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ASSESSING DEPRESSIVE SYMPTOMS IN ADOLESCENT BOYS:
PRE- VERSUS POSTPUBESCENT,
DELINQUENT VERSUS NONDELINQUENT

by

David Paul DeFrancesco

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Psychology

UTAH STATE UNIVERSITY
Logan, Utah

1990

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David P. DeFrancesco

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ABSTRACT

Assessing Depressive Symptoms
in Adolescent Boys: Pre- Versus Postpubescent,
Delinquent Versus Nondelinquent

by

David P. DeFrancesco, Master of Science

Utah State University, 1990

Major Professor: Dr. Damian McShane
Department: Psychology

The purpose of this study was to compare depressive symptoms reported by boys who were either pre- or postpubescent and who were legally designated delinquent or had no legal histories. A self-report puberty scale and a semi-structured interview (the Child Assessment Schedule-CAS) were administered to 48 boys. Results were analyzed using analysis of variance (ANOVA). Significance levels between groups were examined with Duncan's range test. No significant differences were found between pre- and postpubescent boys for reporting depressive symptoms, but delinquent youths were found to report significantly more depressive symptoms than nondelinquent youths. The implications of these results are discussed in relation to the measures used and recommendations for future research.

(56 pages)

CHAPTER I

STATEMENT OF THE PROBLEM

Introduction

The following material discusses depression in children (measurement and criteria) and outlines the focus of the research study. First, a brief overview of the history of depression in children is presented. Initially, a psychodynamic view held that depression in children did not exist; over the years this perspective changed and was modified toward different definitions of depression in children depending upon the orientation of particular clinicians and/or the measures used. Next, the issue of measurement and criteria for diagnosing depression in children is explored. Various measures and criteria have been utilized, yielding different results. Finally, the purpose and objectives of the present study are given.

Existence and Manifestation of Depression in Children

The existence and manifestation of childhood and adolescent depression have been controversial topics for the last 30 years (Poznanski, 1983). For many years, the psychoanalytic view that depression in children does not exist was generally accepted by professionals. Children, it was believed, lack a fully developed superego, and separation (object loss) is not experienced until the end of

adolescence (Kaslow & Rehm, 1983). The idea of depressive equivalents (Toolan, 1962) or masked depression (Glaser, 1967) was introduced in the 1960s. It was proposed that in children depressive affect is not shown directly but is masked and manifested through other symptoms (e.g., enuresis, truancy, conduct disorders, drug use). In fact, so many symptoms were categorized under "masked depression" that it was hard to differentiate between affective pathology, other psychiatric pathologies, and normal developmental stages of behavior.

A major change in perspective took place during the 1970s; several authors published reports describing overt manifestation of depressive affect in children (Carlson & Cantwell, 1980; Poznanski & Zrull, 1970). Even though these children exhibited "acting out" behaviors, clinicians believed that an astute interviewer could see through these "masking symptoms," which sometimes accompanied the underlying depression. They believed that the mask is more often on the diagnostician than on the child or adolescent's depression.

Developmental theorists propose that the manifestation of certain psychopathologies should be different for adults than for youth (Rutter, 1986). Both children and adults experience developmental changes, but the changes that occur in relation to all aspects of development (physical, cognitive, affective, etc.) are greater and more varied

through childhood than the changes that continue to occur through adulthood (Rutter, 1980). Not only should the manifestation of psychopathologies be different between "children" and "adults" but between the different stages within "childhood" and "adulthood." Differences in the manifestation of depressive symptoms in males around puberty and between males and females across all ages is a research area that requires more in-depth exploration (Rutter, 1986).

In one longitudinal study with a sample of 2,000 children, there were only 3 cases of depressive disorder diagnosed of age-10 children, yet at ages 14-15, there were 9 cases of depressive disorder and 26 cases of mixed affective disorder (Rutter, 1979/80; Rutter, Graham, Chadwick, & Yale, 1976). Developmental theorists maintained that depression may have been present in the children when they were younger, but they had been unable to verbalize their internal states. If so and if the underlying affective state had been present, the question was asked whether the manifestations of internal distress could be inferred from specific behaviors? An interesting result of this study involved comparing the frequency of depressive symptoms reported of boys the same age (14-15) who were prepubescent and others who were postpubescent. None of the prepubescent boys exhibited depressive feelings, yet about one-third of the postpubescent boys did.

Delinquent Behaviors as Possible Masking Symptoms

There are many behaviors that are characteristic of an adolescent delinquent population, and most of these can be considered anti-social (Kazdin, 1987). Most of these behaviors have been described in the literature as possible masking symptoms (i.e., Lefkowitz & Burton, 1978). Some of the anti-social behaviors that ultimately bring certain youth to the attention of the courts are referred to as "status offenses." These are offenses that are criminal only because of the age of the individual. Some of these offenses include the use of alcohol, truancy, driving a car, and breaking curfew. Delinquent behavior may also include acts that are criminal regardless of the age of the perpetrator such as theft, drug use and sale, vandalism and destruction of property, assault, rape, and drunk and disorderly conduct.

The problem with studies that examine the characteristics of the "typical" juvenile delinquent is that there are many juveniles who commit anti-social acts who never come into contact with the law (Empey, 1982). A few studies have been conducted with nonincarcerated youths who were asked to report on their delinquent behavior (Elliott, Knowles, & Canter, 1981; Johnston, Bachman, & O'Malley, 1982). The results of these and similar studies have been beneficial in determining the characteristics of youths who

commit delinquent acts.

Among childhood disorders, anti-social behavior tends to be relatively stable over time (Robins, 1978). The results of longitudinal studies have shown that conduct problems in youths tend to carry over into adulthood and that these individuals continue displaying anti-social personalities (Wolfgang, Figlio, & Sellin, 1972).

Issues Regarding Measurement of Depression in Children

Presently there is a controversy revolving around the criteria and the assessment methods used in diagnosing depression in children and adolescents (Quay & LaGreca, 1986). Diagnostic criteria have varied depending on the researchers, and no assessment method has been universally agreed upon.

Assessment criteria. Currently, the Diagnostic and Statistical Manual of Mental Disorders-Revised (DSM III-R) (American Psychiatric Association (APA), 1987) is used clinically and in certain research projects as a tool to help establish unified criteria for the assessment of adolescent affective disorders. In DSM III-R, the criteria used to diagnose depression in adolescents are the same criteria used to diagnose depression in adults. For children ages 6 years old or older, the criteria needing to be met for diagnosing a major depressive episode are dysphoric mood or loss of interest or pleasure in all or

almost all usual activities and pastimes combined with four out of eight possible symptoms present nearly every day for a period of at least 2 weeks. The symptoms are poor appetite, sleep difficulties, psychomotor agitation or retardation, fatigue, feelings of worthlessness, complaints or evidence of diminished ability to think or concentrate, and/or recurrent thoughts of death or suicide ideation. The criteria make no mention of masking or depressive equivalents, yet certain authors have argued that masking symptoms either cover up underlying affect or at least accompany it (Atkins, 1985; Ney, Colbert, Newman, & Young, 1986).

DSM III-R does make a distinction between criteria and associated features. These features, although not part of the diagnostic criteria, are often thought to be present in individuals who are diagnosed as depressed. For major depressive disorder, age- and sex-specific associated features are discussed in DSM III-R. In adolescent males, the following associated features are listed: negativistic or frankly anti-social behavior, feelings of wanting to leave home or not being understood or approved of, restlessness, grouchiness, aggression, sulkiness, a reluctance to cooperate in family ventures, withdrawal from social activities, school difficulties, inattention to personal appearance, increased emotionality, and substance abuse (APA, 1987).

Dysthymic disorder, also called depressive neurosis, is another diagnosis that may be given when depression is observed. The criteria needed to be met for this diagnosis include a chronic mood disturbance (again, involving dysphoric mood or loss of interest) but not of sufficient severity and duration to meet criteria for major depression. The only difference for adults and youths is the time duration required. For adults, a 2-year duration of chronic disturbances of mood is required, whereas for youths, a 1-year duration is sufficient. The age- and sex-specific associated features for this disorder are the same as those given for major depression.

Assessment methods. Using DSM III-R criteria as a standard, there are a variety of effective methods that can be utilized to collect data on youths for diagnostic purposes. Direct interviewing, self-reports, and performance techniques are a few of these methods.

Recently, several diagnostic interview schedules (i. e., Schizophrenia and Affective Disorders Schedule (Kiddie-SADS), Diagnostic Interview Schedule for Children (DISC), Child Assessment Schedule (CAS)) have been developed for use with children and adolescents based on DSM III-R criteria (Costello, Edelbrock, Dulcan, Kalas, & Klaric, 1984; Herjanic & Reich, 1982; Hodges, McKnew, Cytryn, Stern, & Klein, 1982; Kovaks, Feinberg, Crouse-Novak, Paulauskas, & Finkelstein, 1984). Even though these various methods have

been found to differentiate psychopathologies, they are still being revised and tested to see which method works best (Hodges, McKnew, Burbach, & Roebuck, 1984; Kerr, Hoier, & Versi, 1987). It has yet to be determined if these new methods are effective in distinguishing a depressed subgroup from within a population exhibiting behaviors described in the literature as depressive equivalents.

Self-report measures or checklists are the most frequently used sources of data for diagnosing children (Kerr et. al., 1987; Meyers & Weissman, 1980). Petti (1978) has shown that self-report measures are effective assessment instruments, especially with older youths who possess well-developed verbal skills. In a study that compared a diagnosis of depression based on the child's self-report versus the report on the child by the parent, both methods were shown to be effective in differentiating depressed children and nondepressed children from among psychiatrically disturbed children (Kazdin, Colbus, & Rodgers, 1986). The only difference between the sources was that the parents' ratings of the severity of depression in their children were consistently higher than the severity of the depression rated by the children themselves.

Problem Summary

The expressions of both depressive symptoms and delinquent behaviors differ depending on the developmental stage of the child. In a "normal" population, the expression of depressive affect increases from pre- to postpubescence, and the expression of acting-out behaviors decreases. In a "delinquent" population, the expression of acting-out behaviors tends to carry over from childhood into adulthood, and depressive affect does exist within this population, yet this author was not able to find any reports of studies investigating the expression of depressive affect between pre- and postpubescent, delinquent youths. If postpubescent, delinquent youths show little depressive affect, an underlying depressive state could be being masked by their acting-out behaviors.

Purpose and Objectives

The purpose of the present study was to determine if the prevalence of depressive symptoms, as determined by the Child Assessment Schedule (CAS), is different between pre- and postpubescent youths exhibiting delinquent behaviors. This study answered the following question: Are depressive symptoms (inferred by the score on the CAS) more prevalent postpubescent versus prepubescent in an adolescent delinquent population, and how does this prevalence rate compare with a similar nondelinquent population?

Hypotheses

1. There will be no differences in the numbers of depressive symptoms (inferred by the scores on the CAS) between two samples of boys, one group from a prepubescent population and one group from a postpubescent population.

2. There will be no differences in the numbers of depressive symptoms (inferred by the score on the CAS) between two samples of boys, one group from a delinquent population and the other group from a nondelinquent population.

CHAPTER II

REVIEW OF LITERATURE

Suicide, Depression and Anti-Social Behavior

Suicide ranks fourth among the leading causes of death among students ages 15-19 years, and depressive episodes usually are related causal factors (Knopf, 1979). A study examining the rates of adolescent suicide between the years 1961 and 1981 reported a 203% increase (Morgan, 1981). Suicide ideation, suicide attempts, and severe depression have historically been linked to anti-social behavior. The numbers of successful suicides in jail attest to the seriousness of these symptoms (Lewis, 1985). These statistics support the notion that depression in certain youths definitely exists. Existing empirical evidence regarding the manifestation of depression across different ages is limited and inconsistent (Cantwell, 1983; Poznanski, 1983).

Prevalence of Manifest Depression in Children

Prevalence and incidence rates of depression in youths are difficult to assess because of the previously stated problems with assessment methods and criteria (Hodges & Siegel, 1985). In a review of a number of epidemiological studies, Kashani, Husain, Shekim, Hodges, Cytryn, & McKnew

(1981) found the rates ranging from .14% to 59%.

Using a diagnostic interview and DSM III-R criteria, Carlson and Cantwell (1979) diagnosed 28% of 210 children seen at a psychiatric facility as depressed; yet with a self-report measure, 60% of these same children showed depressive symptoms and 49% scored in the moderately depressed range. In another study, an interview and self-report method were used to differentiate between depressed and nondepressed adolescent delinquents in a locked facility. Chiles, Miller, and Cox (1980) found that 23% of the 120 subjects met the criteria established by Research Diagnostic Criteria for a Major Depressive Disorder.

Epidemiological studies have shown that women are at a greater risk for depression than men across all ages (Wing & Bebbington, 1985). These authors reviewed a number of studies conducted in North America and Western Europe. They concluded that the relative risk is greater than 2:1 and is greater among women.

Hormonal differences between the sexes have been proposed to explain this higher incidence and prevalence rate (Clayton, 1983), but in one study involving a large sample of children, prepubescent girls exhibited more depressive symptoms than equivalent-age boys, who exhibited higher rates of a variety of conduct-related problems (Kovacs et al., 1984). Other researchers have proposed that these gender differences in incidence and prevalence rates

can be explained, in large part, by examining the culturally sanctioned sex-role differences for expressing affective distress and/or seeking help (Boyd & Weissman, 1981; Clayton, 1983). Males are taught to externalize their affective distress, whereas females are taught to internalize their problems.

Depressive Equivalents Masking Depressive Affect

Toolan (1962) was among the first to report that depressive affect in children may be expressed indirectly through behavioral problems that he labeled "depressive equivalents." He reported primarily descriptive data in the form of clinical and case studies. Other authors agreed with his observations and expanded the "masked depression" construct by adding to the list of overt symptoms (Glaser, 1967; Lesse, 1974, 1979). Again, these reports were mainly clinical and case studies, and the list of symptoms was so varied that it encompassed most of the nonpsychotic psychopathologies in children and adolescents; most authors did not differentiate between normal developmental, sometime transient behaviors, and depressive equivalents.

Lefkowitz and Burton (1978) compiled some data from published epidemiological and longitudinal studies and examined the prevalence of certain "depressive equivalents" in normal populations of youths. These authors concluded that age is a factor in the manifestation of these overt

symptoms such that as a child gets older, he/she exhibits fewer of these behaviors; thus, the behaviors seem more deviant the older the child, indicating some underlying pathology. In addition, they concluded that if depression exists, it should be possible to measure it, yet, at the time of their study, no reliable and valid method for assessing this condition in children had been developed.

Measurement Contradictions and Establishing Criteria

Various researchers and clinicians have attempted to devise measures and to establish criteria on which to base a diagnosis of depression in children and adolescents. Cytryn and McKnew (1972), based upon a review of the literature and their own clinical experience, propose three distinct categories of depression among latency-aged children. Two of their categories describe "acute, chronic, depressive reactions of childhood" and sad or depressive affect that seems evident and obvious during an interview with the child. The third category they call "masked depressive reaction of childhood." They felt that this last category is the most prevalent of the three. Within this category, the underlying depression is largely inferred by dysphoric themes generated from projective tests such as the Rorschach.

Other authors have proposed their own diagnostic systems and criteria. These different systems and criteria

further complicate the picture of childhood and adolescent depression. Cytryn, McKnew and Bunney (1980) attempt to reassess the situation by examining different proposed criteria in order to try to find some commonalities. Their comparison shows some striking similarities among the variously developed criteria leading these researchers to conclude that diagnostic criteria for childhood and adult depression are very similar, and that DSM III-R (APA, 1980) contains valid criteria for diagnosis in both populations. They further conclude that diagnoses should be formulated after clinical interviews with the client, since the individual best knows his or her own internal discomfort, and that sometimes information from a variety of sources tends to be contradictory and inconsistent. The authors resolve the issue of other symptoms masking depression by assigning a primary diagnosis of depression only when depressive affect is overtly elicited. Since youths may have trouble in labeling and verbally expressing their affective state, depression, using direct interviewing methods, may result in underdiagnosis.

Mezzich and Mezzich (1979), using the Minnesota Multiphasic Personality Inventory (MMPI) item pool, developed the Face Valid Depression Scale for Adolescents (FVDSA). The authors had experts select items that if scored in a set direction (either true or false depending on the statement) would be indicative of adolescent depression.

The experts used their clinical judgment, as well as the available literature, to establish the criteria as to which items should be included in the scale. FVDSA was then administered to 212 psychiatric inpatient adolescents and a depressive subsample was identified by including any adolescent scoring 1 standard deviation or higher above the mean. The percentage of youths identified as depressed by the FVDSA scores were then compared to the percentage of youths diagnosed as depressed after the patients' intake interview. Mezzich and Mezzich found a higher frequency of depressive diagnoses using the FVDSA scores (46 of 212 or 22%) than when using the intake interview (15 of 212 or 7%). One of the interesting findings of this study was the predominance of females (78%) over males (22%) in the depressive subsample (as indicated by the FVDSA scores). In the nondepressive subsample, there were equal numbers of males and females.

A factor analysis of the FVDSA showed that both social abandonment and acting-out were particularly characteristic of the depressed subsample. This operationalism of the construct of depression can be criticized because the FVDSA does not differentiate between depression and any other psychopathology. Also, since a comparison control sample was not included in the study, normal adolescent behaviors may have been included as depressive indicators.

In a study conducted to examine a way to differentiate

between depressive symptoms (masked depression) and a depressive disorder, Carlson and Cantwell (1979, 1980) used a self-report measure called the Children's Depression Inventory (CDI) (Kovaks & Beck, 1977) in conjunction with systematic interviews with both the child and the parent. Diagnoses were based on DSM III criteria. The results indicated that when using a systematic interview with the child, differential diagnoses can be made using DSM III criteria. The authors were able to distinguish between behavior disorders and affective disorders; the depressed children rated themselves as depressed on the CDI as well. Carlson and Cantwell (1980) concluded that behaviors that have been labeled "masked depression" are often nothing more than presenting complaints. During the interview process, the mask seemed rather thin and the underlying depressive affect was elicited. Two major differences were found between the behavior problems of children who were simply depressed and children who were both depressed and behavior disordered. In the depressed children, the behavior problems were less severe and started after the first indication of depressive affect. In children with both diagnoses (or diagnosed as being behavior disordered alone), the behavior problems were chronic and of greater magnitude.

In another study conducted to find a somewhat different way to differentiate between depressive equivalents and a depressive disorder in an adolescent population (Chiles et

al., 1980), a structured interview was combined with both a self-report measure, the Beck Depression Inventory (BDI) (Beck, 1972), and observer ratings to diagnose a group of adolescent delinquents admitted to a correctional facility. The researchers diagnosed according to the criteria established by The Research Diagnostic Criteria (RDC) (Spitzer, Endicott, & Robbins, 1977), which is similar to DSM III criteria, but adds certain symptoms specific to subadult disorders. The authors were able to identify a depressive subgroup from the tested population, but their results contradicte the results from the previous Carlson and Cantwell (1979, 1980) studies in a number of ways. First, the authors (Chiles et al., 1980), found the self-report measure to be ineffective in differentiating between the depressed and nondepressed groups, whereas Carlson and Cantwell did not. Also, Chiles et al.'s (1980) results show little difference between the behavior problems exhibited by the two groups in that only the depressed group admits to using more drugs and alcohol, they tend to cut school more, and have a shorter attention span than the nondepressed group. A few demographic differences were also found to differentiate the groups; namely, members of the depressed group had more first degree relatives that were diagnosed depressed and had more first degree relatives that were alcoholics than members of the nondepressed group. Finally, the researchers relied on the observers' (counselors')

ratings to help verify the depressive affect elicited during the structured interview as compared to the previous study where the authors felt that the observers' (parents) ratings were unnecessary for generating a diagnosis, and at times may have interfered by giving information that was contradictory to the child's reported affective state.

Regardless of these differences two important similarities become evident when comparing the results of these studies (Carlson & Cantwell, 1979, 1980 with Chiles et al., 1980): Structured or semi-structured interviewing may be an effective method for differentiating between a depressed group and a nondepressed group of adolescents, at least if the "masking" defense is thin; and differential diagnoses can be made using primarily adult criteria for depression.

Instruments Used for Differential Diagnosis

Measures that are used most frequently to differentiate between depressed and nondepressed youths are self-report or checklist measures. A variety of these are readily available and have been tested in both research and clinical studies (Marshall, 1985).

Instruments that are currently being studied for use to differentially diagnose youths are structured and semi-structured interviews. Most measures being developed are based on DSM III criteria and, as reported previously

herein, they hold promise. Several researchers are presently conducting studies to develop a standardized and valid instrument.

Herjanic and Campbell (1977) published a study in which a structured interview was administered to both children and parents in order to test the instrument's ability to differentiate between psychiatrically disturbed children and a nonpsychiatrically disturbed group. Data from the interview were used for diagnostic purposes by counting and comparing the number of symptoms elicited by the children comprising the two groups. The results indicated that symptom counting is an effective method for distinguishing between disturbed and nondisturbed children and that both children and parents are reliable sources of information (Herjanic & Reich, 1982).

A similar measure that is in the final stages of development is the Diagnostic Interview Schedule for Children (DISC) (Costello et al., 1984). This structured interview, which gives diagnoses according DSM III criteria, is having considerable reliability and validity problems and is not yet ready for distribution (K. Bordon, NIMH, personal communication, February 15, 1988).

Another well-validated and reliable assessment instrument is the Child Assessment Schedule (CAS) (Hodges, Kline, Stern, Cytryn, & McKnew, 1982). This is a semi-structured interview that records the child's verbal

responses to 75 questions, the examiner's observations to an additional 53 items, and information about the onset and duration of symptoms.

Summary

The preceding review examined the controversy involving childhood and adolescent depression that has been ongoing for the last 30 years. Different authors believe that depression is manifested in different ways. Some authors believe that depression is always accompanied by dysphoric affect while others believe that depression can be expressed more indirectly through other deviant behaviors. Developmental differences may account for the different ways depression is exhibited. There appears to be distinct changes that occur to boys around puberty. Possibly hormonal changes occur that relate to the expression of affect, at least in males. In normal youths the prevalence of depressive symptoms (as defined by DSM III-R criteria) increases after puberty and aggressive behavior (conduct disorders) decreases. In a population of delinquent youths, aggressive behavior is stable even into adulthood. Depressive symptoms in this group are evidenced, but do they become more prevalent after puberty? This question has not yet been examined.

There seems to be a need for establishing universally accepted criteria and measures for diagnostic purposes. With

the increase in suicide rate among adolescents, cases of depression seem to be going undetected. Most researchers have agreed that DSM III criteria (and currently DSM III-R) can be used for diagnostic purposes with subadult populations, yet the dysphoric affect necessary to indicate depression may be "masked" in adolescents by other behaviors. Self-report measures are the most frequently used instruments for assessing depression in youths. Structured and semi-structured interviewing methods are showing promise as valid, standardized, diagnostic instruments.

CHAPTER III

METHOD

Population and Sample

The sample of subjects for the delinquent group was drawn from the accessible population of youths that come before, and are placed by, Utah's First and Second Districts' Juvenile Court. These youths all committed some offense that was serious enough to require court action. All of these youth were subsequently placed under the authority of one of the following agencies: The Department of Family Services (DFS), Juvenile Probation, Youth Corrections, and direct accountability to the judge. The 24 members of the delinquent group were recruited from a list generated by officials of the various agencies with authorization granted to them by the appropriate state officials. To be included on the list, an individual had to be a male between the ages of 12 and 17 years, and at the time of interview was placed at an out-patient setting.

The sample of subjects for the nonacting-out group were recruited from the Cache Valley area. This sample matched the acting-out sample for age (12-17) and gender (male) and to be included in this group the individual must have never come into contact with the court system. A list of subjects was developed by meeting with parents and discussing the

study with interested parties.

Consent forms (Appendix B) were distributed to the parent or guardian of each boy to sign and, if acceptable, the child completed the puberty scale questionnaire. Individual meeting times were then scheduled for the boys continuing with the CAS. All participants were offered a cash incentive of \$5.00 for participating in the study. The total sample included 48 adolescents, 24 delinquents and 24 nondelinquents.

Data Collection

With the experimental (acting-out) group of boys, 65 consent forms and questionnaires were mailed out. Of these, three were returned that were signed and completed. Follow-up telephone calls were then conducted in which 10 more male subjects were recruited. The final 11 subjects needed to complete this sample were recruited by meeting with the boys and their guardians personally at meetings set up by their respective case workers (i. e., probation officer or youth correction's official).

With the control group of boys, certain individuals who the experimenter knew interacted with youths (i. e., scout masters, parents, and school personnel) were contacted and explained the purpose of the study. These individuals identified male subjects with no known legal histories, and had these individuals contact the experimenter. If

interested, their guardians were then contacted for consent.

All boys who returned the signed parental/guardian consent form were scheduled for an individual assessment time. Several boys did not complete the self-report puberty scale because of questions about the measure and for those individuals the measure was completed prior to the interview. The experimenter then assigned the participating boys into the different groups. There were 12 boys in each of the 4 groups (delinquent and nondelinquent prepubescent, delinquent and nondelinquent postpubescent). The experimenter then administered the CAS to each of the boys individually in a private setting. The boys were interviewed based on their availability for scheduling regardless of group membership. Five interviews were randomly selected to be audio-taped and scored by two independent sources. These five tapes were used to examine the reliability of the CAS. A total score consisting of symptom complexes that are analogous to the childhood diagnoses presented in DSM III-R were used for group comparisons.

If the scores indicated that a boy may have been experiencing a state of severe depression, the experimenter discussed this possibility with the parent or guardian who in turn notified the primary therapist. This was the case in only two situations.

Instrumentation

Depressive Symptoms

The Child Assessment Schedule (CAS) is a standardized semi-structured interview authored by K. Hodges (1986), now at Duke University Medical Center, Durham, North Carolina. This instrument is suitable for 6-18 year olds, and is used directly with the child or adolescent. It was developed to overcome major limitations of other standardized child interviews that assess psychological disorders. Some of these limitations are: 1) Other instruments fail to specify a standard list of topics or questions to be used. 2) Instruments that do supply a standardized set of questions are either designed only to assess specific disorders or have an interview format that is very lengthy and awkward for use with children. 3) Other measures place harsh demands on the children by requiring them to make fine discriminations about symptoms and symptomology. The CAS was designed to facilitate good rapport with the child while providing for a comprehensive and standardized collection of clinical information (Hodges, Kline et al., 1982).

In the Hodges, Kline et al. study (1982), reliability was obtained by videotaping the initial interviews and having three independent raters score the CAS from the videotape. Scoring agreement was calculated by comparing raters item by item for the presence or absence of a

symptom. Correlation coefficients were calculated for each of the pairs of raters for all CAS derived scores. The mean correlation for total CAS score (total pathology score) was .9; for the Symptom Complex Depression the mean correlation was .82.

In Hodges, Kline et al., three types of concurrent validity were examined: comparisons among contrast groups (inpatient, outpatient, and controls), correspondence between the CAS and maternal report on the Child Behavior Checklist (CBC) (Achenbach & Edelbrock, 1979), and correspondence between the CAS and the child's self-report on the Child Depression Inventory (CDI) (Kovacs, 1978) and the State-Trait Anxiety Inventory for Children (STAIC) (Spielberger, 1973). Analysis of variance, Duncan's multiple range test, discriminant analyses (Wilk's lambda), and correlations were conducted where applicable.

The CAS total score correctly classified 65.52% of the cases overall. The derived Wilk's lambda was .50, which transforms into a chi-square statistic of 58.26 ($p < .001$). The percent correct classification was considerably higher for inpatients (72.2) and controls (83.8) than outpatients (40.6).

Comparing the CAS with maternal reports on the CBC, correlation coefficients are $r(81) = .53$, $p < .001$ for number of problems and $r(81) = .57$, $p < .001$ for severity of problems. Of all the CAS scales, the CBC Depression scale correlates the

highest with the Depression symptom complex ($r(61)=.51$, $p<.001$).

In examining the child self-report measures, significant differences were found among the groups for depression as measured by the CDI ($f(2,75)=29.05$, $p<.001$), and this correlated significantly with the CAS's Depression symptom complex score ($R(77)=.53$, $p<.001$). Significant differences were found among the groups for anxiety as measured by the STAIC ($f(73)=9.41$, $p<.001$), and this correlated significantly with the CAS's Overanxious symptom complex score ($R(75)=.54$, $p<.001$).

The results of this study, which involved a sample of 87 children, indicate that the CAS is a reliable and valid measure. Another independent study was conducted that helps to substantiate these results (Hodges, McKnew et al., 1982). In the present study the number of depression items are totaled and used as an indicator of depressive symptoms. The total number of symptoms scored for each subject are used in the data analysis. The CAS labels 34 of 261 items as depression items.

Appendix A lists the 34 significant items and how they are classified according to the CAS. Thirty items signify general depressive symptoms (D). Two concur with DSM III-R's diagnostic criteria for Dysthymia (DY) and two with DSM III-R's diagnostic criteria for Major Depression (DE).

Maturation Scale

To differentiate between pre- and postpubescent adolescents, a self-administered instrument that was found to be both reliable and valid in two previous studies (Duke, Litt, & Gross, 1980; Morris & Udry, 1980) was utilized with certain modifications that were needed to allow its use with children in Cache Valley, Utah (see Appendix C). The original instrument contained drawings from Tanner's (1975) stages of maturity that are commonly used by pediatricians as standards for assessing pubertal development in boys and girls. These drawings were from Tanner's (1975) published photographs that illustrate 5 stages of development each for male genitalia and male pubic hair. These drawings, which were deleted in the present study because of human subjects committee and school official concerns, were modified into written questions. Along with these modified questions, three other questions that were on the original measure were utilized. These three questions deal with hair on other parts of the body, namely: underarm, abdomen, and facial. A final question was asked which deals with overall sexual development.

The child's task was to answer the set of questions to the best of his ability. For the first two questions (similar to the original measure without drawings), the child was to choose one of the five statements that best described himself. The next three questions were scored on

a 4-point scale (1=none, 2=some, 3=a lot, 4=as much as I will ever have). The final question that dealt with overall sexual development was answered on a 7-point scale with childhood at 1, adolescence at 4, and adulthood at 7 (see Appendix B). The number to each scored item was added with a cut-off score of 21 indicative of postpubescence.

Morris and Udry (1980) calculated Pearson correlation coefficients for boys' (sample size=48) self-ratings compared with a physician's observations. The correlation coefficients for the illustrations were as follows: genital development = .59, genital hair distribution = .63, underarm hair = .68, hair on abdomen = .32, facial hair = .37, and position on the scale of general adolescent development = .57. The alpha level for all of these coefficients was set at .05.

In a previous study conducted with girls (Brooks-Gunn, Warren, Rosso, & Gargiulo, 1987), a Tanner rating of 1 indicated prepubertal, 2 indicated early pubertal, 3 indicated midpubertal, 4 indicated late pubertal, and 5 indicated postpubertal. For the present study a puberty assessment was made by totaling individual items and a score of 21 or greater indicated postpubescence.

Statistical Analysis

The number of depressive symptoms scored on the CAS by each of the 48 boys (4 groups of 12) were compared between the 4 groups (delinquent/prepubescent; nondelinquent/prepubescent; delinquent/postpubescent; nondelinquent/postpubescent) using a one way ANOVA for unweighted means. Significant differences between the groups were examined using Duncan's range test. Significance levels were set at .05.

CHAPTER IV

RESULTS AND DISCUSSION

Results

The self-report maturation scale from all boys was scored and the subjects were placed into their corresponding cells. The number of depressive symptoms from the CAS was tallied for each participant and the following distribution table was generated.

Table 1 shows the number of boys in each group and how they scored on both the CAS and the maturation scale.

Table 1

The Number of Depressive Symptoms Scored (SymScr) and the Maturation Scale Score (MtScr) for Each Boy as a Function of Group Membership. (Delinquent/Prepubescent; Delinquent/Postpubescent; Nondelinquent/Prepubescent; Nondelinquent/Postpubescent).

B O Y	Group							
	Del/Pre		Del/Pst		Nondel/Pre		Nondel/Pst	
	SymScr	MtScr	SymScr	MtScr	SymScr	MtScr	SymScr	MtScr
1	13	17	11	25	1	15	1	21
2	9	20	7	23	0	16	3	23
3	8	20	8	23	0	13	0	23
4	11	19	5	23	0	15	3	21
5	11	19	5	23	1	20	1	25
6	15	19	11	25	1	17	1	22
7	7	17	10	21	1	13	1	24
8	3	20	10	21	1	12	0	21
9	1	19	7	23	0	19	3	22
10	21	14	7	23	0	17	1	23
11	10	15	1	22	1	20	0	21
12	10	15	5	24	1	20	0	23

\bar{X} = 9.92
SD= 5.23

\bar{X} = 7.25
SD= 2.99

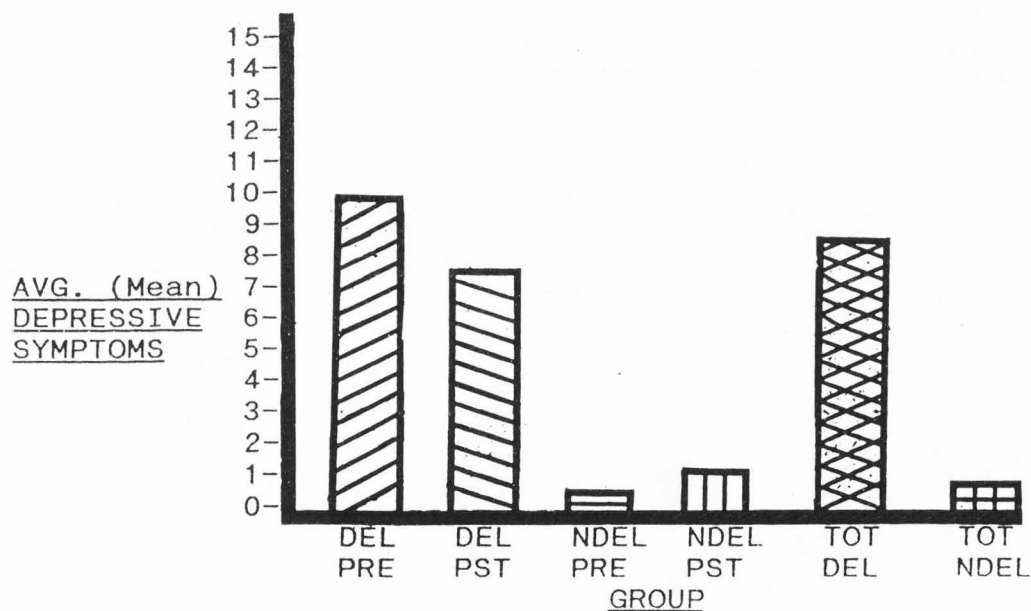
\bar{X} = .58
SD= .52

\bar{X} = 1.17
SD= 1.19

All of the 24 boys in the 2 delinquent groups scored at least one item in the significant direction. In the control groups, 15 of the 24 boys scored at least one item in the significant direction. Figure 1 displays graphically the average number of depressive symptoms reported as a function of group membership.

Figure 1

Average depressive symptoms reported as a function of group membership. (Delinquent/Prepubescent <DEL-PRE>; Delinquent/Postpubescent <DEL-PST>; Nondelinquent/Prepubescent <NDEL-PRE>; Nondelinquent/Postpubescent <NDEL-PST>; Total Delinquent <TOT-DEL>; Total Nondelinquent <TOT-NDEL>).



Boys were placed in the Del-Pre group if they came into contact with the court system and had maturation scores ranging from 14 to 20. The scores on the CAS of the Del-Pre group ranged from 1 to 21 with a mean 9.92 and a standard

deviation of 5.23. Boys were placed in the Del-Post group if they had contact with the court system and had maturation scale scores falling within the range of 21 to 25. The scores on the CAS of the Del-Post group ranged from 1 to 11 with a mean of 7.25 and a standard deviation of 2.99.

Boys were placed in the NonDel-Pre group if they had no contact with the court system and had maturation scale scores falling within the range of 12 to 20. The scores on the CAS of the NonDel-Pre group ranged from 0 to 1 with a mean of .583 and a standard deviation of .515.

Boys in the NonDel-Pst group had no contact with the court system and had maturation scores within the range of 21 to 25. The scores on the CAS of this group ranged from 0 to 3 with a mean of 1.17 and a standard deviation of 1.19.

The data generated by the CAS was analyzed using a one way analysis of variance (ANOVA) for unweighted means. The ANOVA on these data yielded a significant difference between groups for reported depressive symptoms, $F(3)=26.60, p<.00001$. To examine which group or groups were significantly different in reported depressive symptoms the Duncan range test was utilized.

Duncan's range indicated that the means for the Del-Pre group and the Del-Pst group were equal and significantly different from both control groups indicating a significant association for group. No other significant differences were found. Referring back to Figure 1, a large difference

is exhibited between the combined (Pre and Pst) delinquent groups as compared to the combined nondelinquent groups.

The reliability of the CAS was examined by having two independent examiners score five randomly sampled audio-taped interviews. The experimenter compared his scores to the individual items with those of the other two raters. Cohen's kappa coefficient (Cohen, 1960) was utilized as a measure of agreement between the experimenter and the two raters. A kappa coefficient of .82 and .86 was found between the experimenter and raters one and two, respectively.

Discussion

The results of this study clearly support the notion that adolescent aged boys are able to express depressive symptoms. These results also indicate that delinquent boys express more depressive symptoms than nondelinquents and dispute the notion that their acting-out behaviors are masking an underlying depressive state (i.e., Lefkowitz & Burton, 1978). The purpose of this study was to examine the prevalence of youths expressing depressive symptoms and not to place diagnoses on them. Nonetheless, using DSM III-R criteria, two of the youths could have been diagnosed with an affective disorder. One of these boys scored 15 on the CAS (about one standard deviation, 5.23 above the mean, 9.92), and the other boy scored 21 (over two

standard deviations above the mean). If diagnostic labels alone were used, the depressive symptoms exhibited and expressed by these delinquent boys may have been overlooked, thus contributing to the notion of a "masked depression."

In this study no differences were found between pubertal levels (pre- vs. post-), as measured by the maturation scale, which somewhat conflicts with the results of the studies conducted by Rutter in 1979/1980 where depressive affect was reported by postpubescent youths yet not reported when these same individuals were prepubescent. Interestingly, the two boys who scored the highest on the CAS were both members of the prepubescent group. Since the puberty assessment measure used in this study was modified, its validity is suspect and that may have contributed to this contradiction between findings. More nondelinquent postpubescent youths than prepubescent nondelinquents did express depressive symptoms, but not significantly so. With a different puberty measure and a larger sample size this finding may have been different.

In this study, all of the delinquent youths and 15 of the 24 nondelinquent youths reported at least some depressive symptoms. Most of the delinquent boys expressed significantly more depressive symptoms than the nondelinquent boys, and the items scored by the groups differed. Most of the nondelinquent youths scored only one item in the significant direction and this item was either

number 158, 159, 161, or 162. The wording of the question preceding these items may have contributed to their scoring of them. The preceding question said, "When you feel sad (or down or nothing is fun) do you:", and this is followed by the numbered statements (see Appendix A). Since most everyone would admit to feeling sad at some time, it seemed inappropriate to include items 158, 159, 161, 162, and 166 as indicative of current depressive symptomology.

None of these youths, at the time of the interview, were at inpatient type settings (even though some were placed there prior to and after the time of the interview). Most of the delinquent boys were receiving some form of outpatient treatment differing in focus depending on their presenting problems (i.e., drug and alcohol, behavior disorder, sexual offense). Previous studies have examined the prevalence of depression in delinquent youths that were incarcerated (i.e., Carlson & Cantwell, 1979; Chiles et al., 1980) and this study supports their findings in that more youths reported depressive symptoms than were diagnosed as depressed. The prevalence rate in this study was higher than in the previous studies (100% vs. 60%), but in this study the sample size was considerably smaller and the measure differed (interview vs. self-report). Also, as previously noted was the problem in wording the CAS seemed to have. The prevalence rate of depressive symptoms in the nondelinquent youths was considerably higher than the

finding from other studies (62.5% vs. 12.5%) (i.e., Kashani et al., 1981), but if the individuals scoring only one item were omitted then the findings were rather consistent.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

In the present study, all of the participants were from an agricultural valley in rural Utah. This demographic feature places certain limits on generalizing these findings to youths in the general population. Other confounding variables may have been that most of the delinquent youths were receiving some form of counseling or treatment at the time of the interviews, and/or the community from which the sample was drawn has characteristically strong religious affiliations. Also the sample contained all but one Caucasian youth.

The sampling procedures that were used differed between groups, and the experimenter had more personal contact with the control than with the experimental group. All of these stated factors may have had an influence on the results of this study. A follow-up study utilizing a larger and more varied sample, recruited in a more random manner, might help to shed more light on the generalizability of these findings.

If the findings of this study are consistent in other studies, then a considerable number of delinquent youths are having difficulty with depression. This is especially true if only diagnoses are being used when placing and discussing these youths. Individual interviews with each youth are

recommended to assess for depressive affect. If discovered, interventions can be initiated to remediate this affective state as an adjunct to the more traditional, behavioral-type therapies that are commonly used with behavior-disordered youths.

Since only two of the youths expressing depressive symptoms in this study met the criteria for a diagnosis of depression (according to DSM III-R), it seems that delinquent boys are a subgroup within a more general category of depressive youth. Future research may want to address this and other subgroups (i. e., sexually abused youth) to help identify specific symptoms in common to each group.

Also in the present study, because of the sensitive nature of discussing sexual issues with minor children, the maturation scale that was used was necessarily modified. Because of this modification, the psychometric properties of this measure are uncertain. This experimenter was able to locate only one self-report maturation scale for use with boys in an extensive review of the literature. Research to develop a better and more useful self-report maturation scale is indicated.

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APPENDICES

Appendix A

Child Assessment Schedule's Depression Items by Number.
(all items would be scored YES or TRUE)(D=Depressive affect;
DE=Major depression; DY=Dysthymia)

- 2) Do you like to (best liked activity mentioned in previous question) as much lately as you used to? Reports significant decrease in enjoyment of "best liked thing" lately (D)
- 12) At school, are you worried or sad about other problems when you should be doing your work (like worrying about home problems)? Trouble in concentrating due to mental stress, such as worries, being upset, depressed. (D)
- 15) Do you have trouble keeping your mind on your school work? Reports difficulty concentrating on school work. (D)
- 29) Have you been (answer to previous question, e.g., riding bike) lately as much as you usually do? Do you like being with your friends as much as before? Indicates that recently there has been less enjoyment, is doing fewer activities, or spends less time with friends. (D)
- 37) How much do you (answer to above question)? How much did you (answer to above question) last year? Indicates does fun activities or hobbies less recently (within last year). (D)
- 131) Can you tell me something about what you are like? (Tell me about yourself.) Describe self in negative terms or makes very negative comments. (D)
- 132) (If desired, ask about each response item as follows:) What do you think about your looks? Describes imperfections in body (e.g. too fat, thin, ugly - poor body image). (D)
- 133) (If desired, ask about each response item as follows:) What do you think about how smart you are? Views self as dumb. (D)
- 134) (If desired, ask about each response item as follows:) What do you think about how good you are at sports? Views self as clumsy or poor at sports. (D)
- 135) (If desired, ask about each response item as follows:) What do you think about how much other kids like you? Views self as not liked, unpopular. (D)
- 138) What do you most dislike about yourself? (If you could

change something about yourself, what would it be? Feels inadequate or inferior or dislikes or is disrespectful of self. (D)

142) Would you say that you have been feeling: - Sad? (or gloomy, blue, or down in the dumps)? Sad. (DY)

143) Would you say that you have been feeling: - Crabby, irritable, things get on your nerves easily? Irritable a lot. (DY)

145) Would you say that you have been feeling: - Feel "empty" inside? Feels empty. (D)

146) Would you say that you have been feeling: - As if nothing is fun anymore? Anhedonia. (D)

151) (If child responds "yes" to any of the feelings in #142-146 above, or indicates nontransient sadness, ask:) I have been asking you about feelings. How much (often) have you been feeling this way? Feels sad nearly everyday (or irritable, empty, hopeless, or has loss of pleasure). (DE)

152) (If child responds "yes" to any of the feelings in #142-146 above, or indicates nontransient sadness, ask:) I have been asking you about feelings. When you feel this way, do you feel this way while doing most everything you do, or just some things? Experiences sadness (or equivalents mentioned above) when doing all or almost all usual activities. (DE)

158) When you feel sad (or down or nothing is fun) do you: Think you are no good? Reports low self esteem. (D)

159) When you feel sad (or down or nothing is fun) do you: Think you are bad or feel guilty? Feelings of guilt. (D)

161) When you feel sad (or down or nothing is fun) do you: Move around a lot, or are you active doing something all the time? Reports agitation or hyperactivity. (D)

162) When you feel sad (or down or nothing is fun) do you: Become slowed down, talk less? Psychomotor retardation. (D)

166) When you have these sad feelings do you feel like things will work out or do you feel like they are hopeless? Does not feel things will work out, feels hopeless. (D)

168) Sometimes children think about death. Do you think about death? How much? Thinks about death often, not just fear of dying. (D)

169) Do you ever think of hurting yourself? (If yes, ask:) Even killing yourself? Has thought of hurting himself. (D)

170) Do you ever think of hurting yourself? (If yes, ask:) Even killing yourself? Has thought of committing suicide. (D)

171) (If yes, ask:) How often have you thought about hurting yourself? Has had recurrent thoughts of hurting self and/or committing suicide. (D)

172) (If yes, ask:) Did you ever think of how you would do it? Can specify a method. (D)

173) (If yes, ask:) Did you ever do anything to hurt or kill yourself? Has actually tried to hurt or kill self. (D)

177) Do you have trouble falling asleep? (Inquire regarding length of time.) Has trouble falling asleep (30 to 60 minutes). (D)

181) Do you have trouble waking up real early in the morning or in the middle of the night? Early morning wakening. (D)

182) Do you have trouble waking up real early in the morning or in the middle of the night? Wakening in the middle of the night. (D)

185) How good is your appetite? Do you enjoy your meals? Child indicates loss of appetite or overeating, when not dieting - see guidelines. (D)

186) Have you gained or lost weight recently? (If yes, ask:) How much? Child indicates significant and recent weight gain or loss. (If 15% weight loss, pursue anorexia nervosa; if binge eating, pursue bulimia.) (D)

191) Do you feel tired more than before? Indicates tiredness varying from less energy than usual to extreme fatigue; spends more time than usual resting. (D)

Appendix B

Consent Form

Dear _____:

I am conducting a study under the supervision of Dr. Damian McShane (a licensed psychologist) to learn how different boys at different ages and in different situations express their feelings. The purpose of the study is to see if boys have differences in talking about or expressing their feelings.

I will gather information by having the participants complete a short questionnaire (6 questions) to assess puberty differences (pre. vs. post) (copy of questionnaire is attached). Certain boys will be selected to be involved in an informal discussion. Topics during this discussion will include: school, friends, activities, family, fears, worries, self-image, mood, somatic concerns, expressions of anger and thought disorders. The discussion will last approximately 45 minutes. All boys will be between the ages of 12-17; all information gathered will be done individually and privately. Boys will receive \$1.00 for a completed puberty questionnaire and an additional \$4.00 for participating in the informal discussion.

All information gathered will be kept confidential. No names will be used when reporting the results of this study. Participants are free to withdraw from this study at any time without fear of any resulting problems. In accordance with ethical guidelines (APA, 1982; Society for Research in Child Development, 1973), if a child's responses show that he might have a problem (i.e. severe depression), I will talk with the child's parent(s) or guardian(s) to see if I can help. If you or your guardian(s) have any questions or concerns about this study, please feel free to contact David DeFrancesco at 753-0518 or 753-5411. If you have no question or concerns about this study and you agree to participate, please sign and return this letter with the completed puberty scale, if applicable.

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I have read about the study on expressing feelings and I agree to participate. I know that I may stop at any time. I know that my name will not be used while reporting or discussing the results.

Participant : _____

Date: _____ Guardian/Parent: _____

Appendix C

Adolescent Maturation Scale

1. The following 5 statements (A-E) describe different amounts of male genital pubic hair. A boy passes through each of the 5 stages as described below. Please read the descriptions below, then choose the description that best describes your stage of hair development. Mark a 1 on the line above that description. Then choose the description that is the next closest to your stage of hair development and mark a 2 on the line above.

A _____

There is no pubic hair at all.

B _____

There is a little soft, long, lightly colored hair. Most of the hair is at the base of the penis. This hair may be straight or a little curly.

C _____

The hair is darker in this stage. It is coarser & more curled. It has spread out and thinly covers a bit larger area.

D _____

The hair is now as dark, curly and coarse as that of an adult male. However, the area that the hair covers is not as large as that of an adult male. The hair has not spread out to the thighs.

E _____

The hair has spread out to the thighs. The hair is now like that of an adult male. It covers the same area as that of an adult male.

2. The following 5 statements describe different stages of development of the testes, scrotum, and penis. A boy passes through each of these five stages. Please read each of the statements and choose the description that fits closest to your stage of development. Mark a 1 on the line above that description. Then choose the description that is next closest to your stage of development and mark it 2.

A _____

The testes, scrotum and penis are about the same size and shape as they were when you were a child.

B _____

The testes and scrotum have gotten a little larger. The skin of the scrotum has changed. The scrotum, the sack holding the testes, has lowered a bit. The penis has gotten only a little larger.

C _____

The penis has grown mainly in length. The testes and scrotum have grown and dropped lower than in stage B.

(read statements D and E continued on next page)

D _____

The penis has grown even larger. It is wider. The glans (the head of the penis) is bigger. The scrotum is darker than before. It is bigger because the testes have gotten bigger.

E _____

The penis, scrotum, and testes are the size and shape of that of an adult male.

On the following 4 questions, CIRCLE THE NUMBER that best describes you.

- 1) How much underarm hair do you currently have?
1-none 2-some 3-alot 4-as much as I ever will
- 2) How much hair do you have on your stomach?
1-none 2-some 3-alot 4-as much as I ever will
- 3) How much hair do you have on your face?
1-none 2-some 3-alot 4-as much as I ever will
- 4) Imagine that the numbers below stand for seven equal stages of sexual development (your physical development) from childhood to adulthood. Please CIRCLE THE NUMBER that best stands for your stage of sexual development.

1	2	3	4	5	6	7
CHILDHOOD			ADOLESCENCE			ADULTHOOD