-turned-inwards (Anthony, 1977). Psychoanalytic discussions seem to centre round experiential factors in infancy and childhood as precursors to depression. These may be extrinsic as well as intrapsychic and include "anaclitic depression" (Spitz, 1946); "detachment behaviour" (Bowlby, 1969); injury to self-esteem (Bibring, 1953). However, the lack of concrete evidence renders these concepts as somewhat nebulous.

The growing concern to understand and clarify the concept of depression in children and adolescents led to an influx of research and interest in this area. Studies over the past fifteen years highlight three predominant schools of thought:-

1. Given that childhood and adolescent depression are similar to adult depression, the symptoms may be taken as the same or there may be additional unique features pertaining to younger persons only (Ling et al, 1970 in Cytryn & McKnew, 1980; Murray, 1970; Weinberg et al, 1973; Puig-Antick et al, 1978).
2. Given that childhood and adolescent depression are not similar to adult depression, the symptoms may be differently exhibited. (Toolan, 1962; Glasser, 1967; Cytryn & McKnew, 1974; Lesse, 1979; Carlson & Cantwell, 1980).
3. Childhood and adolescent depression may not be a valid clinical entity because of nonspecific diagnostic criteria. (Bradley, 1945 & Anthony, 1960 in Welner, 1978; Rie, 1966).

Kovacs and Beck (1977), in a review of several studies on the manifestation of childhood and adolescent depressive disorders, noted that remarkable similarities emerged between adult and childhood depression. There was agreement in that (a) cognitive changes in the negative direction occurs, such as, feelings of apathy, impaired concentration, self-blame, helplessness. (b) attitudinal and motivational changes in disturbances in vegetative and psychomotor functions, such as, loss of appetite, inactivity, enuresis, weepiness, irritability occur

Some researchers categorically believe that depression in children and adolescents is hidden behind many facades. Clinically, the prominent features of depression are, persistent lowering of mood (feeling sad), loss of self-esteem, accompanied by cognitive, behavioural and somatic symptoms. However, an alternative view is that certain conduct behaviours "mask" the underlying depression (Toolan, 1962; Glasser, 1967; Cytryn & McKnew, 1974; Lesse, 1979). Under this category are said to be behaviours such as delinquency, school phobia, temper tantrums, poor school achievement, truancy. Toolan (1962), also includes psychosomatic and hypochondriacal reactions like eating and sleeping disturbances, boredom, tics, colitis, restlessness. This wide spectrum of behaviours only heightens the concern over the definition and diagnosis of childhood and adolescent depression.

The relationship of these behaviours and depression is problematic in that almost any behaviour that is disturbing enough could earn for the child a label of depression. The list of behavioural symptoms of childhood and adolescent depression generated from a definition of this condition should be founded on knowledge of the incidence of such behaviour in the normal population. As stated earlier, attempts at unifying the diagnosis and identification of childhood and adolescent depression have resulted in the general acceptance of the D.S.M. - III (Kovacs & Beck, 1977; Kashani et al, 1981). While the same diagnostic criteria used for adult affective disorders are to be employed for children and adolescents as well, associated features may differ and vary according to age. For example, restlessness maybe associated with depression. This restlessness is often associated with sulkiness, social withdrawal, lack of interest in school and personal appearance for adolescent depressives (Kashani et al, 1981).

Childhood versus Adolescent Depression

Developmentalists hold the view that while the child is in the representational phase (Piaget, 1962 in Anthony, 1975) it is impossible for him to understand his own experiences and that of anyone else (Anthony, 1975). As the young child possesses a limited vocabulary, cognitive system and behavioural repertoire (Kovacs & Beck, 1977), his expressions of the depressive affect must differ from other age groups. These myriad manifestations only add to the criticism about the identification and "amorphous undifferentiated" diagnosis of childhood depression.

Nevertheless it might be appropriate at this stage to attempt to trace briefly the developmental pattern of depression from infancy onwards (as derived from the literature).

1. INFANCY. Overt symptoms may be associated with maternal deprivation/separation, and/or the loss of a significant loved one. This may be demonstrated by protests (example, crying), to withdrawal and apathy accompanied by physical, intellectual and emotional retardation (Spitz, 1946; Toolan, 1962; Bowlby, 1973).
2. CHILDHOOD. (Six years to pre-pubertal, that is, before the appearance of secondary sexual characteristics).
Depression may be demonstrated in antisocial or conduct disorders, passive or active aggression, negative self-image, school refusal, overt sadness, somatic complaints like enuresis, encopresis, insomnia, tummyaches (Malmquist, 1971; Philips, 1979); suicidal ideation (Poznanski, 1982).
Even the reassessment of the evidence for maternal deprivation effects as reviewed by Rutter (1981) does not dispense with some of these behavioural characteristics.

3. ADOLESCENCE. Overt expressions of guilt, crying, self-condemnation decrease in frequency; self-blame may become an acting-out defensive behaviour seen as aggression (Burks & Harrison, 1962; Brumback & Weinberg, 1977); school phobia/truancy (Rutter et al, 1976; Baker & Wills, 1978); self-deprecatory feelings emerge and relationships are tenuous and tentative (Philips, 1979). After puberty, the depressive symptoms start to resemble those of adulthood. These are demonstrable by loss of interest, apathy, boredom, social withdrawal, diminished school performance, poor concentration, suicidal thoughts (Lesse, 1979; Philips, 1979; Inamdar et al, 1979; Poznanski, 1982).
4. ADULTHOOD. As described by the Research Diagnostic Criteria (R.D.C.) (Spitzer et al, 1975), major features are dysphoric mood, loss of appetite and weight, sleep disturbances, psychomotor agitation or retardation, poor concentration, recurrent thoughts of death/suicide, self-blame and hopelessness.

While the symptoms of depression in children and adolescents have remarkable similarities, adolescent depression is said by some to be more akin to adult depression (Malmquist, 1971; Teri, 1982 (b)). However, there have been insufficient longitudinal and epidemiological studies to verify symptoms of the depressive disorder, and therefore, caution is warranted.

Conceptual Models of Childhood and Adolescent Depression

Apart from the psychoanalytic model, most of the recent research on childhood depression emphasizes a social-learning and cognitive approach. Four of the more frequently cited models will be reviewed now.

1. Psychoanalytic Model:

Psychoanalysts attribute adult depression to the loss of a loved and significant figure (usually a parent) during early childhood. They maintain that depression can occur as early as six months (Klein, 1960 in Connors, 1976; Bowlby, 1973). Spitz (1946) describes this "anaclitic depression" as a course of stages the infant goes through from protest, to withdrawal, to apathy. This may result in physical, intellectual and emotional retardation. This is another example of theory being derived from limited investigation, that is, use of institutionalized population (Rutter, 1981). Despite this more recent reinterpretation, there can be serious deficits associated with early loss or lack of stimulating nurturance.

The Freud-Abraham model (1917; 1949 in Akiskal & McKinney, 1975) holds that depression is triggered by loss of an important individual during a crucial stage in development. This symbolic loss is introjected and turns to anger. Retroflexed anger then develops into lowered self-esteem. Bibring (1953) held the view that when the individual's ego ideals and self-esteem collapses, depression ensues. Therefore, feelings of helplessness and inadequacy seem to be fundamental to Bibring's model. This "negative cognitive set" has been adopted by more recent socio-behavioural-cognitive approaches (Ferster, 1965; Lewinsohn, 1974; Beck, 1974; Seligman, 1974).

2. Cognitive Model:

In contrast to Freud (1917, in Akiskal & McKinney, 1975) and Lichtenberg (1957, in Abramson & Sackheim, 1977), who regarded the depressive as

assuming personal responsibility for failing to achieve desired goals, Beck (1967) postulated that an altered or distorted cognition coupled with a negative expectation results in a low threshold for assuming personal responsibility. These erroneous beliefs engender feelings of guilt, self-blame and dejected mood (dysphoria). Beck's theory was derived from clinical observations of depressed patients. The central feature of hopelessness and helplessness is reflected in a "cognitive triad" of negative self-concept, negative interpretations of one's experiences and a negative view of the future (Akiskal & McKinney, 1975).

This altered, negative view of one's self and the environment leads to schemas of perceived deficiency. Beck has also speculated that individuals, even children, tend to set up rigid and perfectionistic goals for themselves and when they fail (as perceived by themselves) depression sets in.

Kovacs and Beck (1977) who have developed the Childhood Depression Inventory (C.D.I.), believe that the cognitive distortion model can be applied to children. However, we need more empirical evidence supporting the notion that sad children with a poor self-image are in fact depressed by their illogical self-statements.

3. Behavioural/Learning Models:

a) Behavioural Reinforcement Model

This paradigm is based on the contingency between responses and reinforcement schedules (Lewinsohn, 1974).

Behaviourists have maintained that depressed persons, by both classical and operant conditioning, distort and inaccurately process information about their experiences and life events (Lazarus, 1968; Ferster, 1974; Lewinsohn, 1974).

Changes in the pattern of social reinforcements (e.g. loss of job, marital separation, parental death), may result in chronic anxiety that reduces the person's usual behavioural repertoire. Depressives, under this framework, lack the social skills to generate alternative reinforcement sources (McLean, 1976 in Kashani et al, 1981).

This inability to derive gratification from the environment leads to physical, emotional and biological dysfunction described as depressive symptoms of weight loss, dysphoria, anhedonia (decreased interest in usual activities), low self-esteem.

This model has been successfully used in treatment, for example, to teach social skills to a group of children described as "social isolates" (Gottman et al, 1975), but its contribution to a better understanding of depression in children and adolescents is still obscure.

b) Learned Helplessness

This model grew out of Seligman and his associates' (1968) initial work with animals in a laboratory where dogs were exposed for prolonged periods to inescapable shock. They found that the dogs' subsequent behaviour was maladaptive and resulted eventually in helplessness and passivity

even when escape was introduced at a later stage of the experiment. Seligman and his co-workers contend that this behavioural deficit in response initiation resulted from learning that reinforcement and response are independent. Incentive was therefore reduced. This behavioural state of "learned helplessness" becomes a personality trait (Akiskal & McKinney, 1975).

This theory was substantiated by experiments with human beings (Miller & Seligman, 1975; Hiroto & Seligman, 1975).

The cornerstone of the hypothesis is that once people perceive non-contingency, they find a cause to which they attribute their helplessness. The cause of deficit may be motivational, cognitive or affective (Abramson et al, 1978).

While the learned helplessness theory evoked a lot of interest it has also received a lot of criticism (Abramson & Sackiem, 1977; Buchwald et al, 1978; Costello, 1978; Depue & Monroe, 1979). Abramson, Seligman and associates (1978) attempted to reformulate their own theory. According to this model, a personal helplessness state occurs when outcomes are attributed to the self and this is due to internal factors. Universal helplessness is a state when perceptions of outcomes are attributed to the self and to others. Neither the individual or others can control the outcome. Such individuals are said to make external attributions.

This distinction is illustrated in the table below. The implication of this framework as it relates to depression needs to be supported by empirical evidence.

TABLE 1.

Personal Helplessness and Universal Helplessness

other	self	
	The person expects the outcome is contingent on a response in his repertoire.	The person expects the outcome is not contingent on any response in his repertoire.
The person expects the outcome is contingent on a response in the repertoire of a relevant other.	1	personal helplessness 3 (internal attribution)
The person expects the outcome is not contingent on a response in the repertoire of any relevant other.	2	universal helplessness 4 (external attribution)

(Abramson, Seligman and Teasdale, 1978)

From this diagram it can be seen that in contrast to condition 1 and 2, condition 3 reflects a clear Internal attribution of control and condition 4 a clear External attribution of control.

Control or lack of control seems to be the catalyst for depression here. If an individual can attribute helplessness either internally or externally (Abramson et al, 1978) there may be a relationship between the locus of control construct as proposed by Rotter (1966) and depression. This aspect will be explored further in Chapter Four.

In relation to childhood and adolescent depression, it has been suggested that children can learn a helpless stance when faced with prolonged failure (Dweck et al, 1973; 1978).

Seligman's model clearly requires validation and empirical support with clinical and non-clinical subjects.

Is there a distinction between self-blame and learned helplessness?

The cognitive aspects of depression can be traced back from Freud's (1917 in Akiskal & McKinney, 1975) concept of aggression/anger turned inwards, to Bibring's (1965, cited in Kashani et al, 1981) notion of helplessness and loss of self-esteem independent of aggressive drive. This is further expanded in Beck's (1967; 1974) schema that depressed individuals feel deficient and blameworthy, resulting in passive acceptance of failure responses. Seligman (1974) describes the depressive's cognitions as being distorted in that his behaviour is independent of reinforcement. His feeling of control is paralysed by the sense of hopelessness and helplessness. The theories centralize around whether depressives hold themselves responsible for actions and failures, whether they expect outcomes independent of their actions or whether in fact these expressions of self-blame exist synonymously with helplessness and no control. The circularity of these descriptions is complexing and we seem to need further empirical support.

This contention over the source of control apparently has been demonstrated when depressed individuals and college students rendered "temporarily helpless" believe that they blame themselves yet feel they cannot control the event (Abramson & Sackheim, 1977). This paradox, it would seem, can only be plausible if one were truly depressed.

The description of "negative cognitive set" appears in both Beck's cognitive model and Seligman's socio-behavioural

model. It seems plausible to conceptualize an individual who expects to be not able to succeed or surmount any obstacle and thereby fails to recognise any relationship between one's responses and reinforcement. This individual then evidences salient cognitive-affective features of hopelessness and helplessness.

4. An Integrative Model

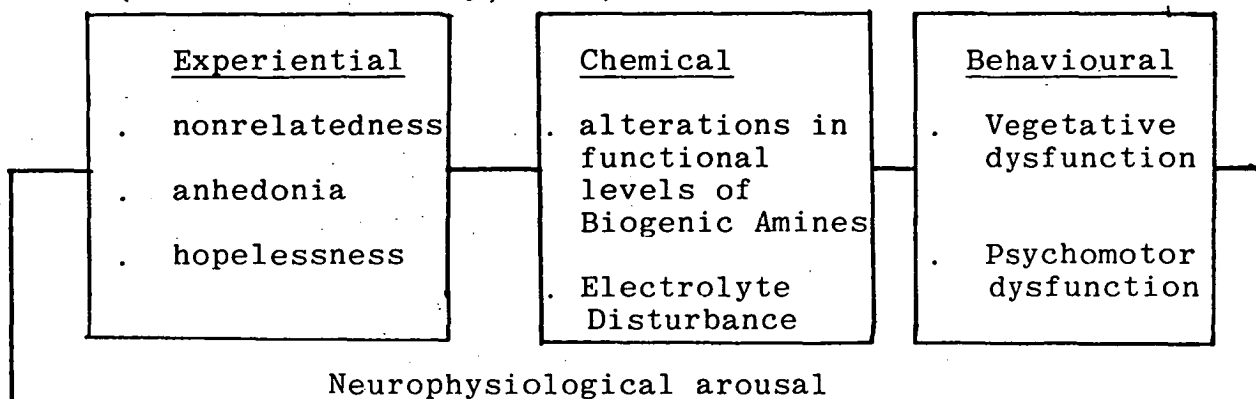
This is a model proposed by Akiskal & McKinney (1975) after they examined psychodynamic, socio-behavioural, neurobiologic and other associated research on the area of depression. They attempted to investigate the role of neurotransmitters in signalling the intense dejection and hopelessness that results in non-relatedness and anhedonia, accompanied by vegetative and psychomotor retardation.

Depression therefore, according to this model, occurs when the body's homeostatic balance fails or malfunctions as a result of functional impairment during the interaction of three sets of variables at the chemical, behavioural and experiential levels. The diencephalon is the neurophysiological site responsible for this impairment.

Factors that influence and affect the systems' vulnerability include developmental and psychosocial episodes, genetic disposition, physiological stressors and personality traits. Interactions within these factors involve biological changes (See Table 2).

TABLE 2.

Definition of Depression at Experiential, Chemical
Behavioural and Neuro-Physiological levels.
(Akiskal & McKinney, 1975)



Simply put, if one system is impaired it sets off a chain reaction with the other systems. An example illustrated by Akiskal & McKinney (1975) was that, melancholia or lowering of mood results from failure in the homeostatic mechanisms that maintain the system in negative feedback. By the lowering of norepinephrine in the reinforcement system, stress beyond the individual's coping ability plus anxiety and hopelessness, produce heightened arousal which leads to the system's disruption. Psychomotor and vegetative malfunction follows on. A cycle seems to prevail when as a result of feeling helpless, that is, out of control, more arousal occurs and further bodily and psychic decrements occur. The diencephalon is the organism's mainstay in its response of reinforcement. Akiskal & McKinney (1975) state that this fragile reaction that brings about depression can occur in anyone - animals, children and adults.

While this theory encompasses several other models, it also needs further research and empirical evidence.

Conclusions

Textbooks on child psychiatry and psychology offer no single model for depression in children and

adolescents. However, Kashani et al, (1981) examined adult models in relation to childhood depression. They state that because of the developmental changes that occur during childhood and adolescence, research on depression will be more complex to identify for young persons.

The main support for the models of depression illustrated in this chapter has been more for the psychosocio-behavioural framework. Psychoanalytic studies, being drawn mainly from analog and anecdotal data, do not lend themselves to credibility. Theorists are now looking at biochemical differences that trigger depression in susceptible individuals (Mendels, 1973 in Akiskal & McKinney, 1975; Cytryn & McKnew, 1974; Puig-Antich et al, 1981 in Kashani et al, 1981). The aspects of biochemical differences for depression, interesting though they are, will be beyond the scope of this study.

This chapter attempted to review the depressive syndrome in order to bring clarity into the area of childhood and adolescent depression. Although depressive disorders are conceptualized along different theoretical frames of reference, in order to proceed towards a sounder understanding of depression, the various modalities need to be complementary rather than dissonant.

While it is also important to note that adolescence is a period of great development and change, it seems necessary to accept the D.S.M - III criteria but to refine the same for their successful use with adolescence. A tighter, singular and uniform model is needed.

CHAPTER 3.

DEPRESSION AND LOCUS OF CONTROL

DEPRESSION AND LOCUS OF CONTROL

For some time, the notion of hopelessness, a sense of futility and powerlessness have been described as central characteristics of depression (Bibring, 1953; Melges & Bowlby, 1969).

From various theories of depression that have emerged (see Chapter 2), it would seem that despite the range of descriptions offered, a repititious note sounding throughout is that the depressed individual is apathetic, dysphoric, displays helplessness and has a low self-esteem.

The view that depressives are both helpless (Seligman, 1974) and self-blaming (Lichtenberg, 1957 in Abramson & Sackheim; Beck, 1967) appears theoretically paradoxical. These ostensibly illogical cognitions of helplessness and self-blame associated with depression have been supported by empirical evidence, where subjects' perception of self-blame (guilt) and helplessness covaried positively with depression (Abramson & Sackheim, 1977; Peterson, 1979). The research is useful in demonstrating the cognitive contents of the depressed.

The perception that depressives feel no control over outcomes led to rising interest in seeking a relationship between depression and the locus of control construct in order to assess the attributions of helplessness and self-blame. The 'locus of control' concept developed out of the social learning theory (Rotter, 1954 in Rotter, 1975). This variable is said to have developed from observations that increments and decrements in expectancies vary, depending on the nature of the situation and also as a consistent characteristic of the particular person being reinforced. The individual who perceives that outcome is contingent upon his/her own behaviour is said to have more internal control: The individual who perceives that the outcome

is independent of his/her behaviour is said to have more external control.

Research has shown that people maintain differences in behaviour as a function of the locus of control dimension (Lefcourt, 1966; Rotter, 1966). When goals appear accessible and attainable to the individual, he/she tends to be motivated and is then prepared to accept responsibility for success and failures. However, when exposure to these conditions becomes frequently unavailable and unsuccessful, then it is likely to lead to low tolerance or despair and hopelessness.

Abramowitz in 1969, discovered a positive relationship between external locus of control and depression in a college sample. Several studies have also yielded significant positive correlations between external control scores and depression (Goss & Morosko, 1970; Miller & Seligman, 1973; Calhoun et al, 1974; Prociuk et al, 1976; Fogg et al, 1977; Leggett & Archer, 1979; Tesiny et al, 1980). Most of these studies however sampled only clinic or college populations.

The relationship between depression and external locus of control seems to be in line with Seligman's learned helplessness model for depression. Several studies, some with animals (Seligman et al, 1968; Seligman & Beagley, 1975, in Abramson et al, 1978; Lefcourt, 1976), and other studies with human beings (Dweck & Reppucci, 1973; Hiroto & Seligman, 1975; Miller & Seligman, 1975), have found that individuals who perceived noncontingency between personal responses and valued outcomes, then demonstrate helplessness. Lack of adaptive behaviours associated with depression is then exhibited. Thus the perception of control may be seen as pivotal for depression.

Prociuk, Breen and Lussier (1976) examined Beck's concept of hopelessness (defined as a system of negative expectancies about oneself and one's future), in relation to generalized expectancies for reinforcement (or locus of

control) and depression. Results confirmed that the notions of hopelessness with depression and external locus of control are positively correlated.

While external locus of control is associated with a predominance of negative affective experiences (Melges & Weisz, 1971), the link between depression and externality has not been so clearly distinguished as Prociuk et al might claim. Schwartz (1964, in Lamont, 1972) held the view that depressed patients exhibited highly self-referred perceptions of events within and outside themselves. That is, they had high standards and a sense of personal responsibility (self-blame) over events. Therefore, they showed more internal locus of control. This conjecture has been supported by further researchers (Lamont, 1972; Golin & Terrell, 1977; Rozensky, 1977 in Peterson et al, 1978).

As mentioned earlier, these studies mainly used college, adult or clinic populations and provide few clues towards our understanding of depression for younger populations. Again however, inconsistencies in determining the relationship between depression and locus of control may be due to chance effects, to different methods of measuring, or to differences in population characteristics.

Given that in depressives the symptoms of hopelessness, helplessness and self-blame appear to be part of the whole depressive syndrome, this present research attempts to explore the dimensions of internal and external perceptions within the depressive framework for an adolescent population.

The Locus Of Control Construct

According to Lefcourt (1966), internal control refers to the perception of positive and/or negative events as being consequent on one's own actions and thereby under personal control. External control refers to the perception

of positive and/or negative events as being unrelated to one's own behaviour in certain situations and therefore beyond personal control.

In Rotter's theory (1966), described within the social-learning context, the control construct is considered a generalized expectancy, operating across a large number of situations, which relates to whether or not the individual possesses or lacks power over what happens to him. If one perceives reinforcement to be contingent upon one's behaviour then the occurrence of either positive (or negative) reinforcement will strengthen (or weaken) the likelihood of the behaviour recurring in similar situations (Rotter, 1966).

This then causes a curvilinear relationship with assessment of maladjustment, so that those who perceive events as being unrelated to one's own behaviour and personal control are more likely to be depressed, apathetic and withdrawn. Those who see themselves as totally responsible could be associated with delusions of grandeur, ideas of reference, paranoia.

The Locus of Control Construct Applied to Child/Adolescent Populations.

Locus of control scales for adults first evolved out of the belief that reinforcement (positive or negative) was a major determinant of behaviour. It was envisaged that this reinforcement pattern is seen in the degree to which an individual perceives a causal relationship between his behaviour and the outcomes could be measured by a locus of control scale. Bialer (1961) using the same concept, developed a pencil and paper scale to measure locus of control for children. Battle and Rotter (1963) constructed a projective Children's Picture Test of Internal-External control. In 1965, Crandall, Crandall and Katkovsky looked at more specific measures in particular, children's beliefs about reinforcement in intellectual-academic achievement situations.

They devised the Intellectual-Achievement Responsibility Questionnaire (IAR).

Nowicki and Strickland (1973) designed a scale purporting to measure a generalized expectancy of measurement for children paralleling Rotter's adult measure. The scale consists of forty questions (answered Yes or No) covering a variety of situations and personal interactions. Test - retest correlations ranged from .67 to .81 and internal consistency reliabilities from .63 to .79 (Nowicki & Strickland, 1973). The Nowicki-Strickland Locus of Control Scale was found to be the most suitable for the purposes of this current investigation.

This study, using a behavioural-cognitive definition of depression, accepts the notion that helpless individuals view the occurrence of aversive events as signals that they cannot control the situation and as cues for the continued occurrence of such events despite efforts on their part.

Is the helpless stance ^{ca}_{of} concomitant of adolescent depression? Dweck and Reppucci (1973) and Dweck (1975) investigated the reactions of children to causal cognitions and found that helpless children tend to attribute failures to factors that are beyond their control, such as external agents or their own lack of ability (that is, self-blame). Dweck (1977) argued that the helplessness model (used in the context of the depressive syndrome) may be conceptualized but is not sufficient for serious mood disorders in children. She asserts that the preadolescent is unable to exert control over outcomes. The adolescent, however, who is undergoing physiological and maturational changes, is expected to exercise control (defined as "to regulate or direct") over the environment. This may be due to adult and peer pressure. In this context, it is probable that the notion of control or lack of control may be taken as an indicator of the depressive syndrome for adolescents.

As with previous issues discussed about depression in children and adolescents, serious lack of experimental studies examining variables in this area is also apparent. The few variables that have been explored well in relation to depression and locus of control, appear to be self-esteem (Moyal, 1977) and poor school achievement (Tesiny et al, 1980).

While perception of control may be relevant to depression (Peterson, 1979) the nature of the relationship has not been clearly established. Can we assume that depressives are more external in locus of control (Abramowitz, 1969; Calhoun et al, 1974; Becker & Lesiak, 1977; Leggett & Archer, 1979; Tesiny et al, 1980), or, are they as others suggest more internal in locus of control (Schwartz, 1964 in Lamont, 1972; Golin & Terrell, 1977)? Will adolescent depressives show patterns of externality or internality as other populations have? This present study attempts to investigate this notion.

CHAPTER 4.

ADOLESCENT SCHOOL PROBLEMS

ADOLESCENT SCHOOL PROBLEMS

Adolescence - Theoretical Views

As this study proposes to examine depression in adolescents it would be appropriate here to briefly look at descriptions of adolescence as defined by some major theorists.

One of the earliest proponents was G. Stanley Hall whose theory is described as the law of recapitulation. He believes that human development is genetically determined and evolves through four stages - infancy, childhood, youth and adolescence.

Adolescence, according to Hall, is the period when the qualities of the human body and soul emerge at a higher level and the later development of the individual becomes prepotent. Some characteristics of the adolescent include strong feelings, highly personalized expressions and suffering. The adolescent oscillates between contradictory emotional tendencies such as pleasure and pain, selfishness and altruism in the process of acquiring maturity. This is described as the period of "storm and stress" (Hall, 1904 in McKinney, Fitzgerald and Strommen, 1982).

Although present-day theories incorporate a similar notion of adolescent turbulence Hall's theory is not readily accepted. If "storm and stress" is synonymous with identity crisis, how then can we distinguish adolescents with psychiatric disorders from those without? Later research found that physical and somatic changes in the developing adolescent was susceptible to cultural and environmental influences (McKinney, Fitzgerald & Strommen, 1982).

Psychoanalytic theorists also consider adolescence as a period that is phylogenetic. S. Freud (1915, in Muuss, 1975) states that there is a close relationship between physiological changes and body processes on the one hand

and between psychological changes and self-image on the other. Thus behavioural changes like aggressiveness, moodiness, tension and other negative forms of emotion are said to be linked with the physiological changes.

Erik Erikson however seems to have not only embraced some aspects of Hall and Freud's theories but also looks at the social forces affecting the adolescent. Erikson (1963, in Muuss, 1975) describes adolescence as the period of identity development. The 'healthy' adolescent is able to reach a meaningful self-concept and identity through social interaction. If the adolescent fails he will experience role confusion and this may then lead to isolation, withdrawal and depression.

While several theorists argue that the life of the adolescent is stressful and turbulent, as briefly described in the previous paragraphs, let us now examine some different viewpoints. Social learning theorists, such as A. Bandura (1964) and Offer & Offer, (in McKinney et al, 1975) believe that the period of adolescence can be smooth and happy.

Bandura considers that any negative behaviour seen in an adolescent is symptomatic of individual coping mechanisms and not a general status of adolescents. Behaviours are learnt through modelling and past conditioning and any deviance that does occur is due to contingencies of specific preadolescent social situations such as childrearing patterns, parent-child relationships or dependency training.

Offer & Offer (1975 in McKinney et al, 1982) studied various characteristics (example, stress) associated with adolescents and found that the coping styles amongst adolescents was distributed along a normal curve. They agree however that there is a subgroup of adolescents who do have psychiatric disorders.

Whichever theoretical stance is endorsed, it is accepted that the period of adolescence is particularly susceptible to disturbance. Given that individual differences occur, those adolescents who are more vulnerable to the stress

and loneliness in their environment may be expected to develop adjustment problems. This can result in psychological disorders such as phobias, anxiety or depressive states, psychosomatic illnesses, schizophrenia, suicide ideation. According to Rogers (1981), the individual's susceptibility for depression depends on the mechanisms developed as children to cope with conflicts.

Problems in School

A variety of behavioural manifestations of emotional maladjustments occurs in schools. Most common of these are social withdrawal, aggressive behaviours, poor school performance, defiance of authority, enuresis, truancy, school phobia.

Adolescents who demonstrate these behaviours are often labelled (wrongly or otherwise), "bad", "delinquent", "antisocial". This misuse of labels could be due to the lack of clarity of references in the literature on childhood and adolescent disorders. Attempts have been made to understand some of the features associated with childhood and adolescent depression. Some of the symptoms examined were aggressiveness (Burks & Harrison, 1962; Poznanski & Zrull, 1970), school phobia, absenteeism (Toolan, 1962; Berg *et al*, 1976; Baker & Wills, 1978), learning difficulties (Glasser, 1967; Tesiny *et al*, 1980), low self-esteem (Moyal, 1977).

Incidence of Depression in School Children

Despite the infrequent emergence of traditional depressive symptomatology in adolescence, epidemiological data indicates that it is by no means a rare occurrence. One study of grades 7 and 8 students in a United States high school revealed that one-third of the school population was experiencing moderate to severe depression (Albert & Beck, 1975).

According to Rutter and associates (1976), deviant behaviour of the "conduct disorder" type becomes more frequent in adolescents. There is perhaps one in ten adolescents who suffer from feelings of misery and self-depreciation. Pupils "at risk" at school have educational and constitutional problems and there is also evidence of psychiatric disorder in the family - mainly depression. The pattern of disorders in

adolescence shows an increased prevalence of both depression and school refusal. Rutter et al (1976) found a three-fold increase in the prevalence of the depressive disorder for fourteen and fifteen year olds.

Brumback and Weinberg (1977) found 58% of seventy-two prepubertal children suffering from a depressive disorder when referred to an educational diagnostic centre.

The typical picture of a depressed adolescent is one of lethargy, pervasive apathy, social withdrawal with a reduction in mental and physical activity. There may be frequent complaints of fatigue, tiredness, poor concentration, physical complaints like headaches, tummyaches and many show suicidal tendencies (Rice, 1981).

An underlying feature in adolescent depression may be the prior loss of a loved one or loss of self-esteem. However, while these precursors (that is, negative self-image and loss) are common, depressed adolescents experiencing hopelessness and low self-esteem may manifest different patterns of the clinical phenomena. One may be withdrawn and apathetic and the other agitated and demanding (Grinker et al, 1961 in Weiner, 1970).

For one depressed adolescent, this dysphoric mood may lead to belligerence, defiance and open aggression (Burks & Harrison, 1962; Werry & Quay, 1971; Malmquist, 1977). Yet another depressed adolescent may be withdrawn and miserable-looking, may have difficulty participating in activities and starts neglecting his schoolwork. This adolescent then becomes listless, disinterested in school and friends and starts refusing to attend school.

As described earlier in this chapter, the period between childhood and adulthood is a tenuous one which involves the surrender of previous gratification and the search for an identity. This transitional phase may enhance the individual's susceptibility to depressive reaction (Weiner, 1970; Albert & Beck, 1975). This can be better understood in the etiological basis of childhood and adolescent depression.

Researchers studying adolescents found several behaviours associated with depression, among them were aggression (Burks & Harrison, 1962; Cytryn et al, 1980), school refusal (Berg et al, 1969; Brumback & Weinberg, 1977; Lang and Tisher, 1978), poor school performance (Lesse, 1979), and poor concentration (Poznanski, 1982).

While it has been argued that these behaviours may be only part of the adolescent 'growth phenomena' (Graham, 1974; Baker & Wills, 1978), it is equally important to note that many of the symptoms specified under childhood and adolescent depression have been drawn from inferences and limited clinic studies. Therefore, for a more definitive picture of the disorder, we need to first establish that depression has been diagnosed and then examine the features that are manifested in the adolescent. The diversity of symptoms associated with childhood and adolescent depression has led this present author to look at two particular behaviours (aggressiveness and absenteeism) in a group of depressed and non-depressed adolescents as defined by the Childrens Depression Scale (Lang & Tisher, 1978).

Aggression In Relation to Adolescent Depression

According to Bibring (1953), the state of helplessness or inadequate ego may hide underneath the external expression of aggression. This notion was supported in clinical observations of children conducted by Burks and Harrison (1962) who concluded that aggression may be viewed as an overt reaction to avoid or hide feelings of depression. This has been described as a defensive response in the depressed individual (Malmquist, 1977).

While aggression is cited in some studies as a common behavioural manifestation in children, there is the need for further clarification that it is also applicable to depressed adolescents, as Rutter and associates (1976) have suggested. It is interesting also to note that Pearce (1977) states that "physical aggression is unusual" as a symptom of the

depressive disorder for younger populations and that the interaction between aggression and depression is a complex one.

This present study will attempt to explore the variable of aggression as assessed in a high school population in the hope of establishing a clearer statement about aggression as a characteristic of adolescent depression.

School Refusal/School Phobia/Truancy in Relation to Adolescent Depression.

As the title suggests, a variety of labels can be associated with the "failure to attend school" pattern. Yet the most important distinction that need to be drawn is between school phobia and truancy. Truancy has been defined as "absence without proper leave from home, school or other place of duty, especially in the case of children or adolescents" (English & English, 1957). The truant may not be at home but is often engaged in minor anti-social activities. Truancy can be viewed as a socio-cultural phenomenon (Rubenstein & Hastings, 1980).

The school phobic, however, holds unrealistic fears about school and may manifest some intrapsychic pathology such as separation anxiety and poor dependency links (Eisenberg, 1958; Hersov, 1960; Berg et al, 1969; McDonald & Sheperd, 1976).

According to Lesse (1979), school phobia may conceal underlying depression among young adolescents. However, school refusal and school phobia have been used synonymously by several researchers (Kahn & Nursten, 1962; Berg et al, 1976; Rutter et al, 1976) in relation to depression and disorders for the younger population. For this study, for the sake of simplicity, a measure of absenteeism will be used to represent both school phobia and school refusal. It would be extremely difficult to separate out reasons for absenteeism here.

Rutter and associates (1976) in an evaluative study on adolescent problems, conclude that depression and school refusal were more prevalent in adolescence. While these features are on the increase the relationship between school refusal and depression has still not been clearly established. It also remains uncertain how these conditions constitute indicators of psychiatric disorder.

However, it could be inferred from the following studies that what is known for adult depression could be relevant here. In a clinical study by Berg and associates (1976), it was found that school phobia in adolescents closely resembled adult affective disorders in that "a mood change of anxiety or depression was primary and predominant".

Baker and Wills (1978) found that nearly all school phobics in their sample suffered from a variety of psychiatric symptoms and were anxious and depressed. While irrational anxiety has been ascribed as the basis of school phobia, this may be a symptom of adolescent depression or it may be part of a more complex psychological disorder.

It seems vital to establish and clarify if school refusal is a distinctive part of the depressive syndrome (Pearce, 1977; Rubenstein and Hastings, 1980) or just an isolated sociocultural feature in the adolescent phenomenon (Baker & Wills, 1978).

The transition from childhood to adolescence is complex and behavioural expressions of school refusal or absenteeism could stem from a variety of causes during the transition into adulthood.

Studies which have examined absenteeism (school refusal) in relation to depression have again suffered by being restricted mainly to clinic or child subjects (Murray, 1970; Kovacs & Beck, 1977; Brumback & Weinberg, 1977). This present research hopes to extend these

contributions by investigating the relationship between absenteeism and depression for adolescent non-clinic populations.

Conclusion

As has been demonstrated earlier, adolescence is seen as a critical period of development. While stage theorists emphasize the distinctiveness of adolescence, social learning theorists see it in a broader social context such as the relationship between external factors and behaviour. The prototypical adolescent does experience turmoil and anxiety and these stresses trigger the vulnerability of some adolescents to psychological problems. This is the time when dilemmas may be handled by 'acting out' behaviours and in addition to this, adolescents may demonstrate unique features under similar stressful situations. It seems that the prognosis for adolescent psychiatric disorders depends very much upon the diagnosis. As mentioned in the earlier chapters, the clinical picture of depression in adolescents resembles that of depression in adults. While expressions may differ in relation to the individual's developmental level (Rutter et al, 1976; Poznanski, 1982), it is crucial to look more closely at the behaviours associated with depression as it relates to adolescents. Aggression and absenteeism are two such behaviours that will be examined in this light. Simplistically, these behaviours appear to be expressed in opposite ways. While aggression is often seen as a physical (outward-directed) action, absenteeism can be described as a withdrawal (inward-directed) action. It is anticipated that some clarity may emerge as to the inter-relatedness of these behaviours associated with the depressive syndrome.

CHAPTER 5.

SEX DIFFERENCES IN ADOLESCENT PROBLEM BEHAVIOUR

SEX DIFFERENCES IN ADOLESCENT PROBLEM BEHAVIOUR

In trying to examine differences in adolescence, it is important also to consider sex differences.

If we trace the attitudes of our society we can see that the different characteristics of men and women have frequently been exaggerated and over-emphasized in both Western and Eastern cultures. According to Maccoby (1980), beliefs about psychological characteristics of the sexes represent cultural interventions that are woven around a core of social or biological fact. To differentiate between truth and cultural myth is extraordinarily difficult, especially since people's beliefs sometimes become self-fulfilling prophecies. Sex differences have 'news value', therefore research is generally more interested in looking for differences and when differences are found consistently in several studies then people assume it is 'natural', that is, biological.

Males are led to believe that a tough, strong, aggressive image is normal and highly valued in society. Whilst females are often taught, since birth, to inculcate gentle, submissive, accepting behaviours that are representative of their 'weaker sex'. This view has been examined by research (Whiting & Edwards, 1973; Weinreich, 1978; Hartnett et al, 1979; Maccoby, 1980).

However, while there are such sex differences, the notion of individual differences has led to further research looking at changes in role expectations (Dweck & associates, 1973; 1975; 1978; Overton & Meehan, 1982).

As mentioned earlier, adolescence is a period of growth, conflict and consolidation. Several developmental studies have attempted evaluating particular sex differences that may exist during this period (Elkind, 1961; Killian,

1979 in Overton & Meehan, 1982; Funabiki et al, 1980; Rice, 1981).

Female adolescents are said to display more helpless behaviours than males do (Dweck & Repucci, 1973; Radloff, 1975). It has been proposed that sex differences that exist may be a reflection of social role expectations rather than actual differences. When Overton and Meehan (1982) examined work competence and helplessness in three groups of adolescents described as male, female and androgynous (that is, having both male and female traits) as determined by a Sex-Role Inventory (Bem, 1974), they found that androgynous, helpless adolescents performed most poorly. Also, there was no significant difference between individuals with a feminine role compared to individuals with a masculine role. The concept of adopting androgynous sex roles has been also investigated in some earlier studies. According to Bem (1975) androgynous sex roles entail a greater adaptability of behaviours across situations. It was concluded by Williams (1979) that androgynous women had higher self-esteem and were less vulnerable to stress and therefore psychological disorders. While Overton and Meehan's (1982) study is situation specific, the results seem to suggest some intriguing hypotheses about sex-roles. As long as females maintain a helpless stance, myths about role expectations and requirements will perpetuate.

Females and Depression

Radloff (1975) speculated that females are more prone to depression as a consequence of learned helplessness. In a recent study with adolescents it was found that there were more females with high depressive scores than males (Teri (1982(a)). Social roles do not encourage or applaud competitiveness and drive in women (Broverman, Broverman & Clarkson, 1970 in Davidson & Neale, 1978; Chetwynd & Hartnett, 1978). In a series of studies by Dweck and her colleagues (Dweck & Repucci, 1973; Dweck, 1975; Dweck et al, 1978), it was found that girls are more likely to demonstrate

learned helplessness and attribute lack of ability to themselves. They conclude that this demonstration of helpless behaviour was due in part to the evaluative feedback that teachers gave girls as compared to that given to boys. Girls who received negative feedback from a female adult demonstrated greater learned helplessness. This lack of worth or negative self-esteem is associated with feelings of distress, self-hatred, psychosomatic symptoms and feelings of depression (Coopersmith, 1967).

It is important to consider the implications of negative feedback and stereotyping in females as compared to males. Several research studies have reported a higher incidence of females who have affective disorders (Anthony, 1977; Weissman & Klerman, 1977; Lesse, 1979; Carlson & Cantwell, 1980). It has been suggested that the higher incidence of psychological disorders in females may be due to the reluctance of men to admit unpleasant affects and sensations while it is culturally more acceptable for females to admit their difficulties and engage in more negative expressions (Phillips & Segal, 1969 in Litman, 1978; Maccoby & Jacklin, 1975). This notion was however disputed by Litman (1978) who suggested instead that the greater incidence of mental illness (example, depression) could in fact be related to the greater sex-role conflict experienced by females. This seems to have serious implications and emphasizes the need for society to re-examine the basis for role-expectations.

Sex differences in Locus of Control

Depressives have been frequently described as having low self-esteem, that is, while depression rises self-esteem declines (Battle, 1980). Depressives are said to be more external in locus of control and generally perceive themselves as lacking in control over events (Abramowitz, 1969; Peterson *et al*, 1978; Tesiny *et al*, 1980). Seidner (1978) examined the role of the locus of control construct as a mediator between sex and self-esteem. Results were

that girls with more internal locus of control had higher self-esteem. Boys however, with either more internal or external locus of control scored higher than girls on the self-esteem construct.

While studies have shown that positive correlations exist between depression scores and external locus of control scores the association has not been consistent for the sexes. It has also been found that there is a higher correlation between externality and depression for males more than that for females (Calhoun et al, 1974; Hanes & Wild, 1977; Fogg et al, 1977). While females are reported to demonstrate more helpless behaviour, in the study by Calhoun and associates (1977), it was concluded that females had the tendency to hold themselves responsible for unhappy mood and that adolescent females were more self-critical and self-blaming. This is incongruous with Seidner's (1978) study where internality and self-esteem correlate positively for females. Seidner suggests that girls with internal locus of control may be less susceptible to the debilitating effects of sex-biased societal values. If society condones and encourages females from infancy to adopt an attitude of resignation, compliance and passivity it is little wonder that females, according to Maccoby and Jacklin (1975) become externalizers by reason of cultural shaping. The probability of any sex difference in relation to depression and the locus of control construct has not been clearly determined.

Sex differences in Helplessness and Self-blame for Adolescent Depression.

Theories of depression have varied in semantic descriptions of its etiology. Core characteristics for describing depressives are feelings of self-blame, low self-esteem, helplessness, lack of control over events. While not venturing to debate about the validity of these descriptions it is more important to examine these constructs in relation to perceived sex roles. In a study by Funabiki

et al, (1980), males and females were found to endorse distinctive patterns in the expression of both depressive cognitions and behaviours. They noted that females would be more self-deprecatory and withdraw socially, while males would seek social support. How can self-blame (which is an internal perception) and helplessness (which is an external perception) be synchronous? Are these constructs in fact being perceived differently by males and females or is the locus of control construct not adequately designed to accurately measure the 'true' female traits? Or to stretch this conjecture further, are there no sex differences in perceptions of control for depressed adolescents?

This study will attempt to examine if sex differences do occur in the interactions between locus of control and problem behaviours for depressed adolescents.

In summary, this study will attempt to examine how certain variables interact with depression for an adolescent population.

It is therefore hypothesized that:-

1. For adolescents, depression correlates with locus of control.
2. There will be sex differences for depressed adolescents.
3. There is a relationship between the sex of the depressed adolescent and the direction of the locus of control.
4. There exists a relationship between the behavioural variables of aggression and absenteeism for depressed adolescents.

CHAPTER 6.

METHOD

METHOD

This study is concerned with depression in an adolescent high school population and how certain variables may interact with the depressive disorder. In particular, the aim is to examine the role of locus of control and the behavioural correlates absenteeism and aggressiveness (attributed to the depressive syndrome) in the hope of adding information to the somewhat mystifying phenomena of adolescent depression. Sex differences will also be examined.

Subjects:

The original pool of subjects was 270 Grade 8 students drawn from three high schools in different Hobart suburbs. These high schools were chosen to be representative of the general population with respect to socio-economic status (SES). The average age was 13 years. There were 143 boys and 127 girls. After completing the Lang-Tisher Childrens Depression Scale (CDS), data were then analysed for 180 subjects ('hi' group, N=90 and 'lo' group, N=90). There was little difference in the number of male to female subjects (88 males, 92 females).

No marked difference was found in the number of depressed adolescents across the three schools (School 1, N=59; School 2, N=69; School 3, N=52), and there was no significant difference for the distribution of students into 'hi' or 'lo' groups ($X^2 = 1.54$, d.f.=2, $p > 0.10$). (See Appendix A)

Materials Used:

- (1) The Lang-Tisher Childrens Depression Scale (CDS).
- (2) The Nowicki-Strickland Locus of Control Scale.
- (3) A Teacher Rating Scale.
- (4) School absentee records.

Description:

1. The Lang-Tisher Childrens Depression Scale (C.D.S.)

This is an Australian scale developed by Moshe Lang and Miriam Tisher in 1978, to be used specifically for children aged from nine to sixteen. The Lang-Tisher scale was used for several reasons:-

- (i) Though the Kovacs' and Beck's Childrens Depression Inventory (CDI) does have more predictive validity in distinguishing depressed from non-depressed (Raskin, 1977), the Lang-Tisher Childrens Depression Scale was used for the following reason. Namely, it was developed from an Australian population and used child subjects unlike the Childrens Depression Inventory (Beck & Kovacs, 1977) which developed from an adult clinical population.
- (ii) The Kovacs and Beck scale appears to be oversensitive, that is, over 50% of normal 11 to 15 year olds were rated "depressed" (Carlson & Cantwell, 1980; Birmaher, 1981). Yet in a more recent study by Teri (1982(a)), only 5% of adolescents reported depression high enough to be significant but that the B.D.I. yielded a high internal consistency. (At the time of this current testing the report by Teri was not published.)
- (iii) Criticism has pointed to the lack of adequate and sound psycho-metric measures of childrens' depression (Kovacs, 1977; Lefkowitz & Burton, 1978). Lang and Tisher constructed their scale in the hope of improving clinical diagnosis of childhood/adolescent depression. The only way to extend the usefulness of this scale would be to use it on a large, heterogeneous population.

The test contains sixty-six items, forty-eight depressive (D) statements (examples, - often I hate myself; most of the time I feel nobody understands me), and eighteen positive or pleasure (P) statements (examples - I enjoy myself most of the time; it is alright to feel angry).

The (D) and (P) items are retained as independent scales and scored separately giving a depressive score and a pleasure score.

The items were developed from psychotherapy and sentence completion records of depressed children. The aim was to describe feelings or attitudes so that children who feel the same way could easily identify with them. The items are contained on separate cards and require individual administration, but for the purposes of this study the items were listed in a group format because it was to be administered in small groups (Appendix B(i)). At the time of this testing a group form proposed by the authors was not available.

Scoring: Each of the sixty-six statements could be responded to in one of five ways - very wrong; wrong; don't know/not sure; right; very right and accordingly scored from 1 to 5 in the order above for the 'D' items and from 5 to 1 for the 'P' items. The sum total of the 'D' items gives us a depression score.

Reliability: The level of Alpha was reported to be high (.96). Test - retest reliability was 0.74 (Tonkin & Hudson, 1980).

As this current study had a large sample (N=270) the sixty-six statements were in a pencil and paper format and given on a group basis. As suggested by the authors of the Childrens Depression Scale (Lang-Tisher, 1978), this instrument merely provides a guide in our diagnosis and investigation into the area of child/adolescent depression. Though it is a research edition and as yet has not been used for clinical diagnosis, it has been recommended to determine the nature and extent of childhood and adolescent depression (Lang & Tisher, 1978). Also, it is seen as a "potentially useful instrument" (Petti, 1978; Tonkin & Hudson, 1980) in an area where there is little choice of instruments. Therefore, it was considered that the conversion from individual to group form here would not have invalidated the instrument.

2. The Nowicki-Strickland Locus of Control (1973)

The Nowicki-Strickland Locus of Control scale was developed in 1970 by Stephen Nowicki and Bonnie R. Strickland and revised in 1973. They hoped to produce a reliable measure of generalized locus of control of reinforcement so that researchers could effectively use it to study behaviour over a wide range of children.

The scale which is a paper and pencil self-evaluation measure consists of forty questions that require a Yes or No answer. The construction of items was based on Rotter's social learning theory (Rotter, 1954) of the internal - external control of reinforcement dimension. The internal control refers to the perception of positive and/or negative events as being a consequence of one's own actions and thereby personal control; external control refers to the perception of positive and/or negative events as being unrelated to one's own behaviours in certain situations and therefore beyond personal control (Lefcourt, 1966).

The items describe a variety of reinforcement situations across inter-personal and motivational areas, example, "Are some kids just born lucky?"; "Will your parents usually help you if you ask them to?". The higher the score the more external the orientation. (Appendix B(ii)).

Test - retest correlations for Grades 3 to 12 range from .67 to .81. Internal consistency reliabilities range from .63 to .79 (Nowicki & Roundtree, 1971).

3. Teacher Rating Scale

According to Raskin (1977), although the child is probably the best source for reporting or rating his own inner feeling states, the child's parents, teachers or significant others maybe a better source for rating the presence of secondary depressive symptoms.

Due to the nature and intent of this current study it was more appropriate to design a Teacher Rating Scale to obtain a measure of aggressive behaviour that is said to be a predominant symptom of depression in adolescents (Burks & Harrison, 1962; Toolan, 1962; Glasser, 1967; Poznanski & Zrull, 1970; Murray, 1970).

For greater reliability, two independent raters were used, given the same environment, namely, the school.

There has been dispute over the effects of bias in rating scales (Birleson, 1981), however other studies have shown satisfactory inter-rater reliability especially among teachers (Werry & Quay, 1971).

Development of the Scale.

- 1) A group of teachers were asked to individually write their definition of aggressive behaviour in relation to its physical, verbal and social stance.
- 2) From this pool the most common traits were drawn and the scale formulated.
- 3) The scale comprised of the three main aspects of aggressive behaviour - physical, verbal and social - on a one-to-ten point scale (least-to-most, respectively). (See Appendix B(iii)).

4. Absentee Record

Refusal to come to school or absenteeing has been considered a major symptom of depression (Agras, 1959; Davidson, 1961; Murray, 1970; Lang-Tisher, 1978).

Absentee records were obtained from accurately kept records in each of the three schools.

1) All schools maintain a uniform method of recording absenteeism. For each of the subjects the total number of days marked 'absent' was recorded and the total time away over the period of five school terms was then calculated in percentage form.

2) From this the mean was obtained for each school. School policies for handling absenteeism varied and therefore the mean for each school and for 'hi' and 'lo' depressed groups was treated separately.

(Appendix C(i) & (ii)).

Procedure

1) The original pool of 270 students were all given the Lang-Tisher Childrens Depression scale (via group administration). Time for administering was thirty minutes.

2) The 180 students designated 'hi' or 'lo' depressed were jointly given the Nowicki-Strickland Locus of Control scale (via group administration).

3) Two independent teachers from each school were asked to observe the students during class and around school and rate aggressive behaviours of the 180 subjects.

4) Percentage of absenteeism for each of the 'hi' and 'lo' depressed subjects was calculated from the school files.

Scoring

1) Childrens Depression Scale

From the range of scores on the depression scale, subjects (N=270) were ranked one to ninety from the lowest score upwards and from one to ninety from the highest score down. The former group were designated the "nondepressed" or 'lo' group (N=90) and the latter were designated the "depressed" or 'hi' group (N=90). The middle (N=90) subjects

were designated "average" and hence discarded from the sample.

For the purposes of statistical uniformity, the mean and standard deviation of each of the three schools were calculated. The differences in scores was negligible (Appendix D(i)).

2) Locus of Control Scale

In accordance with the Nowicki-Strickland scoring, separate means were obtained for males and females (see Appendix D(ii)). From this those subjects whose score fell below the mean were designated "Internal" (I) in locus of control and likewise, those subjects whose score fell above the mean were designated "External" (E) in locus of control. This procedure was done for both sexes.

3) Teacher Rating of Aggression

Subjects were allocated into "aggressive" (scored 1) or "non-aggressive" (scored 2) groups only where the teachers rating scores were in total agreement. Subjects whose raters did not agree were scored 0. Inter-rater reliability measures were between 88% and 90%. (See Appendix E).

4) Absenteeism

Subjects were allocated into 'hi' (scored 1) or 'lo' (scored 2) absentee groups according to the means obtained from each school.

The results can be seen in Chapter 7.

CHAPTER 7.

RESULTS

RESULTS

The aim of the study was to examine the relationship of locus of control to two behavioural variables - absenteeism (school refusal) and aggressiveness - for depressed adolescents with special emphasis on sex differences.

Before analysing the results it is necessary to outline the method used to test the hypotheses. The multi-dimensional nature of the study prompted the writer to use a method that provides class probabilities for cross tabulations. One such model that closely resembles the ANOVA is the log-linear model. Problems analysing categorical data can be solved by assuming initially a structure of the logarithms of the class probabilities (Lindeman et al, 1980). By using this model we are able to examine interactions between more than two variables at the one time unlike the chi-square test of associations. A more extensive combination of variables can be obtained from the log-linear model.

If $I \times J \times K$ correspond to the cross-classification of individuals according to variables A, B and C respectively, let p_{ijk} be the probability of simultaneously falling in the i th class of variable A, the j th class of variable B, and the k th class of variable C, ($i = 1, 2, \dots, I$, $j = 1, 2, \dots, J$, and $k = 1, 2, \dots, K$). Let $v_{ijk} = \ln p_{ijk}$.

The model is

$$v_{ijk} = \mu + \lambda_i^A + \lambda_j^B + \lambda_k^C + \lambda_{ij}^{AB} + \lambda_{ik}^{AC} + \lambda_{jk}^{BC} + \lambda_{ijk}^{ABC}$$

where μ is a constant that insures that $\sum_{ijk} p_{ijk} = 1$ in which \sum_{ijk} is = to $\sum_i \sum_j \sum_k$. The symbols λ_i^A , λ_j^B and λ_k^C denote the main effects, respectively, of the i th category of variable A, the j th category of variable B, and the k th category of variable C. The symbols λ_{ij}^{AB} , λ_{ik}^{AC} and λ_{jk}^{BC} denote, respectively, two-factor interactions of A_i and B_j , A_i and C_k , and B_j and C_k , where A_i represents the i th class of variable A, B_j the j th class of variable B and C_k the k th

class of variable C. Finally, λ_{ijk}^{ABC} denotes the three-factor interaction of A_i , B_j , and C_k . The notation $\lambda^{AB} = 0$, means that $\lambda_{ij}^{AB} = 0$ for all pairs, ij , $i = 1, \dots, I$ and $j = 1, \dots, J$. Similarly, $\lambda^{AC} = 0$ means $\lambda_{ik}^{AC} = 0$ for all ik pairs and $\lambda^{BC} = 0$ means $\lambda_{jk}^{BC} = 0$ for all jk pairs.

The hierarchical model states that if any λ with no subscripts is zero, then every λ of higher order (containing more superscripts) that contains the same superscript(s) must also be zero. Thus, if $\lambda^{AB} = 0$, then also $\lambda^{ABC} = 0$, but λ^{AC} and λ^{BC} are not necessarily zero. Similarly, $\lambda^A = 0$ implies that $\lambda^{AB} = \lambda^{AC} = \lambda^{ABC} = 0$.

(refer Lindeman, Merenda and Gold, 1980).

The following notations will be used to identify models with the above descriptions. Suppose the factors (variables) are identified as A, B, C,then

$$\begin{aligned}
 M_0 &: \ln p_{ijk} = \mu \\
 M_{A+B+C} &: \ln p_{ijk} = \mu + \lambda_i^A + \lambda_j^B + \lambda_k^C \\
 M_{(A*B)+C} &: \ln p_{ijk} = \mu + \lambda_i^A + \lambda_j^B + \lambda_k^C + \lambda_{ij}^{AB} \\
 M_{(A*B)+(A*C)+(B*C)} &: \ln p_{ijk} = \mu + \lambda_i^A + \lambda_j^B + \lambda_k^C + \lambda_{ij}^{AB} + \lambda_{ik}^{AC} + \lambda_{jk}^{BC} \\
 M_{(A*B*C)} &: \ln p_{ijk} = \mu + \lambda_i^A + \lambda_j^B + \lambda_k^C + \lambda_{ij}^{AB} + \lambda_{ik}^{AC} + \lambda_{jk}^{BC} + \lambda_{ijk}^{ABC}
 \end{aligned}$$

where M_{A+B} and M_{A*B} are distinguished. M_{A+B} implies that A and B operate independently. M_{A*B} implies factors A and B are associated (that is, not independent).

This current study examines three-way factor interactions and the table 3 (on the following page) provides a list of hierarchical hypotheses that will be used.

TABLE 3.

HIERARCHICAL HYPOTHESES IN THE I x J x K CONTINGENCY TABLE

(Goodman, 1970 in Lindeman et al, 1980)

HYPOTHESIS	DEGREES OF FREEDOM	NUMBER*	MODEL FITTED	EXPLANATION OF HYPOTHESIS
1. $\lambda^{ABC} = 0$	$(I-1)(J-1)(K-1)$	1	$M_{(A*B)+(A*C)+(B*C)}$	The conditional two-factor interactions given the third variables are equal, that is, departure from conditional independence of each pair of variables, given the value of the third (as measured by the conditional second order interaction) is the same for all values of the third variable.
2. $\lambda^{AB} = \lambda^{ABC} = 0$	$K(I-1)(J-1)$	3	$M_{(A*B)+(B*C)}$	Variables A and B conditionally independent, given the value of variable C.
3. $\lambda^{AB} = \lambda^{AC}$ $= \lambda^{ABC} = 0$	$(I-1)(JK-1)$	3	$M_{(B*C)+A}$	Variables A and B unconditionally independent, as are variables A and C; A independent of the pair, BC.
4. $\lambda^{AB} = \lambda^{AC} = \lambda^{BC}$ $= \lambda^{ABC} = 0$	$IJK-I-J-K+2$	1	M_{A+B+C}	Variables, A, B and C independent in the conventional sense, $P(A=i, B=j, C=k) = P(A=i)P(B=j)P(C=k)$ for all i, j, k.

* Number of hypothesis of the kind indicated.

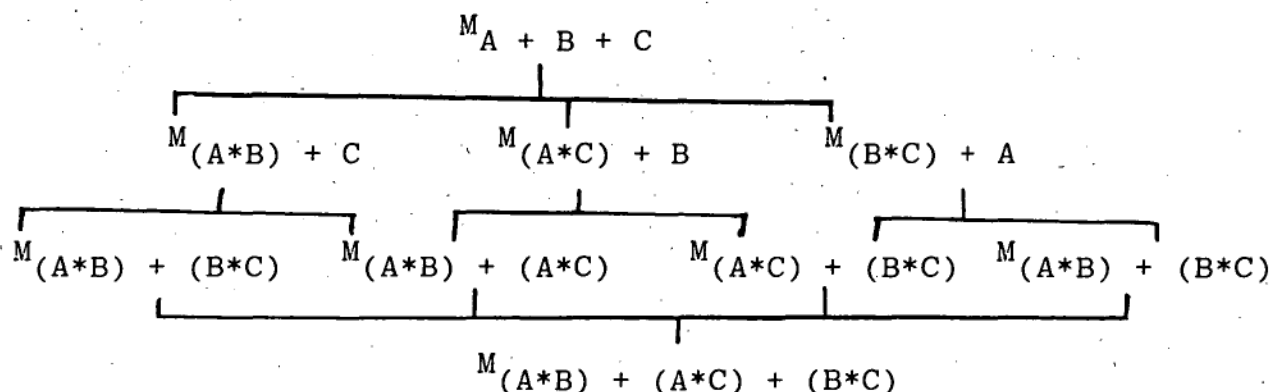
Strategy For Examining Models.

If hypothesis $H_1 : \lambda^{ABC} = 0$ is rejected there are different two factor interrelations at each level of the third factor. If H_1 is accepted test H_2 .

$$H_2 : \lambda^{AB} = \lambda^{AC} = \lambda^{BC} = \lambda^{ABC} = 0 \text{ that is, } M_{A+B+C}$$

If H_2 is accepted all variables are independent. If H_2 is rejected, test intermediate hypotheses.

For this particular study the "backward elimination" strategy was used in which the model $M_{(A*B)+(A*C)+(B*C)}$ serves as the starting point and is weakened in the simplest possible manner. This can be seen in the following diagram.



In the "backward elimination" method, the path is followed from bottom to top until one model provides the best fit.

The primary function of this analysis is to partition the variation between the observed frequencies into identifiable and unexplained components. The process is similar to the "analysis of variance" technique.

For the hypothesis to be accepted the model must fit, that is, the residual must be nonsignificant. This can

be understood better when examining the results that are tabulated under "Analysis of Information".

Hypotheses 1, 2, & 3.

The factors examined were depression (D), sex (S) and locus of control (L). Results of the "backward elimination" for this analysis are presented below:-

TABLE 4.

The Interactions between the Variables Depression (D), Sex (S) and Locus of Control (L).

ANALYSIS OF INFORMATION

Source of Restriction	d.f. (degrees of freedom)	Information Probability Model		
1. Total residual	7	22.56	<0.01	M_0
2. One way marginals explained residual	3	1.11	>0.10	M_{S+D+L} (rejected)
	4	21.45	<0.01	
3. Two way marginals explained residual	3	21.07	<0.01	$M_{(S*D)+(S*L)+(D*L)}$
	1	0.37	>0.10	
4. explained residual	2	19.85	<0.01	$M_{(S*D)+(D*L)}$ (accepted)
	2	1.60	>0.10	
5. explained residual	2	9.99	<0.05	$M_{(S*D)+(S*L)}$ (rejected)
	2	11.46	<0.05	
6. explained residual	2	10.05	<0.05	$M_{(S*L)+(D*L)}$ (rejected)
	2	11.40	<0.05	
7. explained residual	1	9.95	<0.05	$M_{S+(D*L)}$ (rejected)
	3	11.49	<0.05	
8. explained residual	1	9.89	<0.05	$M_{(S*D)+L}$ (rejected)
	3	11.55	>0.05	
9. explained residual	1	0.10	>0.10	$M_{(S*L)+D}$ (rejected)
	3	21.35	<0.01	

In summary, the hypothesis of a three-way interaction is rejected since the model $M_{(S*D)+(S*L)+(D*L)}$ with all two-way interactions has a highly significant chi-square value and the residual chi-square value has a probability $p > 0.10$, subsequent testing shows that the only model involving two two-way interactions which fits the data is $M_{(S*D)+(D*L)}$.

Following the backward elimination procedure, $M_{(S*D)+L}$ and $M_{S+(D*L)}$ are tested, but neither adequately fits the data as the residual chi-square values are significant at the 5% level. Accordingly the model $M_{(S*D)+(D*L)}$ is adopted as the simplest model which fits the data.

TABLE 5.

The Observed and Expected Frequencies for the Variables Depression (D), Locus of Control (L) and Sex (S) for the Model $M_{(S*D)+(D*L)}$.

TABLE OF OBSERVED (O) AND EXPECTED (E) FREQUENCIES								
SEX (S)	MALE				FEMALE			
	Internal		External		Internal		External	
Locus of Control	fo	fe	fo	fe	fo	fe	fo	fe
High Depr. (D)	11.0	11.7	23.0	22.3	20.0	19.3	36.0	36.7
Low Depr. (D)	29.0	31.8	26.0	23.2	23.0	20.2	12.0	14.8

For Hypotheses 1, 2 & 3 the variables being dealt with are adolescent depression (D), locus of control (L) and sex (S). Tables 4 & 5 will be referred to during the analysis of the results.

For Hypotheses 1 and 2 the model may be interpreted as implying that the variables sex(S) and locus of control(L) are conditionally independent given the value of depression (D). For the high depressives the proportion of externals

to internals was 1.91 (irrespective of sex) and for low depressives it was 0.73. These ratios are significantly different, but do not differ between sexes within the categories of high and low depression. The existence of a significant interaction between depression and locus of control irrespective of sex may be assessed by noting that the model $M_{(S*D)+(D*L)}$ accounts for a chi square of 19.85 with 2d.f., whereas the model $M_{(S*D)+L}$ accounts for a chi square of 9.89 with 1 d.f. The difference of 9.96 with 1 d.f. may be attributed to the additional (depression x locus of control) interaction and is significant at the 1% level. Thus there is a significantly higher proportion of adolescents with external locus of control who are highly depressed and this cannot be attributed to sex differences in depression.

The existence of a significant relation between depression and sex independent of locus of control may be assessed by noting that the model $M_{(S*D)+(D*L)}$ accounts for a chi square of 19.85 with 2 d.f., whereas the model $M_{(D*L)+S}$ accounts for a chi square of 9.95 with 1 d.f. The difference of 9.90 with 1 d.f. may be attributed to the additional depression x sex interaction and is significant at the 1% level. Thus there is a significantly higher proportion of females who are highly depressed and this difference cannot be attributed to the effect on depression of locus of control.

Alternative tests of these hypotheses may be performed by assessing respectively the gains in chi square in fitting $M_{(S*D)+(D*L)+(S*L)}$ over $M_{(S*D)+(S*L)}$. Gain due to $D*L = 11.08$ with 1 d.f. For $M_{(S*D)+(D*L)+(S*L)}$ over $M_{(D*L)+(S*L)}$. Gain due to $S*L = 11.02$ with 1 d.f. Both these tests yield very similar chi square values for gain due to the additional interaction and lead to the same conclusion.

For hypothesis 3 since the model $M_{(S*L)+D}$ is rejected, it indicates that sex and locus of control are independent. For the high depression group, the proportion of internals to externals for males was 0.5 and the proportion of internals to externals for females was also 0.5. For the low depression group the proportion of internals to externals for males was 1.37 and for females was 1.36. The results suggest that for both high and low depression there is no sex difference in the direction of locus control. The existence of a sex by locus of control interaction may be assessed by noting that the gain for $M_{(S*L)+D}$ over M_{S+L+D} is a chi-square of 0.10 with 1 d.f. which does not approach significance at even the 10% level. The hypothesis is therefore rejected.

Hypothesis 4.

The variables examined were aggression (Ag), absenteeism (Ab) and depression (D) as they interrelate with each other. The tabular presentation on the following page are the results of the "backward elimination" for this analysis:-

TABLE 6.

The Interactions between the Variables Depression (D), Aggression (Ag) and Absenteeism (Ab).

ANALYSIS OF INFORMATION

Source of Restriction	d.f. (degrees of freedom)	Information	Probability	Model
1. Total	7	85.63	<0.05	M_o
2. One way marginals explained residual	3 4	65.05 20.59	<0.05 <0.05	$M_{Ag+D+Ab}$ (rejected)
3. Two way marginals explained residual	3 1	20.54 0.05	<0.05 >0.10	$M_{(Ag*D)+(Ag*Ab)+(D*Ab)}$ (accepted)
4. explained residual	2 2	20.07 0.52	<0.05 >0.10	$M_{(Ag*D)+(D*Ab)}$ (accepted)
5. explained residual	2 2	18.29 2.29	<0.05 >0.10	$M_{(Ag*D)+(Ag*Ab)}$ (accepted)
6. explained residual	2 2	1.86 18.72	>0.10 <0.05	$M_{(Ag*Ab)+(D*Ab)}$ (rejected)
7. explained residual	1 3	18.25 2.34	<0.01 >0.10	$M_{(Ag*D)+Ab}$ (accepted)
8. explained residual	1 3	1.82 18.77	>0.10 <0.05	$M_{Ag+(D*Ab)}$ (rejected)
9. explained residual	1 3	0.04 20.54	>0.10 <0.05	$M_{(Ag*Ab)+D}$ (rejected)

TABLE 7.

The Observed and Expected Frequencies for the
Model $M_{(Ag*D)+Ab}$.

TABLE OF OBSERVED (O) AND EXPECTED (E) FREQUENCIES									
Aggression (AG)		HIGH				LOW			
Absenteeism (Ab)		HIGH		LOW		HIGH		LOW	
		fo	fe	fo	fe	fo	fe	fo	fe
High Depr.	(D)	11.0	11.1	16.0	15.9	26.0	21.7	27.0	31.3
Low Depr.	(D)	2.0	2.5	4.0	3.5	27.0	30.7	48.0	44.3

The model $M_{(Ag*D)+(Ag*Ab)+(D*Ab)}$ with all two-way interactions has a highly significant chi-square and the residual chi-square value has a probability $p > 0.10$. Following the backward elimination procedure, the model $M_{(Ag*D)+Ab}$ best fits with the residual chi-square value $p > 0.10$. The model $M_{Ag+(D*Ab)}$ was also tested but did not fit as the residual chi-square value was significant at the 5% level. The existence of a significant relationship between aggression and depression may be assessed further by noting that gain for $M_{Ag+D+Ab}$ to $M_{(Ag*D)+Ab}$ is a chi-square of 18.25 with 1 d.f. $p < 0.01$ which is significant. Therefore, there is a significant relationship between high aggression and high depression independent of absenteeism. To assess if any relationship exists between absenteeism and depression, the change in chi-square from $M_{Ag+D+Ab}$ to $M_{Ag+(D*Ab)}$ is 1.82 with 1 d.f., $p > 0.10$ which is not significant. To assess if any relationship exists between aggression and absenteeism, the change in chi-square from $M_{Ag+D+Ab}$ to $M_{(Ag*Ab)+D}$ is 0.05 with 1 d.f., $p > 0.10$ which is not significant. Also from Table 6, it can be

seen that a relationship exists for aggression and depression, that is, high aggression is related to a high depression and low aggression to low depression independent of the factor absenteeism.

Further analyses, using all five factors

Following on from the three factor interactions, five-way analysis was done to corroborate the results obtained. Two-way, three-way and four-way marginals were fixed. The following results were obtained:-

TABLE 8.

The Interactions between the Variables Depression (D)
Locus of Control (L), Sex (S), Aggression (Ag) and
Absenteeism (Ab).

ANALYSIS OF INFORMATION

Source of Restriction	d.f.	Information	Probability	Model
1. Total residual	31	116.45	< 0.01	M_0
2. One-way marginals explained	5	65.37	< 0.01	$M_{L+Ag+S+Ab+D}$ (rejected)
residual	26	51.08	< 0.01	
3. Two-way marginals explained	10	42.11	< 0.01	$M_{(L*Ag)+(L*S)+(L*Ab)+(L*D)+(Ag*S)+(Ag*Ab)+(Ag*D)+(S*Ab)+(S*D)+(Ab*D)}$ (accepted)
residual	16	8.97	> 0.10	
4. Three-way marginals explained	9	2.08	> 0.10	$M_{(L*Ag*S)+(L*Ag*Ab)+(L*Ag*D)+(L*S*Ab)+(L*S*D)+(L*Ab*D)+(Ag*S*Ab)+(Ag*Ab*D)+(S*Ab*D)}$ (rejected)
residual	7	6.88	> 0.10	
5. Four-way marginals explained	3	3.37	> 0.10	$M_{(L*Ag*S*Ab)+(L*Ag*Ab*D)+(L*S*Ab*D)}$ (rejected)
residual	4	3.51	> 0.10	

The model fitting all two-factor interactions was adequate to account for the data without recourse to three or four factor interactions. Separate analyses, as shown earlier in this chapter, have demonstrated significant association between depression with locus of control, sex and aggression. To make some assessment of whether any of these relationships is due to the effect of one of the other variables, a complete analysis was performed using all five variables. As mentioned, the two factor interactions best fitted as the residual chi-square value was 8.97 with 16 d.f., $p > 0.10$.

The model $M_{(D*S)+(D*L)+(D*Ag)+Ab}$ was examined because of the interactions found in the previous analyses. To assess the effect of each variable (S), (L) and (Ag) with depression, each factor was in turn treated as an independent variable. The following tables show the results obtained:-

TABLE 9.

Effect of Depression with Locus of Control, Sex
and Aggression independent of Absenteeism.

ANALYSIS OF INFORMATION

Source of Restriction	d.f.	Information	Probability	Model
1. Total Residual	31	116.45	<0.01	M_0
2. One-way marginals explained residual	5 26	65.37 51.08	<0.01 <0.01	$M_{L+Ag+S+Ab+D}$ (rejected)
3. Two-way marginals explained residual	3 23	37.57 13.51	<0.01 >0.10	$M_{(L*D)+(Ag*D)+(S*D)+Ab}$ (accepted)
4. explained residual	2 24	25.94 25.14	<0.01 >0.10	$M_{L+(S*D)+(Ag*D)+Ab}$
5. explained residual	2 24	29.88 21.20	<0.01 >0.10	$M_{S+(L*D)+(Ag*D)+Ab}$
6. explained residual	2 24	19.32 31.76	<0.01 >0.10	$M_{Ag+(L*D)+(S*D)Ab}$

(For Table of Observed Frequencies for the
5-way interactions - See Appendix F)

The contribution of the association between D*S was tested by comparing $M_{S+(L*D)+(Ag*D)+Ab}$ with $M_{(S*D)+(L*D)+(Ag*D)+Ab}$. The gain in chi-square was 7.69 with 1 d.f. which is significant at the 5% level. Accordingly, the association between depression and sex cannot be explained in terms of associations between depression and aggression or locus of control.

The association between D*L was tested by comparing $M_{L+(S*D)+(Ag*D)+Ab}$ with $M_{(L*D)+(S*D)+(Ag*D)+Ab}$. The gain in chi-square was 11.63 with 1 d.f., $p < 0.05$.

The association between D*Ag was tested by comparing $M_{Ag+(S*D)+(L*D)+Ab}$ with $M_{(Ag*D)+(S*D)+(L*D)+Ab}$. The gain in chi-square was 18.25 with 1 d.f. which is significant at the 1% level.

The conclusion from this analyses is that there are associations between depression and locus of control, depression and sex and depression and aggression but not between depression and absenteeism and that none of these associations can be accounted for in terms of other variables in the analysis.

This conclusion must however, be regarded as tentative in that the number of cells with expected frequencies less than 1 exceeds the number generally recommended if the statistic used is to give a good approximation to the chi-square distribution. This objection does not apply to the two previous analysis which used fewer variables and consequently had larger cell frequencies. These analyses established the existence of the three significant associations between depression with locus of control, sex and aggression and its independence of absenteeism. The further analysis simply provides some evidence that all three two-factor associations are necessary to adequately account for the data.

Summary of Results

1. For adolescent depression there was a positive relationship between external locus of control and depression and this was independent of the effect of sex differences.
2. There was a larger number of females in the high depressed group and this relationship was not due to sex differences in locus of control.
3. Sex was independent of locus of control for this sample.
4. When examining the variables "aggression" and "absenteeism" there was a significant relationship between depression and aggression but a non-significant one for depression and absenteeism.

CHAPTER 8.

DISCUSSION

DISCUSSION

The results obtained partially support the hypotheses and in addition provide some insights into the area of adolescent depression. This chapter will first examine and interpret these results and then conclude with implications and possible directions for future research.

Depression and Locus of Control

From the data reported here, it was found that a positive correlation exists for adolescent depression and external locus of control. While this relationship has been established between depression and externality for adults (Abramowitz, 1969; Lamont, 1972; Calhoun *et al*, 1974; Becker & Lesiak, 1977) and also for children (Moyal, 1977; Tesiny *et al*, 1980) no such investigation appears to have been made for adolescent depression. The results obtained here with an adolescent population seem to suggest that the relationship between depression and external locus of control is consistent across the age groups. This is contrary to the suggestions that depression is nonexistent until adulthood (Rie, 1966) or masked 'for children and adolescents' as implied by Toolan (1962) and Lesse (1979). These results tend to support Moyal (1977), Tesiny *et al* (1980) but not Dweck (1977) who found that depressive children could perceive failures as being either external or internal in control.

To further support the results obtained, the mult-way analysis was used to examine the interactions and independence of all five variables (depression, locus of control, sex, aggression and absenteeism). As can be seen on Table 9, there are associations between depression and external locus of control and this is irrespective of the associations found between other variables. The further analysis therefore provides greater empirical support for the positive relationship between depression and locus of control.

This study in using a non-clinic high school population also reinforces the link between depression and externality as more generalized than had been established. To some extent then it alleviates the concern which had been expressed by Peterson et al (1978) who criticised previous works for using only restricted populations such as college and clinic samples.

Depression and Sex differences

In this study, while depressives were more external in locus of control, there were significantly more females depressives. We could consider the higher incidence of female depressives to males in reference to Seligman's "learned helplessness" model which is one of the more applicable theories of depression. It has been proposed that the early socialization process inculcates in females this "learned helplessness" stance. Roles allotted to females reinforce feelings of inadequacy, helplessness and low self-worth. This view is held by several researchers (Radloff & Rae, 1979; Maccoby, 1980). Even referral patterns for depressives can be explained in more culturally biased terms (Litman, 1978; Grantham, 1983), examples, it is more acceptable for women to 'admit their difficulties' and to seek help. Given the same exposure of social and cultural expectations for males and females, would their rates of depression be similar? (Radloff & Rae, 1979). It seems to be that if traditional sex roles were to become more alike, so would male and female behaviour patterns. This may then lead to the disappearance of previously intrinsic beliefs, namely that females are more inclined to depression (Beck & Greenberg, 1974 in Litman, 1978; Lesse, 1979). Then the notion of androgynous sex roles which provides greater adaptability across behaviours and situations as discussed earlier (Bem, 1975; Williams, 1979) offers useful clinical insights.

However, differential patterns have been demonstrated in this study where the proportion of females was larger than that of males in the "high" depressed group. Conversely, the number of males was larger in the "low" depressed group. This is congruent with the recent study by Teri (1982(a)) on depressed adolescents.

Results of the five-way analysis demonstrated that the significant association found between sex and depression cannot be accounted for by the associations between depression and any of the other variables - locus of control, aggression or absenteeism.

Depression, Sex and Locus of Control

It seemed plausible to assume that because depression correlates positively with external locus of control (which is consistent with the concept of helplessness and lack of control) and since there is a predominance of female depressives in this sample, therefore female adolescents would be more external in their locus of control.

However, the results obtained in this study found no significant difference between the direction of locus of control and sex for depressed adolescents. Neither did these results support the conclusions of those researchers who found higher correlations between externality and male depressives (Calhoun et al, 1974; Fogg et al, 1977; Hanes & Wild, 1977). Leggett and Archer (1979) also found a stronger relationship between externality and depression for males but they conclude that traditional cultural sex roles expect males to exert more control and they therefore get more distressed by the perception of control by external forces. This inconsistency of sex differences causes one to speculate as to whether the learned helplessness model can be applied to the locus of control concept equally validly for both sexes. However, this inconsistency could also be due to the types of population used.

If we examine the results obtained here more descriptively, it should be noted that "low" depressive females tend to be more internal while "high" depressive females tend to be more external. However, for the male population this direction was also present but less strongly. (See Table 5)

The suggestion by Moyal (1977) that self or externalized blaming responses vary across individuals and situations could be relevant here. Perhaps individual differences in perceptions of control play a larger role than the attribute of sex. Surprisingly, this supports the earlier comment by Fogg *et al* (1977) that there is no apparent reason why either depression or hopelessness should relate to locus of control more strongly for males than females, rather than more recent studies cited. This observation has also been made by Pearce (1977) who concluded that each child's depression results from an interaction between internally and externally generated factors and that there is no single cause for depression.

The lack of differential locus of control pattern in this study, therefore, could be due to the differing cognitive style for expressions of hopelessness and helplessness for the sexes.

Depression, Aggression and Absenteeism

When the relationship between depression and the behavioural variables of aggression and absenteeism were examined, a significant correlation has been found for adolescent depression and aggression but not for absenteeism. This relationship between depression and aggression supports the research of Burks and Harrison (1962), Malmquist (1971), Kashani *et al* (1981) who suggested that aggressive, anti-social behaviour could in fact underlie a depressive phenomenon.

The relationship of aggression with depression was further examined using the five factor analysis. Results support the hypothesis in that the association between depression and the behaviour of aggression is significant and cannot be accounted for by the associations between depression and any of the other variables - locus of control, sex or absenteeism.

The fact that the behaviour of aggression was derived from teacher ratings has crucial implications in the classroom situation. It is therefore important to consider the teacher's own perceptions of the behaviour aggression which is often described instead as 'delinquent' behaviour. It is vital for the classroom teacher and clinicians to investigate further if in fact this 'acting-out' behaviour may be hiding underlying depression. This individual diagnostic rating may be of value to the overall clinical picture of adolescent depression.

The behaviour of absenteeism presents more difficulty in interpretation. As indicated in the earlier chapters, it has been difficult to measure accurately. Although it has been described as a depressive symptom (Brumback & Weinberg, 1977; Pearce, 1977; Lesse, 1979), it has also been seen as a manifestation of a more complex phenomenon - school phobia (Kahn & Nursten, 1962; Rubenstein, 1980). The difficulty in defining this behaviour was evident by the variety of terms used by researchers, such as, school refusal, poor school attendance, school phobia (Murray, 1970; Brumback & Weinberg, 1977; Lang & Tisher, 1978) has been discussed earlier.

This complexity could have also contributed to a methodological problem for this study. Absentee records obtained from this study were not as reliable as hoped as measures of school-related problems behaviours because of the difficulty in ascertaining the reasons for absenteeing.

A variety of labels could be ascribed to 'failure to attend school' such as, playing hookey, escaping a test, genuine illness. No uniform criteria had been established for reason away from school. The "absentee" data merely represented number of days away from school.

Another speculation for the negative relationship found between depression and absenteeism in this study could be due to the lack of clarity in ascribing the behaviour "school refusal" as part of the depressive phenomenon. Rutter *et al* (1976) described school refusal as part of a more widespread anxiety state or affective disorder. It has also been attributed to several other disorders (Rubenstein, 1980). Yet if school phobia is part of an underlying depression (Lesse, 1979), then, to better understand the nature of this behaviour and how it may or may not be associated with adolescent depression, a stringent definitive description is needed to identify the behaviour. Is it only a matter of semantics or are we looking at two distinct entities? Is school refusal/absenteeism a minor symptom of depression detectable only when associated features are present (which need to be first identified) or is school refusal/absenteeism a manifestation of a different syndrome whose theoretical basis and etiology is distinct from depression?

This study however has not clarified the role of absenteeism as a depressive symptom.

Aggression and Absenteeism

As can be seen in Table 6 the interactions of absenteeism with depression and with aggression is a more complex one. While the two-way interactions between absenteeism with depression and absenteeism with aggression is significant, the interaction of absenteeism with aggression independent of depression is not significant. The two factors function independent of each other. This supports the concept of individual behavioural

expressions for adolescents. It is quite likely that each individual favours either of these characteristics. Both behaviours have been associated with depression (Murray, 1970; Kovacs & Beck, 1977; Lang & Tisher, 1978). Although in this study no relationship has been found between aggression and absenteeism this does not preclude the existence of these behaviours in the depressive disorder. As discussed in the previous section, results may have been due in part to the definitional diagnosis of the behaviour absenteeism.

The outcome of this study however, demonstrates that a non-significant relationship exists between the behaviours aggression and absenteeism independent of depression.

Conclusion

This study examined four variables as they consociate with adolescent depression. A positive relationship was found between external locus of control and depression, and a higher incidence of female adolescent depressives. This lends further support to some earlier works. However, contrary to previous studies on adults and clinic populations, depressed males were not more external in locus of control, in fact the results showed no sex differences. Possible implications for sex differences in cognition of hopelessness and helplessness warrant further investigation for depressed adolescents.

The symptom of "aggression" has been found to relate positively with high depression and the implications of this in the classroom should not be ignored. The negative relationship of depression with absenteeism calls for further examination. The very high prevalence of this behaviour demands further study with tighter experimental conditions.

However, the task of providing more comparative and validation work is needed to strengthen the emerging picture of depression as it presents in adolescents. Despite clarity being provided for the relationship between some

variables and others, and the lack of clarity for some other relationships, it is important to remember that depressed adolescents in this study or any other could have any combination of features associated with their depression.

To the practising clinician one depressed adolescent may present rather differently from another depressed adolescent.

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APPENDICES

Appendix A.DISTRIBUTION OF STUDENTS FROM THE THREE SCHOOLS INTO
HIGH OR LOW DEPRESSION GROUP.

<u>SCHOOL</u>	1.	2.	3.
LOW	26	38	26
HIGH	33	31	26

CHI-SQUARE = 1.54065 WITH 2 DEGREES OF FREEDOM

SIGNIFICANCE = 0.4629

CHILDRENS DEPRESSION SCALE

TICK THE ANSWER WHICH MEANS MOST TO YOU.
PLEASE CHOOSE ONE ANSWER FOR EACH ITEM.

	VERY RIGHT	RIGHT	DON'T KNOW NOT SURE	WRONG	VERY WRONG
1. I ENJOY MYSELF MOST OF THE TIME					
2. I'M ALWAYS LOOKING FORWARD TO THE NEXT DAY					
3. I FEEL THAT THERE IS A LOT OF SUFFERING IN LIFE					
4. WHEN SOMEBODY GETS ANGRY WITH ME I GET VERY UPSET					
5. I FEEL PROUD OF MOST OF THE THINGS I DO					
6. WHEN I FEEL VERY ANGRY I USUALLY END UP CRYING					
7. OFTEN SCHOOL MAKES ME MISERABLE					
8. I'M ALWAYS KEEN TO DO LOTS OF THINGS WHEN I AM AT SCHOOL					
9. OFTEN I FEEL I'M NOT WORTH MUCH					
10. SOMETIMES I WISH I WAS DEAD					

	VERY RIGHT	RIGHT	DON'T KNOW NOT SURE	WRONG	VERY WRONG
11. MOST OF THE TIME MY MOTHER/FATHER MAKE ME FEEL THE THINGS I DO ARE PRETTY GOOD					
12. OFTEN I WAKE UP DURING THE NIGHT					
13. I FEEL MORE TIRED THAN MOST CHILDREN I KNOW					
14. MOST OF THE TIME I AM NOT INTERESTED IN DOING ANYTHING					
15. IN OUR FAMILY WE ALL HAVE LOTS OF FUN TOGETHER					
16. OFTEN I FEEL NOBODY CARES FOR ME					
17. WHEN SOMEBODY GETS ANGRY WITH ME I GET ANGRY IN RETURN					
18. OFTEN I FEEL LONELY					
19. OFTEN I AM ANNOYED WITH MYSELF					
20. OFTEN I CAN'T SHOW ANYBODY HOW UNHAPPY I FEEL INSIDE					
21. OFTEN I FEEL AS IF I'M LETTING MY MOTHER/FATHER DOWN					
22. I GET FUN OUT OF THE THINGS I DO					

	VERY RIGHT	RIGHT	DON'T KNOW NOT SURE	WRONG	VERY WRONG
23. SOMETIMES I BELIEVE MY MOTHER/FATHER DO OR SAY THINGS WHICH MAKE ME FEEL AS IF I'VE DONE SOMETHING TERRIBLE TO THEM					
24. OFTEN I ENJOY MYSELF AT SCHOOL					
25. I HATE THE WAY I LOOK OR THE WAY I ACT					
26. OFTEN I DON'T FEEL LIKE WAKING UP IN THE MORNING					
27. I FEEL LIKE CRYING OFTEN WHEN I AM AT SCHOOL					
28. WHEN I AM AT SCHOOL I OFTEN FEEL LONELY AND LOST					
29. I FEEL MY MOTHER/ FATHER ARE VERY PROUD OF ME					
30. OFTEN I FEEL DEAD INSIDE					
31. I THINK IT IS ALL RIGHT TO FEEL ANGRY					
32. OFTEN I FEEL MISERABLE/WEOPY/ UNHAPPY					
33. SOMETIMES I FEEL THAT LIFE IS NOT WORTH LIVING					

	VERY RIGHT	RIGHT	DON'T KNOW NOT SURE	WRONG	VERY WRONG
34. I SLEEP LIKE A LOG AND NEVER WAKE UP DURING THE NIGHT					
35. OFTEN I HATE MYSELF					
36. I HAVE MANY FRIENDS					
37. SOMETIMES I AM AFRAID THAT I DO THINGS WHICH MIGHT HARM OR UPSET MY MOTHER/FATHER					
38. OFTEN I FEEL ASHAMED OF MYSELF					
39. OFTEN I FEEL I DESERVE TO BE PUNISHED					
40. MOST OF THE TIME I FEEL NOBODY UNDER- STANDS ME					
41. I'M A VERY HAPPY PERSON					
42. OFTEN MY SCHOOLWORK MAKES ME MISERABLE					
43. OFTEN I AM UPSET ABOUT MY MOTHER'S HEALTH					
44. I SPEND MY TIME DOING MANY INTERESTING THINGS WITH MY FATHER					

	VERY RIGHT	RIGHT	DON'T KNOW NOT SURE	WRONG	VERY WRONG
45. WHEN I AM AWAY FROM HOME I FEEL VERY UNHAPPY					
46. I SOMETIMES FEEL UPSET BECAUSE I DON'T LOVE MY MOTHER/FATHER AS MUCH AS I SHOULD					
47. I FEEL THAT PEOPLE LOVE ME EVEN THOUGH I DON'T DESERVE IT					
48. I FEEL TIRED MOST OF THE TIME WHEN I AM AT SCHOOL					
49. NOBODY KNOWS HOW UNHAPPY I REALLY AM INSIDE					
50. SOMETIMES IN MY DREAMS I AM HURT OR KILLED					
51. SOMETIMES I DON'T KNOW WHY I FEEL LIKE CRYING					
52. SOMETIMES I WONDER WHETHER I MAY BE A VERY BAD PERSON INSIDE					
53. WHEN I FAIL AT SCHOOL I FEEL THAT I AM A NOBODY					
54. I FEEL THAT LIFE IS MISERABLE FOR ME					
55. SOMETIMES I BELIEVE THAT I DO THINGS WHICH COULD MAKE MY MOTHER/FATHER ILL					

	VERY RIGHT	RIGHT	DON'T KNOW NOT SURE	WRONG	VERY WRONG
56. OFTEN I FEEL I AM NO USE TO ANYONE					
57. MANY PEOPLE CARE ABOUT ME A LOT					
58. MOST OF THE TIME I FEEL I AM NOT AS GOOD AS I WISH TO BE					
59. OFTEN I'M VERY UPSET BECAUSE I DON'T GET THE OPPORTUNITY TO DO THINGS I WANT TO					
60. I OFTEN IMAGINE MYSELF HURT OR KILLED					
61. I SOMETIMES FEEL UPSET BECAUSE I CAN'T GIVE MY MOTHER/FATHER THE ATTENTION AND LOVE THAT THEY NEED					
62. OFTEN I FEEL I'M NOT GETTING ANYWHERE					
63. SOMETIMES I FEEL THERE ARE TWO PERSONS INSIDE ME PULLING ME IN DIFFERENT DIRECTIONS					
64. WHEN I AM AWAY FROM HOME I FEEL EMPTY INSIDE					
65. I FEEL I'M A BEAUT PERSON					
66. I'M SUCCESSFUL IN MOST OF THE THINGS I TRY					

Appendix B (ii)

NOWICKI-STRICKLAND LOCUS OF CONTROL SCALE

L.O.C.

PLEASE TICK YES OR NO FOR EACH QUESTION.
CHOOSE THE ANSWER WHICH MEANS MOST TO YOU.

NAME: _____

SEX: _____

SCHOOL: _____

AGE: _____

YES NO

1. DO YOU BELIEVE THAT MOST PROBLEMS WILL SOLVE THEMSELVES IF YOU JUST DON'T FOOL WITH THEM?
2. DO YOU BELIEVE THAT YOU CAN STOP YOURSELF FROM CATCHING A COLD?
3. ARE SOME KIDS JUST BORN LUCKY?
4. MOST OF THE TIME DO YOU FEEL THAT GETTING GOOD RESULTS MEANS A GREAT DEAL TO YOU?
5. ARE YOU OFTEN BLAMED FOR THINGS THAT JUST AREN'T YOUR FAULT?
6. DO YOU BELIEVE THAT IF SOMEBODY STUDIES HARD ENOUGH HE OR SHE CAN PASS ANY SUBJECT?
7. DO YOU FEEL THAT MOST OF THE TIME IT DOESN'T PAY TO TRY HARD BECAUSE THINGS NEVER TURN OUT RIGHT ANYWAY?
8. DO YOU FEEL THAT IF THINGS START OUT WELL IN THE MORNING THAT IT'S GOING TO BE A GOOD DAY NO MATTER WHAT YOU DO?
9. DO YOU FEEL THAT MOST OF THE TIME PARENTS LISTEN TO WHAT THEIR CHILDREN HAVE TO SAY?
10. DO YOU BELIEVE THAT WISHING CAN MAKE GOOD THINGS HAPPEN?

11. WHEN YOU GET PUNISHED DOES IT USUALLY SEEM IT'S FOR NO GOOD REASON AT ALL?
12. MOST OF THE TIME DO YOU FIND IT HARD TO CHANGE A FRIEND'S OPINION?
13. DO YOU THINK THAT CHEERING MORE THAN LUCK HELPS A TEAM TO WIN?
14. DO YOU FEEL THAT IT'S NEARLY IMPOSSIBLE TO CHANGE YOUR PARENT'S MIND ABOUT ANYTHING?
15. DO YOU BELIEVE YOUR PARENTS SHOULD ALLOW YOU TO MAKE MOST OF YOUR OWN DECISIONS?
16. DO YOU FEEL THAT WHEN YOU DO SOMETHING WRONG THERE'S VERY LITTLE YOU CAN DO TO MAKE IT RIGHT?
17. DO YOU BELIEVE THAT MOST KIDS ARE JUST BORN GOOD AT SPORTS?
18. ARE MOST OF THE OTHER KIDS YOUR AGE STRONGER THAN YOU?
19. DO YOU FEEL THAT ONE OF THE BEST WAYS TO HANDLE MOST PROBLEMS IS JUST NOT TO THINK ABOUT THEM?
20. DO YOU FEEL YOU HAVE A LOT OF CHOICE IN DECIDING WHO YOUR FRIENDS ARE?
21. IF YOU FOUND A FOUR-LEAF CLOVER DO YOU BELIEVE IT WOULD BRING YOU LUCK?
22. DO YOU OFTEN FEEL THAT WHETHER YOU DO YOUR HOMEWORK HAS MUCH TO DO WITH WHAT RESULTS YOU GET?

23. DO YOU FEEL THAT WHEN A KID YOUR AGE DECIDES TO HIT YOU, THERE'S LITTLE YOU CAN DO TO STOP HIM OR HER?
24. HAVE YOU EVER HAD A GOOD LUCK CHARM?
25. DO YOU BELIEVE THAT WHETHER OR NOT PEOPLE LIKE YOU DEPENDS ON HOW YOU ACT?
26. WILL YOUR PARENTS USUALLY HELP YOU IF YOU ASK THEM TO?
27. HAVE YOU FELT THAT WHEN PEOPLE WERE MEAN TO YOU IT WAS USUALLY FOR NO REASON AT ALL?
28. MOST OF THE TIME, DO YOU FEEL THAT YOU CAN CHANGE WHAT MIGHT HAPPEN TOMORROW BY WHAT YOU DO TODAY?
29. DO YOU BELIEVE THAT WHEN BAD THINGS ARE GOING TO HAPPEN THEY JUST ARE GOING TO HAPPEN NO MATTER WHAT YOU DO TO TRY TO STOP THEM?
30. DO YOU THINK THAT KIDS CAN GET THEIR OWN WAY IF THEY JUST KEEP TRYING?
31. MOST OF THE TIME DO YOU FIND IT USELESS TO TRY TO GET YOUR OWN WAY AT HOME?
32. DO YOU THINK THAT WHEN GOOD THINGS HAPPEN, THEY HAPPEN BECAUSE OF HARD WORK?
33. DO YOU FEEL THAT WHEN SOMEBODY YOUR AGE WANTS TO BE YOUR ENEMY THERE'S LITTLE YOU CAN DO TO CHANGE MATTERS?
34. DO YOU FEEL IT'S EASY TO GET FRIENDS TO DO WHAT YOU WANT THEM TO DO?

YES NO

35. DO YOU USUALLY FEEL THAT YOU HAVE LITTLE TO SAY ABOUT WHAT YOU GET TO EAT AT HOME?
36. DO YOU FEEL THAT WHEN SOMEONE DOESN'T LIKE YOU, THERE'S LITTLE YOU CAN DO ABOUT IT?
37. DO YOU USUALLY FEEL THAT IT'S ALMOST USELESS TO TRY IN SCHOOL BECAUSE MOST OTHER CHILDREN ARE JUST SMARTER THAN YOU ARE?
38. ARE YOU THE KIND OF PERSON WHO BELIEVES THAT PLANNING AHEAD MAKES THINGS TURN OUT BETTER?
39. MOST OF THE TIME, DO YOU FEEL THAT YOU HAVE LITTLE TO SAY ABOUT WHAT YOUR FAMILY DECIDED TO DO?
40. DO YOU THINK IT'S BETTER TO BE SMART THAN TO BE LUCKY?

Appendix B (iii)

TEACHER RATING SCALECONFIDENTIAL.

STUDENT'S NAME: _____

A. RATING OF AGGRESSIVENESS:Criteria:

- i. Physical behaviours, e.g. "body language" (hands on hips, jaw jutting out, hitting/punching others, bumping into furniture, kicking/stomping feet, shoving materials roughly...)
- ii. Verbal behaviours, e.g. loud/belligerent tone of voice, losing temper frequently, swearing, questioning authority without reason.
- iii. Social behaviours, e.g. doesn't mix readily with others, uncooperative in class/group situation.

Rating:

Teacher to observe student's behaviour for two or more class periods, use previous knowledge of student, and rate each of three criteria listed, 0 to 10, representing least to most aggressive. Circle selected number.

i. PHYSICAL

Least											Most
0	1/	2/	3/	4/	5/	6/	7/	8/	9/	10	

ii. VERBAL

0	1/	2/	3/	4/	5/	6/	7/	8/	9/	10
---	----	----	----	----	----	----	----	----	----	----

iii. SOCIAL

0	1/	2/	3/	4/	5/	6/	7/	8/	9/	10
---	----	----	----	----	----	----	----	----	----	----

B. RATING OF:

i. SELF-ESTEEM:

Low										High
0	1/	2/	3/	4/	5/	6/	7/	8/	9/	10

ii. MOTIVATION:

Low High
0 1/ 2/ 3/ 4/ 5/ 6/ 7/ 8/ 9/ 10

iii. CONCENTRATION:

Poor Excellent
0 1/ 2/ 3/ 4/ 5/ 6/ 7/ 8/ 9/ 10

Appendix C(i)ABSENTEEISM - MEAN AND STANDARD DEVIATION FOR HIGH DEPRESSED POPULATION.

Hi depressed

N. = 90.

SCHOOL 1. N = 33

Σx = 309

M = 9.36

S.D. = 7.07

'Hi' N = 14

SCHOOL 2. N = 31

Σx = 237

M = 7.64

S.D. = 6.78

'Hi' N = 13

SCHOOL 3. N = 26

Σx = 168

M = 6.46

S.D. = 5.10

'Hi' N = 10

Appendix C(ii)ABSENTEEISM - MEAN AND STANDARD DEVIATION FOR
LOW DEPRESSED POPULATION.Lo depressed

N = 90

A) SCHOOL 1.

N = 26

x = 162.8

Mean = 6.26

S.D. = 5.29

Hi = 10

B) SCHOOL 2.

N = 38

x = 228.8

Mean = 6.02

S.D. = 4.47

Hi = 14

C) SCHOOL 3.

N = 26

x = 115.2

Mean = 4.43

S.D. = 4.90

Hi = 6

Appendix D(i).MEAN AND STANDARD DEVIATION FOR THE CHILDRENS DEPRESSION SCALE (C.D.S.)

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR
BRIDGEWATER	59	145.6780	39.0227	5.0803
CLARENCE	69	135.4928	34.6268	4.1686
ROKEBY	52	136.7500	30.4083	4.2169
TOTAL	180	139.1944	35.1174	2.6175

Appendix D(ii).MEAN AND STANDARD DEVIATION FOR THE NOWICKI-STRICKLAND LOCUS OF CONTROL SCALE.

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR
MALE	88	15.0795	5.1955	0.5538
FEMALE	92	15.6196	5.2348	0.5458
TOTAL	180	15.3556	5.2081	0.3882

Appendix EINTER-RATER MEASURES OF TEACHER RATINGS FOR AGGRESSION.Lo Depressed

N = 90

Disagreement N = 9

Inter-rater agreement 90%

'Hi' aggression N = 6

'Lo' aggression N = 75

Hi Depressed

N = 90

Disagreement N = 10

Inter-rater agreement 88%

'Hi' aggression N = 27

'Lo' aggression N = 53

Appendix F.

SHOWING THE OBSERVED FREQUENCIES FOR ALL FIVE VARIABLES,
ADOLESCENT DEPRESSION (D), LOCUS OF CONTROL (L), SEX (S),
AGGRESSION (Ag) AND ABSENTEEISM (Ab).

<u>Depression</u>		<u>Level 1 (High)</u>			
	<u>L.O.C.</u>	<u>Internal</u>		<u>External</u>	
	<u>SEX</u>	Male	Female	Male	Female
<u>Aggression</u>	<u>Absenteeism</u>				
Hi	Hi	1	2	3	5
	Lo	1	4	4	7
Lo	Hi	3	8	7	8
	Lo	5	5	6	11

<u>Depression</u>		<u>Level 2 (Low)</u>			
	<u>L.O.C.</u>	<u>Internal</u>		<u>External</u>	
	<u>SEX</u>	Male	Female	Male	Female
<u>Aggression</u>	<u>Absenteeism</u>				
Hi	Hi	1	0	0	1
	Lo	2	1	1	0
Lo	Hi	8	8	6	5
	Lo	17	14	13	4