THE RELATIONSHIP BETWEEN SELF-EFFICACY STATUS AND DEPRESSION IN ADOLESCENTS

by

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The Relationship between Self-Efficacy Status and Depression in Adolescents

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ABSTRACT

This study examines the self-efficacy status of depressed versus nondepressed adolescents.

A sample of 172 male and 194 female high school students between the ages of 13 and 19 years completed the Beck Depression Inventory (BDI), the Physical Self-Efficacy (PSE) Inventory, the Self-Efficacy Scale (SES), and the Measure of Academic Self-Efficacy (MASE). In agreement with current prevalence statistics, approximately one-third of the subjects tested exhibited either "mild mood disturbance" or "clinical depression" as measured by the BDI. As predicted, self-efficacy status is negatively correlated with level of depression. In contrast with expectations, age and self-efficacy status are not correlated for non-depressed adolescents. However, a three-way interaction is evident for "Sex X Age X Level of Depression" ($p<.001$).

Self-efficacy profiles are generated to discriminate the 18 "Sex X Age X Level of Depression" groupings. A regression analysis reveals age-related changes in the dependence of depression scores on General, Academic, Physical and Social Self-Efficacy status.

It is concluded that self-efficacy status bears an important relationship with adolescent depression. A tentative self-efficacy model of adolescent depression is proposed to

summarize the current findings and to generate new hypotheses. Limitations of the study are outlined, and implications for further study are discussed.

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CHAPTER I

INTRODUCTION

In the past decade the phenomenon of adolescent depression has attracted considerable attention in the clinical literature, but has generated a relative paucity of empirical research (Cantwell & Carlson, 1983). The convergence of evidence for an apparent "underdiagnosis" of depression within this age group explains its status as the most rapidly expanding area in adolescent psychopathology (Hodgman, 1983). Consistent reports of escalating adolescent suicide rates (Klagsbrun, 1981; Shaffer, 1986) render the problem an important clinical, empirical and public concern.

Normal Versus Abnormal Adolescent Behaviour

Ever since Stanley G. Hall (1916) defined adolescence as a period of *Sturm und Drang*, the teenage years have continued to be recognized as ones associated with turmoil and emotional upheaval (Waters & Calleia, 1983). For example, Anna Freud (1958) viewed adolescent turmoil as a necessary and normal resolution of age-appropriate developmental conflicts. However, careful studies of adolescents have consistently failed to support this position (Masterson, 1967; Offer, 1969; Rutter, Graham, Chadwick & Yule, 1976). These researchers have suggested, instead, that the presence of emotional turmoil in adolescents warrants clinical attention and concern (Waters &

Calleia, 1983).

Consistent with the earlier view, it appears that until recently diagnosticians have often misperceived affective disorders in adolescents as normal adjustment problems. For example, Christ, Adler, Isacoff and Gershansky (1981) examined the diagnostic records of 10,412 hospitalized youths admitted during the course of a 20 year period (1957-1977). They concluded that, within this young age group, "depression" represented a "second-hedging diagnosis". It was formulated with less conviction and lacked interjudge reliability compared to other diagnostic categories in the same age group and similar classifications in adults.

To date the traditional view of adolescence as a period of "storm and stress" has been so thoroughly discredited that an overstatement in the opposite direction--denial that adolescent behaviour is significantly different from that of adults--presents a new diagnostic dilemma (Hodgman, 1983).

The adoption of either of these two extreme positions precludes a growth of knowledge in the area of adolescent depression in that it would represent both an empirical and a diagnostic impasse.

Estimates of Prevalence and the Underdiagnosis of Adolescent Depression

Recent empirical investigations (e.g., Cantwell & Carlson, 1983) reflect a consensus that the occurrence of affective disorders has generally been underestimated in adolescents. For example, prevalence statistics on psychiatric diagnoses demonstrate that, for patients under the age of 18, "depressive disorders" constitute between 13.8% (in public hospitals) and 19% (in private hospitals) of the total diagnoses made (United States Department of Health, Education & Welfare, 1977). Follow-back studies suggest that approximately three times as many depressed adults reported becoming manifestly ill during their adolescence, than would be expected on the basis of the cited prevalence statistics for adolescent depression (e.g., Winokur, 1976). However, these depressed adults were not diagnosed accurately when they sought psychiatric help during their teenage years. Due to the retrospective nature of this research, the results may be confounded by affect-distorted recollections (Beck, Rush, Shaw & Emery, 1979). However, the extent of the disparity between concurrent and retrospective estimates exceeds the expected and implies at least some degree of underdiagnosis.

Additional support for this contention is found in a subsample of methodologically more rigorous prevalence studies. For example, Hudgens (1974) concluded that approximately 30% of

adolescent admissions were assigned an affective diagnosis at Washington Renard Hospital. These trends are confirmed in current Canadian statistics (e.g., Haley, Fine, Marriage, Moretti & Freeman, 1985).

Furnell (1973) examined untreated prevalence on the basis of a self-report measure and a behaviour inventory. She found that 46% of adolescents from four high schools could be identified as moderately depressed and 8% as severely depressed. This finding suggests that depression in youth has been missed in both clinical and non-clinical contexts.

A recent review by Rutter (1986) summarized longitudinal prevalence data for depressive symptomology. A sample of school-aged children were repeatedly assessed by clinical interviews, and parent and teacher ratings for a period of 12 years. At 10 to 11 years of age 17% exhibited at least some symptoms of depression, whereas when retested at 14 to 15 years this statistic had increased to 40%. A conjoint study of 547 non-adult patients admitted to the Maudsley Hospital (London, England) showed that while only 11% of prepubertal children were diagnosed as depressed, 25% of postpubertal children received depressive diagnoses. In accordance with other current reviews, Rutter (1986) concluded that there is a rise in the rate of depression in early adolescence and a fall in early adult life, with a shift from male to female preponderance at puberty.

Adolescent Suicide Rates

Studies examining both adults and adolescents have consistently indicated that most suicides occur in psychiatrically diagnosed individuals (Barraclough, Bunch, Nelson & Sainsbury, 1974) and that the most common diagnosis is depression (Rutter, 1986). Therefore, it can be argued that age differences in rates of suicides may illuminate the developmental progress of affective disorders. Suicide in children is rare before age 10 (0.06 per million), becomes more frequent between 10 and 14 years of age (8 per million), but increases 1000-fold (76 per million) in 15 to 19 year olds in comparison with the youngest age group (Eisenberg, 1980; Shaffer & Fisher, 1981).

The phenomenon of "hopelessness" has been cited extensively as a strong predictor of suicide in depressed individuals (Kazdin, Rodgers & Colbus, 1986). Evidence for the relatively higher suicide rate in adolescents suggests that feelings of hopelessness may bear a particularly important relationship with affective symptomology in this age group.

In addition to reviewing the relative suicide rates for different age groups, it is informative to examine these age differences in suicide rates over the course of time periods. In spite of a fall in other age groups, the suicide rate in adolescents has escalated in the last 20 years (Rutter, 1986). Figures compiled by the United States Public Health Service

(Klagsbrun, 1981) clearly indicate that suicide rates for individuals between the ages of 15 and 24 have nearly tripled since 1959. Furthermore, the rate of increase of young suicides exceeds that of any other age bracket (Herjanic & Welner, 1980; Holinger, 1979) to the extent that some theorists have alluded to "an epidemic of young suicides" (Kushner, 1981). Suicide has become the second leading cause of death among adolescents exceeded only by motor vehicle accidents.

Some theorists have discussed these secular trends in terms of "period effects" in that some general influence is thought to have led to an increase in suicide or in the reporting of suicide. However, the age specificity of the secular increase speaks against such an effect (Rutter, 1986). Even if such "period effects" could be delineated the question remains why adolescents are affected differently by these changes than both younger and older age groups.

Regardless of the rationale employed to understand these statistics, the evidence for a dramatic increase in rates of suicide in this age group during the last few decades indicates the urgency for a greater understanding of the nature of depressive symptoms in adolescents (Siegel & Griffin, 1983).

Theories of Adolescent Depression

Anchored in psychoanalytic thought (e.g., A. Freud, 1958), the 1950s and 1960s represented a period when the diagnosis of "depression" was not accepted in children and adolescent patients--"it did not exist" (Puig-Antich, 1980). Children's limited cognitive and emotional development were thought to forestall the expression of sadness, helplessness, hopelessness and depression. In this view, sad affect was thought to be "masked". That is, depressed mood is not expressed directly, but in the form of "depressive equivalents" or "masks". These depressive equivalents included hyperkinesis, somatic complaints, enuresis, conduct problems (Toolan, 1962, 1981), aggressive behaviour (Burks & Harrison, 1960), delinquency, school phobias and academic underachievement (Glaser, 1967, 1981; Kolvin, Berney & Bhate, 1984). Lesse (1981) has argued that, although adolescents may not exhibit the depressed mood pattern noted in adults, the seemingly disparate overt manifestations labelled depressive equivalents are attributable to maturational, cultural, familial and socioeconomical factors, which shape the form of the mask.

Proponents of the "masked depression" tradition hold that the problem of underdiagnosis is a direct consequence of the inappropriateness of adult taxonomies for adolescent patients.

Research in the area of masked depression lacks both quantity and structure and relies extensively on clinical

observation. The focus has been limited to characterizing hypothesized depressive equivalents and postulating their theoretical underpinnings. The absence of inclusion and exclusion criteria for these depressive equivalents (Puig-Antich, 1980) precludes empirical validation of the concept of masked depression.

Some researchers (Cytryn & McKnew, 1972, 1974; Cytryn, McKnew & Bunney, 1972) have argued that masked depression constitutes one type of depression manifested at a particular time during the course of the child's affective illness. In accordance with this view, depression has been shown to be related more frequently to substance abuse in adolescents than in adults (Kashani, Keller, Solomon, Reid & Mazzola, 1985). Geller, Chestnut, Miller, Price and Yates (1985) have demonstrated a similar association between major depressive disorder and antisocial behaviour in youths. More severe depressive symptomology and higher suicidal risk were evident in adolescents who had received a combined diagnosis of both affective and conduct disorders (Marriage, Fine, Moretti & Haley, in press).

Another team of researchers (Cantwell & Carlson, 1983; Strober, Green & Carlson, 1981a) is clearly opposed to the position of masked depression theorists. They have asserted that there are clinical commonalities between adolescent and adult manifestations of major depressive disorders. Symptoms of so-called "depressive equivalents" are considered to be early

prodromal manifestations of affective illness in predisposed individuals. These incomplete forms of affective illness--psychosomatic disturbances, drug and alcohol abuse, conduct problems, complaints of boredom, poor school performance, aggressive outbursts, tantrums, rule violations, and substance abuse (Carlson & Strober, 1983; Strober, Green & Carlson, 1981a)--are thought to overshadow the underlying affective basis of the psychopathology.

Thus, this research group (Carlson & Cantwell, 1979; Carlson & Cantwell, 1980) and others (Hudgens, 1974; Kovacs & Beck, 1977) have concluded that masking symptoms are no more than presenting complaints and that proper clinical assessment by interview will allow the clinician to make or reject a diagnosis without resorting to unwarranted inferences. Therefore, the problem of underdiagnosis may be attributable to failure to apply currently available adult diagnostic criteria to adolescent patients (Carlson & Strober, 1983).

The tendency of clinicians to eschew more specific affective diagnostic categories has been ascribed to both difficulties in interviewing the adolescent patient--thus creating a tendency to resort to more behaviourally based diagnoses--and concerns about the possibly detrimental effects which may result from the application of such labels.

Authors such as Cantwell and Carlson (1983) assume that adolescent depression can be studied within an adult framework.

Research emerging from this theoretical position clearly surpasses, in both quantity and quality, the empirical strategies advocated in the masked depression literature. However, the selection of depressed adolescents as subjects for study on the basis of adult criteria presents an empirical shortcoming. This scheme forecloses on the identification of a possible spectrum of adolescent depression, wherein "adult-like" subjects may constitute only a circumscribed range of this spectrum. To date, there is no evidence that adult criteria define the limits of affective disorders as they present in a younger patient population (Kupferman & Stewart, 1979; Puig-Antich, 1980; Welner, Welner & McCray, 1977).

Given the empirically substantiated problem of underdiagnosis, it is suggested here that the current evidence indicates only that adolescent depression may be more difficult to recognize than its adult counterpart. The reasons underlying this difficulty remain unclear.

It will be argued here that, in light of the current empirical knowledge, a dichotomous viewpoint--masked versus adult-equivalent depression in adolescence--is premature or even unwarranted. To date, our understanding of depression in an adolescent context--in terms of its clinical features, phenomenology, general nature, and treatment--is limited. Furthermore, it appears that the dichotomous theoretical orientation inhibits rather than facilitates research progress. That is, both positions assume rather than explore the nature of

adolescent depression. This assumption is empirically unvalidated.

A Developmental Perspective in the Study of Adolescent Depression

Recently the clinical literature has promoted a developmental approach to the study of both normal and abnormal behaviour. Eisenberg (1977) has argued that a developmental perspective constitutes an essential unifying concept in the psychology and psychiatry of children, adolescents and adults. The perspective of developmental psychopathology requires that attention be directed to both continuities and discontinuities in the frequency, pattern and manifestation of depression across age periods. This approach requires that knowledge of affective development and affective disorders be linked with that of other developmental phenomena. Rather than concentrating on either the normal developmental course of affective expression or on the depressive disorders per se, the focus of attention is on the interface of the two (Rutter, 1986).

A similar viewpoint has been adopted by some researchers in the area of adolescent depression (e.g., Inamdar, Siompoulos, Osborn & Bianchi, 1979) and will be maintained in the current study. Attention is directed toward understanding both the overt manifestations of adolescent depression which are continuous with adult expressions and features unique to the developmental

period of adolescence. Maturational factors and depressive features are theoretically not limited to unidirectional relationships. That is, developmental processes may be hypothesized as influencing the expression of depression and, conversely, the presence of depression may introduce possible disruptions in adolescent developmental sequences (e.g., Waters & Calleia, 1983).

Unique Features of Depression in Adolescents

In line with the preceding arguments, a review of the literature suggests features of depression which appear to be unique to adolescents or which play a more important role in adolescent than in child or adult symptomology. A summary of these unique characteristics or patterns of characteristics may provide a preliminary background for understanding the nature of adolescent depression.

The need to separate children from adolescents in studies of depression has been recognized (Welner, 1978) and realized in some studies. Researchers have concluded that, while young children continue to deny depressed mood when interviewed, adolescents will eventually report sadness even after initial denial of sad affect (Puig-Antich, 1980). Cytryn and McKnew (1974) proposed that depression is expressed predominantly via fantasy in young children, whereas older children tend to express sadness verbally. By adolescence the depression becomes

identifiable in both mood and behaviour. In line with these findings, Lefkowitz and Burton (1978) showed that while a wider array of symptoms are displayed in late than in early childhood, adolescents exhibit more symptoms than either of these younger age groups, but less than their adult counterparts. Based on longitudinal data collected over a period of 12 years, Izard and Schwartz (1986) were able to conclude that both continuities and discontinuities are evident in the affective symptomology of depression across different levels of severity, age and sex groups. Although a common core of emotions associated with depression could be identified, the prominence of sadness, anger, and inner-directed hostility varied substantially with age and sex. For example, relatively more guilt was experienced by adolescent girls than by 11 to 12 year old children, whereas adolescent boys tended to display less guilt and sadness, but more outward-directed hostility than adolescent girls (Izard & Schwartz, 1986).

In a six year follow-up study, Petti (1981) identified a subgroup of depressed adolescents who were comparable to adults in terms of physiological indices (urinary metabolism, plasma-cortisol hypersecretion and EEG analysis). At the onset of this study, this subgroup had displayed less aggressive behaviour than depressed adolescents who did not physiologically resemble adults.

Aggressive acting out appears to be unique to adolescent depression (Mezzich & Mezzich, 1979) and declines as adulthood

is approached (Izard & Schwartz, 1986; Petti, 1981). Negative and antisocial behaviour has been included in the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1980) criteria for major depressive disorders as an associated feature of the illness specific to the adolescent age group. It is of interest that in a study of 99 high school students (aged 12 to 18 years), their conception of depression in peers included acting out features such as "drug and alcohol abuse" and "trouble with the law" (Siegel & Griffin, 1983).

Phenomenologically, the depressive symptoms "unfocused restlessness" (Beck, 1967; Emery, Bedrosian & Garbner, 1983), anger, and "acute boredom" (Siegel & Griffin, 1983) were identified as typical of adolescent rather than adult depressives.

A recent study conducted by Hurt, Friedman, Clarkin, Corn and Aranoff (1982) indicated that although some cognitive symptoms were common to adults and adolescents (e.g., helplessness, hopelessness and worthlessness), the threshold for reported severity of these features in terms of predicting serious impairment and concomitant need for hospitalization was significantly lower for adolescents than for adults.

The preceding review of the literature indicates that the phenomenon of adolescent depression includes features which differentiate it from both adults and younger children. The focus of the current study is the exploration and clarification

of the nature of adolescent depression. Although this study has a cross-sectional rather than a longitudinal design, its rationale is grounded in the developmental perspective.

A Cognitive-Behavioural Approach to Adolescent Depression

The problem of adolescent depression will be approached from a cognitive-behavioural focus. This approach is particularly appropriate in terms of developmental importance, explanatory power, and treatment implications for the target age group. Alternative approaches to the study of depression will be reviewed, and their limitations in the context of the adolescent age group will be proposed.

Research on the biochemical bases of depression suggests a potential interaction of depressive symptomology and pubertal processes. Puig-Antich (1986) has concluded that age and pubertal factors have major effects in most psychobiological markers of depressive illness. For example, differences in the sleep architecture of depressed adults and children have been observed (Puig-Antich, 1980). Recent psychopharmacological studies indicate that adolescents respond atypically and less reliably than adults to pharmacological treatments (Elkins & Rapoport, 1983). In a double-blind study of depressed prepubertal children (Puig-Antich, 1980), 60% were shown to respond positively to imipramine. A similar attempt to delineate subgroups of responders (Ling, Ofetdal & Weinberg, 1970) showed

that depressed children, with and without severe headaches, reacted significantly differently to tricyclic antidepressants.

Although limited in number and methodological strength, psychopharmacological studies suggest that approximately 75% of depressed children treated with antidepressant drugs will respond as expected (Connell, 1972; Kuhn & Kuhn, 1972; Polvan & Cebiroglu, 1972; Stack, 1972). However, the almost exclusive attention to prepubertal children in this line of research precludes definitive statements about the efficacy of drug treatment in adolescent patients (Puig-Antich, 1980) and implies caution in the use of pharmacologic agents within clinical settings. Differences in onset of pharmacological effects, inconsistencies in behavioural correlates, and marked side effects (Brown & Shuey, 1980) have rendered the administration of pharmacological agents an unpreferred and tentative treatment for adolescents in the psychiatric context (Kalogeratis, 1983).

A series of ethical concerns underline the already existent reluctance to administer psychotropic drugs to adolescents. These include a fear of encroaching on normal growth and development, an awareness of their propensity toward drug dependence (especially in depressed adolescents), and difficulties in monitoring medication levels (Esman, 1983).

Research on the efficacy of behavioural interventions in conduct disordered and antisocial children and adolescents confirms the presence of shortterm benefits, but shows a lack of

longterm changes and generalizability to novel situations. For example, Kumchy and Sayer (1980) showed that juvenile delinquents respond to controlling techniques and conceptualize control issues in a manner akin to much younger children. Strictly behavioural interventions suppress their actions rather than promote the acquisition of alternate coping styles.

The rapid life changes inherent in adolescence (Elkind, 1981; Elkind, 1984) and lack of verbal facility and sophistication make the appropriateness of psychodynamic or psychoanalytic treatments questionable. In addition, the longterm nature of these treatments may delay the developmental tasks crucial to adolescence (Waters & Calleia, 1983). An initial, more immediately effective intervention does not, however, preclude subsequent psychodynamic therapy.

Cognitive-behavioural therapy has been proposed as the most appropriate mode of intervention for adolescent patients (Emery, Bedrosian & Garbner, 1983; Waller & Rush, 1983), although its efficacy remains to be empirically demonstrated (Hodgman, 1983). Heightened cognitive flexibility and consequent facile accommodation of new cognitive strategies accent the appropriateness of these interventions with adolescents.

In addition, cognitive development during this period includes the acquisition of active comprehension, the abstraction to a third perspective, and increased sophistication in problem solving strategies (Addison-Stone, 1980). These

elements are significant to the process of cognitive therapy.

Of more specific significance to the cognitive features of depressive symptomology, is the finding that children beyond age 11 are increasingly able to internalize standards of behaviour (Piaget, 1963). In the teenage years, both the conscience and the ego ideal are solidifying. This sets the groundwork for the emergence of guilt as the failure to live up to internalized standards. Achenbach and Zigler (1963) reported that the coordination and matching of the observed self and ideals, independent of immediate environmental cues, result from the increased cognitive sophistication of the adolescent (Izard & Schwartz, 1986).

In light of the proposed advantages of a cognitive-behavioural approach in terms of its salience during the period of adolescence, and in view of the aforementioned disadvantages associated with other levels of analysis, this focus will be maintained in the current research project.

Within this cognitive-behavioural approach, the present study will focus on the role of self-efficacy in adolescent development and depression. The empirical validity of the concept of self-efficacy, its relationship to depression in general, and its proposed importance to the developmental period of adolescence serve as a basis for its examination in this context.

Bandura's Concept of Self-Efficacy: Definition and Empirical Validity

Bandura recognized, explored and defined the human need to develop feelings of efficacy in order to produce and regulate life events. This idea is captured in his construct of self-efficacy (Bandura, 1982b).

Perceived self-efficacy is concerned with judgements of how well--how efficiently and effectively--one can execute courses of action required to deal with prospective situations (Bandura, 1977) The self-efficacy construct delineates an important conceptual and operational distinction between estimating one's ability or competence to execute certain behaviours--self-efficacy--and appraising the consequences such conduct will result in--outcome expectations (Bandura, 1982a, Rotter, 1954). Self-efficacy is more sensitive to personal mediation than outcome expectancy. It involves a generative capability in which cognitive, social and behavioural skills must be organized into integrated courses of action (Bandura, 1982b).

Bandura's concept of self-efficacy serves a unitizing or summarizing function. That is, complex combinations of precursor events are summarized in terms of their impact on perceived self-efficacy.

The concept of self-efficacy has been shown to contain impressive predictive power. When challenged with obstacles, problems, or failure, individuals who experience serious doubts about their capabilities tend to decrease their efforts or give up, whereas those with a strong sense of efficacy will exert greater effort to master the task (Bandura & Schunk, 1981). In addition, the level and strength of self-efficacy will exercise a forcible effect on the choice of activities and environmental settings (Bandura, 1977). Level of self-efficacy has been shown to exceed past behaviour in predictive efficiency. However, predictive potency depends on the presence of appropriate skills and adequate incentives for performance.

Self-efficacy, in addition to its unifying function and predictive validity, has been demonstrated to explain a diverse scope of human phenomena. Perceived self-efficacy has been shown to predict degree of change in diverse social behaviours (e.g., self-assertion), varieties of phobic dysfunctions (Bandura, Adams & Beyer, 1977; Biran & Wilson, 1981; Bandura, 1982b), stress reactions and physiological arousal (Devins, 1982), physical stamina (Weinberg, Gould & Jackson, 1979), self-regulation of addictive behaviour (Maddux & Rogers, 1983), achievement strivings (Bandura, Adams, Hardy & Howells, 1980) and career choice and development (Hackett & Betz, 1981; Taylor & Betz, 1983). The accuracy of these predictions has been demonstrated across time, settings, performance variants, expressive modalities, and extremely diverse domains of

psychological functioning.

Measures of self-percepts of efficacy, using a microanalytic approach, predict variations in levels of change produced by different modes of influence, variations among persons receiving the same influence, as well as variations within individuals with regard to the specific tasks they are liable to master or fail (Bandura, 1982a). Thus, the precision and diversity of Bandura's formulation of self-efficacy in explaining many aspects of human behaviour has been empirically established.

The empirical strength of self-efficacy as a viable construct is related not only to its theoretical power, but also to its ability to be clearly operationalized. Self-efficacy can be measured with relative ease through a series of simple, straightforward inquiries on three specific dimensions: (1) The level of difficulty in a particular domain of functioning which the self-percept extends to; (2) the generality or range of situations and activities which the perceived efficacy applies to; and (3) the strength of belief in one's capabilities. Each of these dimensions has an established relationship with performance levels (Bandura, 1982a; 1986).

Recently, research has focused on devising more comprehensive measures of self-efficacy which incorporate specific subtypes. Empirical research by Bandura and his colleagues (Bandura, 1977; Bandura, 1986; Bandura et al., 1977; Bandura et al, 1980) has demonstrated positive correlations

between therapeutic changes in behaviour and changes in self-efficacy. Bandura (1977) asserted that recognition by clinicians of the powerful impact of perceived efficacy on behavioural change will lead to a better understanding of how behavioural changes are produced in therapy. In addition, research on self-efficacy may have implications for modifying therapeutic procedures.

Self-efficacy has been primarily conceptualized as a situation-specific belief. However, there is evidence that the experiences of personal mastery that contribute to self-efficacy generalize to actions other than the target behaviour (Bandura et al., 1977) An individual's past experiences with success and failure in a variety of situations should result in a general set of expectations that the individual carries into new situations.

Several researchers have attempted to develop measures of self-efficacy that are not tied to specific situations or behaviours. Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs and Rogers (1982) have developed a "Self-Efficacy Scale (SES)" to measure general and social self-efficacy. Ryckman, Robbins, Thornton and Cantrell (1982) have constructed and validated a "Physical Self-Efficacy (PSE)" inventory, and Lalonde (1980) has developed a "Measure of Academic Self-Efficacy (MASE)". These three inventories will be used in the current study and are discussed in more detail in the "Method" section.

Self-Efficacy and Adolescent Development

The developmental tasks of adolescence are thought to include successful integration of the youth into the dominant society (Blos, 1970; Erikson, 1955). As adolescents approach the demands of adulthood, they must assume responsibility for themselves and their life choices (Bandura, 1986). Inherent in this endeavour is the development of a sense of self-confidence and purpose in the realms of education, career and adult life (Waters & Calleia, 1983). A lack of self-trust may prevent the adolescent's initiation of, and ongoing involvement in, these tasks. It is through these developmental tasks that the adolescent forms his or her personal and social identity (Chiles, Miller & Cox, 1980). Adolescents develop a sense of efficacy by repeatedly assessing the effects of their behaviour on the environment. Perceived efficacy is an important component of the self-concept.

The developmental processes inherent in the period of adolescence have been described extensively and eloquently in the literature (Erikson 1963, 1968). The concept of self-efficacy captures the essence of these developmental processes, while at the same time being well-operationalized and empirically validated.

Self-efficacy is critical in the development of the adolescent in that academic performance, social competence, career choice and physical confidence will, in part, depend on

one's efficacy in coping with situations involving these dimensions. Current societal pressures for competence, achievement, and early academic/career specialization emphasize the importance of self-efficacy development. It is proposed here that one's sense of self-efficacy develops during the course of the adolescent years.

Self-Efficacy and Depression

Recently, research on different aspects of depression has increased dramatically (Lewinsohn & Hoberman, 1982). One issue of current interest concerns the relative "realism" of depressed and non-depressed individuals in their self-evaluation. Rehm (1977) has proposed that depression can occur as the result of dysfunctions in self-monitoring, self-evaluation, or self-reinforcement.

Bandura's (1977) theory of self-efficacy provides a useful framework in which to examine the role of self-evaluative factors in depression, that focuses on the perception of ability to produce effective behaviour. Self-efficacy judgements are especially relevant to the exploration of the sense of adequacy or inadequacy that depressed persons experience when faced with enacting behaviours necessary in obtaining reinforcement, pleasure and satisfaction. Kanfer and Zeiss (1983) investigated the relationship between performance standards and judgements of self-efficacy in depressed and non-depressed individuals in an

interpersonal context. Depressed subjects expressed a lower strength of self-efficacy than did non-depressed subjects, but they did not differ on their strength of interpersonal standards (Kanfer & Zeiss, 1983). The role of self-efficacy in depression presents a novel and promising line of research with both applied and theoretical implications (Bandura, 1986).

Self-Efficacy and Adolescent Depression

Adolescence has been described as a transition period when the growing individual assumes responsibility for his or her behaviour in almost every dimension of life. The development of the self-concept involves assurance in one's capabilities to meet the challenges of adulthood according to personal standards. Perceived inefficacy is both distressing and depressing (Bandura, 1986), especially during the adolescent years when the developmental aim is toward independence, and the focus is on self-assertion. Depression in adolescence may be related to a general lack of self-efficacy, or to deficits in specific areas of functioning where self-efficacy is especially important to the adolescent.

The Current Study

The current study represents an investigation of the relationship between self-efficacy status and depression in

adolescents.

The following hypotheses are tested in the present study:

1. It is hypothesized that self-efficacy status will be positively correlated with age in non-depressed adolescents.
2. It is expected that self-efficacy will be negatively correlated with level of depression.
3. The predominance of specific areas of self-efficacy as a function of age and level of depression will be examined on an exploratory basis.

CHAPTER II

METHOD

Subjects

Four hundred randomly selected West Vancouver high school students were invited to participate in a study of "Adolescent Attitudes and Feelings" by information letters mailed to their parents or guardians. One hundred and seventy two males and 194 females between the ages of 13 and 19 with a mean age of 16.29 years (*SD*=1.25) volunteered to take part in the research project.

Measures

1. *Beck Depression Inventory* (BDI; Beck, Ward, Mendelson & Erbaugh, 1961).

The BDI is a clinically derived self-report measure which consists of 21 items relating to affective, cognitive, motivational, and physiological symptoms of depression. The BDI has been validated as a reliable self-report measure of depression in both clinical (Strober, Green & Carlson, 1980) and non-clinical samples of adolescents (Izard & Schwartz, 1986).

Subjects were instructed to check the responses which best described the way they had been feeling during the previous 24 hours. Response options carry a score from 0 to 3, and a total

score reflecting the depth of depression is calculated by summation of individual item scores. The range of possible summated scores extends from 0 to 62 with scores of 0 to 10 being categorized as not depressed (normal ups and downs), 11 to 16 as mild depression (mild mood disturbance), 17 to 20 as borderline depression, 21 to 29 as moderate depression, 30 to 40 as severe depression, and above 40 as extreme depression (Burns, 1980). For the purposes of this study the last four levels of depression (i.e., a score of 17 or above) were grouped together and categorized as clinical depression.

2. Self-Efficacy Scale (SES; Sherer et al., 1982).

The SES is a 23 item scale developed to measure general self-efficacy expectancies. Items focus on the respondent's reported willingness to initiate behaviour, to expend effort in completing the behaviour, and persistence in the face of adversity.

The measure was validated on 376 undergraduate students. A factor analysis yielded two subscales: (1) General Self-Efficacy (17 items); and (2) Social Self-Efficacy (6 items).

Subjects were asked to read a series of statements (e.g., "When I make plans, I am certain I can make them work"), and to rate, on a 6-point Likert-type scale, how much they agreed or disagreed with each statement presented. Respondents were requested to circle number 1 if they agreed strongly, number 2 if they agreed somewhat, number 3 if they agreed slightly,

number 4 if they disagreed slightly, number 5 if they disagreed somewhat, and number 6 if they disagreed strongly. Total scores for General Self-Efficacy and Social Self-Efficacy were obtained by summation of the individual item scores.

Construct validation of the SES was established by the confirmation of several predicted conceptual relationships between the SES and other personality measures--"Internal-External Control Scale (I-E)" (Rotter, 1966); the "Personal Control Subscale (PCS)" (Gurin, Gurin, Lao & Beattie, 1969); the "Marlowe-Crowne Social Desirability Scale (MCSDS)" (Crowne & Marlowe, 1964); the "Ego Strength Scale (ESS)" (Barron, 1953); the "Interpersonal Competency Scale (ICS)" (Holland & Baird, 1968); and a "Self-Esteem (S-E)" scale (Rosenberg, 1965). Positive relationships between the SES and vocational, educational and military success have contributed to the establishment of criterion validity. Positive expectancies of self-efficacy were associated with enhanced personal adjustment (Sherer & Adams, 1985).

3. Physical Self-Efficacy Inventory (PSE; Ryckman et al., 1982).

The PSE is a 22 item scale designed to measure physical self-efficacy. It consists of two factors: (1) Perceived Physical Ability (10 items); and (2) Physical Self-Confidence (12 items). Subjects were requested to read a series of statements (e.g., " I am not concerned with the impression my

physique makes on others") and to rate, on a 6-point Likert scale, how much they agreed or disagreed with the given statements. Total scores were obtained for the two subscales by the same calculations specified for the SES. The PSE was validated on 446 first year undergraduate students in a series of six studies (Ryckman et al., 1982). The results indicated that the PSE inventory demonstrated high test-retest reliability and construct validity. Subjects with high levels of physical self-efficacy had higher self esteem, an internal locus of control, a lack of social anxiety and self-consciousness, and a tendency to seek stimulating activity. In addition, high scorers significantly outperformed lower scores on three tasks requiring the use of physical skills (Ryckman, Robbins, Thornton, Gold & Kuehnel, 1985).

3. Measure of Academic Self-Efficacy (MASE; Lalonde, 1980).

The MASE is a 21 item scale developed to measure academic self-efficacy. Again, subjects were instructed to rate a series of statements (e.g., "If I were to do badly one year at school, I would feel that I would never do well at school"). Response options and calculations of total scores were identical to those described for the SES and PSE.

In a validation study of 344 high school students the MASE was established as a highly reliable instrument. A relationship between academic self-efficacy, successful academic behaviour, and plans to continue with formal education could be

established. Highly efficacious students showed a smaller discrepancy between their career aspirations and expectations, were characterized by low social and test anxiety, and demonstrated a willingness to accept more responsibility for their academic successes and failures (Lalonde, 1980).

A Total Self-Efficacy score was calculated for each subject by summation of the SES, PSE and MASE subscores.

Procedure

Permission was obtained from the West Vancouver School Board, high school principals and teachers, and parents or guardians, and all participants gave their informed consent in writing.

The test battery, consisting of the BDI, SES, PSE, and MASE, was completely anonymously by all participants. The test battery is presented in Appendix A, and items included in each of self-efficacy subscales are reported in Appendix B. Subject were asked to reveal only their age (in years and months), sex, grade level, academic position (academic or non-academic mainstream), and plans with respect to the continuation of their formal education beyond the high school level (yes, no, or not sure).

The battery was administered to groups of 20 to 30 subjects in their regular classrooms. Subjects were informed of their right to withdraw consent at any time during the testing period.

General instructions were provided verbally and in writing at the beginnings of each session. Students were instructed to ask any additional questions during the testing period. At the end of the testing session participants were briefly informed of the nature of the research study. Two weeks subsequent to the initial meetings, the experimenter debriefed all groups of subjects by giving a detailed presentation of the background to and intent of the study. Participant feedback was encouraged and subjects were informed how to obtain a written copy of the research results.

Missing Data

Subjects were asked to attempt to answer all questions and were reminded to check for missing responses at the end of the testing period. In addition, whenever possible questionnaires were checked by the experimenter as they were being returned in order to ensure a minimum of missing data. None of the descriptive data was found to be incomplete. Unanswered individual BDI items carried a weight of '0' in the calculation of total scores. On the Self-Efficacy measures, missing data was completed by inserting the mean for all other subjects on the individual item in question.

CHAPTER III

RESULTS

Description of Subjects and Group Structure

The sample consists of 172 male and 194 female 13 to 19 year olds with a mean age of 16.29 years (SD=1.25). Subjects are enrolled in grades 8 through 12 at one of four West Vancouver secondary schools with a mean grade level of 10 (SD=1.20). Of the total sample, 79.2% are academic mainstream and 20.8% are non-academic mainstream students. Of the 366 subjects, 79.2% report they would continue their formal education beyond high school, 2.7% indicate they would not, and 18.1% are undecided.

Subjects' scores on the BDI range from totals of 0 to 47 with a mean score of 8.45 (SD=7.41). The sample is classified into three levels of depression categories according to standardized cutoffs (Burns, 1980) on the basis of total BDI score obtained:

1. 'Non-Depressed' (BDI Total Score = 0 to 10).
2. 'Mildly Depressed' (BDI Total Score = 11 to 16).
3. 'Clinically Depressed' (BDI Total Score = 17 or above).

In addition subjects are categorized into three age brackets:

1. 'Early Adolescence' (Age = 13 to 15.5 years).
2. 'Middle Adolescence' (Age = 15.5 to 17 years).
3. 'Late Adolescence' (Age = 17 to 19 years).

Thirty one percent of the sample is included in the 'early adolescence', 39% in the 'middle adolescence', and 30% in the 'late adolescence' age bracket. A '3 X 3' (Age X Level of Depression) group structure is generated on the basis of the age and depression groupings.

Of the total sample tested, 68.6% are non-depressed, 20.5% are mildly depressed, and 10.9% are clinically depressed. When categorized by sex, 77.9% of males and 60.3% of females are non-depressed, 15.1% of males and 25.3% of females are mildly depressed, and 7% of males and 14.4% of all females are clinically depressed. Table 1 summarizes the percentages of non-depressed, mildly depressed, and clinically depressed males and females within each of the three age groupings.

The calculation of a Cramer's phi (Cramer, 1946) indicates an association between sex and level of depression for the total sample. A chi square computation shows that this association is highly significant. Table 2 lists Cramer's phi and chi square values for early, middle, and late adolescent age groupings.

Although no significant association of sex with level of depression is evident in the early adolescent age group, significance is reached in the middle and late adolescent groups.

In the middle adolescent age group, the proportion of non-depressed males (85.3%) is significantly greater, than the proportion of non-depressed females (54.9%). Conversely, the

Table 1

Percentages for Level of Depression

for Early, Middle and Late Adolescent Males and Females

Early Adolescence

	Non-Depressed	Mildly Depressed	Clinically Depressed
Males	64.8% (n=35)	25.9% (n=14)	9.3% (n=5)
Females	70.0% (n=42)	15.0% (n=9)	15.0% (n=9)
Total	67.5% (n=77)	20.2% (n=23)	12.3% (n=14)

Middle Adolescence

	Non-Depressed	Mildly Depressed	Clinically Depressed
Males	85.3% (n=58)	11.8% (n=8)	2.9% (n=2)
Females	54.5% (n=42)	29.9% (n=23)	15.6% (n=12)
Total	68.9% (n=100)	21.4% (n=31)	9.7% (n=14)

Late Adolescence

	Non-Depressed	Mildly Depressed	Clinically Depressed
Males	82.0% (n=41)	8.0% (n=4)	10.0% (n=5)
Females	57.9% (n=33)	29.8% (n=17)	12.3% (n=7)
Total	69.2% (n=74)	19.6% (n=21)	11.2% (n=12)

Table 2

Comparative Proportions of Males to Females

for Level of Depression in Age Groups

Age	Level of Depression	Z-Value	$\emptyset'_c$	$\chi^2(2)$
Early Adolescence	Non-Depressed	0.59	0.15	2.62
	Mildly Depressed	1.43		
	Clinically Depressed	0.92		
Middle Adolescence	Non-Depressed	3.99***	0.26	7.34**
	Mildly Depressed	2.62**		
	Clinically Depressed	2.54*		
Late Adolescence	Non-Depressed	2.67**	0.29	8.75**
	Mildly Depressed	2.83**		
	Clinically Depressed	1.85		
Early, Middle & Late Adolescence	Non-Depressed	3.59**	0.19	13.07***
	Mildly Depressed	2.42*		
	Clinically Depressed	2.42*		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

proportion of mid-adolescent females exceeds that of mid-adolescent males for the mildly and clinically depressed groups.

In the late adolescent age group, the proportion of non-depressed males exceeds that of non-depressed females. However, the proportion of males to females in the clinically depressed late adolescent grouping is not significantly different.

Self-Efficacy Status and Age

Pearson product-moment correlations were computed to test the hypothesis that self-efficacy status and age are positively correlated in non-depressed adolescents. Correlation coefficients for age with Total Self-Efficacy, and age with all of the specific self-efficacy measures, are not significant for non-depressed adolescents ($p>.10$). Similarly, a separate correlational analysis for non-depressed males and non-depressed females fails to reveal significant correlations between self-efficacy status and age.

Self-Efficacy Status and Level of Depression

To test the hypothesis that self-efficacy status decreases with level of depression, Pearson product-moment correlation coefficients were computed for BDI Total scores and all Self-Efficacy variables. The resulting 6 x 6 correlational

matrix is presented in Table 3. As predicted, level of depression is negatively correlated with Total Self-Efficacy. Similarly, Academic Self-Efficacy, General Self-Efficacy, and Physical Self-Efficacy are negatively correlated with level of depression. However, no significant correlation is evident between BDI Total Score and Social Self-Efficacy.

Academic, General, Physical and Social Self-Efficacy variables are significantly interrelated (with the exception of Social and General Self-Efficacy), and positively correlated with Total Self-Efficacy.

A three-way analysis of variance was conducted for Level of Depression X Age X Sex on Total Self-Efficacy. Means, standard deviations and cell sizes for the resulting 18 groups are summarized in Table 4. The three-way analysis of variance is presented in Table 5 (Appendix C). Main effects for Level of Depression and Age, two-way interactions for Level of Depression X Age, and for Sex X Age, and a three-way interaction for Level of Depression X Age X Sex are evident.

Given the presence of a three-way interaction for Level of Depression X Age X Sex, as well as the previously cited differences in the proportions of males to females exhibiting no, mild and clinical depression at different age groups, the remaining analyses will be conducted separately for the two sexes.

Table 3

Correlational Matrix

for Depression and Self-Efficacy Variables

	BDI Total Score	Total Self-Efficacy	Academic Self-Efficacy	General Self-Efficacy	Physical Self-Efficacy	Social Self-Efficacy
BDI Total Score						
Total Self-Efficacy	- .68***					
Academic Self-Efficacy	- .60***	.88***				
General Self-Efficacy	- .58***	.83***	.69***			
Physical Self-Efficacy	- .52***	.77***	.49***	.46***		
Social Self-Efficacy	- .28	.49***	.38**	.28	.49***	

*=$p < .05$, **=$p < .01$, ***=$p < .001$

Table 4

Means, Standard Deviaitons and Cell Sizes for Total Self-Efficacy

for Level of Depression X Age X Sex Groupings

		Mean	Standard Deviation	Cell Size
Non-Depressed				
Early Adolescence	Male	58.65	3.22	35
	Female	56.38	4.18	42
Middle Adolescence	Male	57.72	4.48	58
	Female	55.46	4.28	42
Late Adolescence	Male	55.91	4.60	41
	Female	56.56	4.04	33
Mildly Depressed				
Early Adolescence	Male	50.14	5.55	14
	Female	49.52	4.01	9
Middle Adolescence	Male	55.24	3.88	8
	Female	51.49	4.76	23
Late Adolescence	Male	52.02	8.64	4
	Female	51.08	5.78	17
Clinically Depressed				
Early Adolescence	Male	38.23	8.66	5
	Female	45.79	8.53	9
Middle Adolescence	Male	51.26	12.14	2
	Female	46.61	6.67	12
Late Adolescence	Male	46.72	6.86	5
	Female	42.79	9.08	7

The results of the analyses conducted for each of the self-efficacy variables (Total, Academic, General, Physical and Social) are presented in the following five sections. Each of these sections reports findings for males and females in two subsections. These subsections present two-way analyses of variance (Level of Depression X Age) for the respective self-efficacy variable, one-way analyses of variance for the three levels of depression (non-depressed, mildly depressed, clinically depressed), and one-way analyses of variance for the three age groups (early adolescence, middle adolescence, late adolescence). All analyses of variance are reported in tables, which are contained in Appendix C. A summary table in each subsection reports means, standard deviations, and cell sizes for each of the nine Age X Level of Depression groupings, as well as F-values, t-values and significance levels. The studentized range statistic provides a correction for the p-value for a family of nine means. Finally, a figure at the end of each subsection provides an illustration of the reported findings.

Total Self-Efficacy

Males

Table 6 (Appendix C) reports a two-way analysis of variance for Level of Depression X Age. Main effects for Depression and Age, and a two-way interaction are highly significant. This analysis shows that Total Self-Efficacy differs significantly for Levels

of Depression, Age groups, and Level of Depression X Age group combinations. Table 7 summarizes the findings of the six one-way analyses of variance (Table 8, Appendix C and Table 9, Appendix C). These results show that Total Self-Efficacy score differs significantly for non-depressed early, middle and late adolescent males, while similar differences are not evident for mildly or clinically depressed males. Although an Age effect is evident for early adolescent males, the decrease in Total Self-Efficacy scores is not revealed in any significant differences between the specific means of the three age groups. In addition, non-depressed, mildly depressed and clinically depressed early adolescent males differ significantly on Total Self-Efficacy. Significant t-values show that non-depressed and mildly depressed early adolescents, and non-depressed and clinically depressed early adolescents differ in their Total Self-Efficacy scores. The difference in Total Self-Efficacy for non-depressed, mildly depressed and clinically depressed males is similarly observed in the late adolescent age group, but <u>not</u> in the middle adolescent age group.

Females

A two-way analysis of variance for Total Self-Efficacy (Table 10 (Appendix C) reveals a main effect for Level of Depression. However, there is no evidence of an Age main effect or an interaction effect. This finding indicates that Total Self-Efficacy scores differ for Levels of Depression, but not for Age groups.

Table 7

Summary Table for Total Self-Efficacy for Male Adolescents

	Early Adolescence	Middle Adolescence	Late Adolescence	
Non-Depressed	$Mean_1$ = 58.65 SD = 3.22 n = 35	$Mean_2$ = 57.71 SD = 4.49 n = 58	$Mean_3$ = 55.91 SD = 4.60 n = 41	$F(2,131)=4.23$ $p<.05$*
Mildly Depressed	$Mean_4$ = 50.14 SD = 5.55 n = 14	$Mean_5$ = 55.24 SD = 3.88 n = 8	$Mean_6$ = 52.02 SD = 8.64 n = 4	$F(2,23)=2.08$ $p>.10$
Clinically Depressed	$Mean_7$ = 38.23 SD = 8.67 n = 5	$Mean_8$ = 52.26 SD = 12.14 n = 2	$Mean_9$ = 46.72 SD = 6.68 n = 5	$F(2,9)=2.18$ $p>.15$
	$F(2,51)=53.10$ $p<.001$***	$F(2,65)=2.71$ $p>.05$	$F(2,47)=7.60$ $p<.001$***	

Means	T-Value	P-Value	Significance Level[a]
1 & 4	5.39	.0001	.01**
1 & 7	5.22	.0006	.01*

[a]Studentized range

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 11 summarizes the findings of three one-way analyses of variance for Level of Depression (Table 12, Appendix C), and three one-way analyses of variance for Age groups (Table 13, Appendix C).

The results show that Total Self-Efficacy scores differ for non-depressed, mildly depressed, and clinically depressed females in the early adolescent, middle adolescent, and late adolescent age groups. In the early adolescent age group, the mean score on Total Self-Efficacy for non-depressed females differs from that of mildly depressed females, and from that of clinically depressed females. Similarly, in the middle adolescent age group, the mean scores of non-depressed and mildly depressed females are different, and the mean scores of non-depressed and clinically depressed females are dissimilar. The differences in Total Self-Efficacy between non-depressed and mildly depressed females, and between non-depressed and clinically depressed females are repeated in the late adolescent age group.

Figure 1 illustrates the mean Total Self-Efficacy scores of non-depressed, mildly depressed, and clinically depressed adolescents in each of the three age groups for males versus females.

Table 11

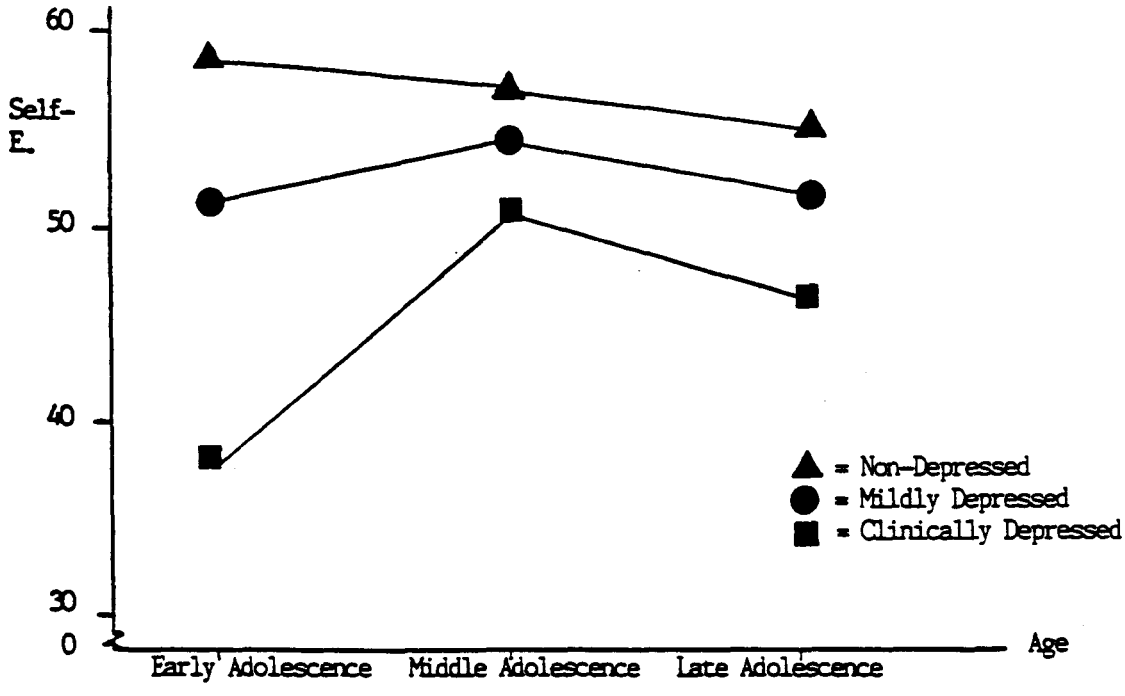
Summary Table for Total Self-Efficacy for Female Adolescents

	Early Adolescence	Middle Adolescence	Late Adolescence	
Non-Depressed	$Mean_1$= 56.38 SD = 4.18 n = 42	$Mean_2$= 55.46 SD = 4.28 n = 42	$Mean_3$= 56.56 SD = 4.04 n = 33	$F(2,114)=0.79$ $p>.40$
Mildly Depressed	$Mean_4$= 49.52 SD = 4.01 n = 9	$Mean_5$= 51.49 SD = 4.76 n = 23	$Mean_6$= 51.08 SD = 5.78 n = 17	$F(2,46)=0.50$ $p>.60$
Clinically Depressed	$Mean_7$= 45.79 SD = 8.53 n = 9	$Mean_8$= 46.61 SD = 6.67 n = 12	$Mean_9$= 42.79 SD = 9.08 n = 7	$F(2,25)=0.53$ $p>.50$
	$F(2,57)=20.40$ $p<.001$***	$F(2,74)=16.95$ $p<.001$***	$F(2,54)=20.98$ $p<.001$***	

Means	T-Value	P-Value	Significance Level[a]
1 & 4	4.62	.0006	.01**
1 & 7	3.63	.0057	.05*
2 & 5	3.33	.0018	.05*
2 & 8	4.35	.0007	.01**
3 & 6	3.49	.0019	.05*
3 & 9	3.93	.0067	.01**

[a]Studentized range

*=$p<.05$, **=$p<.01$, ***=$p<.001$



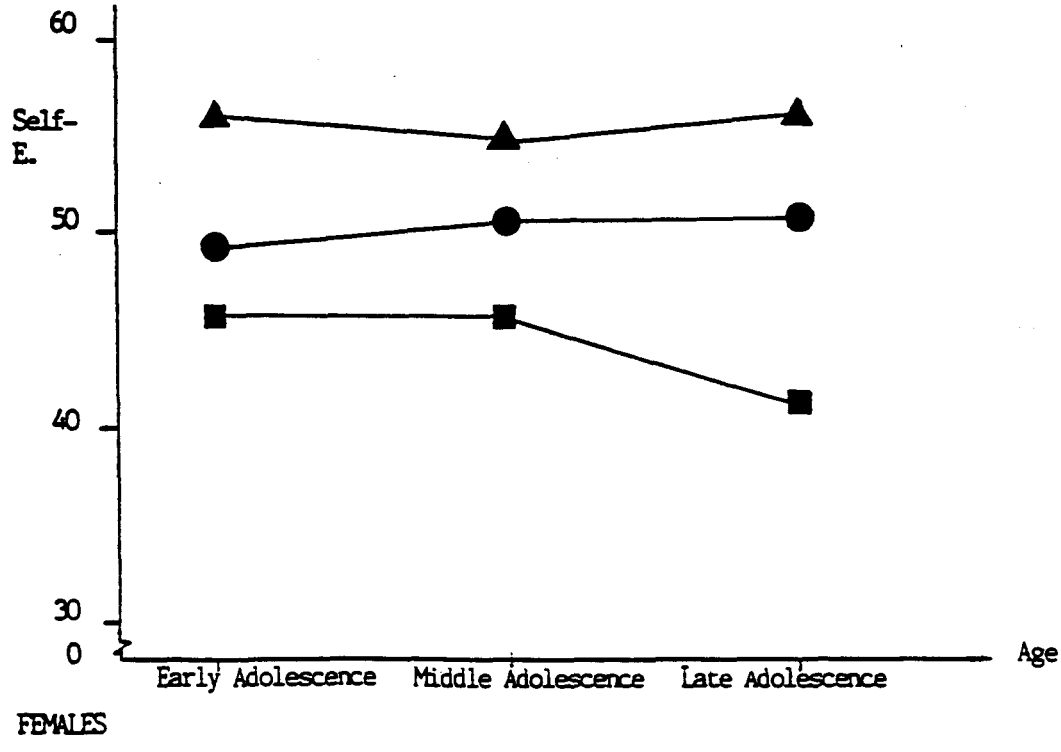


Figure 1. Total Self-Efficacy Mean Scores for Age X Depression Groupings.

Academic Self-Efficacy

Males

A two-way analysis of variance (Table 14, Appendix C) shows main effects for Level of Depression, Age, and a Level of Depression X Age interaction. These results indicate that Academic Self-Efficacy scores differ across Levels of Depression and Age groups.

Table 15 summarizes the results of three one-way analyses of variance for Level of Depression (Table 16, Appendix C), and three one-way analyses of variance for Age groups (Table 17, Appendix C). These analyses show that the Academic Self-Efficacy scores differ for non-depressed, mildly depressed, and clinically depressed males in both the early and late adolescent age groups. This effect is not evident in middle adolescent males. Significant t-values indicate that the mean scores on Academic Self-Efficacy are different for non-depressed and mildly depressed early adolescent males, for non-depressed and clinically depressed early adolescent males, and for mildly and clinically depressed early adolescent males.

A one-way analysis of variance for non-depressed males showed that Academic Self-Efficacy scores differ significantly for the three age groups. A t-test reveals that Academic Self-Efficacy score means differ for early and late adolescent non-depressed males.

Table 15

Summary Table for Academic Self-Efficacy for Male Adolescents

	Early Adolescence	Middle Adolescence	Late Adolescence	
Non-Depressed	$Mean_1$ = 62.49 SD = 4.44 n = 35	$Mean_2$ = 59.80 SD = 6.05 n = 58	$Mean_3$ = 58.32 SD = 7.01 n = 41	$F(2,131)=4.65$ $p<.01$**
Mildly Depressed	$Mean_4$ = 53.01 SD = 7.80 n = 14	$Mean_5$ = 55.75 SD = 4.29 n = 8	$Mean_6$ = 52.58 SD = 14.71 n = 4	$F(2,23)=0.33$ $p>.70$
Clinically Depressed	$Mean_7$ = 34.29 SD = 9.28 n = 5	$Mean_8$ = 55.95 SD = 17.40 n = 2	$Mean_9$ = 43.97 SD = 10.36 n = 5	$F(2,9)=2.95$ $p>.10$
	$F(2,51)=54.39$ $p>.001$***	$F(2,65)=1.77$ $p>.15$	$F(2,47)=7.59$ $p<.001$***	

Means	T-Value	P-Value	Significance Level[a]
1 & 4	4.28	.0005	.01**
1 & 7	6.69	.0022	.01**
4 & 7	4.03	.0066	.01**
1 & 3	3.14	.0025	.05*

[a]Studentized range

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Females

A two-way analysis of variance for females on Academic Self-Efficacy indicate a main effect for Level of Depression. However, neither a main effect for Age nor an interaction effect are observed (Table 18, Appendix C).

Table 19 summarizes the results of three one-way analyses of variance for Level of Depression (Table 20, Appendix C) and three one-way analyses of variance for Age group (Table 21, Appendix C). The results of these analyses show that Academic Self-Efficacy scores differ significantly for non-depressed, mildly depressed and clinically depressed females in the early adolescent, the middle adolescent, and the late adolescent age groups. More specifically, the mean scores on Academic Self-Efficacy differ for non-depressed and clinically depressed early adolescent females, for non-depressed and mildly depressed middle adolescent females, for non-depressed and clinically depressed middle adolescent females, and for non-depressed and clinically depressed late adolescent females.

Figure 2 illustrates a summary of the results for male and female subjects.

General Self-Efficacy

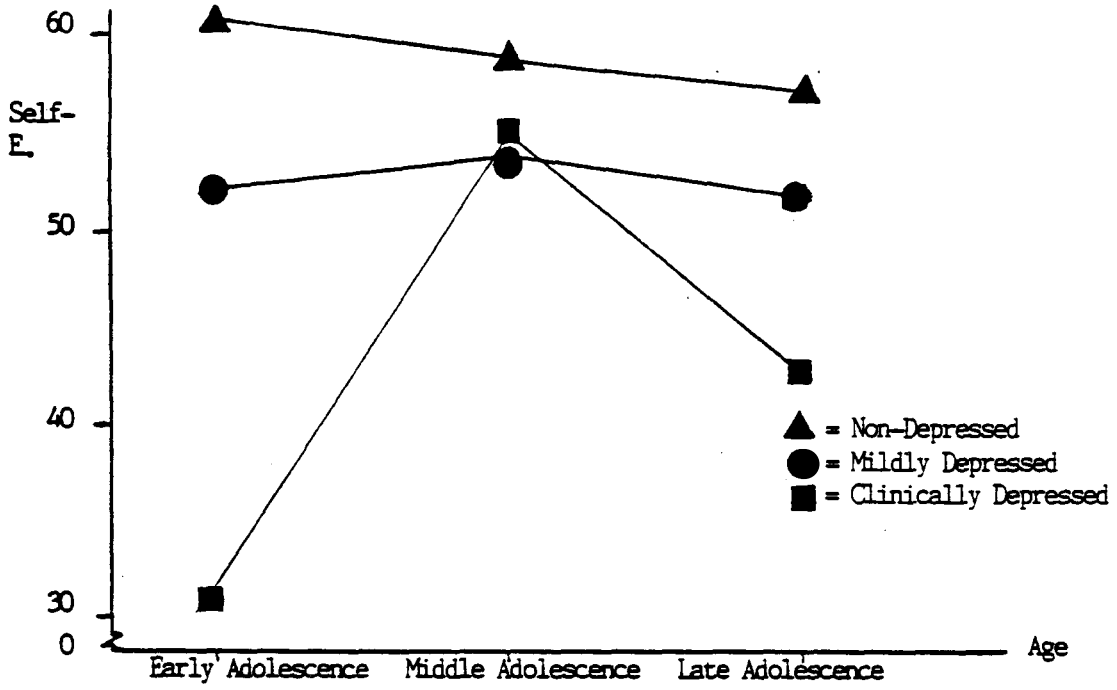
Table 19

Summary Table for Academic Self-Efficacy for Female Adolescents

	Early Adolescence	Middle Adolescence	Late Adolescence	
Non-Depressed	$Mean_1$= 59.77 SD = 5.10 n = 42	$Mean_2$= 58.79 SD = 5.14 n = 42	$Mean_3$= 60.63 SD = 6.08 n = 33	$F(2,114)=1.09$ $p>.30$
Mildly Depressed	$Mean_4$= 54.15 SD = 7.30 n = 9	$Mean_5$= 52.86 SD = 8.18 n = 23	$Mean_6$= 50.84 SD = 8.35 n = 17	$F(2,46)=0.56$ $p>.50$
Clinically Depressed	$Mean_7$= 48.77 SD = 8.46 n = 9	$Mean_8$= 47.35 SD = 10.18 n = 12	$Mean_9$= 45.35 SD = 13.98 n = 7	$F(2,25)=0.20$ $p>.60$
	$F(2,57)=13.83$ $p<.0001$***	$F(2,74)=14.06$ $p<.0001$***	$F(2,54)=15.19$ $p<.0001$***	

Means	T-Value	P-Value	Significance Level[a]
1 & 7	3.76	.0043	.05*
2 & 5	3.15	.0036	.05*
2 & 8	3.76	.0025	.01**
3 & 6	4.29	.0002	.01**

[a]Studentized range
*=$p<.05$, **=$p<.01$, ***=$p<.001$



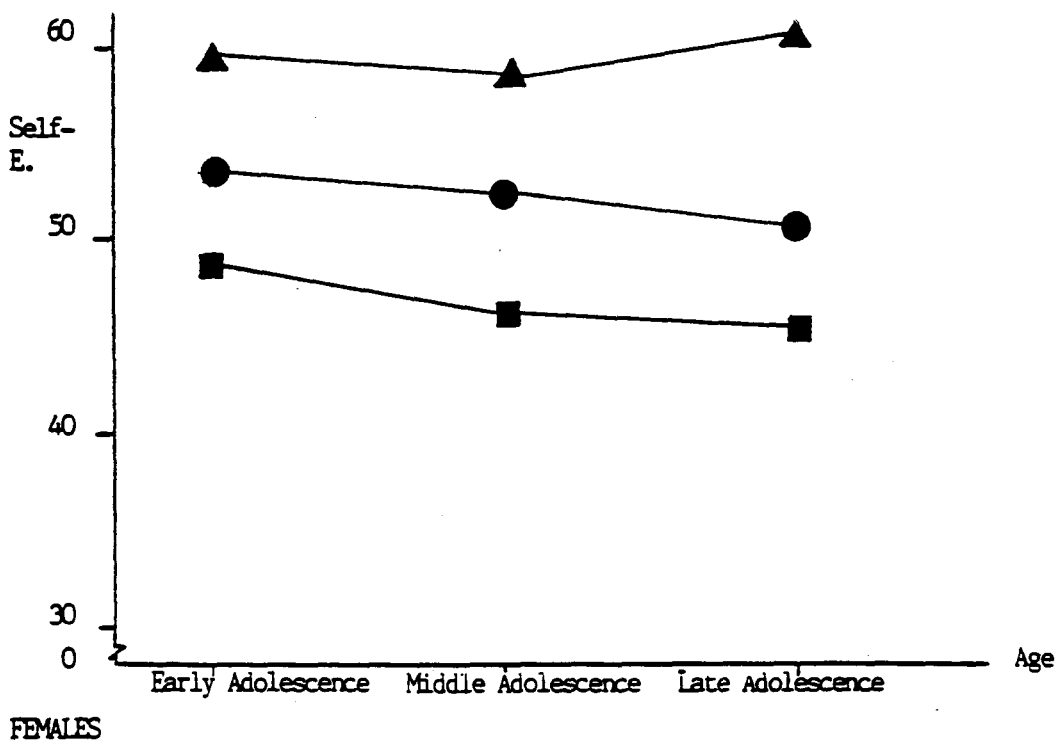


Figure 2. Academic Self Efficacy Mean Scores Age X Depression Groupings.

Males

The results of a two-way analysis of variance are reported in Table 22 (Appendix C). A main effect is in evidence for Level of Depression, but not for Age. In addition, an interaction effect is revealed.

Table 23 summarizes three one-way analyses for Level of Depression (Table 24, Appendix C), and three one-way analyses for Age (Table 25, Appendix C). The results of these analyses show significant differences in General Self-Efficacy for non-depressed, mildly depressed and clinically depressed males in the early adolescent, middle adolescent, and late adolescent age groups. Differences in the mean scores on General Self-Efficacy of non-depressed and mildly depressed early adolescent males, and of non-depressed and clinically depressed early adolescent males are significant. However, no age differences in General Self-Efficacy scores for non-depressed, mildly depressed or clinically depressed male adolescents are revealed.

Females

Table 26 (Appendix C) reports the results of a two-way analysis of variance on General Self-Efficacy for adolescent females. The analysis indicates a main effect for Level of Depression. Neither a main effect for Age nor an interaction effect are revealed.

Table 23

Summary Table for General Self-Efficacy for Male Adolescents

	Early Adolescence	Middle Adolescence	Late Adolescence	
Non-Depressed	$Mean_1$ = 59.83 SD = 4.28 n = 35	$Mean_2$ = 59.28 SD = 6.55 n = 58	$Mean_3$ = 57.20 SD = 5.65 n = 41	$F(2,131)=2.35$ $p>.05$
Mildly Depressed	$Mean_4$ = 50.42 SD = 7.78 n = 14	$Mean_5$ = 52.70 SD = 6.46 n = 8	$Mean_6$ = 55.15 SD = 8.82 n = 4	$F(2,23)=0.68$ $p>.50$
Clinically Depressed	$Mean_7$ = 36.27 SD = 10.21 n = 5	$Mean_8$ = 44.12 SD = 16.64 n = 2	$Mean_9$ = 48.86 SD = 10.61 n = 5	$F(2,9)=1.14$ $p>.30$
	$F(2,51)=39.91$ $p<.0001$***	$F(2,65)=7.60$ $p<.001$***	$F(2,47)=5.74$ $p<.01$**	

Means	T-Value	P-Value	Significance Level[a]
1 & 4	4.27	.0006	.01**
1 & 7	5.09	.0064	.01**

[a]Studentized range

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 27 summarizes the findings for three one-way analyses for Level of Depression (Table 28, Appendix C) and for three one-way analyses for Age groups (Table 29, Appendix C). The results of these analyses indicate that General Self-Efficacy differs for non-depressed, mildly depressed and clinically depressed females in the early adolescent, middle adolescent, and late adolescent age groups.

Mean scores on General Self-Efficacy differ for non-depressed and mildly depressed early adolescent females, for non-depressed and clinically depressed middle adolescent females, and for non-depressed and clinically depressed late adolescent females.

The means for the nine Age X Level of Depression groupings on General Self-Efficacy are graphically displayed for both male and female adolescents in Figure 3.

Physical Self-Efficacy

Males

Table 30 (Appendix C) presents the results of a two way analysis of variance on Physical Self-Efficacy for males. A main effect for Level of Depression, a main effect for Age, and a Level of Depression X Age interaction effect are demonstrated.

Table 31 summarizes the results of three one-way analyses of variance for Level of Depression (Table 32, Appendix C), and three one-way analyses of variance for Age (Table 33, Appendix

Table 27

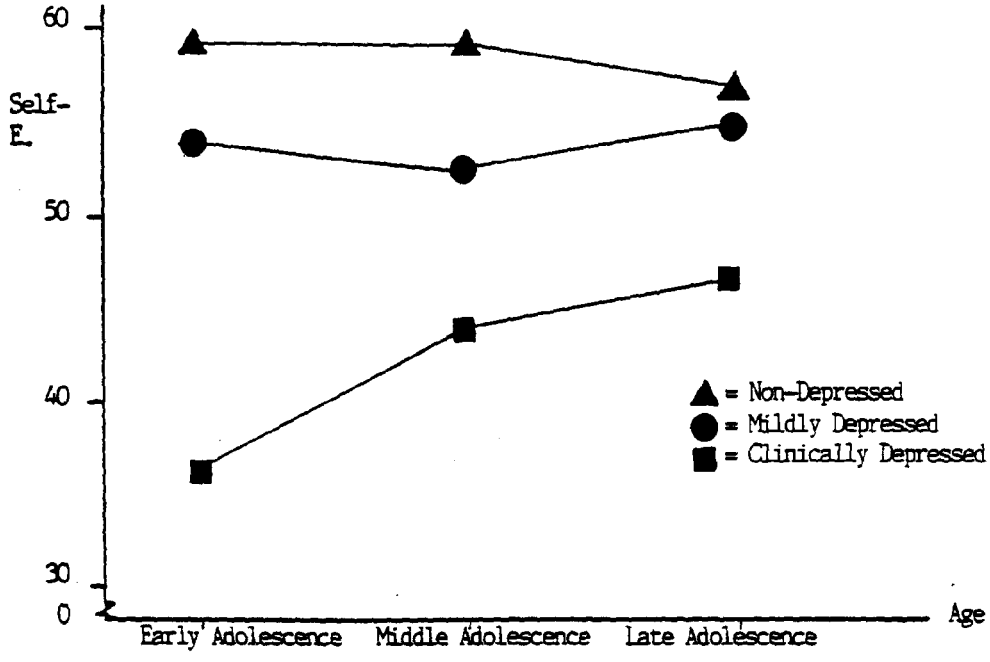
Summary Table for General Self-Efficacy for Female Adolescents

	Early Adolescence	Middle Adolescence	Late Adolescence	
Non-Depressed	$Mean_1$= 58.50 SD = 6.38 n = 42	$Mean_2$= 58.29 SD = 5.90 n = 42	$Mean_3$= 58.08 SD = 6.01 n = 33	$F(2,114)=0.04$ $p>.90$
Mildly Depressed	$Mean_4$= 48.80 SD = 7.25 n = 9	$Mean_5$= 53.67 SD = 6.73 n = 23	$Mean_6$= 53.06 SD = 8.13 n = 17	$F(2,46)=1.48$ $p>.20$
Clinically Depressed	$Mean_7$= 47.60 SD = 14.16 n = 9	$Mean_8$= 46.73 SD = 7.97 n = 12	$Mean_9$= 42.16 SD = 12.20 n = 7	$F(2,25)=0.52$ $p>.60$
	$F(2,57)=10.35$ $p<.0001$***	$F(2,74)=15.58$ $p<.0001$***	$F(2,54)=13.18$ $p<.0001$***	

Means	T-Value	P-Value	Significance Level[a]
1 & 4	3.71	.0045	.05*
2 & 8	4.67	.0003	.01**
3 & 9	3.34	.0136	.05*

[a]Studentized range

*=$p<.05$, **=$p<.01$, ***=$p<.001$



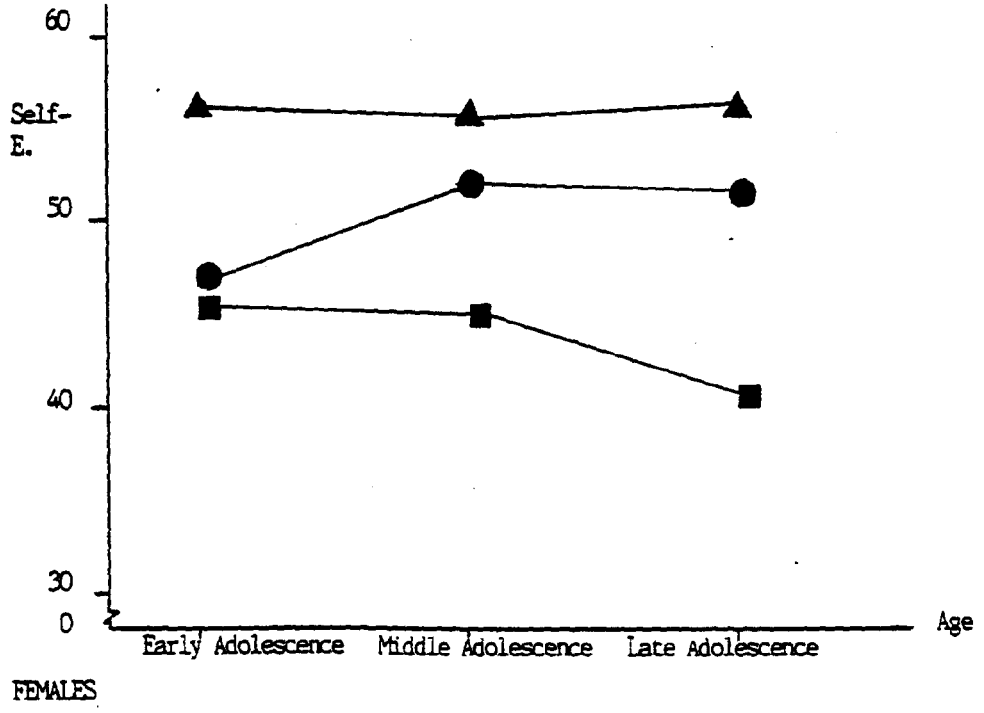


Figure 3. General Self-Efficacy Mean Scores for Age X Depression Groupings.

Table 31

Summary Table for Physical Self-Efficacy for Male Adolescents

	Early Adolescence	Middle Adolescence	Late Adolescence	
Non-Depressed	$Mean_1$ = 54.87 SD = 5.61 n = 35	$Mean_2$ = 54.92 SD = 4.83 n = 58	$Mean_3$ = 52.96 SD = 5.76 n = 41	$F(2,131)=1.90$ $p>.10$
Mildly Depressed	$Mean_4$ = 48.49 SD = 7.13 n = 14	$Mean_5$ = 55.78 SD = 5.88 n = 8	$Mean_6$ = 49.43 SD = 7.38 n = 4	$F(2,23)=3.03$ $p>.05$
Clinically Depressed	$Mean_7$ = 41.67 SD = 16.71 n = 5	$Mean_8$ = 50.76 SD = 6.43 n = 2	$Mean_9$ = 50.76 SD = 9.58 n = 5	$F(2,9)=0.71$ $p>.50$
	$F(2,51)=8.92$ $p<.001$***	$F(2,65)=0.82$ $p>.40$	$F(2,47)=0.77$ $p>.40$	

*=$p<.05$, **=$p<.01$, ***=$p<.001$

C). The results of these analyses show that Physical Self-Efficacy differs significantly for non-depressed, mildly depressed and clinically depressed early adolescents. This effect could not be demonstrated for the middle adolescent and late adolescent males.

Females

Table 34 (Appendix C) reports the results of a two-way analysis of variance for Physical Self-Efficacy in female adolescents. A main effect for Level of Depression is evident, while there is no main effect for Age.

Table 35 summarizes three one way analyses of variance for Level of Depression (Table 36, Appendix C), and three one-way analyses for Age (Table 37, Appendix C). The results show that Physical Self-Efficacy scores differ significantly for non-depressed, mildly depressed, and clinically depressed females in the early adolescent, middle adolescent, and late adolescent age categories. The mean scores on Physical Self-Efficacy differ significantly for non-depressed and clinically depressed early adolescents, and for non-depressed and clinically depressed late adolescent females.

A summary of the results for Physical Self-Efficacy for both males and females are illustrated in Figure 4.

Table 35

Summary Table for Physical Self-Efficacy for Female Adolescents

	Early Adolescence	Middle Adolescence	Late Adolescence	
Non-Depressed	$Mean_1$= 51.66 SD = 5.28 n = 42	$Mean_2$= 50.29 SD = 6.58 n = 42	$Mean_3$= 51.47 SD = 5.95 n = 33	$F(2,114)=0.64$ $P>.50$
Mildly Depressed	$Mean_4$= 45.46 SD = 6.22 n = 9	$Mean_5$= 48.42 SD = 4.82 n = 23	$Mean_6$= 48.84 SD = 6.99 n = 17	$F(2,46)=1.07$ $p>.30$
Clinically Depressed	$Mean_7$= 41.84 SD = 8.40 n = 9	$Mean_8$= 44.19 SD = 6.62 n = 12	$Mean_9$= 38.75 SD = 9.59 n = 7	$F(2,25)=0.52$ $p>.60$
	$F(2,57)=12.26$ $p<.0001$***	$F(2,74)=4.69$ $p<.01$**	$F(2,54)=10.26$ $p<.001$***	

Means	T-Value	P-Value	Significance Level[a]
1 & 7	3.37	.0078	.05*
3 & 9	3.38	.0118	.05*

[a]Studentized range

*=$p<.05$, **=$p<.01$, ***=$p<.001$

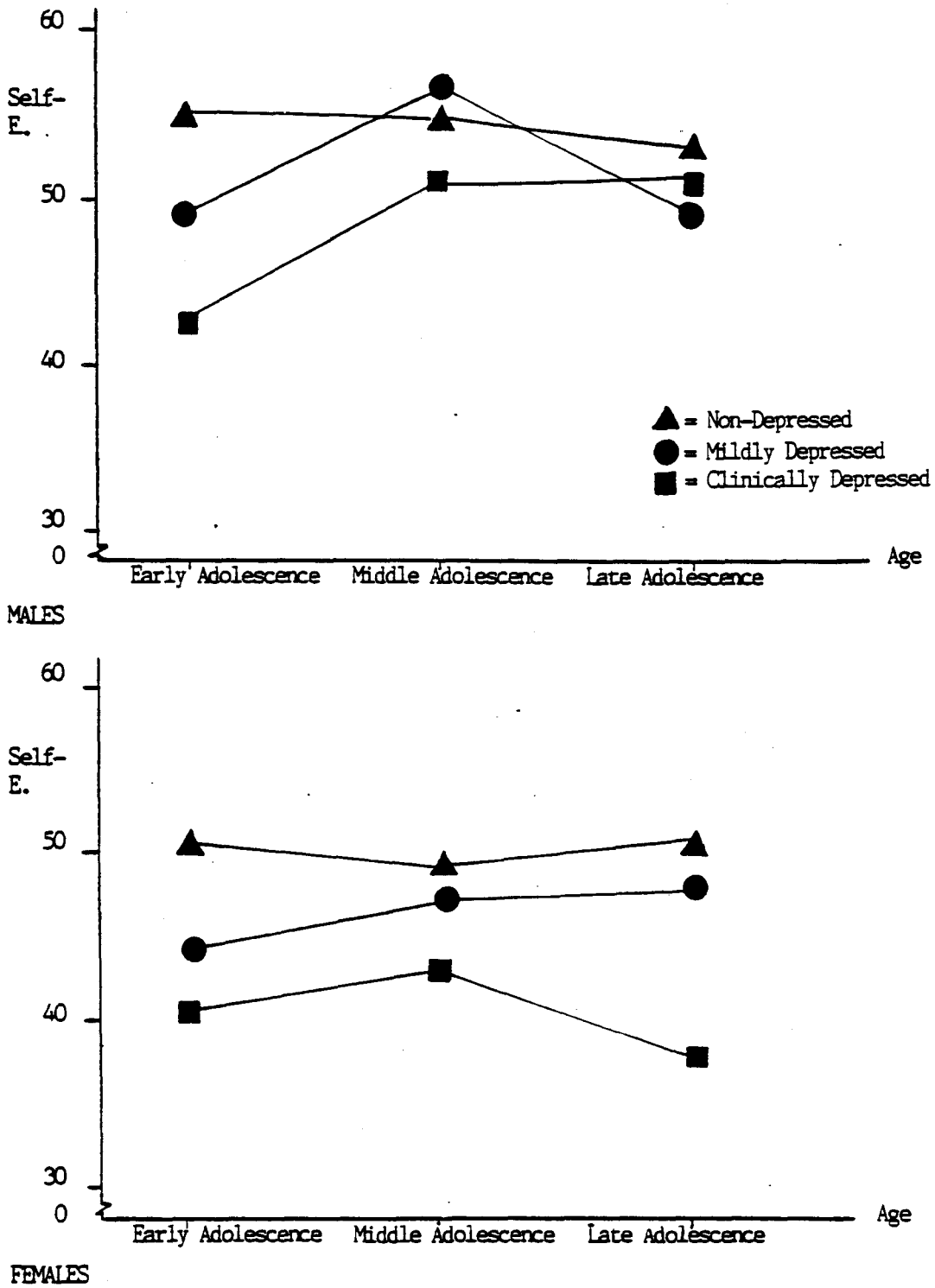


Figure 4. Physical Self-Efficacy Mean Scores for Age X Depression Groupings.

Social Self-Efficacy

Males

Table 38 (Appendix C) reports the results of a two-way analysis of variance for adolescent males on Social Self-Efficacy. A main effect for Level of Depression, a main effect for Age, and an interaction effect for Level of Depression X Age are revealed as a result of this analysis.

Table 39 presents a summary of results for a series of three one-way analyses of variance for Level of Depression (Table 40, Appendix C) and a series of three one-way analyses of variance for Age (Table 41, Appendix C). These results indicate that Social Self-Efficacy differs for non-depressed, mildly depressed, and clinically depressed males in the early adolescent, and late adolescent groups. The mean scores for non-depressed and mildly depressed on Social Self-Efficacy are different. An Age effect is revealed for mildly depressed male adolescents, in that the mean Social Self-Efficacy scores for mildly depressed, early adolescent and mildly depressed, late adolescent mildly depressed males are unequal.

Females

The results of a two-way analysis of variance for Social Self-Efficacy in adolescent females is reported in Table 42 (Appendix C). A main effect for Level of Depression, but not for Age is in evidence.

Table 39

Summary Table for Social Self-Efficacy for Male Adolescents

	Early Adolescence	Middle Adolescence	Late Adolescence	
Non-Depressed	$Mean_1$ = 55.71 SD = 5.79 n = 35	$Mean_2$ = 56.27 SD = 7.44 n = 58	$Mean_3$ = 54.68 SD = 8.09 n = 41	$F(2,131) = 0.58$ $p > .50$
Mildly Depressed	$Mean_4$ = 45.44 SD = 7.36 n = 14	$Mean_5$ = 58.68 SD = 9.90 n = 8	$Mean_6$ = 50.69 SD = 9.18 n = 4	$F(2,23) = 6.26$ $p < .01$**
Clinically Depressed	$Mean_7$ = 45.00 SD = 11.06 n = 5	$Mean_8$ = 56.94 SD = 1.96 n = 2	$Mean_9$ = 41.11 SD = 11.52 n = 5	$F(2,9) = 1.59$ $p > .20$
	$F(2,51) = 14.57$ $p < .0001$***	$F(2,65) = 0.35$ $p > .70$	$F(2,47) = 5.83$ $p < .01$**	

Means	T-Value	P-Value	Significance Level[a]
1 & 4	4.68	.0001	.01**
4 & 6	3.30	.0067	.05*

[a]Studentized range

*=$p < .05$, **=$p < .01$, ***=$p < .001$

Table 43 summarizes the results of three one-way analyses of variance for Level of Depression (Table 44, Appendix C), and three one-way analyses of variance for Age (Table 45, Appendix C). These results show that Social Self-Efficacy scores differ significantly for non-depressed, mildly depressed and clinically depressed early adolescent females.

The results for males and females on Social Self-Efficacy are illustrated in Figure 5.

The mean scores for Total, Academic, General, Physical, and Academic Self-Efficacy are plotted as descriptive profiles for the nine Age X Level of Depression groupings for males (Figure 6) and females (Figure 7).

Regression Analysis

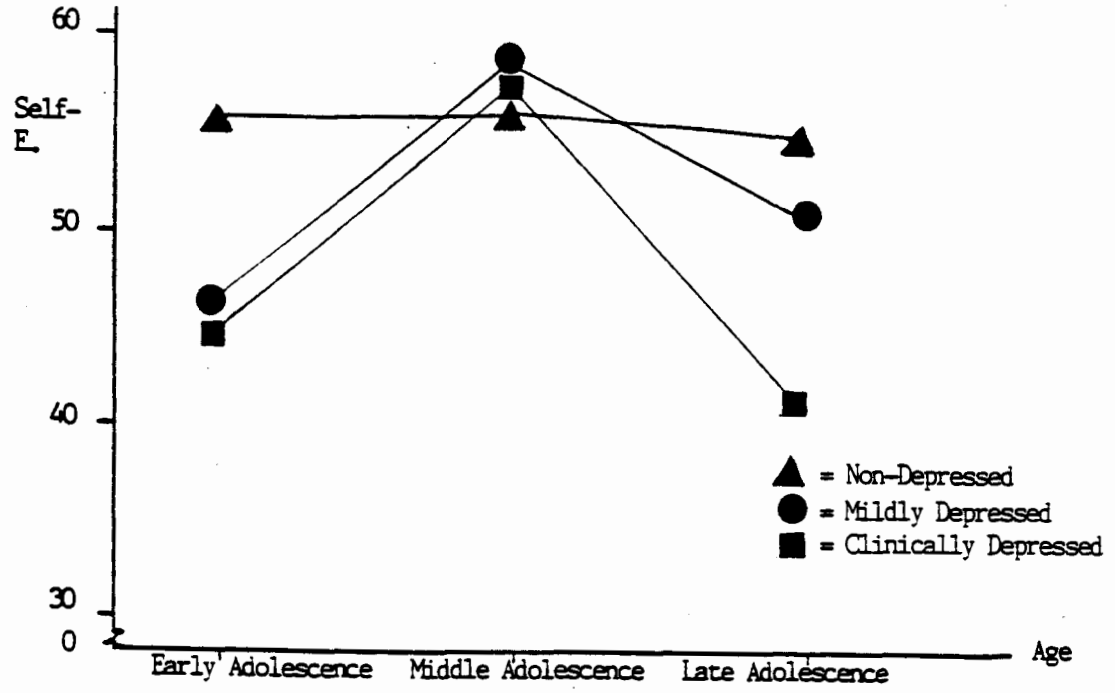
A regression analysis was conducted for each of the six Age X Sex groups in order to examine age-related changes in the statistical dependence of depression on self-efficacy status. The BDI Total Score was used as the dependent variable. Academic, General, Physical and Social Self-Efficacy were selected as the set of predictor variables. The results of this analysis are reported in Table 46. The prediction of BDI Total Score on the basis of this set of four Self-Efficacy variables is highly significant for early adolescent males ($F(4,49)=32.84$, $p<.001$), middle adolescent males ($F(4,63)=10.08$, $p<.001$), late adolescent males ($F(4,45)=6.43$, $p<.001$), early adolescent

Table 43

Summary Table for Social Self-Efficacy for Female Adolescents

	Early Adolescence	Middle Adolescence	Late Adolescence	
Non-Depressed	$Mean_1$ = 55.82 SD = 9.24 n = 42	$Mean_2$ = 54.76 SD = 9.25 n = 42	$Mean_3$ = 56.65 SD = 7.31 n = 33	$F(2,114)=0.44$ $p>.60$
Mildly Depressed	$Mean_4$ = 50.31 SD = 11.82 n = 9	$Mean_5$ = 51.81 SD = 10.28 n = 23	$Mean_6$ = 54.58 SD = 10.67 n = 17	$F(2,46)=0.56$ $p>.50$
Clinically Depressed	$Mean_7$ = 44.75 SD = 10.98 n = 9	$Mean_8$ = 52.55 SD = 9.29 n = 12	$Mean_9$ = 50.40 SD = 14.20 n = 7	$F(2,25)=1.28$ $p>.20$
	$F(2,57)=5.13$ $p<.001$***	$F(2,74)=0.78$ $p>.40$	$F(2,54)=1.35$ $p>.20$	

*=$p<.05$, **=$p<.01$, ***=$p<.001$



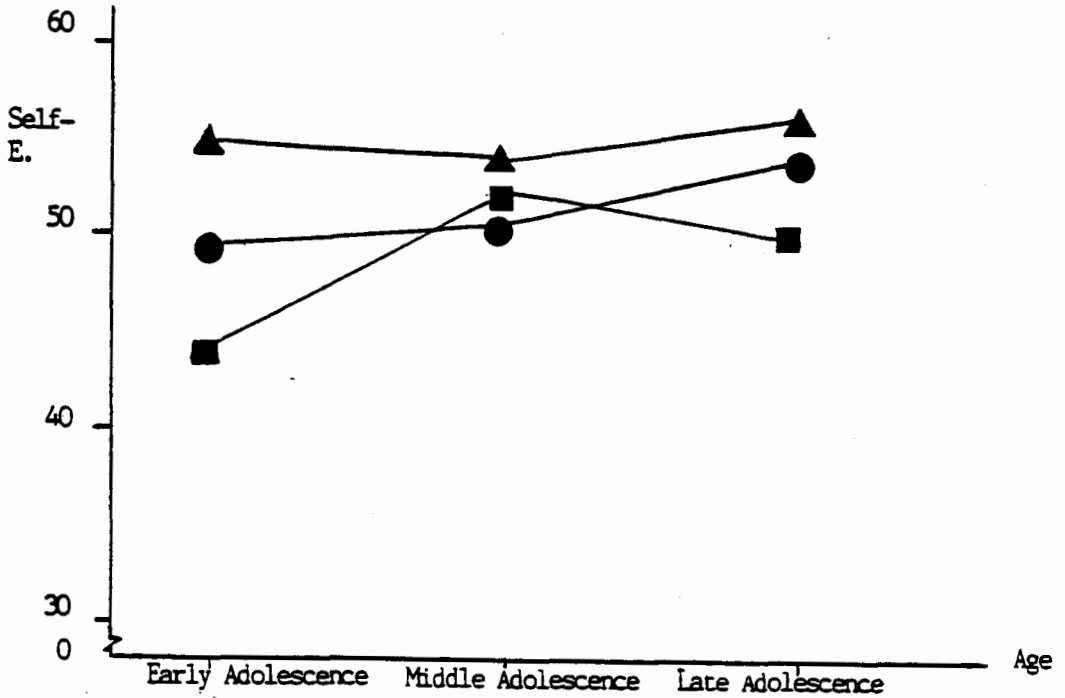
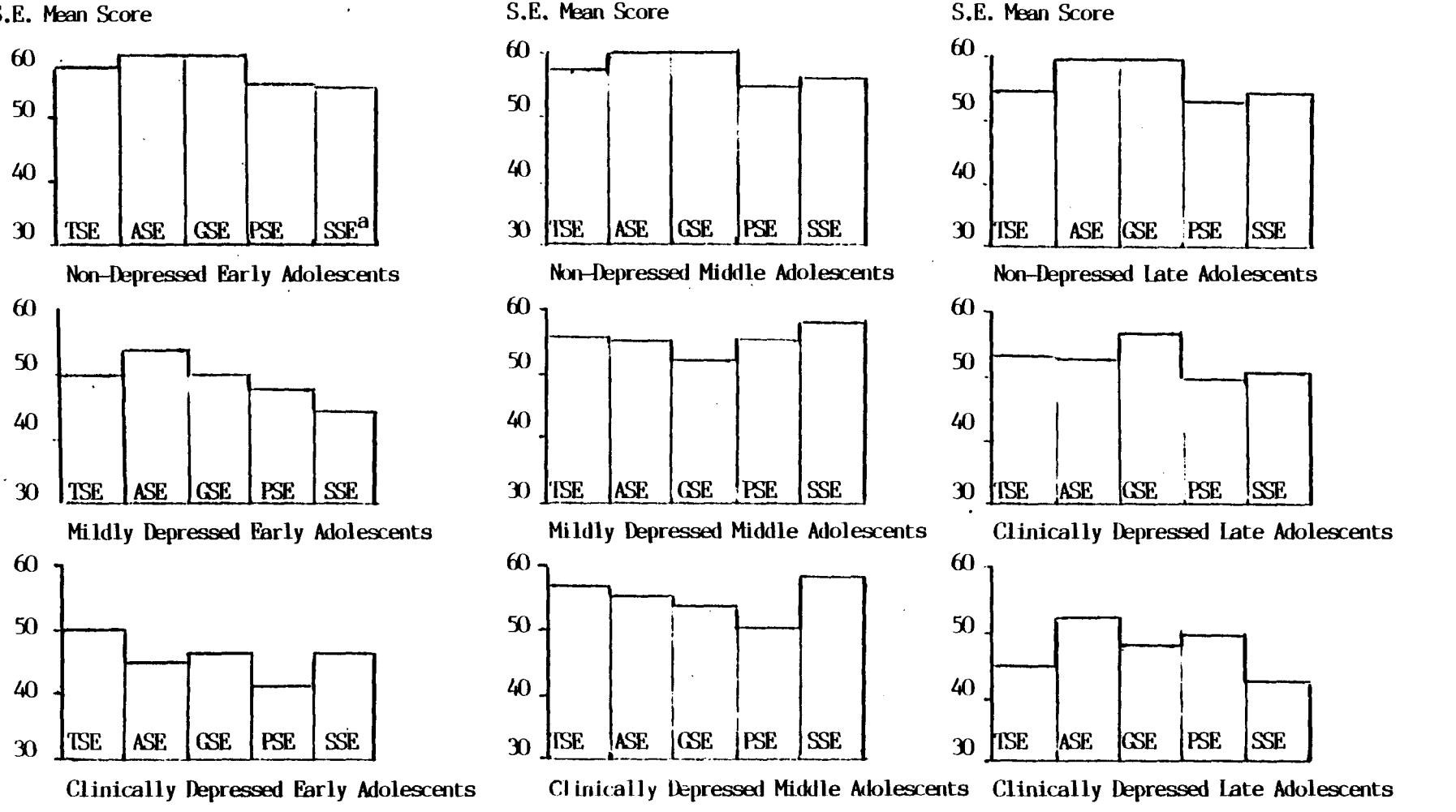
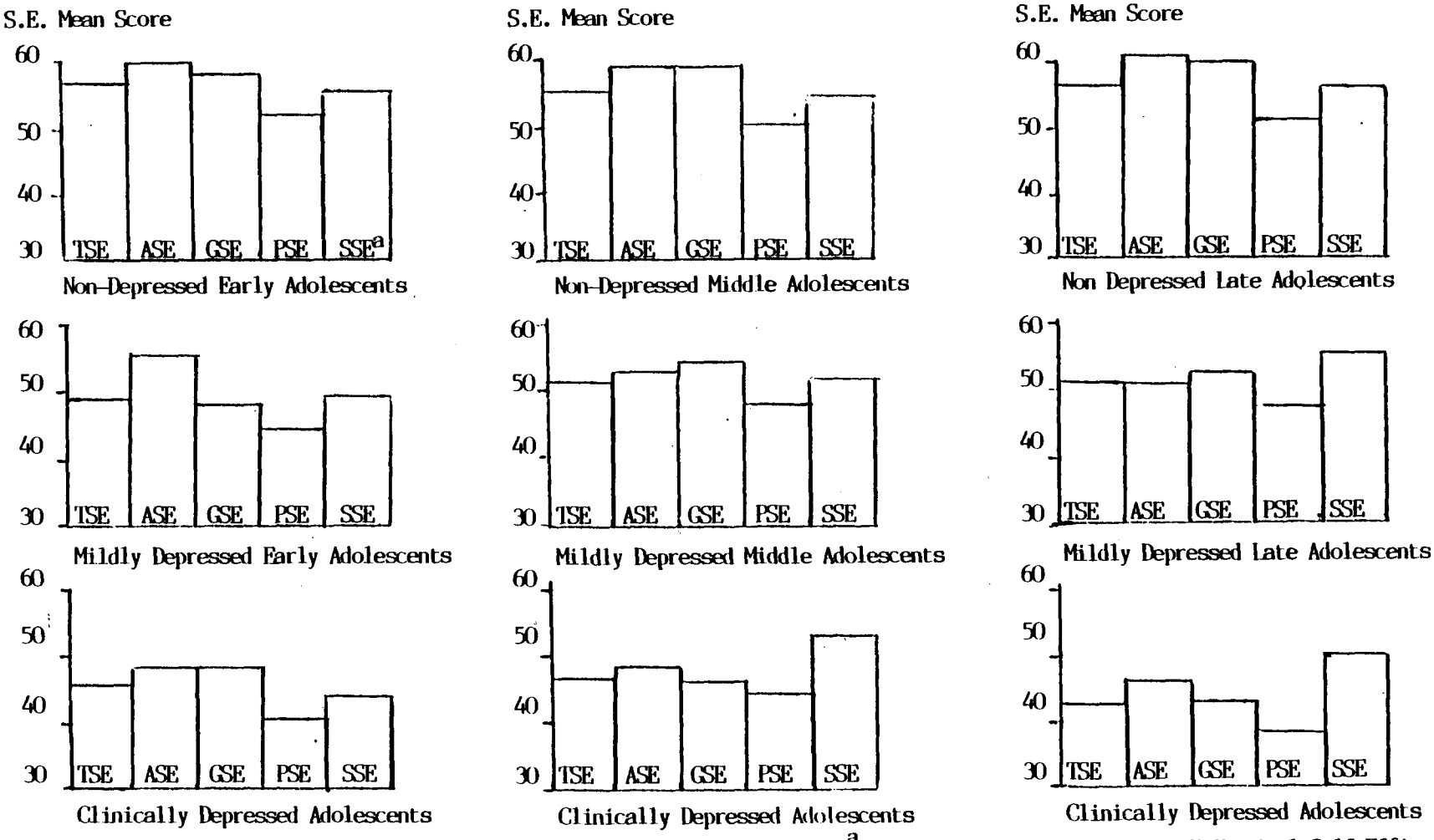


Figure 5. Social Self-Efficacy Mean Scores for Age X Depression Groupings.



[a] TSE=Total Self-Efficacy
ASE=Academic Self-Efficacy
GSE=General Self-Efficacy
PSE=Physical Self-Efficacy
SSE=Social Self-Efficacy

Figure 6. Self-Efficacy Profiles for Male Adolescents.



[a]TSE=Total Self Efficacy PSE=Physical Self-Efficacy
ASE=Academic Self-Efficacy SSE=Social Self-Efficacy
GSE=General Self-Efficacy

Figure 7. Self-Efficacy Profiles for Female Adolescents.

Table 46

Regression Analysis on BDI Totals with Set of Four Self-Efficacy Variables (General, Academic, Physical, Social) for Six Age X Sex Groups

Males

	Early Adolescent	Middle Adolescent	Late Adolescent
Adjusted Square Multiple Correlation	.71	.35	.31
Standard Error of Estimate	4.82	4.21	5.01

Females

	Early Adolescent	Middle Adolescent	Late Adolescent
Adjusted Square Multiple Correlation	.46	.33	.47
Standard Error of Estimate	5.13	6.39	5.61

females ($F(4,55)=13.84$, $p<.001$), middle adolescent females ($F(4,72)=10.26$, $p<.001$), and late adolescent females ($F(4,52)=4.52$, $p<.001$).

The regression coefficients and standard errors for General, Academic, Physical and Social Self-Efficacy are presented for the six Age X Sex groupings in Table 47 and are illustrated in Figures 8 and 9.

The contribution to BDI variance was calculated for each of the four self-efficacy variables by multiplying the contribution to R-Square with the BDI variance of the appropriate Age X Sex group. The calculated values are reported in Table 48, and are graphically displayed in Figure 10.

Table 47

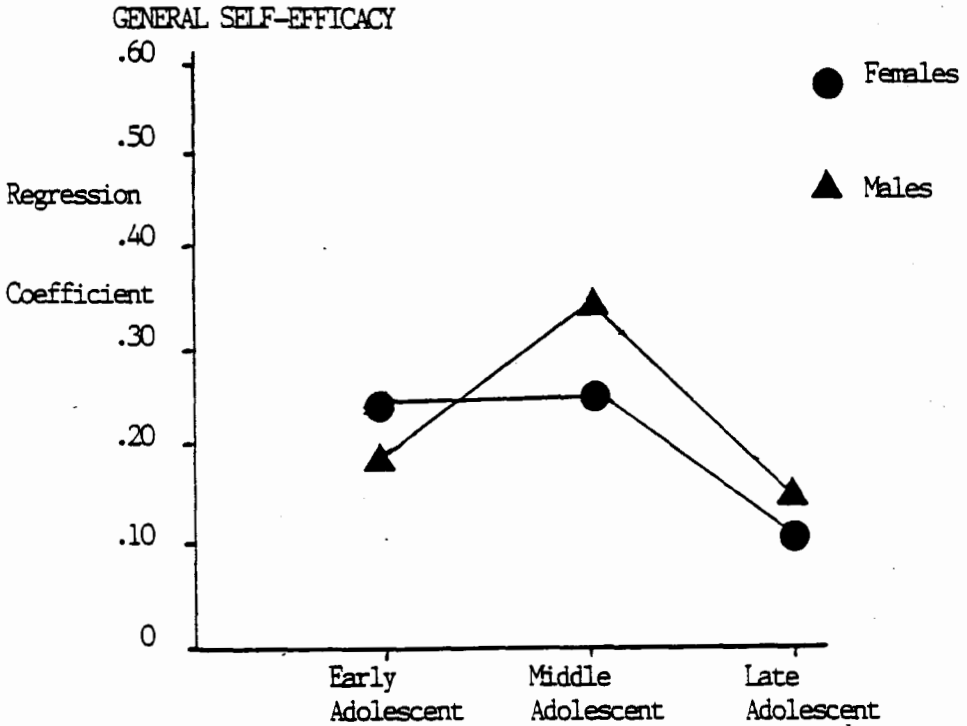
Regression Coefficients and Standard Errors

for BDI Total Scores for Six Age X Sex Groups on Four Self-Efficacy Variables

Age	Male		Female		Self-Efficacy Variable
Early Adolescent	-.19[a]	(.12[b])	-.24	(.10)	General
Middle Adolescent	-.35	(.09)	-.26	(.14)	
Late Adolescent	-.15	(.13)	-.11	(.12)	
Early Adolescent	-.38	(.08)	-.08	(.13)	Academic
Middle Adolescent	-.14	(.09)	-.21	(.10)	
Late Adolescent	-.15	(.09)	-.24	(.10)	
Early Adolescent	-.14	(.07)	-.18	(.10)	Physical
Middle Adolescent	-.32	(.09)	-.21	(.10)	
Late Adolescent	-.06	(.09)	-.27	(.08)	
Early Adolescent	-.08	(.28)	-.53	(.19)	Social
Middle Adolescent	-.41	(.20)	-.12	(.23)	
Late Adolescent	-.42	(.24)	-.09	(.25)	

[a]Regression Coefficient

[b]Standard Error



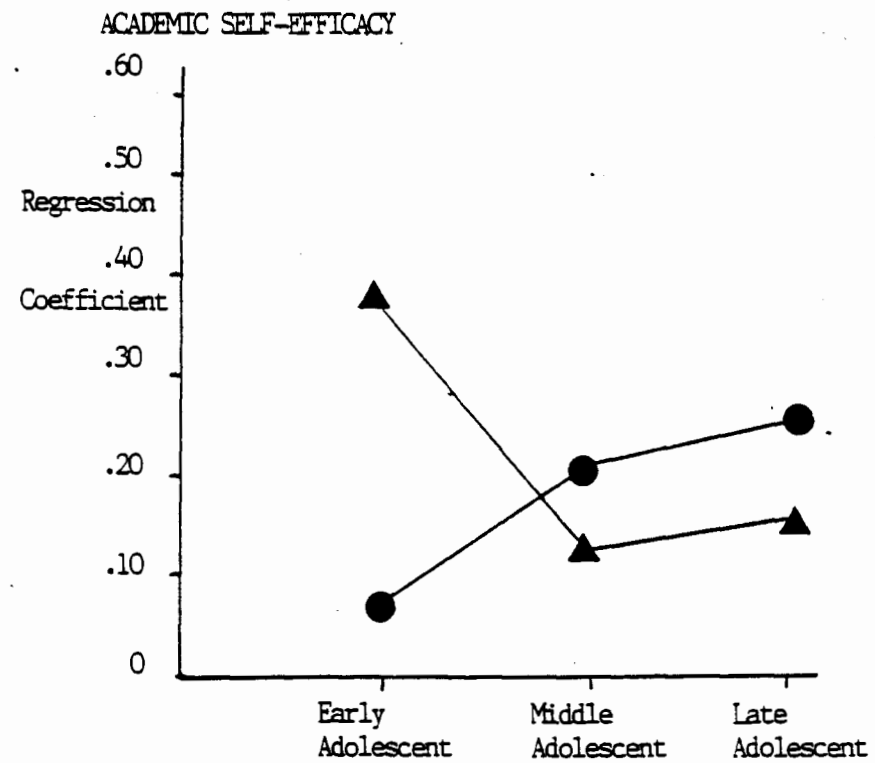
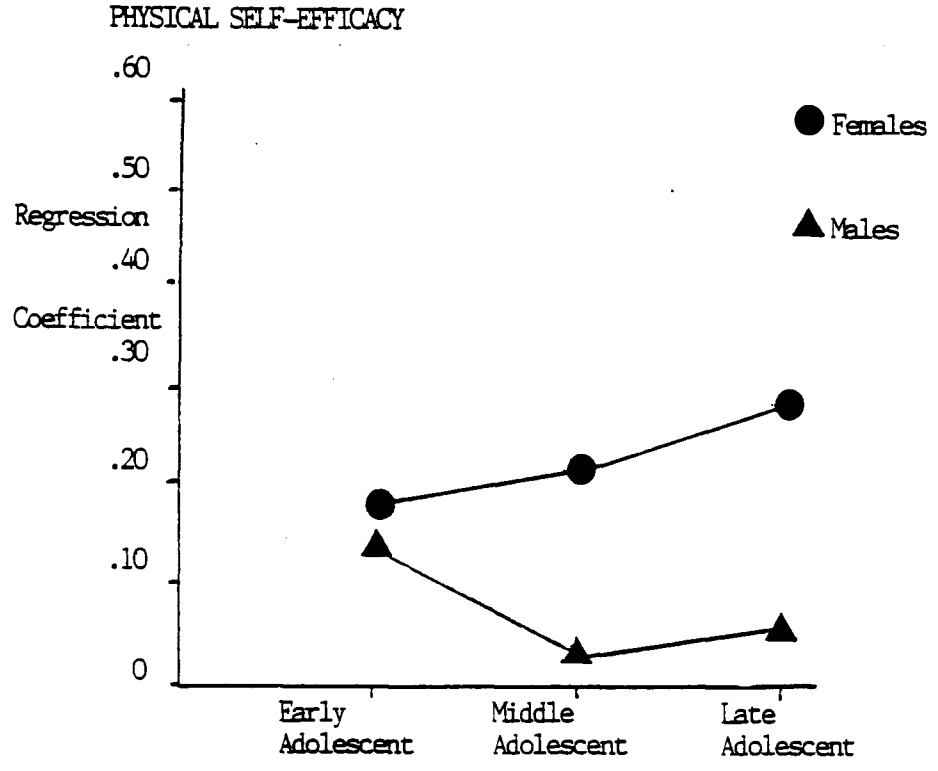


Figure 8. Regression Coefficients for General Self-Efficacy and Academic Self-Efficacy for Males Versus Females.



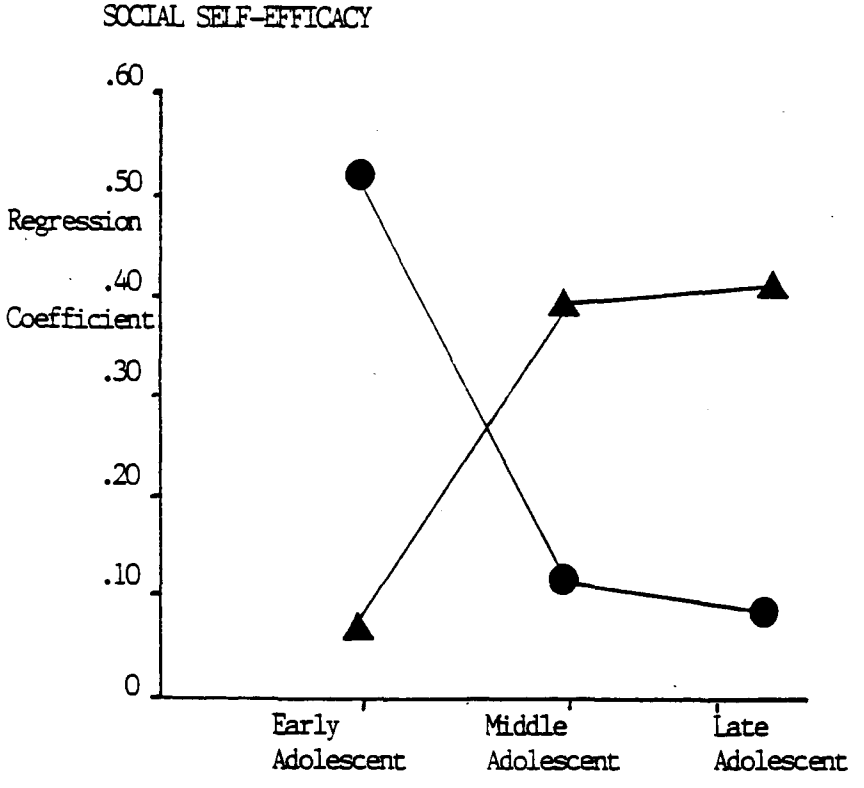


Figure 9. Regression Coefficients for Physical Self-Efficacy and Social Self-Efficacy for Males Versus Females.

Table 48

Contribution to Variance of BDI Totals of Four Self-Efficacy Variables for Six Sex X Age Groups

Age	Self-Efficacy Variable	Male	Female
Early Adolescent	General	1.11[a]	2.50
	Academic	10.35	0.17
	Physical	1.59	1.52
	Social	0.03	3.45
Middle Adolescent	General	4.18	1.91
	Academic	0.66	2.19
	Physical	0.04	2.66
	Social	1.07	0.14
Late Adolescent	General	0.67	0.46
	Academic	1.45	3.56
	Physical	0.20	5.80
	Social	1.63	0.81

[a]Contribution to Variance = (Contribution to R^2) X (BDI Variance for Sex X Age Group)

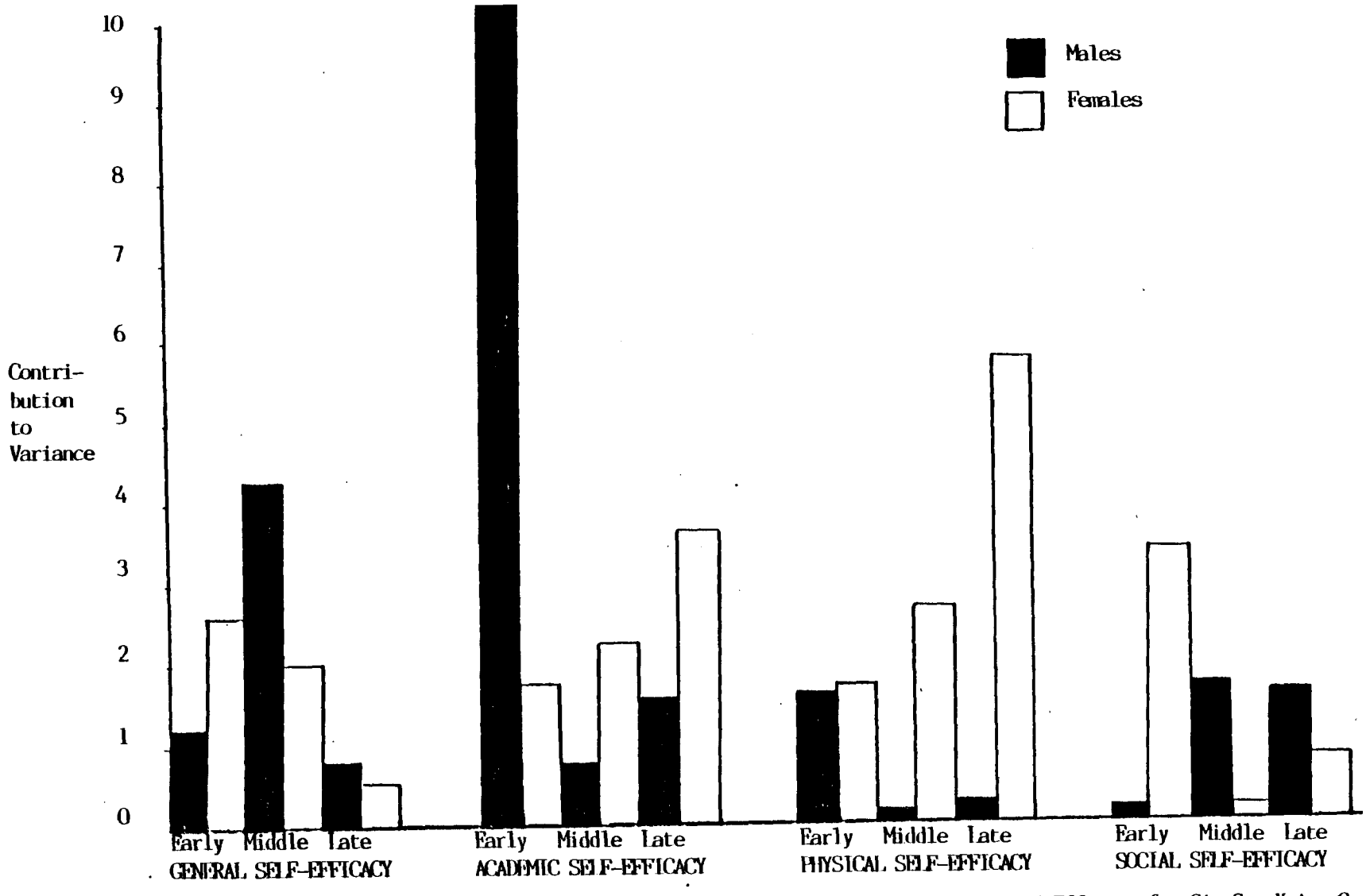


Figure 10. Contribution to Variance of BDI Totals for General, Academic, Physical and Social Self-Efficacy for Six Sex X Age Groups.

CHAPTER IV

DISCUSSION

Prevalence of Adolescent Depression and Sex Distribution

In accordance with current prevalence statistics for non-clinical samples of adolescents (Rutter, 1986), the results of this study indicated that approximately one-third of adolescents were mildly to clinically depressed. Furnell (1973) had found that 8% of Vancouver high school students were clinically depressed. The corresponding figure of 12.3% in the current results may suggest a slight increase in this more severe level of depression in the past 13 years, especially given the reported increase in adolescent suicide rates over the same time period (Kushner, 1981; Shaffer, 1986). An alternative explanation may be the existence of differences in the Vancouver and West Vancouver samples. However, due to the relatively small size of the increase, such interpretations should be tempered with extreme caution.

The shift from male to female preponderance at puberty (e.g., Shaffer, 1986) is confirmed in the new sample. It is of interest that no differences existed in the proportions of males and females exhibiting mild and clinical depression in the early adolescent group, suggesting the possibility that the documented shift occurs during this age period.

At middle adolescence a greater proportion of females than males were mildly and clinically depressed. However, although this effect was repeated in mildly depressed late adolescents, no significant difference in proportions were evident in clinically depressed late adolescents. Although a lesser proportion of the total male adolescents in the oldest age group were clinically depressed, the proportion of males to females at this highest level of depression was similar.

This suggests that patterns of sex differences may not be identical for different levels of depression over the course of adolescence. The complexities of the sex and age patterns at different levels of depression require clarification in future empirical studies.

Self-Efficacy Status and Age

Contrary to expectations, there was no evidence that self-efficacy increases with age in non-depressed male or female adolescents. These results may be interpreted in several ways.

First, it must be stated that self-efficacy status *as measured by the SES, PSE and MASE* did not increase with age. It may be proposed that the inventories used did not assess self-efficacy status in the domains where increases would occur with age. For example, none of the measures specifically assessed perceived self-efficacy in dealing with situations where adolescents would have to assert themselves in the family

context, or where they would be applying for a summer job. However, after being debriefed, subjects were asked to list situations where they thought it would be important for them to feel capable and competent. This written feedback included the situations cited above, as well as numerous others. Thus, it may be argued that the self-efficacy inventories used in the study may not have been of sufficient adolescent-specificity, and that certain areas in which self-efficacy is important and may increase with age were missed. This suggestion is offered as a recognition of a possible shortcoming in the current study, and as constructive criticism for future empirical work, rather than as an explanation for the negative findings.

A second interpretation of the observed lack of relationship between age and self-efficacy status may be that self-efficacy does not increase with age for adolescents, but that this increase occurs at an earlier time in childhood.

A third suggestion is that self-efficacy status may change or fluctuate in specific domains and in complex patterns which will not be reflected in the results of a cross-sectional correlational study. However, the current findings do not lend support to the hypothesis that self-efficacy status increases with age for adolescents.

Self-Efficacy Status and Level of Depression

As predicted, self-efficacy status was negatively correlated with level of depression in the adolescent sample tested. This correlation between Total Self-Efficacy and BDI Total Score suggests that low perceived self-efficacy is associated with depression, whereas higher levels of self-efficacy are related to lack of depression in this age group. This finding does not suggest that low self-efficacy status causes depression or that depression causes one's sense of efficacy to diminish. However, it does propose that a link exists between these two variables and that a closer examination of the nature of this relationship in adolescents is warranted.

The results indicated that in addition to the high negative correlation of BDI Total Scores with Total Self-Efficacy, this relationship was similarly observed in the more specific measures of self-efficacy.

Academic Self-Efficacy showed the highest correlation with level of depression, suggesting that Academic Self-Efficacy represents an area where perceptions of competence are of particular importance to adolescents. This is not surprising, given the current emphasis on academic performance and career competence. Adolescents are in a position where they must make decisions about career choices at an increasingly earlier age, so that they may specialize their coursework appropriately. In economically stressed times, competition for training in careers

is more pronounced and performance carries greater consequences. Adolescence represents a transition period from childhood--when effort is applauded and rewarded--to adulthood--when performance becomes the focus of evaluation (Elkind, 1984). Being an adolescent during an economically unstable time period will require adjustment to a relatively more salient shift from effort to performance as a basis for evaluation by others. Elkind (1981) has described the children of the eighties as "hurried" children forced to achieve more, earlier, than any other generation of children.

Adolescents are aware of these pressures, and it may be suggested that high levels of Academic Self-Efficacy will be adaptive and associated with positive personal adjustment. The current study showed that high levels of Academic Self-Efficacy were related to low levels of depression. In addition, Academic Self-Efficacy will be a more variable domain of self-efficacy, due to the fact that adolescents are immersed in their academic environments. Therefore, they will be developing academic skills and experience that will serve as a basis for continuous reassessment and modificaton of perceptions of academic self-competence.

General and Physical constituted two additional areas in which high levels of self-efficacy were associated with lack of depression. If is of interest that Social Self-Efficacy was not significantly related to level of depression. Given the importance of the peer group, and the advent of intimate

same-sex and heterosexual relationships during this period of development, it is surprising that perceived competence in social situations was not related to level of depression. However, if one examines the interrelationship of the specific self-efficacy variables, it becomes clear that Social Self-Efficacy was highly correlated with Total, Academic, and Physical Self-Efficacy. It may be suggested that a relationship exists between Social Self-Efficacy and level of depression, but that it may be less direct and more complex than those relationships observed in the other self-efficacy variables.

Academic, General, Physical and Social Self-Efficacy were interrelated, and correlated with Total Self-Efficacy. However, the magnitude and patterns of these correlations did not suggest that the four specific measures assessed identical areas of self-efficacy.

The results of the three-way analysis of variance provided additional support for the hypothesis that Total Self-Efficacy status differed significantly for depressed and non-depressed adolescents. In addition, this analysis indicated that the relationship between self-efficacy status and level of depression differed across age groups. The presence of a three-way interaction for Level of Depression X Sex X Age suggested that the association of level of depression with self-efficacy status was different for the two sexes. The results of this analysis, and the previous discussion of sex proportion differences in the prevalence of mild and clinical

depression across age groups, served as a basis for separating subsequent analyses for male and females.

The Total Self-Efficacy, Academic Self-Efficacy, General Self-Efficacy, Physical Self-Efficacy, and Social Self-Efficacy variables will be discussed in the following sections.

Total Self-Efficacy

The results indicated that the relationship between Total Self-Efficacy and level of depression was dissimilar for the two sexes. While Total Self-Efficacy in females differed for level of depression across all three age groups, in males this effect was observed in early and late adolescence, but not in middle adolescence. In addition, while there were no age differences in the Total Self-Efficacy scores of non-depressed females, a general decrease in Total Self-Efficacy was observed in non-depressed males across increasing age categories. Thus, although Level of Depression and Total Self-Efficacy were related in both male and female adolescents, it appears that in males, but not in females, the relationship between Total Self-Efficacy and level of depression differed as a function of age group membership.

The largest discrepancy between the Total Self-Efficacy status of males and females, as it relates to level of depression, was evident in the middle adolescent age group. It appears that for the middle adolescent males, Total

Self-Efficacy was not related to level of depression. That is, non-depressed, mildly depressed and clinically depressed males in this age group exhibited a similar Total Self-Efficacy status. It may be suggested that, in comparison with all same-sex groups and all opposite-sex age groups, the middle adolescent male is unique in that his perceived self-efficacy was more "robust". That is, there is no evidence of the negative relationship with level of depression revealed in all other age groups and for both sexes.

Individuals with high levels of self-efficacy have been shown to persist in their efforts when challenged by obstacles, problems and failure, whereas individuals with low levels of self-efficacy will slacken their efforts and give up (Bandura, 1986). Thus, high self-efficacy predicts active involvement in the environment, while low self-efficacy will promote eventual disengagement from the environment. It can be argued, that an elevated sense of self-efficacy in depressed individuals will increase their chances of remaining actively involved in their surroundings. Involvement in one's environment, in turn, is a prerequisite for the receipt of feedback, the acquisition of new skills, and maintenance of the social support system. Thus, it is suggested that mildly and clinically depressed middle adolescent males may have a cognitive defense mechanism against depression--a heightened or elevated percept of self-efficacy.

In line with this arguement, it was noted that although Total Self-Efficacy status was not correlated with age in the

sample of non-depressed adolescents, it appears that for non-depressed male adolescents Total Self-efficacy status decreased with age. This may suggest that normal male adolescents are exhibiting a protective mechanism against depression. Thus, males may be protected by an inflated sense of self-efficacy at the onset of adolescence, which is modified or solidified during the course of adolescence. With the presence of depression, the protective mechanism may trigger a defense mechanism. Thus, the same cognitive mechanism may be viewed as operating in both non-depressed and depressed adolescent males. Its function would be protective in non-depressed and defensive in depressed individuals. However, this hypothesis could only be tested by a longitudinal design.

Based on the current results, it is clear that the level of Total Self-Efficacy status of males is not similar across age groups and within levels of depression. This is interpreted to mean that the self-efficacy status of males is more fluid and less stable than that of females. Thus, it is possible that self-efficacy status may be "developing" over the course of adolescence for males, but before adolescence for females. If a cognitive defense mechanism does exist, it would require that perceived self-efficacy be <u>flexible</u> rather than firmly established.

If in fact a protective mechanism exists in male adolescents, it does not appear to be present in females, or at least not as predominantly as in males. This is of particular

interest in light of the previously cited evidence for an increasing female preponderance of depression during the course of adolescence. It should also be underlined here that no differences were found in the proportion of males to females exhibiting either mild or clinical depression in the early adolescent age group. Similarly, Total Self-Efficacy scores were significantly different for non-depressed, mildly depressed and clinically depressed males in the early adolescent age group, while this difference was not repeated in the middle adolescent age group. Thus, the "transition period" from male to female preponderance in early adolescence may preclude the manifestation of the suggested defense mechanism.

It should be noted here that Total Self-Efficacy is an artificial variable, in that it represents the sum of all other self-efficacy variables. Thus, it is necessary to continue this discussion by examining the specific self-efficacy variables. That is, given that Total Self-Efficacy is related to Level of Depression, it will be important to investigate whether specific areas of self-efficacy contribute to a greater extent than others to the demonstrated relationship, and if sex differences are more apparent in particular areas of self-efficacy.

Academic Self-Efficacy

In accordance with the findings for Total Self-Efficacy, in both males and females, Academic Self-Efficacy status differed significantly for non-depressed, mildly depressed and clinically

depressed adolescents. Again, the results for males showed differences between age groups, whereas this was not the case for females. Similar to the effects shown for Total Self-Efficacy, middle adolescent males did not differ in Academic Self-Efficacy status across the three levels of depression. This is in contrast with the other same-sex and all of the opposite-sex age groups. However, it is of interest that differences in early adolescent males were more clearly delineated between levels of depression for Academic Self-Efficacy than they were for Total Self-Efficacy. That is, clear differences between the Academic Self-Efficacy mean scores of early and late adolescent males were in evidence, whereas the corresponding means for Total Self-Efficacy had only approached significance. This suggests, that Academic Self-Efficacy in adolescent males allows for clearer distinctions between age and level of depression groupings. The effects noted for Total Self-Efficacy were repeated, but more clearly differentiated.

In contrast, for females, this suggestion can be reversed. Although similar effects were noted for Total and Academic Self-Efficacy, in that Academic Self-Efficacy differs with level of depression in early, middle and late adolescent females, non-depressed early adolescent females do not differ from mildly depressed adolescent females in their Academic Self-Efficacy scores. However, this difference had been observed for Total Self-Efficacy. Similarly, Academic Self-Efficacy, like Total Self-Efficacy, differs for non-depressed and mildly depressed

late adolescent females, but not for non-depressed and clinically depressed late adolescent females. These discrepancies may be interpreted to mean that, although Academic Self-Efficacy and level of depression are related in all adolescents, this relationship is more pronounced in males.

In line with the previous suggestion of the existence of a protective mechanism in middle adolescent males, while Academic Self-Efficacy differentiated non-depressed, mildly depressed and clinically depressed early adolescent males more clearly than Total Self-Efficacy, the mean scores for middle adolescent males were more similar in Academic ($p>.15$) than in Total ($p>.05$) self-efficacy status. Thus, if the possibility of a defense mechanism operating in middle adolescent males is accepted, it may be argued that it is manifested more clearly in the specific area of Academic Self-Efficacy than in Total Self-Efficacy.

As in Total Self-Efficacy, non-depressed adolescent males exhibited a decrease in Academic Self-Efficacy as a function of increasing age. However, this effect was more pronounced in the latter variable. Thus, although there is no evidence to support the hypothesis that self-efficacy status increased with age in adolescence for non-depressed individuals, fluctuations did occur. In this case, for normal adolescent males, Total Self-Efficacy--and more specifically Academic Self-Efficacy--appeared to decrease with age. Although no conclusions with regard to self-efficacy development are warranted in the context of a cross-sectional study, this

finding may again suggest that perceived self-efficacy "solidifies", rather than simply increases, during the course of adolescence.

General Self-Efficacy

In contrast with the Total and Academic Self-Efficacy variables no age differences in males were revealed in General Self-Efficacy. That is, General Self-Efficacy scores differed significantly for non-depressed, mildly depressed, and clinically depressed adolescents for both sexes and across all age groups. Therefore, if one examines the results for males for General Self-Efficacy, based on the findings for Total and Social Self-Efficacy, it can be suggested that the relationship between General Self-Efficacy status and depression resembles that exhibited in females for Total, Academic and General Self-Efficacy. The possibility of a defense mechanism in mildly depressed and clinically depressed adolescent males is not illustrated in General Self-Efficacy status.

It is important to conceptually differentiate General and Total Self-Efficacy. Total Self-Efficacy represents a summation of perceived self-efficacy in different domains of functioning. General Self-Efficacy, on the other hand, is defined as one's global or generalized sense of self-efficacy, rather than an additive combination of self-efficacy in very specific areas. Thus, an adolescent may rely on perceived General Self-Efficacy when judging his or her ability to deal with novel situations

where experience and skills are lacking. One's sense of General Self-Efficacy is abstracted from previous experiences and self-efficacy judgements based on those experiences (Total Self-Efficacy). It is currently not known how this abstraction occurs, or if the process differs for males and females. At this point, it cannot be assumed that Total Self-Efficacy status will be similar to General Self-Efficacy status.

If a protective mechanism exists in adolescent males, and more specifically in the form of a defense mechanism in middle adolescent mildly and clinically depressed males, it would probably be specific rather than general in nature. If self-efficacy predicts effort and persistence in behaviour, and if effort and persistence in behaviour maximize the potential for skill acquisition and positive feedback, it would be eminently more adaptive for the depressed adolescent to focus on specific and familiar areas of functioning rather than on diffuse, unknown situations. Thus, the lack of age effects in General Self-Efficacy for males may support rather than negate the possibility of a protective self-efficacy mechanism. The examination of General Self-Efficacy as an accurate measure of self-efficacy may be suggested, in that General Self-Efficacy bears a direct relationship with level of depression and does not suggest age or sex differences. In light of the current hypothesis, it may be postulated that the protective and defensive functions of the mechanism do not operate as generalized percepts of self-efficacy, but instead are

manifested in specific areas of self-efficacy. Therefore, the level of depression will be more accurately reflected in General Self-Efficacy status.

Physical Self-Efficacy

Similar to the results reported for Total, Academic and General Self-Efficacy, Physical Self-Efficacy status differed for non-depressed, mildly depressed and clinically depressed adolescents. However, the age differences reported for middle adolescent males in Total and Academic Self-Efficacy were extended to late adolescent males in the case of Physical Self-Efficacy. That is, non-depressed, mildly depressed and clinically depressed males in the middle and late adolescent age groups did not differ in Physical Self-Efficacy status. It may be suggested that Physical Self-Efficacy is so significant to male adolescents that the protective mechanism is manifested in the late adolescent years, as well as in the middle adolescent years. If one compares the Academic with the Physical Self-Efficacy status of middle adolescent males, it becomes evident that the means of middle and late adolescent males across levels of depression for Physical Self-Efficacy are even more similar than those for Academic Self-Efficacy. Thus, if a defense mechanism for depressed male adolescents in the form of perceived self-efficacy does exist for adolescent males, it may be suggested that its operation is displayed most prominently in the realm of Physical Self-Efficacy, and somewhat less saliently

in the domain of Academic Self-Efficacy.

One unique feature of affective symptomology in adolescent males is a pattern of "unfocused restlessness" and "agitated boredom" (Carlson & Cantwell, 1983). It may be suggested that these symptoms are related to an inflated perception of self-efficacy. Ryckman et al. (1985) demonstrated that individuals who scored highly on the PSE tended to seek stimulating behaviour. Thus, the male adolescent may seek physical activity, but lacks skills or experience. Physical efforts remain diffuse and are manifested as unfocused activity and reported as "boredom" with the environment. Bandura (1986) has emphasized that the enactive and vicarious modes of learning are most effective in causing increases in self-efficacy status. More specifically, vicarious learning is optimized with models who are perceived as similar in terms of personal attributes and characteristics, such as age. It may be postulated that depressed middle and late adolescents, participating in physical activity and interacting with physically competent peers, are maximizing their potential for both enactive and vicarious learning. The acquisition of physical skills and physical confidence may allow for the development of "real" physical self-efficacy, and a concomitant decrease in depression.

Acting out and aggressive behaviour (Geller et al., 1985) are similarly associated with depression in adolescent males, and may represent an exacerbated form of this phenomenon. It is of interest to note that adolescents recognize aggressive acting

out in their peers as an indicator of depression (Siegel & Griffin, 1983).

For females, the patterns of results for Physical Self-Efficacy are similar to those reported in other areas of self-efficacy. Physical Self-Efficacy discriminated non-depressed from clinically depressed females across all three age groups, but it does not differentiate mildly depressed from clinically depressed, and non-depressed from mildly depressed females. Total Self-Efficacy, for example, had revealed more specific distinctions in the levels of depression.

Social Self-Efficacy

Social Self-Efficacy was the only Self-Efficacy variable which was not correlated with Level of Depression. The results of the analyses of variance, however, indicated that Social Self-Efficacy status differed significantly with level of depression for both males and females, and that age effects were evident for male adolescents.

Again for males in the middle adolescent age group, non-depressed, mildly depressed, and clinically depressed individuals did not exhibit different levels of Social Self-Efficacy status. The Social Self-Efficacy status of early and late adolescents differed across levels of depression. Thus, the hypothesis of a defense mechanism can be restated in the context of Social Self-Efficacy.

Social Self-Efficacy did not differ significantly for non-, mildly or clinically depressed females in the middle and late adolescent age groups. This effect is similar to the one noted in Physical Self-Efficacy for males, but is smaller in magnitude. Thus, Social Self-Efficacy may represent an area of self-efficacy where the proposed cognitive defense mechanism may operate for female adolescents. Depressed middle and late female adolescents may exhibit an inflated sense of Social Self-Efficacy, allowing them to remain engaged in their social environment. If successful, this search for social stimulation--and the possible consequences of increases in social skills, experience and social self-efficacy--may serve to offset the depression. In this sense, an initial inflated sense of self-efficacy potentiates the development of a skill- and experience-based self-efficacy status.

One feature of affective symptomology in adolescent females is acting out behaviour in the form of promiscuity (Cantwell & Carlson, 1983). It may be suggested that depressed adolescent females will in some cases seek social engagement in maladaptive ways, especially if initial efforts toward increased social involvement are unsuccessful. It should be stated here, that inflated self-efficacy is "artificial" in that it is not based on real experiences or skills. In this sense, heightened self-efficacy in depressed adolescents may be thought of as a "mask of self-efficacy", promoting active involvement in specific areas of functioning, rather than the integration of

cognitive, social and behavioural skills normally associated with self-efficacy judgements (Bandura, 1982a).

Although the cognitive "defense mechanism" hypothesized in the context of middle adolescent males is suggested for females in the area of Social Self-Efficacy, the statistical effects underlying this hypothesis are smaller in magnitude. Similarly, the decrease in self-efficacy with age noted in non-depressed male adolescents was not in evidence for non-depressed female adolescents, suggesting that the "protective" form of the mechanism is not present in females. In addition, given the set of self-efficacy domains examined in this study, female adolescents are at a disadvantage in terms of the number of areas in which this defense mechanism is thought to operate. However, it cannot be concluded that the current study sampled all relevant areas of self-efficacy.

Profiles of Self-Efficacy

The profiles generated for the 18 Age X Level of Depression X Sex groups are descriptive of the current sample, rather than classificatory or predictive in nature. An examination of these profiles suggests that for non-depressed males and females the configurations are generally similar. However, although the profiles of mildly depressed adolescents are similar for early male and female adolescents, discrepancies are noted for the middle and late adolescent age groups. Of particular interest is

a comparison between the profiles of clinically depressed male and female middle adolescents. Although the profiles are similar in structure, the male scores are elevated.

The profiles have been presented as an alternative description of the results already reported, rather than as an additional set of findings. Given the current sample size and the exploratory nature of the research study, it must again be emphasized that these profiles may not be used to predict Age X Sex X Level of Depression group membership in new samples of adolescents.

Age-Related Changes in the Dependence of Depression on Self-Efficacy Status

The results of the regression analysis showed that the selected set of four self-efficacy variables--General, Academic, Physical and Social Self-Efficacy--predicted depression scores for adolescents in all six Sex X Age groups. This suggests that a complete assessment of General, Academic, Physical and Social Self-Efficacy status will provide an accurate measure of the level of depression exhibited by early, middle and late adolescent males and females.

An examination of the standard errors of estimate provided a measure of the accuracy of these predictions as a function of Age X Sex group membership. The most accurate prediction of depression scores on the basis of the four self-efficacy

variables was evident for middle adolescent males, whereas the least accurate prediction could be made for middle adolescent females. The accuracy of predictions was greater for males than for females across all three age groupings. These findings may be interpreted to mean that self-efficacy status reflects the level of depression more precisely in males than in females. In accordance with the previous discussion, the self-efficacy status of males is thought to be more "fluid" and less stable than that of their female counterparts. For males, the largest standard error of estimate was reported in the late adolescent group, indicating that for this sex the least accurate prediction can be made for the oldest age group. This finding lends support to the hypothesis that, as adulthood is approached, self-efficacy status decreases in its predictive value for depression scores. Given that for females, self-efficacy measures are generally less reliable predictors of level of depression than they are for males, it may be postulated that self-efficacy status is more solidified in female adolescents, and therefore relatively less related to level of depression. This hypothesis is in accordance with research showing that, females mature somewhat earlier and more rapidly than males in terms of physical, emotional and cognitive development during the adolescent years (Puig-Antich, 1980). A closer examination of the results of the regression analyses for each of the six Sex X Age groups revealed age-related changes in the dependence of depression scores on specific areas of self-efficacy status.

For males, General Self-Efficacy status contributed most significantly to the prediction of depression scores of middle adolescents. For females, General Self-Efficacy status also contributed most significantly to the level of depression of middle adolescents. For both males and females, the contribution of General Self-Efficacy to BDI variance was minimal in the late adolescent age group. These findings show that General Self-Efficacy status contributes similarly to the prediction of depression scores for males and females, but that this effect generally decreases as adulthood is approached.

For males, Academic Self-Efficacy status contributed most significantly to the depression scores of early adolescents, whereas for females, this effect was evident in the late adolescent age group. These results suggest that while Academic Self-Efficacy was relatively more important to the prediction of depression in males at the onset of adolescence, this self-efficacy variable increased in its ability to predict depression in female adolescents as a function of age.

Physical Self-Efficacy status contributed similarly to the prediction of depression scores for males and females in the early adolescent age group. However, while in males the relative contribution diminished in the middle and late adolescent age groups, in females the effect increased as a function of incremental age categories. Thus, Physical Self-Efficacy status reflects level of depression in middle and late adolescent females, but not in middle and late adolescent males. This

finding conforms to the previous hypothesis that a physical self-efficacy cognitive defense mechanism may operate in middle and late adolescent males. The presence of this cognitive defense mechanism would prohibit the prediction of depression scores on the basis of Physical Self-Efficacy scores.

In the early adolescent age group, Social Self-Efficacy status contributed most significantly to the prediction of depression scores for females, but least for males in comparison with the two same-sex age groups. While Social Self-Efficacy status contributed to this prediction in middle and late adolescent males, this effect was less pronounced for late adolescent females and minimal for middle adolescent females. It had been proposed that Social Self-Efficacy may be the one area of self-efficacy investigated in this study, in which middle adolescent females are able to defend against depression by manifesting elevated percepts of efficacy.

In the early adolescent age group, Academic Self-Efficacy contributed more significantly to the prediction of depression scores of males than the other three self-efficacy variables, while for females this effect is evident in Social Self-Efficacy. The Physical Self-Efficacy status of males and the General Self-Efficacy status of females represented additional important predictors of depression in the early adolescent age group.

In the middle adolescent age group, General Self-Efficacy contributed most significantly to the prediction of level of depression in males, with Social Self-Efficacy representing an important additional predictor. The corresponding predictor variables for females were Physical and Academic Self-Efficacy status.

The most, and second most, important predictors of depression scores in the late adolescent age group were Social and Academic Self-Efficacy for males, and Physical and Academic Self-Efficacy for females.

In summary, Academic Self-Efficacy status was the most significant predictor of depression for early adolescent males, General Self-Efficacy for middle adolescent males, and Social Self-Efficacy for late adolescent males. In females, Social Self-Efficacy status contributed most significantly to the prediction of depression scores for early adolescent females, and Physical Self-Efficacy manifests this effect for both middle and late adolescent females. However, it should be emphasized that, although these self-efficacy variables contribute <u>most</u> significantly of the four specific measures of self-efficacy status to the prediction of depression scores in the respective Age X Sex group, the most accurate predictions were made on the basis of an assessment of <u>all four</u> self-efficacy measures.

It can be concluded that age-related changes in the dependence of depression on self-efficacy status are in

evidence, and that the patterns of these changes differ for male and female adolescents. Although a significant relationship between level of depression and Total Self-Efficacy status was evident across all Sex X Age groups, the relative importance of specific areas of self-efficacy changed as a function of sex and group membership. These findings may suggest shifts in the focus of the relationship between level of depression and specific self-efficacy areas.

Summary

1. The prevalence of mild and clinical depression in approximately one third of a non-clinical adolescent population generally corresponded with past investigations. A shift from male to female preponderance after puberty was confirmed, although there was some suggestion that the patterns of sex differences differed for mild versus clinical depression.
2. Contrary to expectations, neither Total Self-Efficacy status nor self-efficacy status in specific areas increased with age in non-depressed adolescents. It was suggested that self-efficacy status may increase with age prior to adolescence, that the measures used may have lacked in specificity, or that self-efficacy status may fluctuate in complex patterns that were not revealed in the current study.
3. As hypothesized, Total, Academic, General and Physical

Self-Efficacy status are negatively correlated with level of depression. However, for Social Self-Efficacy, this relationship was not evident. The relationship between Self-Efficacy and Level of Depression was shown to differ for sex and age levels and suggested separate analyses for male and female adolescents.

4. Total Self-Efficacy scores differed for level of depression in both male and female adolescents. However, for males in the mid-adolescent age group this effect was not in evidence. In addition, Total Self-Efficacy scores differed across age groups in non-depressed adolescent males. It was suggested that non-depressed adolescent males exhibit a protective mechanism against depression in the form of inflated perceptions of self-efficacy. Depressed middle adolescents may be defending against depression by means of a similar mechanism.
5. The effect shown for Total Self-Efficacy was repeated in the Academic Self-Efficacy variable. It appeared that the trends noted for Total Self-Efficacy were more clearly delineated for Academic Self-Efficacy in males, but less clearly in females.
6. General Self-Efficacy differed significantly for levels of depression across all age groups and for both sexes. The age effects demonstrated for Total and Academic Self-Efficacy in males were not evident for General Self-Efficacy.
7. The Physical Self-Efficacy status of mildly and clinically depressed males did not differ from that of non-depressed

males for both the middle adolescent and the late age groups. This was interpreted as a possible extension of the hypothesized defense mechanism to an older age group in this specific area of self-efficacy.

8. The Social Self-Efficacy status of mildly and clinically depressed middle and late adolescent females did not differ from that of non-depressed middle and late adolescents. It was proposed that Social Self-Efficacy may constitute one area in which female adolescents are able to defend against depression.

9. Descriptive self-efficacy profiles for the 18 Age X Sex X Level of Depression groups provided an alternative presentation of the reported results. Cautions against using these profiles for classificatory or predictive purposes were expressed.

10. The set of four self-efficacy variables--General, Academic, Physical and Social--predicted depression scores for all six Sex X Age groups. This prediction was most accurate for middle adolescent males, and least accurate for middle adolescent females. A comparison of the contributions of the four self-efficacy variables to the prediction of level of depression showed that the best predictor for early adolescent males was Academic Self-Efficacy, for middle adolescent males was General Self-Efficacy, for late adolescent males and early adolescent females was Social Self-Efficacy, and for middle adolescent and late adolescent females was Physical Self-Efficacy.

Limitations of the Current Study

The current findings must be interpreted in the context of the following limitations:

1. It is possible that the self-efficacy measures used in this study lacked in age-specificity, in that they may have missed areas of functioning in which self-efficacy would be important to adolescents.
2. The current study is cross-sectional and not longitudinal. Conclusions about the development of self-efficacy are not warranted, although developmental hypotheses may be generated on the basis of the reported findings.
3. The district sampled represents a high socioeconomic status area. However, one of the schools used in the study included students from several districts in the Greater Vancouver area engaged in an alternative educational program. Nevertheless, some caution in extending the current findings to the general adolescent population is warranted.
4. The current study did not assess the pubertal stage of the subjects. Given that pubertal changes occur at different times in males and females, the comparison of the two sexes based on chronological age may not be appropriate.

Toward a Self-Efficacy Model of Adolescent Depression

It has been hypothesized that adolescents, in particular male adolescents, may be exhibiting a cognitive mechanism in the form of inflated self-efficacy which protects them from depression,

and in cases where depression occurs, will allow them to defend against it. Although the current findings are not able to confirm that this is true, and although this is only one of many possible interpretations, it is possible to organize the findings in a model which may serve as a basis for generating new hypotheses.

In early adolescence the relationship between self-efficacy status and depression is similar for the two sexes. During this period there were no differences noted in the proportion of males to females exhibiting mild or clinical depression. However, for non-depressed male adolescents Academic Self-Efficacy decreases with age. Similarly, Academic Self-Efficacy was shown to contribute more significantly than the other three specific self-efficacy variables to the prediction of depression scores of early adolescent males. Thus, non-depressed males may enter adolescence with a slightly higher sense of Academic Self-Efficacy than that exhibited by middle and late adolescents. This initially higher self-efficacy status may promote active involvement in the school environment and thus may maximize the potential acquisition of skills and experiences. The acquisition of skills and experiences will in turn promote the development of "real" self-efficacy, which is associated with a lack of depression. Depressed early adolescent males do not appear to exhibit this inflated sense of Academic Self-Efficacy, but their level of depression is, nevertheless, most significantly related to this area of self-efficacy.

The discussion thusfar has made reference to "inflated" or "elevated" self-efficacy status. It is important to conceptually differentiate these terms from what Bandura (1986) has defined as self-efficacy status. It may be suggested that the higher levels of self-efficacy status--exhibited by depressed middle and late, but not early adolescents--represent self-efficacy-like percepts. These self-efficacy-like percepts may reflect self-reported judgements--cognitive measures--of self-efficacy status, but may lack the behavioural component normally associated with self-efficacy judgements. The concept of self-efficacy is a cognitive-behavioural construct comprised of cognitive and behavioural components, and of the integration of these two elements. The self-efficacy-like percepts, discussed in this context as elevated or inflated, may represent the cognitive component, while lacking the behavioural and integrative components. Therefore, these percepts may be less accurate in predicting performance than Bandura's (1986) self-efficacy studies have generally demonstrated. This hypothesis could be addressed in replications of the current study using behavioural measures in addition to the self-efficacy inventories.

Non-depressed females do not exhibit a decrease in any areas of self-efficacy with age. It appears that they enter adolescence with a stable percept of self-efficacy which does not fluctuate across age groups. It could be argued that in female adolescents self-efficacy percepts have solidified to the

point that changes in the level of self-efficacy would be unlikely. Similarly, the increase or inflation of self-efficacy suggested by a protective or defense mechanism would also not be expected. For early adolescent females, depression scores are best predicted on the basis of Social Self-Efficacy status. Thus, it may be suggested that for females in this age group social functioning is of prime importance, and depression will consequently be reflected in Social Self-Efficacy scores. This arguement is supported by the literature, which has shown that female adolescent development is accelerated in comparison with that of males.

In males, depression may trigger a cognitive defense mechanism in the form of inflated percepts of self-efficacy--a more extreme form of the hypothesized protective mechanism. This cognitive defense mechanism may operate by promoting active involvement in specific areas of functioning. The hypothesized mechanism is most prominent in the areas of Physical Self-Efficacy, where it operates both for middle and for late male adolescents. In this sense, male adolescents may be functioning with a "mask of physical self-efficacy", reflecting the cognitive component of self-efficacy status. However, being an inflated rather than a realistic judgement of self-efficacy, it lacks in substance. That is, it does not reflect skills and experiences, but rather serves the function of allowing the depressed adolescent to remain engaged in his environment, so that the possibility of gaining the lacking skills, experiences

and feedback are optimized. Due to the fact that this "masked self-efficacy" does not reflect real skills and experiences, the male adolescent's activity remains unfocused. In some cases, these activities may be channeled into inappropriate areas. In the case of Physical Self-Efficacy, this may take the form of aggressive acting out behaviour, a symptom associated with depression in male adolescents.

The areas in which this cognitive mechanism is thought to operate are highly specific. That is, the adolescent focuses his energy into physical or academic functioning. It was noted that the age effects reported in all other self-efficacy variables for males were not evident in the area of General Self-Efficacy. In accordance with this hypothesis, General Self-Efficacy was shown to be the most significant predictor of depression scores for middle adolescent males, suggesting that depression is reflected in generalized percepts of self-efficacy. This may propose that although "masks of self-efficacy" operate in specific areas of functioning, they will not generalize to global percepts of self-efficacy.

The female adolescent does not exhibit the hypothesized cognitive defense mechanism except in the area of Social Self-Efficacy, where mildly depressed and clinically depressed middle adolescents were shown to score similarly to non-depressed adolescents. The effect is smaller in magnitude than that found in their male counterparts, and is limited to the area of social functioning. In females "masks of social

self-efficacy" may misdirect activity to acting out behaviour, such as promiscuity, which has been associated with the affective symptomology of female adolescents. It is of interest to note that for both middle and late adolescent females, Physical Self-Efficacy contributes most significantly to the prediction of depression scores on the basis of self-efficacy status. It may be hypothesized that for depressed middle and late adolescent females an important relationship exists between Social and Physical Self-Efficacy status. That is, social functioning relies in part on physical self-confidence, body image, and sexual awareness. Although female adolescents may be defending against depression with "masks of social self-efficacy", this cognitive defense mechanism does not extend to an inflated sense of Physical Self-Efficacy, in that the statistical effect is not repeated for the Physical Self-Efficacy variable. In the case of a depressed female adolescent, who is acting out in the form of promiscuity, this behaviour may in fact be related to a decrease in Physical Self-Efficacy status.

Therefore, the unique features of adolescent affective symptomology may be thought of as the manifestation of "masks of self-efficacy". That is, self-efficacy percepts are elevated and consequently promote active involvement in areas of deficit. The distorted nature of these "masks of self-efficacy", in that they do not reflect true skill or experience levels--thus lacking the behavioural component of self-efficacy status--, may explain the

misdirected focus or awkward outcomes of the adolescent's efforts--the acute boredom, the unfocused restlessness, and the acting out behaviours associated with adolescent depression. However, these masks may be also be adaptive, in that they allow for continued engagement in the environment. Skills and experiences can only be acquired, and feedback can only be received if one maintains contact with the environment. The true integration of cognitive, behavioural and social skills in the form of self-efficacy judgements then becomes a possibility. As revealed in the findings of this study, high levels of self-efficacy are associated with low levels of depression. Therefore, in some cases "masks of self-efficacy" might offset the depression. Again, it must be underlined that the cross-sectional design of the current study renders these suggestions theoretical possibilities, rather than a causal chain of events demonstrated by the data.

It is of interest to note that research in adult depression (e.g., Beck et al., 1979) has revealed the presence of cognitive distortions in depressed individuals. These cognitive distortions generally involve the underestimation of personal abilities, a focus on negative outcomes, and the perception that circumstances will not change in the future. However, the current findings offer some suggestion that depressed adolescents may err somewhat more positively than adults, in that they exhibit inflated percepts of self-competence. As a consequence, they may increase their potential for positive

changes. These cognitive distortions may, therefore, be viewed as more adaptive than those exhibited by adults.

This interpretation is most closely related to the results of the analyses of variance. It should be noted that the findings of the regression analyses showed negative regression weights in the prediction of depression scores for all self-efficacy variables. However, an examination of these regression weights, in terms of their contribution to the variance of depression scores, indicated comparatively minimal contributions of different self-efficacy variables for the Sex by Age groups.

This interpretation suggests that the recognition of depression during adolescence may allow for more successful interventions than in the older age group, in that the cognitive features related to the depression are more flexible, adaptive, and perhaps will be more receptive to change. In addition, it may be argued that the nature of adult and adolescent depression differs in terms of the type of cognitive distortion associated with the depression.

Conclusions and Implications for Further Study

As predicted self-efficacy status has been shown to bear an important relationship with level of depression. Age-related changes in this relationship involved shifts in the relative importance of self-efficacy status in specific areas of

functioning and differed for the two sexes. These patterns will require clarification in empirical investigations of longitudinal rather than cross-sectional design.

In addition, an adolescent-specific measure of self-efficacy should be constructed by examining areas in which adolescents report that feelings of competence and confidence would be important to them.

The postulated self-efficacy model of adolescent depression may be used to generate multiple empirically testable hypotheses. However, even if the model is not used or cannot be validated, the current findings carry important implications for the understanding and treatment of adolescent depression.

Theories of adolescent depression differ in the conceptualization of the role of features unique to the affective symptomology of this age group. These features are discussed as presenting complaints, early prodromal manifestations of the illness, associated symptoms, or forms of masked depression. It will be argued here that <u>how</u> these features are labelled is of minimal importance. Of prime importance is an increased understanding of, and improved ability to recognize, the depressed adolescent. The current findings have shown the presence of a strong relationship between self-efficacy status and adolescent depression. It is thought that this relationship will potentially add to our understanding of the nature of adolescent depression. In

addition, it is hoped that an increased understanding of this relationship will suggest forms of treatment. If high levels of self-efficacy are associated with lack of depression, then increases in the self-efficacy status of depressed adolescents should be related to a lessening of the depression. Empirical studies of changes in self-efficacy status (Bandura, 1986) have demonstrated optimal strategies for affecting increases in perceived efficacy.

The magnitude of the negative correlation between level of depression and self-efficacy status begs the question of whether both variables are measuring the same dimension, and if in fact the knowledge of self-efficacy status contributes additional information. The assessment of self-efficacy status suggests a specific solution for remediation. That is, not only can a specific deficit in a particular area be identified, but further investigation could clarify if this deficit is skill- or experience-based, or related to a lack of integration of cognitive and behavioural components. The assessment of depression per se is indisputably necessary, but it does not carry potential "solutions". Thus, it can be argued that the examination of the self-efficacy status of depressed adolescents is of importance both in terms of understanding the nature of the depression as well as for suggesting possible treatment strategies. If the hypothesized model were valid, these treatment strategies would involve the reproduction or modification of what adolescents already "do naturally".

CHAPTER V

APPENDIX A

Test Battery

CODE NUMBER _____

****

SURVEY FOR HIGH SCHOOL STUDENTS

****

PLEASE DO NOT WRITE YOUR NAME ON THIS FORM. FILL IN ONLY THE REQUIRED INFORMATION.

AGE: ..... _____ YEARS _____ MONTHS

SEX: ..... MALE FEMALE (CIRCLE ONE)

GRADE LEVEL: ..... _____

ARE YOU IN THE ACADEMIC MAINSTREAM? ..... YES NO (CIRCLE ONE)

ARE YOU PLANNING TO CONTINUE YOUR EDUCATION BEYOND THE HIGH SCHOOL LEVEL (COLLEGE, UNIVERSITY)? ..... YES NO NOT SURE (CIRCLE ONE)

THIS SURVEY IS DIVIDED UP INTO THREE QUESTIONNAIRES. SEPARATE INSTRUCTIONS ARE PROVIDED FOR EACH QUESTIONNAIRE. IT IS IMPORTANT THAT YOU ANSWER THE QUESTIONS IN THIS SURVEY AS HONESTLY AS POSSIBLE. PLEASE WORK AS QUICKLY AS YOU CAN. IF YOU HAVE ANY QUESTIONS, RAISE YOUR HAND AND I WILL COME OVER TO HELP YOU. YOU MAY BEGIN NOW. *****

QUESTIONNAIRE NUMBER ONE

On this questionnaire are groups of statements. Please read each group carefully. Then pick the one statement in each group which best describes the way you feel.

Circle the number beside the statement you have picked.

If several statements in the group seem to apply equally well, circle each one. Please turn to the next page.

→

.../2

GROUP 1 :	I do not feel sad	0
	I feel sad	1
	I am sad all the time and I can't seem to snap out of it	2
	I am so sad or unhappy that I can't stand it	3
GROUP 2 :	I am not particularly discouraged about the future	0
	I feel discouraged about the future	1
	I feel I have nothing to look forward to	2
	I feel that the future is hopeless and that things cannot improve	3
GROUP 3 :	I do not feel like a failure	0
	I feel I have failed more than the average person	1
	As I look back on my life, all I can see is a lot of failures	2
	I feel I am a complete failure as a person	3
GROUP 4 :	I get as much satisfaction out of things as I used to	0
	I don't enjoy things the way I used to	1
	I don't get real satisfaction out of anything anymore	2
GROUP 5 :	I don't feel particularly guilty	0
	I feel guilty a good part of the time	1
	I feel quite guilty most of the time	2
	I feel guilty all of the time	3
GROUP 6 :	I don't feel I am being punished	0
	I feel I may be punished	1
	I expect to be punished	2
	I feel I am being punished	3
GROUP 7 :	I don't feel disappointed in myself	0
	I am disappointed in myself	1
	I am disgusted with myself	2
	I hate myself	3
GROUP 8 :	I don't feel I am any worse than anybody else	0
	I am critical of myself for my weaknesses or mistakes	1
	I blame myself all the time for my faults	2
	I blame myself for everything bad that happens	3
GROUP 9 :	I don't have any thoughts of killing myself	0
	I have thoughts of killing myself, but I would not carry them out	1
	I would like to kill myself	2
	I would kill myself if I had the chance	3

.../3

GROUP 10 :	I don't cry any more than usual	0
	I cry more now than I used to	1
	I cry all the time now	2
	I used to be able to cry, but now I can't cry even though I want to ...	3
GROUP 11 :	I am no more irritated now than I ever am	0
	I get annoyed or irritated more easily than I used to	1
	I feel irritated all the time now	2
	I don't get irritated at all by the things that used to irritate me ...	3
GROUP 12 :	I have not lost interest in other people	0
	I am less interested in other people than I used to be	1
	I have lost most of my interest in other people	2
	I have lost all of my interest in other people	3
GROUP 13 :	I make decisions about as well as I ever could	0
	I put off making decisions more than I used to	1
	I have greater difficulty in making decisions than before	2
	I can't make decisions at all anymore	3
GROUP 14 :	I don't feel I look any worse than I used to	0
	I am worried that I am looking old or unattractive	1
	I feel that there are permanent changes in my appearance that make me look unattractive	2
	I believe that I look ugly	3
GROUP 15 :	I can work about as well as before	0
	It takes an extra effort to get started at doing something	1
	I have to push myself very hard to do anything	2
	I can't do any work at all	3
GROUP 16 :	I can sleep as well as usual	0
	I don't sleep as well as I used to	1
	I wake up 1 to 2 hours earlier than usual and find it hard to get back to sleep	2
	I wake up several hours earlier than I used to and cannot get back to sleep	3
GROUP 17 :	I don't get more tired than usual	0
	I get tired more easily than I used to	1
	I get tired from doing almost anything	2
	I am too tired to do anything	3
GROUP 18 :	My appetite is no worse than usual	0
	My appetite is not as good as it used to be	1
	My appetite is much worse now	2
	I have no appetite at all anymore	3

.../4

GROUP 19 :	I haven't lost much weight, if any, lately	0
	I have lost more than 5 pounds	1
	I have lost more than 10 pounds	2
	I have lost more than 15 pounds	3
	I am purposely trying to lose weight by eating less	Yes No

GROUP 20 :	I am no more worried about my health than usual	0
	I am worried about physical problems such as aches and pains; or upset stomach; or constipation	1
	I am so worried about physical problems and it's hard to think about much else	2
	I am so worried about my physical problems that I cannot think about anything else	3

GROUP 21 :	I have not noticed any recent change in my interest in sex	0
	I am less interested in sex than I used to be	1
	I am much less interested in sex now	2
	I have lost interest in sex completely	3
	(** "Sex" means different things to different people--use your own per-)	
	(sonal meaning of the word when answering this question.)	

END OF QUESTIONNAIRE NUMBER ONE

*** QUESTIONNAIRE NUMBER TWO ***

This questionnaire is a series of attitude statements about you. I am interested in the extent to which you agree or disagree with them.

Please read each statement carefully. Then indicated how much you agree or disagree by circling the appropriate number after each statement. The numbers and their meanings are explained below.

If you agree strongly with the statement,	Circle number	1
If you agree somewhat with the statement,	Circle number	2
If you agree slightly with the statement,	Circle number	3
If you disagree slightly with the statement,	Circle number	4
If you disagree somewhat with the statement,	Circle number	5
If you disagree strongly with the statement,	Circle number	6

If you find that the numbers to be used in answering do not explain your opinion well enough, please use the one which is closest to the way you feel.

.../5

	Strongly Agree	Somewhat Agree	Slightly Agree	Slightly Disagree	Somewhat Disagree	Strongly Disagree
1. I have excellent reflexes.	1	2	3	4	5	6
2. I am not graceful and I do not move with ease and speed.	1	2	3	4	5	6
3. I am rarely embarrassed by my voice.	1	2	3	4	5	6
4. My physique/body type is rather strong.	1	2	3	4	5	6
5. Sometimes I don't hold up well under stress.	1	2	3	4	5	6
6. I can't run fast.	1	2	3	4	5	6
7. I have physical defects that sometimes bother me.	1	2	3	4	5	6
8. I don't feel in control when I take tests involving physical dexterity / skill.	1	2	3	4	5	6
9. I am never intimidated by the thought of a sexual encounter.	1	2	3	4	5	6
10. People think negative things about me because of my posture.	1	2	3	4	5	6
11. I am not hesitant about disagreeing with people bigger than me.	1	2	3	4	5	6
12. I have poor muscle tone.	1	2	3	4	5	6
13. I take little pride in my ability in sports.	1	2	3	4	5	6
14. Athletic people usually do not receive more attention than me.	1	2	3	4	5	6
15. I am sometimes envious of those better looking than myself.	1	2	3	4	5	6
16. Sometimes my laugh embarrasses me.	1	2	3	4	5	6
17. I am not concerned with the impression my physique makes on others.	1	2	3	4	5	6
18. Sometimes I feel uncomfortable shaking hands because my hands are clammy.	1	2	3	4	5	6
19. My speed has helped me out of some tight spots.	1	2	3	4	5	6

.../6

	Strongly Agree	Somewhat Agree	Slightly Agree	Slightly Disagree	Somewhat Disagree	Strongly Disagree
20. I find that I am not accident prone.	1	2	3	4	5	6
21. I have a strong grip.	1	2	3	4	5	6
22. Because of my physical speed and ease, I have been able to do things which many others could not do.	1	2	3	4	5	6
23. When I make plans, I am certain I can make them work.	1	2	3	4	5	6
24. One of my problems is that I cannot get down to work when I should.	1	2	3	4	5	6
25. If I can't do a job the first time I keep trying until I can.	1	2	3	4	5	6
26. When I set important goals for myself, I rarely achieve them.	1	2	3	4	5	6
27. I give up on things before completing them.	1	2	3	4	5	6
28. I avoid facing difficulties.	1	2	3	4	5	6
29. If something looks too complicated I will not even bother to try it.	1	2	3	4	5	6
30. When I have something unpleasant to do, I stick to it until I finish it.	1	2	3	4	5	6
31. When I decide to do something, I go right to work on it.	1	2	3	4	5	6
32. When trying to learn something new, I soon give up if I am not at first successful.	1	2	3	4	5	6
33. When unexpected problems occur, I don't handle them well.	1	2	3	4	5	6
34. I avoid trying to learn new things when they look too difficult for me.	1	2	3	4	5	6
35. Failure just makes me try harder.	1	2	3	4	5	6
36. I give up easily.	1	2	3	4	5	6
37. I feel insecure about my ability to do things.	1	2	3	4	5	6

.../7

		Strongly Agree	Somewhat Agree	Slightly Agree	Slightly Disagree	Somewhat Disagree	Strongly Disagree
38.	I am a self-reliant person.	1	2	3	4	5	6
39.	I do not seem capable of dealing with most problems that come up in life.	1	2	3	4	5	6
40.	It is difficult for me to make new friends.	1	2	3	4	5	6
41.	If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.	1	2	3	4	5	6
42.	If I meet someone interesting who is hard to make friends with, I'll soon stop trying to make friends with that person.	1	2	3	4	5	6
43.	When I'm trying to become friends with someone who seems uninterested at first, I don't give up easily.	1	2	3	4	5	6
44.	I do not handle myself well in social gatherings.	1	2	3	4	5	6
45.	I have acquired my friends through my personal abilities at making friends.	1	2	3	4	5	6
46.	If I were not to do well when I first tried an extra-curricular activity, I would keep trying.	1	2	3	4	5	6
47.	When I fail at a task, I think that I am just not bright enough to ever succeed.	1	2	3	4	5	6
48.	I usually feel that if I try to succeed at something, I will be successful.	1	2	3	4	5	6
49.	I like the challenge of new activities.	1	2	3	4	5	6
50.	I am confident in my academic abilities.	1	2	3	4	5	6
51.	I tend to worry a lot about trying new activities or subjects.	1	2	3	4	5	6
52.	I spend more time being afraid of not doing something well, than actually doing it.	1	2	3	4	5	6

.../8

	Strongly Agree	Somewhat Agree	Slightly Agree	Slightly Disagree	Somewhat Disagree	Strongly Disagree
53. I find problems are an exciting challenge.	1	2	3	4	5	6
54. Even though I am not good at some things I do, I keep trying because I know I can improve.	1	2	3	4	5	6
55. If I were to do badly in one year at school, I would feel that I would never do well at school	1	2	3	4	5	6
56. I like to volunteer for new activities.	1	2	3	4	5	6
57. If I were not doing well at school, I would assume that I was going to fail and stop trying.	1	2	3	4	5	6
58. If I were having trouble with a homework problem, I would keep trying until I got the correct answer.	1	2	3	4	5	6
59. If I were not to do well in an extra-curricular activity, my will to continue would drop.	1	2	3	4	5	6
60. If I do not do well in a particular extra-curricular activity, I will not bother to keep trying.	1	2	3	4	5	6
61. I feel that no matter how hard I work on a subject, I can never do really well, so why bother trying.	1	2	3	4	5	6
62. If a teacher were to introduce a new thing in class, I would be very interested in trying it.	1	2	3	4	5	6
63. I wonder "Why bother even trying to solve a difficult homework problem"?	1	2	3	4	5	6
64. If I were to fail a test I would think that I had no ability at all and would stop trying to succeed.	1	2	3	4	5	6
65. I think that many things are closed to me, because I do not think I am smart enough.	1	2	3	4	5	6
66. If I were to fail a subject once, I would just give up on it.	1	2	3	4	5	6

END OF QUESTIONNAIRE NUMBER TWO .../9

CHAPTER VI

APPENDIX B

Self-Efficacy Subscales

The items contained in the test battery ("Questionnaire Number Two"), which contributed to the calculation of the General, Social, Physical and Academic Self-Efficacy scores, are listed below.

General Self-Efficacy Items

1. When I make plans, I am certain I can make them work.
2. One of my problems is that I cannot get down to work when I should.
3. If I can't do a job the first time, I keep trying until I can.
4. When I set important goals for myself, I rarely achieve them.
5. I give up on things before completing them.
6. I avoid facing difficulties.
7. If something looks too complicated, I will not even bother to try it.
8. When I have something unpleasant to do, I stick to it until I finish it.
9. When I decide to do something, I go right to work on it.
10. When trying to learn something new, I soon give up if I a not initially successful.

11. When unexpected problems occur, I don't handle them well.
12. I avoid trying to learn new things when they look too difficult for me.
13. Failure just makes me try harder.
14. I feel insecure about my ability to do things.
15. I am a self-reliant person.
16. I give up easily.
17. I do not seem capable of dealing with most problems that come up in life.

Social Self-Efficacy Items

1. It is difficult for me to make new friends.
2. If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.
3. If I meet smeone interesting who is hard to make friends with, I'll soon stop trying to make friends with that person.
4. When I'm trying to become friends with someone who seems uninterested at first, I don't give up easily.
5. I do not handle myself well in social gatherings.
6. I have acquired my friends through my personal abilities at making friends.

Physical Self-Efficacy Items

1. I have excellent reflexes.
2. I am not graceful and I do not move with ease and speed.
3. I am rarely embarrassed by my voice.
4. My physique/body type is rather strong.

5. Sometimes I don't hold up well under stress.
6. I can't run fast.
7. I have physical defects that sometimes bother me.
8. I don't feel in control when I take tests involving physical dexterity/skill.
9. I am never intimidated by the thought of a sexual encounter.
10. People think negative things about me because of my posture.
11. I am not hesitant about disagreeing wth people bigger than me.
12. I have poor muscle tone.
13. I take little pride in my ability in sports.
14. Athletic people usually do not receive more attention than me.
15. I am sometimes envious of those better looking than myself.
16. Sometimes my laugh embarrasses me.
17. I am not concerned with the impression my physique makes on others.
18. Sometimes I feel uncomfortable shaking hands, because my hands are clammy.
19. My speed has helped me out of some tight spots.
20. I find that I am not accident prone.
21. I have a strong grip.
22. Because of my physical speed and ease, I have been able to do things which many others could not do.

Academic Self-Efficacy Items

1. If I were not do well when I first tried an extra-curricular activity, I would keep trying.
2. When I fail at a task, I think that I am just not bright enough to ever succeed.
3. I usually feel that if I try to succeed at something, I will be successful.
4. I like the challenge of new activities.
5. I am confident in my academic abilities.
6. I tend to worry a lot about trying new activities or subjects.
7. I spend more time being afraid of not doing something well, than actually doing it.
8. I find problems are an exciting challenge.
9. Even though I am not good at some things I do, I keep trying because I know I can improve.
10. If I were to do badly in one year at school, I would feel that I would never do well at school.
11. I like to volunteer for new activities.
12. If I were not doing well at school, I would assume that I was going to fail and stop trying.
13. If I were having trouble with a homework problem, I would keep trying until I got the correct answer.
14. If I were not to do well in a extra-curricular activity, my will to continue would drop.
15. If I were not to do well in a particular extra-curricular activity, I will not bother to keep trying.

16. I feel that no matter how hard I work on a subject, I can never do really well, so why bother trying.
17. If a teacher were to introduce a new thing in class, I would be very interested in trying it.
18. I wonder "why bother even trying to solve a difficult homework problem"?
19. If I were to fail a test I would think that I had no ability at all and would stop trying to succeed.
20. I think that many things are closed to me, because I am not smart enough.
21. If I were to fail a subject once, I would just give up on it.

CHAPTER VII

APPENDIX C

Analysis of Variance Tables

Table 5

Three-Way Analysis of Variance on Total Self-Efficacy

For Level of Depression X Age X Sex

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Main Effects					
Depression	4177.50	2	2088.75	86.25	.0000***
Age	273.44	2	136.72	5.65	.0039**
Sex	51.01	1	51.01	2.11	.1476
Two-Way Interactions					
Depression X Age	384.61	4	96.15	3.97	.0036**
Depression X Sex	9.66	2	4.83	0.20	.8192
Sex X Age	182.14	2	91.07	3.76	.0242*
Three-Way Interaction					
Depression X Age X Sex	314.60	4	78.65	3.25	.0123**
Error	8427.77	348	24.22		

*=p<.05, **=p<.01, ***p<.001

Table 6

Two-Way Analysis of Variance for Level of Depression X Age

Total Self-Efficacy - Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Main Effects					
Depression	1635.31	2	817.65	35.91	.0000***
Age	320.57	2	160.29	7.04	.0012***
Two-Way Interaction					
Depression X Age	493.13	4	123.28	5.41	.0004***
Error	3711.29	163	22.77		

*=p<.05, **=p<.01, ***=p<.001

Table 8

One-Way Analyses of Variance for Level of Depression

Total Self-Efficacy — Early, Middle and Late Adolescent Males

Early Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	2191.65	2	1095.83	53.10	.0000***
Within	1052.53	51	20.64		

Middle Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	116.79	2	58.40	2.71	.0738
Within	1398.44	65	21.51		

Late Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	407.64	2	203.82	7.60	.0014**
Within	1260.33	47	26.82		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 9

One-Way Analyses of Variance for Age

Total Self-Efficacy — Non-, Mildly and Clinically Depressed Males

Non-Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	151.35	2	75.67	4.23	.0167
Within	2345.73	131	17.91		

Mildly Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	132.19	2	66.09	2.08	.1473
Within	729.45	23	31.72		

Clinically Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	308.69	2	154.35	2.18	.1686
Within	636.11	9	70.68		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 10

Two-Way Analysis of Variance for Level of Depression X Age

Total Self-Efficacy — Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Main Effects					
Depression	3021.95	2	1510.98	59.27	.0000***
Age	26.92	2	13.46	0.53	.5907
Two-Way Interaction					
Depression X Age	119.52	4	29.88	1.17	.3246
Error	4716.48	185			

*=p<.05, **=p<.01, ***=p<.001

Table 12

One-Way Analyses of Variance for Level of Depression

Total Self-Efficacy — Early, Middle and Late Adolescent Females

Early Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	1021.22	2	510.61	20.40	.0000***
Within	1426.96	57	25.03		

Middle Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	795.11	2	397.55	16.95	.0000***
Within	1735.96	74	23.46		

Late Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	1207.44	2	603.72	20.98	.0000***
Within	1553.55	54	28.77		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 13

One-Way Analyses of Variance for Age

Total Self-Efficacy — Non-, Mildly and Clinically Depressed Females

Non-Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	27.44	2	13.72	0.79	.4581
Within	1989.40	114	17.45		

Mildly Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	25.34	2	12.67	0.50	.6088
Within	1161.76	46	25.26		

Clinically Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	66.87	2	33.43	0.53	.5928
Within	1565.31	25	62.61		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 14

Two-Way Analysis of Variance for Level of Depression X Age

Academic Self-Efficacy - Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Main Effects					
Depression	2715.37	2	1357.68	30.07	.0000***
Age	505.57	2	252.78	5.60	.0044**
Two-Way Interaction					
Depression X Age	960.95	4	240.24	5.32	.0005***
Error	7358.99	163	45.24		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 16

One-Way Analyses of Variance for Level of Depression

Academic Self-Efficacy — Early, Middle and Late Adolescent Males

Early Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	3850.13	2	1925.07	54.39	.0000***
Within	1805.14	51	35.39		

Middle Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	136.80	2	68.40	1.77	.1785
Within	2512.66	65	38.66		

Late Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	982.81	2	491.40	7.59	.0014**
Within	3041.19	47	64.71		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 17

One-Way Analyses of Variance for Age

Academic Self-Efficacy — Non-, Mildly and Clinically Depressed Males

Non-Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	335.01	2	167.50	4.65	.0112**
Within	4716.57	131	36.00		

Mildly Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	45.36	2	22.68	0.33	.7202
Within	1566.27	23	68.10		

Clinically Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	706.20	2	353.10	2.95	.1033
Within	1076.15	9	119.57		

*=p<.05, **=p<.01, ***=p<.001

Table 18

Two-Way Analysis of Variance for Level of Depression X Age

Academic Self-Efficacy — Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Main Effects					
Depression	4160.52	2	2080.26	41.70	.0000***
Age	73.39	2	36.69	0.74	.4806
Two-Way Interaction					
Depression X Age	154.32	4	38.58	0.77	.5438
Error	9228.62	185	49.88		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 20

One-Way Analyses of Variance for Level of Depression

Academic Self-Efficacy — Early, Middle and Late Adolescent Females

Early Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	1001.25	2	500.62	13.83	.0000***
Within	2063.97	57	36.21		

Middle Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	1404.38	2	702.19	14.06	.0000***
Within	3695.47	74	49.94		

Late Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	1952.20	2	976.10	15.19	.0000***
Within	3469.18	54	64.24		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 21

One-Way Analyses of Variance for Age

Academic Self-Efficacy — Non-, Mildly and Clinically Depressed Females

Non-Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	65.58	2	31.79	1.09	.3403
Within	3330.59	114	29.11		

Mildly Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	73.70	2	36.85	0.56	.5736
Within	3013.34	46	65.51		

Clinically Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	45.94	2	22.97	0.20	.8208
Within	2884.70	25	115.39		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 22

Two-Way Analysis of Variance for Level of Depression X Age

General Self-Efficacy — Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Main Effects					
Depression	2891.05	2	1445.52	34.63	.0000***
Age	233.87	2	116.94	2.80	.0637
Two-Way Interaction					
Depression X Age	483.07	4	120.77	2.89	.0239*
Error	6804.21	163	41.74		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 24

One-Way Analyses of Variance for Level of Depression

General Self-Efficacy — Early, Middle and Late Adolescent Males

Early Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	2861.64	2	1430.82	39.91	.0000***
Within	1828.53	51	35.85		

Middle Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	705.27	2	352.63	7.60	.0011**
Within	3014.16	65	46.37		

Late Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	479.15	2	239.58	5.74	.0059**
Within	1961.52	47	41.73		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 25

One-Way Analyses of Variance for Age

General Self-Efficacy — Non-, Mildly and Clinically Depressed Males

Non-Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	155.89	2	77.95	2.35	.0995
Within	4347.00	131	33.18		

Mildly Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	77.83	2	38.92	0.68	.5156
Within	1312.65	23	57.07		

Clinically Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	291.11	2	145.55	1.14	.3607
Within	1144.56	9	127.17		

*=p<.05, **=p<.01, ***=p<.001

Table 26

Two-Way Analysis of Variance for Level of Depression X Age

General Self-Efficacy — Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Main Effects					
Depression	4078.56	2	2039.28	37.97	.0000***
Age	84.11	2	42.06	0.78	.4586
Two-Way Interaction					
Depression X Age	266.44	4	66.61	1.24	.2955
Error	9936.99	185	53.71		

*=p<.05, **=p<.01, ***=p<.001

Table 30

Two-Way Analysis of Variance for Level of Depression X Age

Physical Self-Efficacy — Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Main Effects					
Depression	508.85	2	254.43	6.57	.0018**
Age	299.03	2	149.52	3.86	.0230*
Two-Way Interaction					
Depression X Age	459.57	4	114.89	2.97	.0213*
Error	6315.03	163	38.74		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 32

One-Way Analyses of Variance for Level of Depression

Physical Self-Efficacy — Early, Middle and Late Adolescent Males

Early Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	995.19	2	497.60	8.92	.0005***
Within	2845.83	51	55.80		

Middle Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	40.50	2	20.25	0.82	.4461
Within	1610.64	65	24.78		

Late Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	61.272	2	30.64	0.77	.4666
Within	1858.56	47	39.54		

*=$p < .05$, **=$p < .01$, ***=$p < .001$

Table 33

One-Way Analyses of Variance for Age

Physical Self-Efficacy — Non-, Mildly and Clinically Depressed Males

Non-Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	107.99	2	53.99	1.90	.1538
Within	3723.99	131	28.43		

Mildly Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	280.51	2	140.25	3.03	.0681
Within	1065.56	23	46.33		

Clinically Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	241.05	2	120.62	0.71	.5168
Within	1525.48	9	169.50		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 34

Two-Way Analysis of Variance for Level of Depression X Age

Physical Self-Efficacy — Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Main Effects					
Depression	2078.77	2	1039.39	26.52	.0000***
Age	56.23	2	28.11	00.72	.4894
Two-Way Interaction					
Depression X Age	251.38	4	62.85	1.60	.1753
Error	7251.72	185	39.20		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 36

One-Way Analyses of Variance for Level of Depression

Physical Self-Efficacy — Early, Middle and Late Adolescent Females

Early Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	868.31	2	434.16	12.26	.0000***
Within	2019.073	57	35.42		

Middle Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	351.19	2	175.60	4.69	.0120**
Within	2767.68	74	37.40		

Late Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	936.99	2	468.49	10.26	.0002***
Within	2462.97	54	45.65		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 37

One-Way Analyses of Variance for Age

Physical Self-Efficacy — Non-, Mildly and Clinically Depressed Females

Non-Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	45.27	2	22.64	0.64	.5308
Within	4052.03	114	35.54		

Mildly Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	74.36	2	37.18	1.07	.3523
Within	1602.42	46	34.84		

Clinically Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	132.47	2	66.24	0.52	.6031
Within	3209.24	25	128.37		

*=p<.05, **=p<.01, ***=p<.001

Table 38

Two-Way Analysis of Variance for Level of Depression X Age

Social Self-Efficacy — Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Main Effects					
Depression	775.55	2	387.78	6.60	.0018**
Age	794.80	2	397.40	6.77	.0015**
Two-Way Interaction					
Depression X Age	912.69	4	228.17	3.88	.0048**
Error	9574.26	163	58.74		

*=p<.05, **=p<.01, ***=p<.001

Table 40

One-Way Analyses of Variance for Level of Depression

Social Self-Efficacy — Early, Middle and Late Adolescent Males

Early Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	1330.79	2	665.39	14.57	.0000***
Within	2329.48	51	45.68		

Middle Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	40.99	2	20.50	0.35	.7085
Within	3846.42	65	59.18		

Late Adolescent Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	842.99	2	421.50	5.83	.0055
Within	3398.36	47	72.31		

*=p<.05, **=p<.01, ***=p<.001

Table 41

One-Way Analyses of Variance for Age

Social Self-Efficacy — Non-, Mildly and Clinically Depressed Males

Non-Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	61.70	2	30.85	0.58	.5588
Within	6912.68	131	52.77		

Mildly Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	893.63	2	446.82	6.26	.0068**
Within	1642.28	23	71.40		

Clinically Depressed Males

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	359.31	2	179.66	1.59	.2570
Within	1019.29	9	113.25		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 42

Two-Way Analysis of Variance for Level of Depression X Age

Social Self-Efficacy — Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Main Effects					
Depression	1089.70	2	544.85	5.89	.0033**
Age	268.50	2	134.25	1.45	.2367
Two-Way Interaction					
Depression X Age	359.99	4	89.99	0.97	.4233
Error	17104.32	185	92.46		

*=p<.05, **=p<.01, ***=p<.001

Table 44

One-Way Analyses of Variance for Level of Depression

Social Self-Efficacy — Early, Middle and Late Adolescent Females

Early Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	1004.65	2	502.33	5.13	.0089**
Within	5581.77	57	97.93		

Middle Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	143.27	2	71.63	0.78	.4613
Within	6780.13	74	91.62		

Late Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	237.27	2	118.63	1.35	.2676
Within	4742.42	54	87.82		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 28

One-Way Analyses of Variance for Level of Depression

General Self-Efficacy — Early, Middle and Late Adolescent Females

Early Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	1341.67	2	670.83	10.35	.0001***
Within	3693.88	57	64.80		

Middle Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	1314.08	2	657.04	15.58	.0000***
Within	3121.40	74	42.18		

Late Adolescent Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	1524.11	2	762.05	13.18	.0000***
Within	3121.71	54	57.81		

*=$p<.05$, **=$p<.01$, ***=$p<.001$

Table 29

One-Way Analyses of Variance for Age

General Self-Efficacy — Non-, Mildly and Clinically Depressed Females

Non-Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	3.22	2	1.61	0.04	.9578
Within	4253.94	114	37.32		

Mildly Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	159.44	2	79.72	1.48	.2378
Within	2473.81	46	63.78		

Clinically Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	132.47	2	66.24	0.52	.6031
Within	3209.24	25	128.37		

*p≤.05, **=p<.01, ***=p<.001

Table 45

One-Way Analyses of Variance for Age

Social Self-Efficacy — Non-, Mildly and Clinically Depressed Females

Non-Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	67.26	2	33.63	0.44	.6453
Within	8719.69	114	76.49		

Mildly Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	127.32	2	63.66	0.56	.5770
Within	5262.26	46	114.40		

Clinically Depressed Females

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Value	Significance Level (p-value)
Between	319.79	2	159.89	1.28	0.2956
Within	3122.40	25	124.90		

*=p<.05, **=p<.01, ***=p<.001

CHAPTER VIII

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