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**Conduct Problems, Depressive Symptomatology and their Comorbid Presentation:  
Adjustment to Early Adolescence**

**Gwynne O. Kohl**

**A dissertation submitted in partial fulfillment of the  
requirements for the degree of**

**Doctor of Philosophy**

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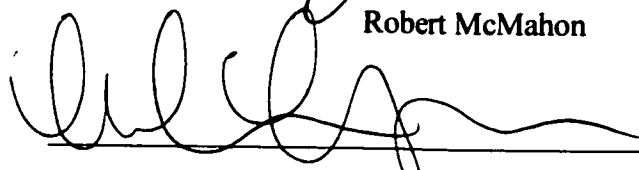
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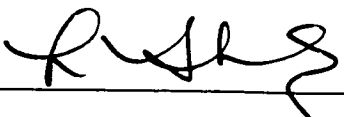
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**Abstract**

**Conduct Problems, Depressive Symptomatology and their Comorbid Presentation:  
Adjustment to Early Adolescence**

Gwynne O. Kohl

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Conduct problems and depression are both associated with negative outcomes in adolescents, including suicide, academic difficulties and social skills deficits. Youth with comorbid conduct problems and depression have even greater functional impairment in many of these areas than do youth with symptomatology in one domain. This current study aims to increase our understanding of comorbid depression and CP in youth. To that end, both continuous and categorical measures of CP and depression were created using multiple-reporter constructs. Continuous measures of CP and depression were used to examine the longitudinal relationship between the two sets of symptoms in the development of comorbidity in the transition from childhood to early adolescence. Categorical measures were used to predict the stability of CP, depression, and their comorbid presentation over time. The differential relationships between a variety of adjustment outcomes (e.g., academic achievement, social competence, antisocial peer relations, suicidality, and substance use) and CP, depression and their comorbid presentation were examined using both continuous and categorical measures. In addition, gender and ethnicity differences were examined.

This study used a gender-balanced, ethnically diverse sample of 435 children from high-risk neighborhoods in four sites around the country. Youth-, parent-, and teacher-report of symptomatology were collected in fifth grade. Multiple-reporter measures of adolescent adjustment, including academic achievement, social competence, and suicidality were collected in seventh grade. Youth-report of antisocial peer relations and substance use was also collected in seventh grade.

Results indicate that CP predicts depression longitudinally, but depression does not predict CP. Comorbid symptomatology is the most stable over time, followed by CP. Depression is the least stable symptomatology over time. Continuous analyses indicate that depression and CP are both risk factors for multiple negative adjustment outcomes. Categorical analyses suggest that comorbid CP and depression is generally no worse than CP-alone and depression-alone is similar to no symptomatology in terms of level of adjustment problems. No gender differences were found in the relationship between symptomatology and adjustment. The utility of using continuous vs. categorical scoring methods in predicting adolescent adjustment is discussed.

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## **Dedication**

**To Jonathan Kanter—the most salient reinforcer in my life. Here’s to the journey.**

**To Steve and Sybil Kohl—The outback is finally mine!**

## Introduction

Conduct problems (CP) and depression are two of the most prevalent forms of child and adolescent psychopathology, with far-reaching effects on personal development and the surrounding social environment (e.g., Birmaher et al., 1996, Hinshaw & Anderson, 1996). Research on comorbid psychopathology and its related effects is a relatively recent endeavor, and an important challenge currently facing the field of developmental psychopathology (Angold, Costello, & Erkanli, 1999; Caron & Rutter, 1991). Comorbidity between CP and depression has been repeatedly documented in both clinical and community studies of children and adolescents, and it occurs at higher rates than would be expected by the chance combination of the two forms of psychopathology (Angold et al., 1999). Comorbidity is important to assess because two youth with one condition in common may have very different courses and outcomes based on their comorbid conditions (Hinshaw & Park, 1999). Therefore, continued research on the developmental pathways to comorbidity and the relationship between comorbidity and adjustment outcomes will contribute greatly to our knowledge of developmental psychopathology. Identifying gender and ethnic differences in these relationships will further our knowledge and help target effective secondary prevention and intervention strategies.

The current study aims to increase our understanding of comorbid depression and CP in youth. To that end, both continuous and categorical measures of CP and depression were created using multiple-reporter constructs. Continuous measures of CP and

depression were used to exam the longitudinal relationship between the two sets of symptoms in the development of comorbidity in the transition from childhood to early adolescence. Categorical measures were used to predict the stability of CP, depression, and their comorbid presentation over time. The differential relationships between a variety of adjustment outcomes (e.g., academic achievement, social competence, antisocial peer relations, suicidality, and substance use) and CP, depression and their comorbid presentation were examined using both continuous and categorical measures. In addition, gender and ethnicity differences were examined.

This introduction aims to summarize literature pertinent to 1) the predictive relationship between CP and depression, and 2) the differential pattern of adolescent adjustment predicted by CP, depression, and comorbid CP and depression. Special attention will be given to research demonstrating gender and ethnic differences in these relationships and contradictory findings will be highlighted. In the service of these main goals, I will first briefly summarize the development of CP, depression and their comorbid presentation from childhood through adolescence and discuss methodological issues relevant to the study of comorbidity.

### Conduct Problems

Conduct problems (CP) refer to a group of problem behaviors, including noncompliance, aggression and delinquency. These problems can range from oppositional behavior (e.g., temper tantrums and defiance) to violating societal norms (e.g., truancy and running away) to violating the rights of others (e.g., assault and

firesetting). Although these behaviors cover a wide range, they frequently co-occur and can be subsumed under headings of “antisocial behavior” or “conduct problems” (McMahon & Wells, 1998). CP increase in severity and variety with development (Lahey & Loeber, 1994; Loeber, Green, Lahey, Christ, & Frick, 1992).

Dimensional measures of CP have been shown to be stronger predictors than categorical measures of several outcomes, such as overall impairment, substance use, juvenile offending and school dropout (Fergusson & Horwood, 1995; Pickles et al., 1991; Robins & Regier, 1991). In other words, a “dose response” relationship appears to be the best fit between CP and these outcomes. Researchers have created a variety of dimensional measures to assess youth CP relative to his or her age and gender group (e.g., Achenbach, 1993; Conners, 1990; Eyberg, 1992). The Child Behavior Checklist (CBCL) is the most commonly used and widely researched (Achenbach, 1993). The CBCL has corresponding parent-report, youth-report, and teacher-report versions to allow for comparison across informant and context. It has good reliability and internal consistency. Through factor analysis, Achenbach derived broad-band factors to assess externalizing behaviors more generally and narrow-band factors to assess delinquency and aggression more specifically. Researchers such as Achenbach (1993), Conners (1990), and Eyberg (1992) have also developed clinical cut-offs for dimensional scores based on statistical deviance from the mean for a large, representative sample.

The prevalence of CP has been assessed in several studies, and results indicate that it varies significantly across developmental period and gender. In preschoolers, the

prevalence of Oppositional-Defiant Disorder (ODD) ranges from 4 to 9% (Cohen, Velez, Kohn, Schwab-Stone, & Johnson, 1987). In school-aged children, the prevalence of ODD ranges from 5 to 12% whereas the prevalence of Conduct Disorder (CD) ranges from 0 to 12% (Anderson et al, 1987; Bird et al., 1988; Cohen et al., 1993; Costello et al., 1988; Lahey, Miller, Gordon, & Riley, 1999). In adolescents, the prevalence of ODD ranges from 1 to 19% (Cohen et al., 1993; Velez et al., 1989), and that of CD ranges from 6 to 12% (Frick, 1998; Lahey et al., 1999). In general, CP appear to increase throughout childhood and early adolescence and begin to decrease at the end of adolescence.

CP tend to occur in much higher rates in boys than in girls, but these overall rates belie an interaction between gender and development. CP are approximately four times more common for boys than girls during childhood (Cohen et al., 1993; Offord et al., 1987), but by adolescence, this gender ratio has decreased markedly to approximately two to one and, in some cases, to equal rates (Zoccolillo, 1993). The overall higher rate of CP in boys is largely a result of higher rates of aggressive behavior in boys, and the increase in girls' CP in adolescence is largely a result of increased covert CP (Frick, 1998). These nonaggressive, covert behaviors (truancy, running away overnight, serious lying, substance use and nonconfrontational stealing) have an average age of onset of 12 to 13 years in epidemiological samples, leading to lower levels of diagnosed CD in younger girls (Zoccolillo, 1993).

Some research has suggested that CP in girls is related to worse outcomes as compared to CP in boys (Loeber & Keenan, 1994; Robins, 1986; Silverthorn & Frick,

1993). The concept of a gender paradox is integral to the understanding of gender differences in the impact of CP on adjustment (Loeber & Keenan, 1994). This term was first used in the medical literature to describe a disease that is unevenly distributed across genders and has a more adverse effect on the gender with the lower prevalence rate (Taylor & Ounsted, 1972). In this application to developmental psychopathology, if one gender has a lower prevalence rate for a given condition, the members of that gender with the condition are more likely to present with comorbid conditions and more severe impairment. For example, though fewer girls typically manifest CP, the girls with CP have a higher probability of incurring a variety of comorbid conditions and worse adjustment outcomes than do boys with CP (Loeber & Keenan, 1994; Robins, 1986). Other researchers have disagreed with the conclusion, citing evidence that CP appears to be equally devastating for both boys and girls (Moffit & Caspi, 2001). Comorbidity is the rule rather than the exception with CP, which will be discussed further in the section of Comorbid CP and Depression.

### Depression

In the past several decades, the perspective on depression in childhood and adolescence has changed markedly. Contrary to previous belief, it is now widely recognized that children and adolescents do manifest and report symptoms of depression similar to those of adults and in high enough numbers to be a significant mental health problem (e.g., Kovacs & Goldston, 1991). Depression is a set of emotional, cognitive,

behavioral and physiological symptoms that are characterized by dysphoria, withdrawal, and decreased activity (Dobson, 1985).

Similar to CP, dimensional measures are commonly used to assess youth depressive symptomatology relative to age and gender, including the Children's Depression Inventory (CDI; Kovacs, 1980) and the Reynolds Child Depression Scale (RCDS; Reynolds, 1989). The CBCL (see Conduct Problems above) also measures depressive symptomatology with its anxious/depressed subscale. Recently, Lengua, Sadowski, Friedrich and Fisher (2001) have validated an alternative depression scale using a subset of CBCL items. Along with measuring depressive symptomatology on a continuum, all of these measures have clinical cut-offs based on statistical deviance from the mean.

Using measures of depressive syndromes with subclinical cut-offs, as compared to categorical measures of depressive disorders, may lead to a better understanding of youth depression. For instance, Gotlib, Lewinsohn, and Seeley (1995) isolated "false positive" adolescents, those who had met criteria for a depressive syndrome as assessed by a continuous measure, but not a depressive disorder as assessed by a structured diagnostic interview. They found that these false-positive youth were similar to youth who had met criteria for a depressive disorder (true positives) on measures of cognitive and psychosocial dysfunction, and they were significantly more impaired than the youth who had not met criteria for a depressive syndrome. These false positives were also more likely to meet criteria for a depressive disorder (i.e., become a true positive) within the

year. In addition, Hammen and Rudolph (1996) argue that youth with only moderate levels of depressive symptomatology (i.e., not meeting criteria for a depressive disorder) may still demonstrate significant levels of functional impairment. This moderate level of distress during childhood may interfere with important developmental processes and have a more detrimental effect than it would in adults. This may be more of an issue for depression than CP for two reasons. First, the diagnostic criteria for disruptive behavior disorders were based on studies with youth whereas the diagnostic criteria for depression is a downward extension of research with adults (Compas & Hammen, 1994). Second, low levels of CP may be normative in adolescence (e.g., Moffitt, 1993).

Rates of depression also vary by age and gender. Adolescents have a prevalence rate of depressive disorders similar to adults, which is approximately a four-fold increase from childhood. Prevalence rates for depressive symptomatology (i.e., having at least one symptom) range from 7% in preschoolers to 40% in adolescents (Kashani, Holcomb, & Orvaschel, 1986; Pataki & Carlson, 1990). In community samples of youths, 6- to 9-month prevalence rates of Major Depressive Disorders (MDD) and Dysthymic Disorders (DD) combined are approximately 6 to 9% (Bird et al., 1988; Hammen & Rudolph, 1996; Offord et al., 1987). MDD is present in less than 1% of preschoolers (Kashani et al., 1986; Kashani & Schmid, 1992), in 1 to 3% of school-aged children (Costello et al., 1988; McGee et al., 1990), and in 4 to 8% of adolescents (Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993). Though DD is rarely measured alone, point prevalence rates

of 1 to 2% for children and 2 to 8% for adolescents have been reported (Birmaher et al., 1996).

In children, there are no gender differences in rates of depression, but in adolescents and adults twice as many females as males are diagnosed with depression (Compas et al., 1997; Cyranowski, Frank, Young, & Shear, 2000; Hammen & Rudolph, 1996). These gender differences exist for depressive disorders, syndromes, and measures of depressed mood (Garrison, Jackson, Marsteller, McKeown, & Addy, 1990; Ge, Conger, & Glen, 2001; Kandel & Davies, 1982; Prescott et al., 1998; Pumariega, Johnson, Sheridan, & Cuffe, 1996). Kandel and Davies (1982) found a significantly higher mean score for depressed mood in adolescent girls than in boys in a community sample. The gender difference results from developmentally related increases in rates and levels of depression in girls while rates of depression in boys remain the same (Angold & Rutter, 1992; Fleming, Offord, & Boyle, 1989; Wichstrom, 1999) or decrease slightly from childhood to adolescence (Costello et al., 1988; Kashani et al., 1987).

Because rates of comorbid psychopathology with depression are so high, it is essential to assess for comorbid psychopathology when studying depression. Otherwise, the research finding related to risk factors or outcomes for depression might be more a product of unassessed comorbid conditions than of depression. As will be discussed further in the Adjustment Outcomes section, comorbid depression and CP is predictive of much worse outcomes than depression alone (e.g., Capaldi, 1992; McConaughy & Skiba, 1993).

## Comorbidity

Comorbidity between CP and depression has been repeatedly documented in studies of children and adolescents (Angold et al., 1999). It has important implications for the study of both depression and CP, in terms of models of etiology and adjustment outcomes. In this section, I will review the prevalence of comorbid CP and depression, developmental and gender considerations, and its relationship to functional impairment. First, some methodological issues specific to the study of comorbidity must be discussed.

Methodological issues related to measuring comorbidity. Several methodological issues have plagued the study of comorbidity, in general, and the study of CP and depression in children and adolescents, more specifically. The most important issues are measurement system, informants and sample selection. Each will be discussed in turn.

An overriding issue has been the use of diagnostic versus dimensional measures. Diagnostic measures traditionally have been preferred and used more widely. However, as mentioned in previous sections of this paper, it has been argued that dimensional measures are a) more useful in that they measure sub-clinical symptomatology that is likely to reach clinical levels with development, b) more practical with community samples with low-base rates, c) more developmentally and empirically derived, and d) more useful for comparing across youths in similar gender and age cohorts (Gotlieb, Lewinsohn, & Seeley, 1995; Keenan & Shaw, 1997; Nottelmann & Jensen, 1995; Pickles et al., 2001). In addition, diagnostic cutoffs have been criticized as arbitrary and insensitive to the view that symptomatology is best represented on a continuum

(Edelbrock & Costello, 1988). Finally, a variety of problems associated with nosological measures may lead to inflated or inaccurate measures of comorbidity. These include diagnostic categories with overlapping symptoms, too narrowly defined diagnostic categories, non-uniform timeframes for assessment, lack of a dynamic disease model (e.g., viewing disorders as continually changing and developing clusters of symptoms), and non-uniform algorithms employed to determine what meets criteria for a disorder (e.g. caseness) (Angold et al., 1999; Compas & Hammen, 1994; Lilienfeld, Waldman, & Israel, 1994).

Another issue has been determining the best source of information. There is consensus that multiple informants are preferred due to increases in reliability and validity (Compas et al., 1997; Robins, 1991). However, different informants are considered more valid for reporting different types of symptomatology. For example, measuring depression necessarily emphasizes self-report measures, as does measuring covert CP, while teachers and parents are better reporters of overt CP (Angold & Costello, 1993; Bird et al., 1992; Capaldi & Stoolmiller, 1999; Fergusson, Horwood, & Lynskey, 1993; Hammen & Compas, 1994; Hammen & Rudolph, 1996; Hinshaw, Simmel, & Heller, 1995). In addition, teachers, as compared to parents, may be the best informants for overt CP because they have access to the largest comparison sample of youth (Stanger & Lewis, 1993).

Sample characteristics will greatly affect findings related to comorbidity. Ideally, samples should be gender-balanced and ethnically diverse to allow for greater

generalization. Many of the current studies of comorbidity have used clinical samples, which overestimate prevalence rates (because of the Berkson's bias<sup>1</sup>, referral bias, and clinical interviewer expectancy bias) and prevent generalization to community populations (Agnold & Costello, 1993; Costello et al., 1996). However, because of low base rates of symptomatology in community samples, these samples must be very large in order to have enough power to detect relevant associations. High-risk samples offer a compromise, potentially increasing the base rates of symptomatology, which increases the statistical power to detect relevant relationships among clinical phenomena (e.g., syndromes or disorders) while removing many of the limitations inherent in clinical samples. However, as with clinical samples, prevalence rates from high-risk samples cannot generalize to community samples.

These methodological factors require consideration when planning future studies. To further our knowledge of developmental psychopathology, studies of comorbidity should use dimensional measures with multiple informants and representative, high-risk or community samples. Few of the present studies adhere to all of these guidelines.

Comorbid CP and depression. In examining existing data, overall prevalence rates for comorbid CP and depression within a community sample of children and adolescents average about 6 to 7% (Bird, Gould, & Staghezza, 1993; Kashani et al., 1987). This rate appears to increase from childhood to adolescence and to be higher for boys than girls (Bird et al., 1993; Costello et al., 1996; Esser, Schmidt, & Woerner, 1990). Several studies have reported developmental reversals in rates of depression and

CP by gender such that boys have higher rates of both CP and depression in childhood, but girls have higher rates of depression and rates of CP equal to that of boys in adolescence (McGee et al., 1992). Following from these developmental changes in rates of individual conditions, rates of comorbid CP and depression decrease for boys and increase for girls as they develop from childhood to adolescence (Keenan & Shaw, 1997; Loeber & Keenan, 1994; Mitchell, McCauley, Burke, & Moss, 1990; Rutter, 1970; Zoccolillo, 1992).

However, when examining rates of CP in depression and rates of depression in CP, the gender paradox becomes apparent. Simply stated, girls are more likely to be depressed, but when boys are depressed, they are more likely to have comorbid conditions, such as CP; and boys are more likely to have CP, but when girls have CP, they are more likely to have comorbid conditions, such as depression. For example, in a clinical sample, Rhode et al. (1991) found gender differences in the relationship between concurrent depression and CP, such that adolescent males with depression were more likely to have Conduct Disorder (CD) or Oppositional- Defiant Disorder (ODD) than nondepressed males, but there was no difference for females. Similarly, Puig-Antich (1982) found that 37% of prepubertal boys with a Major Depressive Disorder (MDD) had comorbid CD, but none of the prepubertal girls with MDD had comorbid CD. Conversely, in a community sample, Cole and Carpentieri (1990) reported that the CP-only group was primarily composed of boys, while the group with comorbid CP and

depression was composed of equal numbers of boys and girls. Therefore, girls with CP were more likely to have comorbid depression than were boys with CP.

Instead of measuring prevalence rates of comorbidity, studies using continuous measures of symptomatology have calculated covariation in several ways, from simple correlation to confirmatory factor analysis (CFA). Studies using CFA to correlate latent factors to measure syndrome covariation between CP and depression reported correlations between .56 and .73 (Cole & Carpentieri, 1990; Ge, Best, Conger, & Simons, 1996; Messer & Gross, 1994). Studies measuring the relationship between single dimensional measures of CP and depression reported correlations ranging from .31 to .46 (Fergusson et al., 1996; Verhulst, 1993). The higher correlations for latent factor models were not a result of age differences because a wide range of ages was sampled by both sets of studies. Correlations from CFA are generally higher because they are disattenuated for unreliability.

An excellent example is Capaldi's (1991) study of a high-risk sample of boys in which she used measures of CP and depression continuously and categorically. Based on cut-offs of .5 SD from the mean of each measure, she reported that 13% of the sample met criteria for comorbid depression and CP. Using continuous measures, she reported CP and depression to be correlated .32. These correlations suggest moderate levels of covariation.

The available research overwhelmingly suggests that comorbidity, regardless of the specific disorders, is associated with a more severe presentation of psychopathology

and worse adjustment outcomes. For example, youth with major depression and any comorbid disorder had more depressive symptoms and a more severe and chronic course than did depressed youth without a comorbid disorder (Birmaher et al., 1996; Compas & Hammen, 1994; Lewinsohn, Rohde, & Seeley, 1995). Birmaher and colleagues (1996) also found that comorbidity was related to suicidality, functional impairment, response to treatment and treatment utilization. Several other studies of general comorbidity have found it to be significantly related to greater functional impairment and treatment utilization (Bird, Gould, & Staghezza, 1993; Newman et al., 1996). In addition to being related to measures of global adjustment and treatment utilization, Lewinsohn et al. (1995) found that comorbidity was strongly related to academic problems and past suicide attempts. The section on Adjustment Outcomes will detail the relationships between comorbid CP and depression and a variety of specific outcomes.

#### Relationship between CP and Depression

Many researchers have hypothesized a causal relationship between depression and CP, but they differ in their conceptualizations of the causal model. Some suggest that depression occurs first and causes CP (e.g., Kovacs et al., 1988; Puig-Antich, 1982; Rudolph et al., 1994; Sack, Beiser, Phillips, & Baker-Brown, 1993), while others believe that CP occur first, increasing the likelihood of ensuing depression (e.g., Capaldi, 1992; Capaldi & Stoolmiller, 1999; Loeber & Keenan, 1994; Rohde et al., 1991; Zoccolillo & Rogers, 1991). Rudolph, Hammen, and Burge (1994) offer two models to explain the two different causal relationships between CP and depression. First, a stress-reaction model

posits that the disruption in interpersonal functioning resulting from CP may place a child at risk for depression. Conversely, a stress-generation model suggests that the onset of depression may impede social development, creating risk factors for later behavior problems.

Rudolph and colleagues (1994) report that their data from a community sample of 7- to 13-year-olds exemplifies the stress-generation model in which depression aggravates dyadic conflict and increases negative responses from unfamiliar agemates. Similarly, Kovacs et al. (1988) examined a small clinical sample of comorbid children and concluded that in the majority of cases with comorbid CD and depression, CD symptoms were “complications” of the primary depression. However, looking closely at the data for the sample of eight comorbid cases, the depression was present before CD in five cases and CD was present before depression in three cases. These results were not significantly different and do not seem to be strong evidence for this theory. In one of the first comorbidity studies, Puig-Antich (1982) reported the onset of MDD to precede that of CD in 14 of the 16 cases (87%). In preliminary follow-up data from antidepressant treatment, he reported that a relapse of depression was always followed shortly by a recurrence of CD, suggesting that MDD triggered CD. The results supporting the primacy of depression are mostly from clinically depressed samples (except the Rudolph et al. study), which may be biased towards depression because the admission criteria to the study focused on depressive symptomatology and a referral bias lead to the inclusion of youths that are overtly and/or severely depressed.

There are some clinical and high-risk samples that have reported contradictory findings. Capaldi (1992) has suggested a similar mechanism to the stress-reaction model, called the dual-failure model. In this model, CP lead to profound failure experiences in both academic and social domains that are exacerbated over time and lead to depression. Using a longitudinal sample of high-risk boys assessed in sixth and eighth grade, Capaldi compared models in which CP predicted depression and depression predicted CP. Her data suggest that CP are more likely to predict the development of later depression. Measuring age of onset by retrospective parent report in a clinical sample, Biederman and colleagues (1995) concluded that all measured disorders, except tics and psychosis, preceded the onset of MDD by at least 1 year. Rohde and colleagues (1991) found MDD/DD significantly more likely to follow than to precede disruptive behavior disorders: MDD/DD preceded disruptive behavior disorders in 11 cases and followed it in 28 cases. In a longitudinal study of First Nation and non-native youths, Sack and colleagues (1993) found evidence that CP reported by children, parents, or teachers preceded depression, but depression did not precede CP.

Given all of the available data, it seems likely that both directional relationships occur. For example, Marriage et al. (1986) reported that in six of eleven comorbid patients, CD preceded depression ("primary conduct") and in the other five, depression preceded CD ("primary affective"). In this sample, the authors report that both pathways seem equally likely. Interestingly, this data is very similar to that of Kovacs et al. (1988), but the two papers draw very different conclusions. Even in studies advocating for a

particular directional pathway and reporting that most of the youth followed one course from disorder A to disorder B, there was always a minority of youth that followed the opposite course. It is important to note that in all of these clinical studies, the sample size and, consequently, the number of youth with comorbid disorders is very small. Therefore, it is difficult to make definitive statements about pathways in the development of psychopathology from these studies.

An additional methodological issue may complicate the interpretation of these findings. Using retrospective reporting by both parent and child, Marriage and colleagues (1986) noted "the [child's] accounts were more heavily weighted for timing of onset of dysphoria, while parents were more reliable in remembering the beginning of behavior problems." Therefore, when different informants are used, different types of psychopathology appear to be more salient, leading to differential reporting and different relative ages of onset. Most of these studies used multiple reporters, removing this methodological confound. However, Biederman et al. (1995) only used parent-report and did find that CP preceded depression. Conversely, Rhode et al. (1991) only used child-report, but they still reported CP more likely to precede depression.

Fergusson and colleagues (1996) have offered the reciprocal causality model to account for each disorder's influence on the other. They posit that comorbidity is a result of transactional processes in which the child's behavior interacts with the environment over time to create new risk factors or new problem behaviors. In this way, the presence of CP influences the risk factors related to depression, and depression, in turn, increases

the risk for future CP. The manifestations of both types of psychopathology are exacerbated over time.

Additionally, the direction of influence between the two disorders may be reciprocal, but asymmetrical, with CP having a greater effect on depression (Loeber & Keenan, 1994). In this model, CP interacts with the environment to increase negative feedback and isolation from parents, teachers and peers. As in Capaldi's dual failure model, these extensive negative interactions are risk factors for depression. In turn, the depression further impedes the child's social development and increases his or her CP. This model appears to best explain the current data, taking into account both causal relationships, but slightly emphasizing the role of CP in predicting depression.

Several researchers have explored gender differences in the developmental trajectories of CP and depression. Often these forms of psychopathology are grouped into the larger categories of internalizing (i.e., depression, anxiety and somatic complaints) and externalizing (i.e., disruptive, aggressive, and delinquent behaviors) problems. Overall, both internalizing and externalizing problems have moderately stable developmental trajectories, though externalizing problems are more stable over time (e.g., Verhulst & van der Ende, 1992). There appear to be no gender differences in stability of CP over short-term periods, but boys with CP tend to have more stable psychopathology than girls when measured over long periods of time (Frick & Loney, 1999). Girls are more likely to have other serious dysfunction, such as emotional disorders and suicide attempts (Robins et al., 1991; Silverthorn & Frick, 2000). For example, Robins (1986)

found that CP in boys predicts only CP in men, but CP in girls predicts both CP and internalizing problems in women. McGee and colleagues (1992) reported that both externalizing and internalizing problems in 11-year-old boys predicted only externalizing problems in adolescence, whereas internalizing problems in 11-year-old girls predicted internalizing problems in adolescence, and externalizing problems in girls did not predict future problems. These data suggest that CP are more stable for boys and depression is more stable for girls. The lack of prediction for externalizing problems in girls in the McGee et al. study may be because of very low base rates of externalizing problems in 11-year-old girls. Tremblay and colleagues (1992) found that measures of CP obtained prior to adolescence failed to predict future behavior in girls. Using the same sample as McGee et al., Bardone, Moffit, Caspi, Dickson, and Silva (1996) found that depression in 15-year-old adolescent girls solely predicted depression at age 21, and CP in adolescent girls solely predicted CP at age 21. The lack of prediction from CP in adolescent girls to depression in women may be a result of adolescent girls with comorbid CP and depression being removed from the sample or included with the depressed group. These girls are the ones that would have been most likely to develop depression in adulthood.

These gender differences in developmental pathways may partially explain why researchers have found different patterns of directionality between depression and CP in different studies with different age and gender representations. These disparate findings exemplify the developmental psychopathology concepts of multifinality and equifinality. The developmental pathways from similar starting points to different outcomes (i.e.,

multifinality), and from different starting points to similar outcomes (i.e., equifinality) may be partially moderated by gender. These data suggest that males are more likely to develop non-comorbid presentations of CP regardless of their initial presentation (i.e., CP or depression), while females with depression are more likely to remain depressed and females with CP are more likely to develop comorbid CP and depression. Future research to verify these gender-based trajectories is needed.

### Adjustment Outcomes

Symptoms of depression and CP in childhood are risk factors for many adolescent adjustment problems, such as academic and social difficulties. Evidence suggests that children with comorbid CP and depression have worse adjustment outcomes than those with difficulties in only one area (e.g., Capaldi, 1991, 1992; Harrington, Fudge, Rutter, Pickles, & Hill, 1991; Nottelmann & Jensen, 1995; Verhulst & van der Ende, 1993). There are two ways in which the adjustment of youth with comorbid CP and depression can be worse. First, comorbid CP and depression may predict greater risk than either CP or depression alone in specific domains of functioning. Second, comorbid CP and depression may result in a worse pattern of adjustment that incorporates the distinct deficits of both CP and depression across multiple adjustment domains (Capaldi, 1992; Capaldi & Stoolmiller, 1999). Both mechanisms could operate simultaneously, leading to youth with worse adjustment in any given domain as well as more discrete domains of adjustment difficulty. Examining the relative relationship between CP, depression, and

their comorbid presentation and a variety of adjustment outcomes will help elucidate the ways in which comorbidity is related to worse outcomes.

Though research suggests that CP and depression are each related to a variety of adjustment difficulties, five outcomes were chosen for this study. These outcomes represent some of the most serious problems facing youth with far-reaching effects on adolescent development: academic adjustment, social competence, antisocial peer relations, substance use, and suicidality. This section reviews each of these adolescent adjustment outcomes specifically in relation to depression, CP, and comorbid CP and depression.

Academic adjustment. Academic adjustment is defined here as academic success (e.g., grades, test scores, and dropout rates) and behavioral adjustment at school (e.g., truancy, suspensions and expulsions). Researchers have demonstrated the connection between depression and impairment in academic adjustment (Bardone et al., 1996; Birmaher et al., 1996; Capaldi, 1991; Cole, 1990; Hammen et al., 1999; Kandel & Davies, 1986; Kovacs & Goldston, 1991; Nolen-Hoeksema, Girgus, & Seligman, 1986; Puig-Antich et al., 1985; Slotkin, Forehand, Fauber, McCombs, & Long, 1988). School difficulties may occur more frequently in depressed youth because they have concentration problems, insomnia, reduced motivation, psychomotor retardation, and diminished pleasures in all activities, including school (Birmaher et al., 1996; Kovacs & Goldston, 1991). However, some researchers have found that depressed youth demonstrate better school performance than youth with other forms of psychopathology

(Capaldi, 1992; Cohen, Gottlieb, Kershner, & Wehrspann, 1985; Costello et al., 1988; McCauley et al., 1993; McConaughy et al., 1988). Gender differences in the relationship between depression and academic adjustment have not been examined in the literature.

Research has shown that CP have a strong relationship with impairment in academic performance (e.g., Bardone et al., 1996; Capaldi, 1991, 1992; Capaldi & Stoolmiller, 1999; Cohen et al., 1985; Costello et al., 1988; Fergusson & Horwood, 1995; Hinshaw, 1992; Lewinsohn et al., 1995; McConaughy et al., 1988; Zoccolillo & Rogers, 1991). Early CP lead to poor academic achievement because noncompliant, disruptive and inattentive youth consistently miss valuable teaching time. The relationship between CP and poor academic adjustment appears to be similar across gender. The only gender difference reported in the literature suggests that CP are more strongly related to grade retention for school-aged girls than boys (Costello et al, 1988).

Several researchers have found that CP are a stronger predictor than is depression of poor academic adjustment (Capaldi, 1991, 1992; Capaldi & Stoolmiller, 1999; Cohen et al., 1985; McConaughy et al., 1988). Other researchers have reported that youths with comorbid CP and depression disorders have worse academic adjustment outcomes than those with only one form of symptomatology (Capaldi, 1991; Frost, Moffitt, & McGee, 1989; Kovacs et al., 1988; McConaughy & Skiba, 1993).

Social competence and antisocial peer relations. Impairments in social competence in children and adolescents are related to almost every form of psychopathology. In fact, many symptoms of depression and CP are also behaviors

demonstrating a lack of social competence. Many children and adolescents who have poor social competence are rejected by their peers (e.g., Asarnow, 1988; Dishion, 1990). Peer rejection can lead to membership in a deviant peer group for youths with certain behavior problems (Dishion, Patterson, Stoolmiller, & Skinner, 1991) while other youths simply become socially withdrawn (e.g., Hammen et al., 1999). That is, there appear to be multiple trajectories for rejected, socially incompetent youth, depending on their specific behaviors. Social competence can be measured in a variety of ways, including self-report of perceived competence and satisfaction with relationships, teacher and observer measures of social skills, and peer report of likability.

Depression has been repeatedly found to be related to social competence (Altman & Gotlib, 1988; Birmaher et al., 1996; Blechman et al., 1986; Capaldi, 1991; Capaldi & Stoolmiller, 1999; Cole, 1990; Goodyer, Wright, & Altham, 1989; Hammen et al., 1999; Kovacs, 1997; Kovacs & Goldston, 1991; Puig-Antich et al., 1985; Rudolph et al., 1994; Slotkin et al., 1988). Research suggests that depression can serve to disrupt normal social development, a process that requires sustained interpersonal interactions during which social skills are modeled, tested and consolidated (Hammen et al., 1999; Kovacs, 1997; Kovacs & Goldston, 1991). This impediment in social skill development may lead to further social skill deficits, peer rejection, and social isolation. Gender differences in the relationship between depression and social competence have not been reported.

Little research has been conducted to examine the relationship between depression and deviant peer groups. In one study, Capaldi (1991, 1992) reported no

relationship between depression and deviant peer association for high-risk 6<sup>th</sup> and 8<sup>th</sup> grade boys. No studies have examined the relationship between depression and deviant peer association for girls.

There is abundant evidence to suggest that CP are associated with poor peer relations and poor social competence (Capaldi, 1991, 1992; Capaldi & Stoolmiller, 1999; Cole & Carpentieri, 1990; Cohen et al., 1985; Dishion, 1990; McConaughy et al., 1988; Renouf, Kovacs, & Mukerji, 1997; Robins, 1986; Sack et al., 1993). These deficits in social competence tend to be more severe for those with CP than with depression (Asarnow, 1988; Cohen et al., 1985; Cole & Carpentieri, 1990; McConaughy et al., 1988; Renouf et al., 1997). Gender differences in the relationship between CP and social competence have not been examined directly.

In addition, there is a strong relationship between CP and association with deviant peers (Capaldi, 1991, 1992; Fergusson et al., 1996; Keenan et al., 1995; Kim, Hetherington, & Reiss, 1999; Laird, Pettit, Dodge, & Bates, 1999; Moffitt et al., 1996). Patterson and colleagues (Patterson, 1982; Patterson, Reid, & Dishion, 1993) have suggested that children with CP actively seek out environments in which their behavior is accepted (e.g., antisocial peers). They label this process "niche picking." Dishion, Patterson, Stoolmiller, and Skinner (1991) found a transactional relationship between antisocial behavior and association with antisocial peers for boys in late childhood.

CP appear to be a stronger predictor than depression of antisocial peer relations (Capaldi, 1991, 1992). Gender differences in the relationship between CP and antisocial

peer relations have not been reported because much of the research has been conducted with boys. However, assortative mating for antisocial behavior has been demonstrated, suggesting a significant relationship between CP and antisocial mates (Krueger, Moffitt, Caspi, Bleske, & Silva, 1998). In fact, Bardone et al. (1996) reported that girls with CP were more likely to be victims of domestic violence, suggesting that they might have been romantically involved with deviant peers.

Several researchers have determined that comorbid CP and depression is related to worse social competence than either condition alone (Hammen & Compas, 1994; Rudolph et al., 1994; Zoccolillo, 1992). Conversely, others have reported that the comorbid presentation is no worse than CP alone (Asarnow, 1988; Capaldi, 1991, 1992; Cole & Carpentieri, 1990; Renouf et al., 1997). The majority of the data appears to suggest that both depression and CP are related to poor social competence, but CP has a much stronger relationship and accounts for most of the explained variance. No gender differences have been examined.

Little research has examined the relationship between comorbidity and deviant peer relations. In the two studies available, Capaldi (1991, 1992) reported that association with delinquent peers was not significantly different for comorbid and CP-only boys in 6<sup>th</sup> and 8<sup>th</sup> grade. This finding suggests that depression does not have an independent relationship with delinquent peer affiliation in boys. Future research should examine the relationship between depression and delinquent peers for girls.

Substance use. Some studies have found depression to be related to substance use, including tobacco, alcohol and other substances (Birmaher et al., 1996; Boyle & Offord, 1991; McMahon, 1999; Rohde, Lewinsohn, & Seeley, 1996). Conversely, other studies have found no relationship between depression and substance use (Capaldi, 1991, 1992; Capaldi & Stoolmiller, 1999; Cohen et al., 1993; Miller-Johnson, Lochman, Coie, Terry, & Hyman, 1998). These contradictory findings may be explained by several factors, including gender, age, and ethnicity differences in the sample and the type of substance use measurement (e.g., substance use or abuse, single or polysubstance measure).

For the studies that found no relationship between depression and substance use, the Capaldi (1991, 1992) studies solely comprised boys and the Miller-Johnson et al. (1998) study did not provide information on the gender ratio of their sample. In studies showing a significant relationship, Rohde et al. (1996) found that girls with alcohol abuse/dependence were significantly more likely to have an internalizing disorder than were boys. In a sample of females, Bardone and colleagues (1996) found that adolescent depression was related to multiple drug use in early adulthood. Conversely, using the same sample at younger ages, Henry et al. (1993) found that depression at age 11 did not predict substance use at age 15 for girls, though it did for boys. Bardone et al.'s and Henry et al.'s contradictory findings within the same data set may be a result of Henry et al. measuring depression at age 11. As mentioned above, rates of depression increase dramatically for females in adolescence. In fact, when depression and substance use were measured concurrently at age 15, there was a significant relationship for both girls and

boys. These data suggest that girls are more likely to have substance use problems concomittant with their depressive symptoms. Additionally, depression may have a stronger relationship with alcohol use (e.g., Rohde et al., 1996) than with polysubstance use (e.g., Capaldi, 1992).

Many studies have found an association between CP and substance use (Boyle & Offord, 1991; Capaldi, 1991, 1992; Capaldi & Stoolmiller, 1999; Fergusson & Horwood, 1995; Fombonne, Wostear, Cooper, Harrington, & Rutter, 2001a; Henry et al., 1993; McMahon, 1999; McManus et al., 1984; Miller-Johnson et al., 1998; Neighbors et al., 1992; Robins & Regier, 1991; Windle, 1990). Loeber and Keenan (1994) suggest that substance use and CP have reciprocal effects on each other, each increasing the risk for the other. They delineate a developmental pathway that demonstrates the transactional relationship between them: Minor delinquency leads to alcohol and marijuana use, which leads to more serious offending, which results in polysubstance use. They report that rates of comorbid CP and substance use are highest in late adolescence, especially for those youths engaged in serious levels of either delinquency or substance use. The relationship between CP and substance abuse appears to be stronger for females than males, despite higher rates of daily or heavy use of illegal substances and higher rates of CP for males (Bardone et al., 1996; Boyle & Offord, 1991; Lewis & Bucholtz, 1991; Lewis et al., 1991; Loeber & Keenan, 1994; McManus et al., 1984; Pedersen, Mastekaasa, & Wichstrom, 2001; Williams, Ayers, Abbott, Hawkins, & Catalano, 1999).

Summarizing the research, it appears that CP are a stronger predictor than depression of substance use. In adolescence, it appears that CP is a stronger predictor than depression of substance use for boys, and both depression and CP are strong predictors of substance use for girls. In addition, comorbid CP and depression appear to be related to worse substance use outcomes than CP or depression alone, especially for girls (Capaldi, 1991; Fleming et al., 1993; Fombone et al., 2001a; Harrington et al., 1991; King et al., 1996; Miller-Johnson et al., 1998; Neighbors et al., 1992; Riggs et al., 1995)

Suicidality. Depression is related to increased risk for suicidality, including suicidal ideation, attempts and completion, across community and clinical samples (e.g., Andrews & Lewinsohn, 1992; Apter, Bleich, Plutchik, Mendelsohn, & Tyano, 1988; Birmaher et al., 1996; Borst et al., 1991; Brent et al., 1993; Capaldi 1992; Capaldi & Stoolmiller, 1999; Fombonne, Wostear, Cooper, Harrington, & Rutter, 2001b; Hoberman & Garfinkel, 1988; Lewinsohn et al., 1995; Martunnen et al., 1991; 1995; Rao, Weissman, Martin, & Hammond, 1993; Sack et al., 1993). Some equivocal gender differences have been found in the relationship between depression and suicidality. In community studies, Andrew and Lewinsohn (1992) and Wannan and Fombonne's (1998) reported that depression predicted suicidality across gender, but found the relationship to be stronger for boys than girls. Conversely, in clinical or autopsy studies, Bettes and Walker (1986), Martunnen and colleagues (1991, 1995), and Shaffer (1988) found a significantly stronger relationship between depression and suicide (ideation, attempts and completion) in girls than in boys. These disparate findings may be the result of different

samples (clinical/autopsy versus community). Suicide in boys in clinical or autopsy studies may be more strongly predicted by other risk factors, such as CP; whereas in community samples, depression is more likely to predict suicidal ideation and attempts for boys.

CP have been identified as a strong predictor of suicidality as well (Andrews & Lewinsohn, 1992; Apter et al., 1988; Lewinsohn et al., 1994; Martunnen et al., 1991; Myers et al., 1991; Sack et al., 1993). Again, contradictory findings related to gender differences in risk factors for suicidality emerge. Several studies report a stronger relationship between CP and suicidality for girls than for boys (Lewis et al., 1991; Wannan & Fombonne, 1998). Cairns et al. (1988) suggest that aggressive behaviors are less likely to be tolerated in adolescent girls than in boys, leading aggressive girls to be socially rejected and, consequently, to become depressed and suicidal. Conversely, Shaffer (1988) and Bettes and Walker (1986) reported that in boys, suicidality was most likely to be associated with agitation, anger, and aggressive behavior, often in conjunction with substance use. In two separate studies, Martunnen et al. (1991, 1994) reported higher rates of CP in male than in female suicide completers (18% of boys vs. 11% of girls, and 45% of boys vs. 33% of girls), but they did not report significance tests. However, these relatively higher rates of CP in male versus female suicide completers may simply reflect the gender ratio in prevalence of CP in the general population. That is, CP may be equally or more strongly predictive for girls given that the prevalence of CP in girls in the general population is much lower than that for boys.

There is no consensus on the relative predictive power of CP versus depression in relation to suicidality. However, there is much evidence to suggest that rates of suicide attempts and completion are much higher in comorbid CP and depression than in either condition alone (Angold et al., 1999; Brent et al., 1993; Capaldi, 1992; Hammen & Compas, 1994; Fombonne et al., 2001b; Myers et al., 1991; Rohde et al., 1991; Shaffer, 1974). Because suicide is related to both hopelessness (depression) and impulsive, antisocial behavior, the combination of CP and depression may be particularly lethal (Lewinsohn et al., 1995; Marriage et al., 1986; Ryan et al., 1987). However, a few researchers have reported contradictory findings, stating that comorbid CP and depression does not place youth at greater risk for suicidality than either CP or depression alone (Borst et al., 1991; Sack et al., 1993). To further complicate the matter, it appears that gender may moderate this relation. Wannan and Fombonne (1998) reported a significant gender interaction for comorbid depression and antisocial behavior in their prediction of suicidality. This finding suggests that comorbid depression and CP may have a greater impact on suicidality in girls than in boys. Similarly, Miller, Chiles and Barnes (1982) found that depression was predictive of suicide attempts in female, but not in male, juvenile delinquents.

Summary. To summarize, though many studies have examined the relationship between either depression or CP and different adjustment outcomes, few nonclinical, longitudinal studies have examined CP, depression, and their comorbid presentation simultaneously to provide data on the relative strength of these predictors. Capaldi

(1991, 1992) did just this, but her sample included only boys. Miller-Johnson et al. (1998) also did this in examining predictors of substance use, but the participants in their sample were all African American and they did not report the gender composition of their sample. The existing research supports the hypotheses that CP are a stronger predictor than is depression of poor adjustment outcomes (including substance use, poor academic adjustment, poor social competence, and antisocial peer relations). The relationship between suicidality and CP and depression is less clear, with data indicating that both are powerful predictors. In addition, comorbid CP and depression appear to be related to worse adjustment outcomes in general (except perhaps for social competence and antisocial peer relations) than is one form of symptomatology alone. In addition, some previous research indicates that gender may moderate the relationship between symptomatology and adjustment outcome, such as with substance use and suicidality (e.g., suicide: Andrew & Lewinsohn, 1992; Wannan & Fombonne, 1998; Martunnen et al., 1991; 1995; substance use: Rohde et al., 1996; Henry et al., 1993; Loeber & Keenan, 1994; Boyle & Offord, 1991). The present study examined the relative strength of CP, depression and their comorbid presentation in their prediction of a variety of important adjustment outcomes using a longitudinal community sample that was gender-balanced and ethnically diverse.

#### Ethnicity and Urbanicity in Relation to CP, Depression, and Adjustment Outcomes

Aside from gender, other demographic characteristics may be related to youth symptomatology and adjustment. This section will review research related to ethnicity

differences—primarily African American versus Caucasian—and urbanicity differences in CP, depression, and the five adjustment outcomes reviewed above: academic adjustment, social competence, antisocial peer relations, substance use, and suicidality.

Conduct problems. Little research has been conducted on ethnic differences related to CP. The literature that exists provides contradictory findings. Some researchers have found no ethnic differences in rates of ODD and CD (Lahey, Miller, Gordon, & Riley, 1999; Robins & Price, 1991; Zoccolillo, 1993). Among the studies that have reported ethnic differences, no clear pattern has emerged. Using diagnostic measures, Velez et al. (1989) found that Caucasian youth had lower rates of CD than all other ethnic groups at one measurement time point, but no differences at another time points and no differences for ODD. Using dimensional measures, Achenbach, Howell, Quay, and Conners (1991) found higher rates of aggression among Caucasian youth than other ethnic groups, but no ethnic differences in delinquency. A few studies reported higher rates of behavior problems and delinquency among African American youth as compared to Caucasian youth (Elliot, Ageton, Huizinga, Knowles, & Canter, 1983; Hope, Bierman, & CPPRG, 1998). Loeber, Farrington, Stouthamer-Loeber, & van Kammen, 1998) and higher rates of CP among Latinos compared to non-Latinos (Aneshensel & Sucoff, 1996; Fridrich & Flannery, 1995). In a recent study, Bird et al. (2001) reported no differences in rates of CD/ODD among African American, Mainland Hispanic, and Non-Hispanic, Non-African American youth, but did find lower rates of CD/ODD for Island Puerto

Ricans. They suggest that these differences are in part a result of stronger family attachment and social control in Puerto Rican culture.

Depression. The limited data available on ethnic differences in rates of child and adolescent depressive symptoms suggests that there are few differences (Costello et al., 1996). Pumariega et al. (1996) found no ethnic differences between African Americans and Caucasians in mean depression scores for adolescent depression in a high-risk sample. Kandel and Davies (1982) found no differences among African American, Caucasian and Latino adolescents on a measure of depressed mood in a community sample. Schraedley and colleagues (1999) found no differences between African American and Caucasian adolescents on mean depression scores in a community sample, although they did find significantly higher mean scores for Latino and Asian adolescents. Conversely, Garrison and colleagues (1990) did find significantly higher mean depression scores for African American versus Caucasian youth. To complicate matters further, several national studies of adults have found lower rates of depression for African Americans as compared to Caucasians (Blazer, Kessler, McGonagle, & Swartz, 1994; Roberts, 2000). Because of these contradictory findings, more research is needed to assess rates of CP and depression for diverse ethnic groups.

Urbanicity differences in CP and depression. Several studies have examined the relationship between urbanization and mental health diagnoses. Child and adolescent rates of CP tend to be higher in highly urbanized areas as opposed to rural areas (Hope et al., 1998; Rutter et al., 1970; Rutter, Cox, Tupling, Berger, & Yule, 1975; Wichstrom,

Skogen, & Oia, 1996). Several studies have found that adults in urban areas were at greater risk for depression than those in rural areas (Blazer et al., 1994; Cross-National Collaborative Group, 1992; Rutter, 1973). Offord et al. (1987) reported higher rates of CD and emotional disorders in urban youth as compared to rural youth, but these differences were not significant. Interestingly, several studies have reported that comorbidity (though not solely CP and depression) was significantly more likely in urban areas for both youth and adults (Hope et al., 1998; Kessler et al., 1994; Offord et al., 1987).

Urbanization, especially when referring to inner-city neighborhoods, is confounded with other family, school, and community variables, such as family discord and disruption, large family size, overcrowded and poor living conditions, schools characterized by high turnover of staff and students, and lower socioeconomic status (SES; Attar, Guerra, & Tolan, 1994; Rutter et al., 1975; Wichstrom et al., 1996). In fact, Costello et al. (1996) reported that no urbanicity differences in symptomatology persisted when SES was included in analyses. In addition, highly urbanized neighborhoods tend to comprise higher percentages of ethnic minorities, creating a confound when examining ethnicity or urbanicity separately (Aneschensel & Sucoff, 1996). For example, Peebles and Loeber (1994) found that when both ethnicity and urbanicity were examined simultaneously in relation to CP, residence in low SES inner-city neighborhoods was related to increased measures of CP, whereas ethnicity was not. There also may be an ethnicity by urbanicity interaction (Kessler & Neighbors, 1986). For example, Neff

(1984) reported a stronger relationship between ethnicity and depression for African American youth in rural areas. However, Hope et al. (1998) found that when ethnicity was included as a predictor in their model, urbanicity continued to predict CP. These data suggest that it is important to take both ethnicity and level of urbanization into account as correlates of depression and CP in youth.

Academic adjustment. Several researchers have reported ethnicity differences in academic adjustment, such that Caucasian youth have higher standardized test scores and more motivation to succeed academically than African American youth (Diamond & Onwuegbuzie, 2001; Hare, 1985; Hedges & Nowell, 1998; Maguin & Loeber, 1996; Mau & Lynn, 1999). These differences have been attributed to higher overall family income, parental education, educational resources available in the home, and peer culture with more positive orientation towards school for Caucasian youth (Blair, Blair, & Madamba, 1999; Hedges & Nowell, 1998; reviewed in Kao, 2001). Several researchers have found an ethnicity by gender interaction in which African American girls have higher standardized achievement than African American boys, but there are no overall gender differences for Caucasians (Cokley, 2001; Hare, 1985).

There are little data on the relationship between urbanicity and academic adjustment. Rutter (1973) reported higher rates of “educational failure” in his London inner-city sample as compared to his rural Isle of Wight sample. Similarly, Randhawn and Hunt (1987) reported that rural Canadian students performed better than urban students on standardized achievement tests. However, Corely, Goodjoin, and York (1991)

reported lower SAT scores in rural as compared to urban African American youth. These differences could be evidence of another interaction between ethnicity and urbanicity, but there are too little data to tell. Additionally, there may be a curvilinear function for the relationship between urbanicity and academic adjustment, such that suburban areas are likely to have the highest achievement levels, followed by rural areas, followed by inner-city areas.

Social competence and antisocial peers. Ethnic differences in social competence measures, such as negative behavior, disruptive behavior or physical fighting, have been found (Coie, Dodge, & Coppoelli, 1982; Feng & Cartledge, 1996; Finkelstein & Haskins, 1983; Sbarra & Pianta, 2001; Wiegel, 1985). (It is important to note that these measures of social competence overlap with measures of CP, but remain valid ways to assess social skills.) Across these studies, African American youth appear less socially competent than their Caucasian counterparts. However, Foster, Martinez, and Kulberg (1996) warn that social values differ by culture and ethnicity, making it difficult to examine cross-cultural social competence equitably. In general, African American youth may respond more directly, appearing either more assertive or aggressive to Caucasian peers (Rotheram-Borus & Phinney, 1990; Weigel, 1985). Schofield (1981) found that African American youth value "toughness," possibly because of their history of subjugation. African American children may play with Caucasian peers in a way that they perceive as playful, but is considered rough by Caucasian standards. African American youth engage in

banter, or “verbal dueling”, that is often perceived by Caucasians as verbally aggressive, whereas it is experienced as harmless by African Americans (Kochman, 1987).

In addition, rater bias exists when assessing the relationship between ethnicity and social competence. For example, Lethermon, Williamson, Moody, and Wozniak (1986) found that Caucasian raters rated Caucasian youth higher than African American youth on social skills whereas African American raters rated them equally. African American raters also rated all children higher than did Caucasian raters on measures of assertiveness. Feng and Cartledge (1996) reported that “teachers tended to attribute characteristic internalizing and externalizing behaviors to Asian and African American students, respectively.”

No ethnic differences in antisocial peer relations have been reported. To the extent which ethnic minorities are overrepresented in inner-city neighborhoods (Aneshensel & Sucoff, 1996; Peeples & Loeber, 1994) and urban neighborhoods have higher rates of CP and exposure to violence (Attar et al., 1994; Rutter, 1982), ethnic minority youth may have more opportunity to form relations with antisocial peers.

No differences in social competence or antisocial peer relations have been reported in relation to level of urbanicity. However, as mentioned above, urban, inner-city neighborhoods are associated with increased CP, higher crime rates and heavier gang presence (e.g., Attar et al., 1994; Peeples & Loeber, 1994; Rutter et al., 1970, 1975; Wichstrom et al., 1996). This relationship suggests that the availability of antisocial peers

may be higher in urban neighborhoods and antisocial norms for behavior may be more prevalent.

Substance use. Despite some contradictory findings, the general trend appears to be higher rates of substance use, dependence and drug-related problems in Caucasian as compared to African American youth (Albrecht, Amey, & Miller, 1996; Anthony, Warner, & Kessler, 1994; Compton et al., 2000; Friedman & Ali, 1998; Oetting & Beauvais, 1990; Oetting et al., 2000; Paschall, Flewelling, & Faulkner, 2000; Wallace & Bachman, 1991; Williams et al., 1999; Windle, 1990). The evidence seems to suggest that substance use does not differ by level of urbanicity (Albrecht et al., 1996; Bachman & Johnson, 1978). However, Albrecht et al. (1996) reported an ethnicity by urbanicity interaction, such that urbanicity predicted substance use for Caucasian, but not African American youth.

Interestingly, French and Picthall-French (1998) found an ethnicity by gender interaction in their rural sample: Caucasian males had higher rates of substance use than African American males, but African American females had higher rates than Caucasian females. In another study, Herd (1997) reported that Caucasian females are at greater risk for having alcohol-related problems when consuming the same amounts of alcohol as Caucasian males, but this gender difference did not exist for African Americans. African American females were able to drink more than Caucasian females while maintaining a lower risk for alcohol-related problems.

**Suicidality.** Overall, Caucasians are twice as likely as African Americans to commit suicide (Oquendo et al., 2001; Shaffer, Gould, & Hicks, 1994; Tsuang, Simpson, & Fleming; 1992; U.S. Bureau of the Census, 1990). However, different results have been found when examining adolescents, specifically, and suicidal behavior, more generally. Some researchers have found similar rates of suicidal behavior across Caucasians and African Americans, whereas others have found higher rates for African American adolescents (reviewed in Roberts, 2000). In addition, several researchers have noted increasing suicide rates for African American youth, especially males, as compared to more stable rates for Caucasian youth over the past several decades (McIntosh, 1989; Shaffer et al., 1994; Wagman, Ireland, & Resnick, 2001). Very little data on the relationship between urbanicity and suicidality have been reported (Roberts, 2000). Suicide rates do vary substantially by geographic region within the United States (Tsuang et al., 1992). The mountain region has the highest overall suicide rate, whereas the middle Atlantic region has the lowest overall suicide rate. These regions are not a direct comparison of rural and urban communities because they both comprise urban and rural areas. However, the mountain region is characterized by a lower average population density as compared to the mid-Atlantic states. These data suggest that the role of urbanicity in predicting suicidality is worth exploring.

**Summary.** The existing data on ethnicity and urbanicity differences in CP and depression is far from conclusive. Preliminary evidence suggests few ethnicity differences in CP and depression, but higher rates of both CP and depression in highly

urbanized areas. Caucasian youth have higher academic achievement and reported social competence as compared to African American youth. Few urbanicity differences in academic achievement and social competence have been reported in the literature. A relationship between antisocial peer relations and either ethnicity or urbanicity has not been reported, but is likely higher in urban areas. Substance use is higher in Caucasian youth as compared to African American youth, and no differences have been reported in the relationship between substance use and urbanicity. The relationship between ethnicity and suicidality is unclear, with data suggesting that Caucasian youth may currently have similar or higher rates as compared to African American youth, but rates are rising for African American youth. There are no data on the relationship between urbanicity and suicidality. Assessing levels of symptomatology and adjustment outcomes for a large sample of high-risk youth by different combinations of ethnicity and urbanicity (e.g., urban African American, rural Caucasian) is a step towards better defined groups, and may help clarify some of the existing confusion in this area.

### Purpose

The goals of this study were to replicate and extend the current research on 1) the development of depression, CP and their comorbid presentation in childhood (i.e., 5th grade) and early adolescence (i.e., 7th grade), 2) the predictive relationship between CP and depression, and 3) the relationship between symptomatology and early adolescent adjustment. This study addressed many of the methodological problems associated with past comorbidity research. First, dimensional measures, based on empirical studies of

youth development and psychopathology, with a circumscribed assessment time frame (i.e., 6 months to 1 year) were used. Symptomatology groups were created using subclinical cut-offs to capture youth with elevated symptomatology. Second, constructs were created using a variety of informants to capture a range of contexts within which behaviors occur and a range of perceptions of that behavior. Third, the sample is longitudinal to allow for prediction over time. Fourth, the sample is gender balanced and ethnically diverse to allow for the examination of group differences. Fifth, the sample has an overrepresentation of youth with problem behaviors to increase statistical power for analyses of depression symptoms, CP and their co-occurrence.

Based on the existing literature, the hypotheses of the current study are as follows:

Hypothesis 1—Changes in rates of symptomatology: Overall rates of depression, CP, and their comorbid presentation will increase from fifth to seventh grade. In fifth grade, rates of depression will be similar across gender, but by seventh grade, rates of depression will be higher for girls than boys. Rates of CP will be higher for boys than girls across both fifth and seventh grade, but the difference may be smaller in seventh grade. In terms of comorbid symptomatology, boys will have overall higher rates of comorbidity, but rates of comorbidity will increase more for girls than for boys from fifth to seventh grade.

Hypothesis 2—Predictive relationship between CP and depression: In longitudinal analyses, CP will be more stable than depression, and CP will predict depression more

strongly than depression will predict CP. However, there may be gender differences in the strength and/or direction of this prediction.

Hypothesis 3—Relationship between symptomatology and adjustment outcomes:

Using continuous measures, depression and CP will predict adjustment problems across all domains assessed, with the exception that depression may not predict antisocial peer relations. Using categorical measures, youth with comorbid depression and CP will have significantly worse adjustment outcomes than those with depression-only, CP-only, and no symptomatology. Those with CP-only will have worse adjustment outcomes than those with depression-only and those with no symptomatology. Those with depression-only will have worse adjustment outcomes than those without any elevated symptomatology. Some of these findings may vary by the specific adjustment outcome. In addition, there may be gender differences in the strength of the relationships between symptomatology and adjustment outcome.

Hypothesis 4—Ethnicity and urbanicity differences in symptomatology and adjustment outcomes: Given the limited literature and the nature of this data set (which will be discussed in the method section), these analyses were exploratory and no predictions were made.

## Method

### Overview

Data for this study were collected as part of an ongoing, longitudinal, multi-site investigation of the development and prevention of CP in children. Details of the investigation are described elsewhere (Conduct Problems Prevention Research Group [CPPRG], 1992, 2000). This larger study selected 54 high-risk schools from four areas of the country. Schools were randomly assigned to either intervention or comparison conditions. High-risk children from each school were enrolled in the study. In addition, a normative sample of children was enrolled, which included some children from the comparison group. The current study analyzed data from the high-risk comparison and normative groups only. Data collected during and immediately after the participants' 5<sup>th</sup> and 7<sup>th</sup> grades was used. This time period was selected because it spans a major transitional period, representing the transition from elementary school to middle or junior high school and the transition into adolescence. Changes in symptomatology are likely to occur during this transition. Youth-, parent-, and teacher-report of youth psychopathology and adjustment were obtained and used to construct composite measures of the major domains (CP, depressive symptomatology and adjustment outcomes).

### Participants

Participants in the larger study were selected from four areas of the country, each representing a different cross-section of the American population: 1) Durham, North Carolina, a small city with a large low- to middle-SES, single- and two-parent, African

American population in the urban public schools; 2) Nashville, Tennessee, a moderate-sized city with a mix of low- to middle-SES, single- and two-parent African American and Caucasian families; 3) Seattle, Washington, a moderate-sized city with a low- to middle-SES, ethnically diverse population, including Caucasians, African Americans, Asian and Pacific Islanders, Chicano/Latinos, and Native Americans; and 4) Central Pennsylvania, a mostly rural area with low- to middle-SES, two-parent, Caucasian families. High-risk schools were identified at each of the four sites based on measures of poverty and low parental education levels that were characteristic of the parents of children in the schools, and on location of the schools' "catchment areas" in high-crime areas (Lochman & CPPRG, 1995).

As part of the larger intervention study design, schools were randomly assigned to intervention and comparison conditions. Participants were selected in kindergarten using a multistage screening process that included initial teacher ratings of disruptive behavior at school followed by parent ratings of behavior at home. Teachers completed the 10-item Authority Acceptance Scale from the Teacher Observation of the Child Adaptation-Revised (TOCA-R; Werthamer-Larsson, Kellam, & Wheeler, 1991) for all kindergartners in the 54 participating elementary schools at the four sites. The parents of children who scored in the top 40% of the sample on teacher ratings at each site were contacted and administered a screening measure that asked to rate the frequency of their child's problem behavior at home. This measure was composed of items from the Aggression scale of the CBCL (Achenbach, 1991) and the Revised Problem Behavior Checklist

(Quay & Peterson, 1987) and other items generated by the investigators (see Lochman & CPPRG, 1995). Children's total scores on the two screening measures were averaged. Children who were in the top 10% of the sample for this combined score were invited to participate in the longitudinal study as the high-risk sample. In the first cohort of the study (there are a total of three cohorts from 3 consecutive years), a total of 310 children were enrolled. This study utilizes data on children from the comparison schools only, for a total of 155 high-risk participants.

In order to study normal child development processes, a normative sample of 387 children also was selected from the comparison schools only. This sample was obtained in the first cohort only. From the same schools as noted above, 100 kindergarten children were selected at each site (87 in Seattle) on the basis of their race, gender, and level of teacher-reported behavior problems. The normative sample of 100 children from each site was selected by including 10 children at each decile of the distribution of scores on a teacher-report screen for behavior problems, which consisted of items from the TOCA-R. This sample was also stratified by race and gender.

The high-risk ( $n=155$ ) and normative ( $n=387$ ) samples for the first cohort have been combined for the purposes of this study. Approximately half of the high-risk sample ( $n=79$ ) are also part of the normative sample, so combining the two samples leads to a total sample of 463 youth. Because multiple imputation (MI) was used for missing data, only cases with no data across all reporters and time periods (e.g., completely missing) were excluded from the sample for the main analyses. Twenty-eight cases (6%)

were completely missing due to attrition by the sixth year of the study. This left a total sample of 435 cases for the 42 variables and subscales chosen. Of these 435 cases, 284 had complete data for the selected variables. The other 151 cases had some missing data, either by reporter or time point. Preliminary analyses, such as reliability analyses and subscale construction, were conducted prior to MI because of the size of the dataset. MI cannot handle analyses with such a large number of variables, so subscales were created before conducting MI for the main analyses.

Across all sites, the modal grade for youth in this sample (i.e., normative and high-risk control youth combined for the first cohort) in the sixth year of this study was fifth grade (75% in 5<sup>th</sup> grade, 21% in 4<sup>th</sup> grade, 3% in 3<sup>rd</sup> grade, and 1% in 6<sup>th</sup> grade). The sample was 54% male, with 48% of the sample from an ethnic minority background (44% African American and 4% other). Eighty-six percent of the Durham sample, 51% of the Nashville sample, 2% of the Pennsylvania sample and 54% of the Seattle sample was ethnic minority. The modal Hollingshead SES indicator was 5 (5 in Durham, 5 in Nashville, 4 in Pennsylvania, 3 in Seattle), with 5 representing the lowest level of SES. Four percent of the total sample had a Hollingshead SES index of 1, 16% had an index of 2, 24% had an index of 3, 26% had an index of 4, and 29% had an index of 5.

### Procedures

To capture the transition from childhood to early adolescence, measures of CP and depressive symptomatology from 5th grade and CP, depressive symptomatology, and adjustment outcomes from 7th grade were analyzed. Conduct problems were assessed by

parent- and youth-report in home interviews in the summer after the youth completed fifth grade and again in the summer after the youth completed seventh grade, and by teacher-report from teacher interviews during the spring of the youth's fifth and seventh grade years. Parent- and youth-report of depressive symptomatology was assessed in home interviews in the summer after the youth completed fifth grade and again in the summer after the youth completed seventh grade. Teacher-report of depressive symptomatology was not assessed because teachers are not considered valid informants for internalizing problems (e.g., Stanger & Lewis, 1993). Early adolescent adjustment outcomes include measures of academic adjustment, social competence, antisocial peer relations, substance use, and suicidality. Adjustment outcomes were assessed by parent- and youth- report from home interviews in the summer after the youth completed seventh grade, and by teacher-report from teacher interviews in the spring of the youth's seventh grade year.

### Measures

For all scales created, a mean was used instead of a sum in order to allow for some missing data. Scores were considered missing if twenty-five percent or more of the items were missing.

Conduct problems. Youth-, parent-, and teacher-report measures of youth covert and overt CP were obtained. At the end of fifth grade, youth completed the 20-item General Delinquency subscale of the 32-item Things That You Have Done questionnaire (TYHD). Most of the items comprising THYD were derived from the National Youth

Survey (Elliott, Ageton, & Huizinga, 1985), but additional items were written specifically for Fast Track (CPPRG, 2000c). A 19-item scale was created including items related to aggressive behavior, status violations, theft, vandalism and school delinquency, but excluding items related to substance use and consequences instead of behavior (e.g., school suspension and trouble with the police). For each type of delinquent act, the participant is asked how many times he/she committed it in the past year. However, because of the very high rate of zero responses for all items, the distributions of the raw count mean scores were characterized by extreme positive skew as well as a concentration of values at zero. Therefore, items were dichotomized and the mean of the scale was calculated, producing a measure of the percentage of the total items the youth reported committing as opposed to a mean of the frequencies of the items the youth reported committing. This scale demonstrated acceptable internal consistency with this sample (Cronbach's  $\alpha = .79$ ).

At the end of seventh grade, adolescents completed the 34-item Self-Reported Delinquency Scale (SRD). The SRD is an extensive, well-known instrument that was developed for the National Youth Study (Elliott et al., 1985; Elliott, Huizinga, & Menard, 1989). As a more in-depth and focused version of the THYD, the SRD also includes items related to aggressive behavior, status violations, theft, vandalism and school delinquency. It excludes items related to substance use. For this study, one item asking about the use of credit cards without permission was omitted because it was not endorsed by any youth, reducing the scale to 33 items. This instrument was self-administered and

audio-assisted in the hopes of eliminating the influence of social desirability on youth responding. For each type of delinquent act, the youth is asked whether he/she ever committed it, how many times in the past year, if others were involved, and if he/she was under the influence of alcohol or drugs while committing it. Similar to the TYHD, a dichotomized item mean score, capturing the number of different CP a youth endorsed, was created. The 33-item SRD scale demonstrated adequate internal consistency with this sample (Cronbach's  $\alpha = .83$ ). The THYD and SRD General Delinquency scales are composed of different, but overlapping item sets, representing developmental changes in the behavioral expression of CP.

Parents completed the 112-item CBCL (Achenbach, 1991b) at the end of fifth and seventh grade. Parents respond to each item using a 3-point scale, noting whether each behavior is "not true", "somewhat or sometimes true," or "very true or often true" for the youth. The Externalizing broad-band scale from the CBCL was used to measure parent-report of CP. This 33-item scale assesses aggressive and delinquent behaviors. One item measuring substance use was removed from this scale so as not to confound it with the outcome measure of substance use. A mean score of the 32 remaining items was used as parent-report of CP. The items from the CBCL were factor analyzed to empirically identify subscales consisting of symptoms that clustered together in children. There is extensive documentation of the validity and reliability of the CBCL (Achenbach, 1991a, 1991b). In this sample, the 32-item scale is highly reliable for both fifth and seventh grade measures ( $\alpha = .92$ , for both grades).

Teachers completed the Externalizing Scale from Teacher Report Form of the CBCL (TRF; Achenbach, 1991a) in the spring of fifth and seventh grade. The TRF Externalizing scale is a 34-item measure of aggressive and delinquent behavior. It was developed to complement parent report on the CBCL. Again, there is extensive documentation of the validity and reliability of the CBCL (Achenbach, 1991a, 1991b). Teachers respond to each item using a 3-point scale, noting whether each behavior is “not true”, “somewhat or sometimes true,” or “very true or often true” for the youth. The teacher who completed the form each year was chosen in collaboration with the grade-level counselor to determine a teacher who had the student for a primary subject and knew the student best. Similar to the CBCL, one item measuring substance use was removed so as not to confound the scale with the outcome measure of substance use. A mean score of the 33 remaining items was used as teacher-report of CP. In this sample the scale is highly reliable for both fifth and seventh grade measures ( $\alpha = .97$ , for both grades).

A composite cross-reporter measure of CP was created by averaging standard  $z$ -scores of parent-, teacher-, and youth-report, separately for fifth and seventh grade. Reliability analyses indicated good internal consistency for this cross-reporter construct across both grades (composite  $\alpha s = .97$ , for both fifth and seventh grades). As shown in Table 1, correlations among reports range from  $r = .26$  to  $.39$  for fifth grade and  $r = .24$  to  $.43$  for seventh grade. Parent- and teacher-report have the highest correlation and parent- and youth-report have the lowest correlation across both grades. This measure of CP was

used both continuously and categorically by creating a subclinical cut-off, as described below.

Depressive symptomatology. Youth- and parent-report measures of youth depressive symptoms were obtained at the end of fifth and seventh grade. Youth completed the Reynolds Child Depression Scale (RCDS; Reynolds, 1989), a 30-item self-report measure assessing symptoms of depression from the criteria listed for MDD and DD in the DSM-III-R on a 4-point Likert-type scale, ranging from 1 = “almost never” to 4 = “all the time”. For this sample, the RCDS demonstrated acceptable internal consistency across both fifth and seventh grade measures ( $\alpha = .87$ ). A continuous measure was created by taking a mean of all 30 RCDS items.

The CBCL (Achenbach, 1991b) was used to assess depressive symptomatology via parent-report. Parents respond to each item using a 3-point scale, noting whether each behavior is “not true”, “somewhat or sometimes true,” or “very true or often true” for the youth. Based on empirical factor analyses, the CBCL includes a 14-item Anxious/Depressed subscale (Achenbach, 1991b). This combined measure of depression and anxiety suggests that these two forms of psychopathology are difficult to differentiate in young children. However, the youth in this sample were in 5th and 7th grade, potentially making it more feasible to differentiate clusters of symptoms of depression from those of anxiety. This study utilized an alternative scale that isolates symptoms of depression, which was developed using both conceptual and empirical criteria (Lengua et al., 2001). The scale consists of 12 items measuring symptoms of depression. Two items

related to suicide ideation and attempts were removed from this construct because they were used as part of an outcome measure of suicidality. A mean of the remaining 10 items was calculated as parent-report of youth depressive symptomatology. Reliability analyses for both fifth and seventh grade data indicate adequate internal consistency ( $\alpha = .67$  and  $.76$ , respectively).

Similar to CP, a cross-reporter composite measure of depression was created by averaging standard  $z$ -scores of parent- and youth-report, separately for fifth and seventh grade. Reliability analyses indicated good internal consistency for the combined reporter construct across both grades (composite  $\alpha s = .83$  and  $.85$ , for fifth and seventh grades respectively). As seen in Table 2, correlations between parent- and youth-report are quite low across both grades ( $r = .21$  and  $.19$ , for fifth and seventh grade, respectively). This measure of depression was used as both a continuous and categorical variable by creating a subclinical cut-off.

Early adolescent adjustment. The adjustment measures were selected to closely follow from Capaldi (1991, 1992) and included: suicidality, substance use, academic adjustment, social competence, and antisocial peer relations. All adjustment outcomes were assessed by parent- and/or youth-report at the end of seventh grade. Teacher-report of academic adjustment and social competence was assessed in the spring of seventh grade.

Academic adjustment was assessed by youth-, parent-, and teacher-report. Because teachers are best at judging student academic performance relative to their peers,

most of the information for this construct comes from teacher-report. For teacher-report of academic adjustment the Teacher's Rating of Student Adjustment (CPPRG, 2000b), a short 6-item rating scale, was completed by each teacher who had the youth for a primary subject. Teachers are asked to rate the student's level of skill on a 5-point scale from "poor, unsatisfactory skills" to "excellent skills" in six domains. Because of the structure of most middle and junior high schools in which youth are taught different subjects by different teachers, several teachers were asked to fill out the measure for each youth. The six items were each averaged across teachers, creating a composite score for each of the six domains. Depending on the number of teachers who completed this measure for each youth, responses for each item were averaged across two or three teachers. The three domains relevant to academic adjustment are academic performance, academic motivation, and personal maturity related to work completion. Agreement among teachers for each item was examined using the intraclass correlation coefficient (ICC; Shrout & Fleiss, 1979) across three different teachers. The ICCs for the three items in this construct (first with three teachers averaged ( $n = 117-119$ ) and second with two teachers averaged ( $n = 222-223$ )) are as follows: academic motivation: .81 and .80, academic performance: .80 and .80, and personal maturity: .82 and .82.

Teacher-report of academic adjustment was also assessed with the Social Competence—Teacher Report-Revised (SCTR-R; CPPRG, 2000a), a 17-item measure of academic competence, prosocial behavior, and emotion regulation. For each item, the teacher is asked to rate the frequency of individual social behaviors on a 6-point scale

ranging from “almost never” to “almost always.” The five items related to academic competence were used for this construct (e.g., “performing at grade level,” “reliable in turning in assignments”).

Youth and parents completed parallel measures that assessed both academic and social adjustment to school. The School Adjustment-Child Report (SA-CR; CPPRG, 2001a) is a 20-item measure that evaluates the youth's perceptions. It assesses general school adjustment, academic adjustment, peer relations adjustment, peer pressure adjustment, behavioral adjustment, and school bonding. The questions are rated on a 5-point scale from “never true” to “always true”. Three items from this measure (e.g., “I did not do well in academics this year,” “School work was hard for me,” and “I had an easy time handling academic demands”) are used for youth-report of academic adjustment.

The parallel measure of school adjustment for parents, the School Adjustment-Parent Report (SA-PR; CPPRG, 2001b) is an 18-item measure that evaluates the parent's perceptions of their child's general school adjustment, academic adjustment, peer relations adjustment, and behavioral adjustment. The parallel three items for parents (e.g., “My child did not do well in academics this year,” “School work was hard for my child,” and “My child had an easy time handling academic demands”) are used for parent-report of academic adjustment.

A composite cross-reporter construct was created by combining standard  $z$ -scores from one youth, one parent and two teacher subscales. Teacher report was weighted in

this measure for two reasons: 1) teachers have access to a broader sample of children with which to compare each given child academically, and 2) there were two separate measures completed by teachers, one of which was averaged across multiple different teachers. Reliability analyses indicated that the academic adjustment cross-reporter construct was highly internally consistent (composite  $\alpha = .92$ ). Correlations among reporters range from  $r = .32$  to  $.53$ . Parent- and teacher-report have the highest correlation and parent- and youth-report have the lowest correlation, though all are significant.

Social competence was assessed by youth-, parent-, and teacher-report. To assess teacher-report, 12 items assessing prosocial behavior and emotion regulation from the SCTR-R were used. In addition, three items from the TRSA measuring the domains of social skills, relationships with adults, and conduct were used. ICCs for these three items across multiple teacher reports (first with 3 teachers averaged ( $n = 118-119$ ) and second with 2 teachers averaged ( $n = 223$ )) are as follows: adult relationships:  $.71$  and  $.65$ , conduct:  $.84$  and  $.84$ , and social skills:  $.71$  and  $.69$ .

Parent- and youth-report of social competence was assessed using the SA-PR and SA-CR, respectively. Items assessing peer relations and behavioral adjustment at school were used from each measure. These included five parent-report items (e.g., “My child did not have as many friends this year,” and “My child got into trouble this year at school”) and eight youth-report items (e.g., “I had a hard time making friends,” and “Teachers were on me because i broke rules.”).

A cross-reporter composite measure was created by combining standard  $z$ -scores from one youth, one parent, and two teacher subscales. Once again, teacher report was weighted in this measure for same two reasons: 1) teachers have access to a broader sample of children with which to compare each given child socially, and 2) there were two separate measures completed by teachers, one of which was averaged across multiple different teachers. Reliability analyses indicated that the cross-reporter construct was highly internally consistent (composite  $\alpha = .95$ ). Correlations among reporters ranged from  $r = .43$  to  $.58$ . Again, parent- and teacher-report have the highest correlation and parent- and youth-report have the lowest correlation, though all are significant.

Antisocial peer relations were assessed by youth-report on the Self Report of Close Friends, a self-administered, audio-assisted instrument based on a measure developed for the Seattle Social Development Project (O'Donnell, Hawkins, & Abbott, 1995). Youth were asked to identify their two closest friends. For each friend and for their larger social group, a series of questions assessed activities they did together, thoughts and feelings shared with the friend, commitment to the friend, behaviors by the friend including delinquency, substance use, school motivation and involvement in positive peer activities. Youth responses are on a 4-point scale from "very much" to "not at all." Seven items for each friend/group of friends (for a total of 21 items) assessing their friends' antisocial behavior and their parents' approval of these friends were included in this construct.

In addition, two items from the Gang Involvement measure developed for the Pittsburgh Youth Study (Lahey, Gordon, Loeber, Stouthamer-Loeber, & Farrington, 1999) were included. This instrument was also self-administered and audio-assisted. Youths were asked if (a) they had been a member of a gang in the last year, and (b) they had friends in a gang. Because of the tree structure of the measure, those participants who endorsed gang membership, were not asked if they had a friend in the gang. Therefore, the missing item was recoded as “yes” to having gang members as friends if the participants had responded “yes” to being in a gang. Two dichotomous items were created assessing lifetime gang membership and friendship with gang members. The two gang questions were recoded to be on the same 4-point scale as the other 21 items, such that “no” was 1 and “yes” was 4. Reliability analyses combining 21 items from Self Report of Close Friends and 2 dichotomous items from Gang Involvement indicate good internal consistency ( $\alpha = .90$ ). Combining the 23 items created a mean score of antisocial peer relations.

Substance use was assessed using the Tobacco, Alcohol and Drugs measure, a self-administered audio-assisted instrument based on part of the National Longitudinal Study of Adolescent Health (CHIP-AE, Starfield et al., 1995). This measure assesses the frequency of use of tobacco, alcohol, and illegal drugs (marijuana, cocaine, crack, inhalants, heroin, LSD, PCP, ecstasy, mushrooms, speed and other pills not prescribed by a physician). Because of the tree structure of this measure and low levels of endorsement of many items, only items assessing substance use (and not measures of frequency,

contexts, or consequences of substance use) were used. A dichotomized item mean was created combining the six items assessing cigarette smoking, alcohol, marijuana, cocaine, inhalants, and “other illegal drug” use. Internal consistency is adequate ( $\alpha = .68$ ).

Suicidality was assessed by both youth- and parent-report. Youth reported on the Suicide measure, a 7-item self-administered audio-assisted instrument based on the Child Health and Illness Profile—Adolescent Edition (CHIP-AE) used in the National Longitudinal Study of Adolescent Health (Starfield et al., 1995). In this measure, the youth is asked whether s/he has contemplated suicide, actually attempted suicide, required medical attention for an attempt, whether any friends have attempted suicide, and whether any family members have attempted suicide. Because of very low levels of endorsement, only two items from this measure were used for these analyses: 1) “In the last 12 months, did you think about committing suicide?” and 2) “How many times did you actually attempt committing suicide?” These items were dichotomized to determine the presence of suicidal ideation and/or suicidal attempts. In addition, two parent-report items from the CBCL were included: 1) “Talks about killing self” and 2) “Deliberately harms self or attempts suicide.” The dichotomized child-report items were rescored (no=0 and yes=2) to match the scale 0, 1, 2 scale for the CBCL and to weight the child report of suicidality relative to parent report. These four items were averaged to form a composite measure of suicidality. Internal consistency for this 4-item scale is low ( $\alpha = .37$ ) because of the few items in the scale and the low level of endorsement.

Gender. Gender was a single item indicator: Males were coded 1, females 0.

**Ethnicity.** To make this variable usable in MI, two dummy variables were created from the single categorical variable of “ethnicity.” African American and Caucasian participants were each coded 1 for a separate dummy variable. All other ethnic groups were coded 0 for the two dummy variables. With this coding, the two dummy variables are interpreted as (a) African American versus other ethnicities and (b) Caucasian versus other ethnicities. Only comparisons between African American and Caucasian were calculated because the sample size of other ethnic groups was too small. Because of a site by ethnicity confound in this sample (i.e., the Central Pennsylvania sample is 98% Caucasian and the Durham sample is 86% African American), ethnicity comparisons could not be conducted for the whole sample. Instead, a variable that simultaneously divided the sample by site (i.e., rural versus urban) and ethnicity (i.e., African American versus Caucasian) was created. In this way, the complete sample of African American and Caucasian participants could be used instead of only using the ethnically heterogeneous Seattle and Nashville sites and greatly reducing the sample size. Before describing the new composite variable, a description of the rural versus urban variable is necessary.

**Urbanicity.** First, to differentiate among the four sites, three dummy codes were created from a single-item indicator. Participants from Nashville, Central Pennsylvania, and Durham were each coded 1 for a separate dummy variable. All other sites were coded 0 for the three variables. With this coding, the three dummy variables are interpreted as (a) Nashville versus other sites, (b) Central Pennsylvania versus other sites, and (c)

Durham versus other sites. A single-item indicator was created from these dummy codes to differentiate rural versus urban sites. If the site was Nashville, Durham, or Seattle, the indicator was coded 0 (urban). If the site was Central Pennsylvania, the indicator was coded 1 (rural).

Combining the site variable and two ethnicity dummy variables—and retaining the majority of the sample—a new indicator was created with three groups: (a) rural Caucasian sample, (b) urban Caucasian sample, and (c) urban African American sample. (There were no rural African Americans to comprise a fourth group.)

### Data Analysis

Missing data. Most of the missing data in the study were due to attrition. Table 3 illustrates the different patterns of missing data for the subscales of depression, conduct problems, and the five adjustment outcomes. As shown in this table, there were 46 different patterns of missingness, including the pattern for which data were present for all subscales. Six percent of the data were missing across all subscales and 61% were available for all subscales. This pattern highlights the point that it is unreasonable to discard a large number of cases in order to use complete cases analyses when only a relatively small proportion of data points are actually missing across all measures (Graham & Hofer, 2000; Graham, Hofer, Donaldson, MacKinnon, & Schafer, 1997).

For the main analyses in this study, missing data were multiply imputed using Schafer's NORM software (Schafer, 1997; Schafer & Olson, 1998). Independent analyses were performed on 20 data sets containing imputed values. Use of 20 imputed

data sets was determined to be more than adequate for these analyses. Based on 20 imputed data sets, the standard error of a point estimate with as much as 60% missing information is approximately only 1.015 times as large as an estimate based on an infinite number of imputations (Schafer, 1997, p. 107). The parameter estimates were then combined to obtain an unbiased estimate of the population values. The total variances of the estimates are also combined, but this process is more complicated. Total variance is the sum of within-imputation variance, between-imputation variance, and an additional correction factor to account for the simulation error in the parameter estimate. From these estimates, significance testing can be performed. Previous research indicates that results of MI are minimally affected by biases due to attrition (Graham et al., 1997).

At this point in the advancement of analyses with missing data, procedures for calculating reliable parameter estimates are readily available (e.g., MI) and performing valid hypothesis testing is possible when regression statistics are utilized. However, comparably good procedures for calculating ANOVA results are not yet available. Because of this practical problem, ANOVA analyses were transformed into dummy coded regression analyses and all pairwise comparisons were tested using the Bonferroni correction to address Type I error.

For certain analyses, such as stability analyses, where significance tests could not be calculated using MI, the data are presented as purely descriptive. These descriptives were calculated using one singly imputed dataset. This dataset was computed using an EM (Expectation-Maximization algorithm) covariance matrix from NORM (Dempster,

Laird, & Rubin, 1977). First, the dataset is created without errors, along with a matrix of real error (residual) terms. Then a randomly selected residual (error term) is added to each imputed value in the dataset. A residual is randomly selected, with replacement, from the distribution of actual residuals for that variable. Previous research suggests that this singly imputed dataset provides unbiased parameter estimates, but overestimates the statistical significance (Graham, Cumsille, & Elek-Fisk, in press).

Analysis plan. First, using a sub-clinical cut-off of  $.5$  SD (e.g., Capaldi, 1991; Miller-Johnson et al., 1998), four distinct symptomatology groups were created from the cross-reporter constructs of CP and depression: 1) CP alone, 2) depressive symptoms alone, 3) CP and depressive symptoms, and 4) neither CP nor depressive symptoms.

Second, cross-sectional and longitudinal relationships between continuous measures of depressive and CP symptomatology were examined using correlation and regression. Using the four groups, the stability of CP, depression, and comorbidity were examined by comparing changes in mean levels of symptomatology for each group over 2 years. In addition, the number and percentage of youth who were retained in the same groups over a 2-year period were calculated. Gender differences were examined for all analyses.

Third, longitudinal relationships between levels of symptomatology (and their interaction) and the five adolescent adjustment outcomes were examined using regression analyses. To assess significant differences among the four symptomatology groups in their levels of each of the five adolescent adjustment problems, dummy codes were

created to test all pairwise comparisons among groups using regression analyses. Gender differences were examined for both sets of analyses.

Fourth, ethnicity differences between Caucasian and African Americans youth in levels of depressive and CP symptomatology and adjustment outcomes were examined using the same approach of creating dummy codes to test pairwise comparisons in a regression framework.

## Results

### Group Membership

Consistent with previous similar studies (e.g. Capaldi, 1991; Miller-Johnson et al., 1998), a sub-clinical cut-off of  $.5$  SD above the mean was used to create four distinct symptomatology groups from the continuous multi-reporter measures of CP and depression. This cut-off was used so as not to exclude youth with elevated, but not clinical, levels of symptomatology and to obtain reasonable sample sizes in the groups. Participants in the CP alone group (CP) had a score on the CP construct  $.5$  SD above the mean and a score on the depression construct at or below the mean. Participants in the depressive symptoms alone group (DEP) had to score  $.5$  SD above the mean on the depression construct and at or below the mean on the CP construct. Participants in the comorbid CP and depressive symptoms group (CPDEP) had to score  $.5$  SD above the mean on both measures of CP and depression. Participants in the group with neither CP nor depressive symptoms (NONE) scored at or below the mean on both measure of CP and depression. Therefore, participants who had scores on the continuous measures of depression and/or CP that fell between the mean and  $.5$  SD above the mean were not included in these groups. This procedure reduced the sample size of youth within symptomatology groups to 309 for the fifth grade data and 318 for the seventh grade data. Percentages of youth were based on the original sample size of 435 for Tables 4 and 5, and the reduced sample sizes for Tables 10 through 15.

Percentages and number of youth in each group are shown in Table 4. For fifth grade, 56 (12.87%) youth were in the CPDEP group, 41 (9.43%) were in the CP group, 34 (7.82%) were in the DEP group, and 178 (40.92%) were in the NONE group. For seventh grade, 58 (13.33%) youth were in the CPDEP group, 38 (8.74%) were in the CP group, 39 (8.97%) were in the DEP group, and 183 (42.07%) were in the NONE group. There were 126 (28.96%) youth in fifth grade and 117 (26.89%) youth in seventh grade who did not fit any of the groups' criteria. These overall rates do not change significantly because the measures were standardized separately for each time point.

Because gender differences were an integral part of this study, group membership is displayed separately for boys and girls in Table 5. For girls, 8.59% were in the CPDEP group in fifth grade and 8.08% were in seventh grade; 3.03% were in the CP group in fifth grade and 4.55% were in seventh grade; 9.60% were in the DEP group in fifth grade and 13.64% were in seventh grade; and 53.54% were in the NONE group in fifth grade and 51.01% were in seventh grade.

For boys, 16.46% were in the CPDEP group in fifth grade and 17.72% were in seventh grade; 14.77% were in the CP group in fifth grade and 12.24% were in seventh grade; 6.33% were in the DEP group in fifth grade and 5.06% were in seventh grade; and 30.38% were in the NONE group in fifth grade and 34.60% were in seventh grade.

The developmental changes in rates of symptomatology for boys and girls appear to be going in opposite directions. As compared to girls, the percentage of boys without symptomatology actually increased over the 2 years, but remained 16% lower than the

percentage of girls without symptomatology. The percentage of boys with comorbid symptomatology was approximately two times that of girls' across the 2 years. Boys were five times more likely to have CP than girls were in fifth grade and only three times more likely to have CP than girls were in seventh grade. Girls were only slightly more likely to have elevated depression alone than boys in fifth grade, whereas in seventh grade girls were more than twice as likely to have elevated depression alone.

Because all of these analyses were based on standardized measures of symptomatology, it is impossible to assess absolute change in levels of CP and depression. Therefore, unstandardized means of single-reporter measures of CP and depression were compared for a rough estimate of change over time. Tables 6 and 7 contain parent- and child-report of depression, and parent- and teacher-report of CP for each time point, for the whole sample and by gender. Child-report of CP was not included because different measures were given at the two time points, preventing direct comparison across time. Examination of these means suggests that all of the unstandardized measures of CP and depression are quite stable from fifth to seventh grade, with one exception: Child-report of depression triples. These results indicate that the stability of the standardized measures over time is only in part due to the standardization process. Mean levels of CP appear stable over the 2-year period, which is accurately reflected by the standardized measure, but mean levels of depression increase markedly.

### Stability Analyses

For each of the four groups—CPDEP, CP, DEP, and NONE--the mean level of CP and depression were assessed over the 2-year period from fifth to seventh grade (see Table 8). Because of limitations of MI, significance tests could not be calculated for mean differences. The means are meant to be purely descriptive of trends in the data. For the CPDEP group, the mean levels of both CP and depression were the highest across all groups in fifth grade and both decreased by seventh grade. This decrease may result from the restandardization of measures for seventh grade. If the entire sample scored somewhat higher, then the standard scores for individuals in a given group would be lower in seventh grade. From the unstandardized measures, it is clear that depression increased markedly, but CP was relatively stable. Alternatively, the decrease could result from regression toward the mean. For the CP group, CP decreases over the 2-year period and depression increases (toward the mean). For the DEP group, the opposite occurs; depression decreases and CP increases. For the NONE group, initial mean levels of both depression and CP are the lowest across all groups and they both increase over the 2-year period. However, they both remain below the mean. When these trends are examined separately by gender, a similar pattern emerges for both boys and girls (see Table 9).

When the overall percentages of youth in each of the four groups are assessed, they appear to remain relatively stable over a 2-year period. However, a given youth's standing was more variable and the membership of each group changed markedly. Again, significance tests cannot be computed on these data because of the limitations of MI, and

results are presented as descriptive data. When tables are computed to examine the relationship between fifth grade group membership and seventh grade group membership, the total sample is reduced ( $n = 234$ ) because some of the youth who met criteria for a group at one of the two time points did not meet group criteria at the other time point. (In fifth grade, 309 youth met criteria for one of the groups, and in seventh grade, 318 youth met criteria. These were not all the same youth. Some youth who met group criteria in fifth grade did not meet criteria in seventh grade, and some youth who met group criteria in seventh grade did not meet criteria in fifth grade.) Therefore, the following percentages are different than those presented in Table 4 because of the reduced sample size. As shown in Tables 10 and 11, with this reduced sample, the CPDEP group comprised 16.24% of the sample in fifth grade and 16.67% in seventh grade. The CP group comprised 11.97% of the sample in fifth grade and 11.54% in seventh grade. The DEP group comprised 9.83% of the sample in fifth grade and 11.54% in seventh grade. Finally, the NONE group comprised 61.97% of the sample in fifth grade and 60.26% in seventh grade. The DEP group increased by 1.7% while the NONE group decreased by a similar amount. The other two groups changed less than 0.5%.

As illustrated in Table 10, of those youth in the CPDEP group in fifth grade, 71.05% were still in the CPDEP group in 7<sup>th</sup> grade. Thirteen percent moved to the CP group; 10.5% moved to the DEP group; and 5.3% moved to the NONE group. Of those youth in the CP group in fifth grade, 50.00% were still in the CP group in 7<sup>th</sup> grade. Interestingly, 25.00% had moved to the CPDEP group, 21.43% had moved to the NONE

group and 3.57% were in the DEP group. Of those youth in the DEP group in fifth grade, 39.13% were still in the DEP group in 7<sup>th</sup> grade. Thirty nine percent had moved to the NONE group, 13.04% were in the CPDEP group, and 8.70% were in the CP group. Of those youth in the NONE group in fifth grade, 85.52% remained in the NONE group in seventh grade; 8.97% moved to the DEP group; 4.14% moved to the CP group; and 1.38% moved to the CPDEP group.

Table 11 represents the stability of the groups retrospectively: For each group in seventh grade, what percentage of its members were in that group in fifth grade? For the CPDEP group in seventh grade, 69.23% were in the CPDEP group in fifth grade, 17.95% were in the CP group, 7.69% were in DEP group, and 5.13% were in the NONE group. For the CP group in seventh grade, 51.85% were in the CP group in fifth grade, 18.52% were in the CPDEP group, 22.22% were in the NONE group, and 7.41% were in the DEP group. For the DEP group in seventh grade, 33.33% were in the DEP group in fifth grade, 48.15% were in the NONE group, 14.81% were in the CPDEP group, and 3.70% were in the CP group. For the NONE group in seventh grade, 87.94% were in the NONE group in fifth grade, 6.38% were in the DEP group, 4.26% were in the CP group, and 1.42% were in the CPDEP group.

Next, these stability analyses were examined for each gender separately. The overall percentages of girls and boys in each group varied, as demonstrated by Tables 12 and 13. For the CPDEP group, 63.64% of the girls and 74.07% of boys remained in the CPDEP from fifth to seventh grade. Girls were more likely to move to the DEP group

(27.27%) while boys were more likely to move to the CP group (18.52%). For the CP group, 33.33% of girls and 52.00% of boys remained in the group over 2 years. Girls were equally likely to move to the CPDEP (33.33%) or the DEP (33.33%) group. Boys were equally likely to move to the CPDEP (24.00%) or the NONE (24.00%) group. For the DEP group, 41.67% of girls and 36.36% of boys remained in the DEP group from fifth to seventh grade. Both girls and boys were most likely to move to the NONE group (33.33% and 45.45%, respectively). For the NONE group, 86.36% of girls and 84.21% of boys remained in the NONE group across two years. Of the youth that moved from this group, girls were more likely to move to the DEP group (11.36%) whereas boys were likely to move to the CP or DEP group (7.02% and 5.26%, respectively).

When examined retrospectively (see Tables 14 and 15), 70.00% of girls and 68.97% of boys who were in the CPDEP group in seventh grade had been in that group in fifth grade. Girls were more likely to have moved from the DEP group (20.00%) whereas boys were more likely to have moved from the CP group (20.69%). Twenty-five percent of girls and 56.52% of boys in the CP group in seventh grade had been in that group in fifth grade. Girls were more likely to have moved from the NONE group (50.00%) whereas boys were more likely to have moved from the CPDEP group (21.74%). For the DEP group, 26.32% of girls and 56.52% of boys in seventh grade had been in that group in fifth grade. Both girls and boys were more likely to have moved from the NONE group (52.63% and 37.50%, respectively). For the NONE group in seventh grade, 93.83% of girls and 80.00% of boys had been in that group in fifth grade. Girls were

more likely to have moved from the DEP group (4.94%) whereas boys were likely to have moved from the CP (10.00%) or the DEP group (8.33%).

### Prediction of symptomatology

Using continuous measures of CP and depression, regression analyses were conducted to determine the crosssectional and longitudinal relationships between the two constructs. For longitudinal analyses, fifth grade measures of depression and CP were entered simultaneously in the regression equation. In the crosssectional analyses, depression and CP in fifth grade were significantly related ( $b = .42, p < .001$ ) as were depression and CP in seventh grade ( $b = .40, p < .001$ ). For boys, depression and CP were significantly related in fifth grade ( $b = .36, p < .001$ ) and in seventh grade ( $b = .40, p < .001$ ). Similarly, for girls, depression and CP were significantly related in fifth grade ( $b = .54, p < .001$ ) and in seventh grade ( $b = .45, p < .001$ ).

As shown in Table 16, for the whole sample, depression in fifth grade was a significant predictor of only depression in seventh grade ( $b = .51, SE = .05, p < .001$ ). CP in fifth grade was a significant predictor of both CP ( $b = .66, SE = .04, p < .001$ ) and depression ( $b = .10, SE = .05, p = .04$ ) in seventh grade. CP appears to be a stronger predictor of future CP than future depression. When a CP X depression interaction term was included in the model, it was a significant predictor of depression (and not CP) in seventh grade ( $b = -.14, SE = .06, p < .05$ ). Interactions were probed using Aiken and West's (1991) method of examining interactions in regression. As seen in Figure 1, this interaction indicated that when CP were 1 SD below the mean, fifth grade depression was

a strong predictor of seventh grade depression ( $b = .66$ ,  $SE = .08$ ,  $p < .001$ ) and the initial level of depression was low (intercept =  $-.05$ ). When the level of CP was 1 SD above the mean, fifth grade depression continued to be a strong predictor of seventh grade depression, but the slope was more gradual ( $b = .45$ ,  $SE = .06$ ,  $p < .001$ ) and the initial level of depression was higher (intercept =  $.12$ ).

When the same analyses were examined separately by gender, different results emerged. CP in fifth grade was a significant predictor of CP in seventh grade for both boys and girls ( $b = .62$ ,  $SE = .06$ ,  $p < .001$  and  $b = .63$ ,  $SE = .07$ ,  $p < .001$ , respectively). Similarly, depression in fifth grade was a significant predictor of depression in seventh grade for both boys and girls ( $b = .44$ ,  $SE = .07$ ,  $p < .001$  and  $b = .59$ ,  $SE = .07$ ,  $p < .001$ , respectively). No gender interaction terms were significant. Gender was a significant predictor of CP, but not depression. See Table 17 for mean levels of depression and CP by gender and grade. Across both grades, boys had much higher average levels of CP ( $M = .21$  and  $.22$ , respectively) than did girls ( $M = -.25$  and  $-.26$ ). There was no significant difference in mean levels of depression across gender and grade ( $M = .07$  and  $.05$  for boys;  $M = -.08$  and  $-.06$  for girls).

#### Prediction of adjustment

The relationships between CP, depression and adjustment outcomes were assessed in two different ways, using both continuous and categorical measures of CP and depression. In both approaches, MI was used to impute missing data. For the continuous analyses, CP, depression, CP X depression interaction, and gender were entered in one

step. Next, the CP X gender interaction term was entered. Finally, the depression X gender interaction term was entered, removing the CP X gender interaction. For the categorical analyses, the relationship between CP, depression and adjustment outcomes was examined using the symptomatology groups created—CPDEP, CP, DEP, NONE. For each adjustment outcome, each pairwise comparison among the symptomatology groups was tested using dummy coding in a regression model. To control for Type I Error, a Bonferroni correction was used and the significance level had to be equal to or less than .008. Gender was included as a predictor and, thus, was covaried in all models.

In the continuous analyses shown in Table 18, gender only predicted academic adjustment and social competence ( $b = -.29$ ,  $SE = .07$ ,  $p < .01$ , and  $b = -.29$ ,  $SE = .07$ ,  $p < .01$ , respectively). In both cases, girls demonstrated higher functioning than boys ( $M = .26$  and  $-.22$ , respectively for academic adjustment and  $M = .32$  and  $-.27$ , respectively for social competence). See Table 17 for mean levels of adjustment outcomes by gender.

First, regression analyses were conducted to predict adolescent adjustment outcomes from continuous measures of CP, depressive symptoms, and their interaction (see Table 18). Both CP and depression predicted academic adjustment in seventh grade ( $b = -.33$ ,  $SE = .05$ ,  $p < .01$  and  $b = -.17$ ,  $SE = .05$ ,  $p < .01$ , respectively). Both CP and depression predicted social competence ( $b = -.57$ ,  $SE = .05$ ,  $p < .01$ ;  $b = -.14$ ,  $SE = .05$ ,  $p < .01$ , respectively). Both CP and depression predicted antisocial peer relations in seventh grade ( $b = .35$ ,  $SE = .08$ ,  $p < .01$ ;  $b = .18$ ,  $SE = .07$ ,  $p = .01$ , respectively). Only CP significantly predicted substance use ( $b = .33$ ,  $SE = .08$ ,  $p < .01$ ), although the relationship

between substance use and depression approached significance ( $b = .13$ ,  $SE = .07$ ,  $p = .07$ ). Only depression predicted suicidality in seventh grade ( $b = .15$ ,  $SE = .04$ ,  $p < .01$ ), although there was a trend towards significance for CP ( $b = .08$ ,  $SE = .04$ ,  $p = .06$ ).

The interaction between CP and depression significantly predicted academic adjustment and demonstrated a trend toward significance for social competence ( $b = .15$ ,  $SE = .06$ ,  $p = .01$  and  $b = .10$ ,  $SE = .05$ ,  $p = .06$ , respectively). Interactions were probed using Aiken and West's (1991) method for exploring interactions and are graphed in Figures 2 and 3. The interaction indicated that for CP 1 SD above the mean, the level of academic adjustment was already quite low (intercept =  $-.34$ ) and depression is not a significant predictor of academic achievement ( $b = -.04$ ,  $SE = .06$ ,  $p = .52$ ). When CP were 1 SD below the mean, depression was a significant predictor of academic adjustment ( $b = -.30$ ,  $SE = .08$ ,  $p < .001$ ) and the initial level of academic adjustment was much higher (intercept =  $.25$ ). The interaction for social competence showed a similar pattern, though not reaching significance: For CP 1 SD above the mean, the initial level of social competence was low (intercept =  $-.51$ ) and depression was not a significant predictor of academic achievement ( $b = -.04$ ,  $SE = .05$ ,  $p = .37$ ). When CP were 1 SD below the mean, depression was a significant predictor of social competence ( $b = -.22$ ,  $SE = .07$ ,  $p = .002$ ) and the initial level of academic adjustment was much higher (intercept =  $.45$ ).

When the depression X gender term was included in the model, a few changes in the significant findings occurred. The interaction term was not a significant predictor, but

it appeared to change the balance of variance explained by other variables. First, depression no longer significantly predicted antisocial peer relations ( $b = .17$ ,  $SE = .09$ ,  $p = .08$ ) or substance use ( $b = .10$ ,  $SE = .10$ ,  $p = .30$ ). Second, CP became a significant predictor of suicidality ( $b = .09$ ,  $SE = .04$ ,  $p < .05$ ). When the CP X gender interaction term was included in the model, the interaction was not a significant predictor and there were no changes to the model.

For the analyses of symptomatology by categorical group, the means and standard deviations of the adjustment outcomes for the four symptomatology groups are presented in Table 19 and illustrated graphically in Figures 4 through 8. The significant group differences from regression analyses of dummy coded pairwise comparisons are presented in Table 20. Similar to the continuous analyses, gender was included in all analyses with categorical variables. Gender was a significant predictor for academic adjustment and social competence only ( $b = -.32$ ,  $SE = .09$ ,  $p < .001$ , and  $b = -.31$ ,  $SE = .08$ ,  $p < .001$ , respectively), again with girls showing higher functioning. There were no significant gender interactions, but Figures 9 through 13 are included for visual inspection of mean differences of adjustment outcomes by symptomatology group and gender.

For academic adjustment, the CPDEP and CP groups predicted worse adjustment than the NONE group ( $b = -.77$ ,  $SE = .12$ ,  $p < .001$  and  $b = -.63$ ,  $SE = .13$ ,  $p < .001$ , respectively). The DEP group was not significantly different from the other three groups. The CPDEP and CP groups were not significantly different. For social competence, the

CPDEP and CP groups predicted worse adjustment than the NONE group ( $b = -1.09$ ,  $SE = .11$ ,  $p < .001$  and  $b = -.99$ ,  $SE = .12$ ,  $p < .001$ , respectively). In addition, the CPDEP and CP groups predicted worse adjustment than the DEP group ( $b = -.6$ ,  $SE = .16$ ,  $p < .001$  and  $r = -.66$ ,  $SE = .17$ ,  $p < .001$ , respectively). The DEP and NONE groups were not significantly different and the CP and CPDEP groups were not significantly different.

For antisocial peer relations, the CPDEP and CP groups predicted worse adjustment than the NONE group ( $b = .89$ ,  $SE = .16$ ,  $p < .001$  and  $b = .62$ ,  $SE = .18$ ,  $p < .001$ , respectively). The DEP group was not significantly different from the other three groups, and the CPDEP and CP groups were not significantly different from each other. Substance use had a similar pattern of results. The CPDEP and CP groups predicted worse substance use than the NONE group ( $b = .72$ ,  $SE = .17$ ,  $p < .001$  and  $b = .62$ ,  $SE = .19$ ,  $p = .001$ , respectively). Again, the DEP group was not significantly different from the other three groups, and the CPDEP and CP groups were not significantly different from each other. Finally, for suicidality, the only significant group difference was between the CPDEP and NONE groups ( $b = .36$ ,  $SE = .09$ ,  $p < .001$ ). The CP and DEP groups were not significantly different from each other or from the CPDEP and NONE groups in predicting suicidality.

### Ethnicity differences

As described above, participants were divided into three groups based on their ethnicity and geographical location—urban African Americans ( $n = 190$ ), urban Caucasians ( $n = 111$ ) and rural Caucasians ( $n = 114$ ). Using these three groups,

differences were examined in the prediction of depression, CP and adjustment outcomes. Each pairwise comparison was tested using dummy coding in a regression model. To control for Type I Error, a Bonferroni correction was used and the significance level had to be less than or equal to .017. Table 21 shows the means and standard deviations for symptomatology and adjustment outcomes for each ethnicity group to allow examination of effect size for significant group differences.

Table 22 portrays significant differences in prediction for these outcomes. In fifth grade, urban African Americans and urban Caucasians had significantly higher levels of CP than rural Caucasians ( $b = .42$ ,  $SE = .09$ ,  $p < .001$  and  $b = .24$ ,  $SE = .10$ ,  $p < .02$ , respectively). In seventh grade, urban African Americans had significantly worse CP than urban and rural Caucasians ( $b = .28$ ,  $SE = .09$ ,  $p < .01$  and  $b = .42$ ,  $SE = .09$ ,  $p < .001$ , respectively). There were no differences in depression across the three groups and two time periods.

Rural Caucasians had higher levels of academic adjustment than urban Caucasians and urban African Americans ( $b = -.42$ ,  $SE = .09$ ,  $p < .001$  and  $b = -.25$ ,  $SE = .10$ ,  $p < .02$ , respectively), and urban Caucasians had higher levels of academic adjustment than did urban African Americans ( $b = -.67$ ,  $SE = .09$ ,  $p < .001$ ). Rural Caucasians and urban Caucasians had higher levels of social competence than did urban African Americans ( $b = -.37$ ,  $SE = .10$ ,  $p < .001$  and  $b = -.53$ ,  $SE = .10$ ,  $p < .001$ , respectively). Urban African Americans had higher levels of involvement with antisocial

peers than did rural Caucasians ( $b = -.37$ ,  $SE = .13$ ,  $p < .01$ ). There were no differences among ethnic groups for substance use or suicidality.<sup>2</sup>

**Table 1. Correlations among child-, parent-, and teacher-report of conduct problems. Above diagonal is 5<sup>th</sup> grade and under diagonal is 7<sup>th</sup> grade; diagonal is correlation for same report across two time periods**

<b>Fifth Grade Conduct Problems</b>			
<b>Seventh Grade Conduct Problems</b>	<b>Teacher</b>	<b>Parent</b>	<b>Child</b>
<b>Teacher</b>	.59	.39	.35
<b>Parent</b>	.43	.67	.26
<b>Child</b>	.32	.24	.38 <sup>a</sup>

**Note.** All correlations significant at the .001 level.

<sup>a</sup>This correlation is lower than the parent and teacher correlations because different measures were used at the two time points for child-report and not for parent- and teacher-report.

**Table 2. Correlations among child- and parent-report of depression. Above diagonal is correlation between reporters for 5<sup>th</sup> grade and under diagonal is correlation between reporters for 7<sup>th</sup> grade; diagonal is correlation for same report across two time periods**

<b>Seventh Grade Depression</b>	<b>Fifth Grade Depression</b>	
	<b>Parent</b>	<b>Child</b>
<b>Parent</b>	.54	.21
<b>Child</b>	.16	.52

**Note.** All correlations significant at the .001 level





Table 3. Patterns of Missing Data (cont.)

Frequency	Pattern				
	Parent	Teacher	Child	Interactions	
3	1 0 1 0 1 0 1 1 0 0 1 1 0 0 1 1 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 0 1 0 1 0 0 0 0 0 0				
1	1 0 1 0 1 0 1 1 0 0 1 0 0 0 1 1 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 0 1 0 1 0 1 0 0 0 0 0 0 0				
1	1 1 1 0 1 0 1 1 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 0 1 0 1 0 1 0 0 0 0 0 0 0				
1	1 1 1 0 0 0 1 1 0 0 1 0 0 0 1 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 0 1 0 1 0 1 0 0 0 0 0 0 0				
11	1 1 1 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 0 1 0 1 0 1 0 0 0 0 0 0 0				
1	1 0 1 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 0 1 0 1 0 1 0 0 0 0 0 0 0				
1	1 1 0 0 1 0 1 0 0 0 1 1 0 0 1 1 0 0 1 1 0 0 0 0 0 0 1 1 1 1 1 1 1 1 0 1 0 1 0 1 0 0 0 0 0 0 0				
1	1 1 0 0 0 0 1 0 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0				
1	1 0 0 0 1 0 1 0 0 0 1 1 0 0 1 1 0 0 1 1 0 0 0 0 0 0 0 0 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0				
1	0 1 0 0 1 0 0 0 0 1 1 0 0 1 1 0 0 1 1 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0				
6	0 1 0 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0				
3	0 1 0 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0				
28	0 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0				

**Table 4. Percentage and number of youth in each symptomatology group by grade**

<b>Group</b>	<b>5<sup>th</sup> Grade</b>	<b>7<sup>th</sup> Grade</b>
	<b>% (n)</b>	<b>% (n)</b>
CPDEP	12.87 (56)	13.33 (58)
CP	9.43 (41)	8.74 (38)
DEP	7.82 (34)	8.97 (39)
NONE	40.92 (178)	42.07 (183)
NO GROUP	28.96 (126)	26.89 (117)
<b>TOTAL</b>	<b>100.00 (435)</b>	<b>100.00 (435)</b>

Note. CPDEP = Comorbid CP and depression, CP = Conduct problems, DEP = Depressive symptomatology, NONE = No elevated depression or CP.  
 NO GROUP = A portion of the sample that did not fit into any of the four groups because the level of symptomatology for those individuals was between the mean and .5 SD above the mean for either CP or depression, or both.

**Table 5. Percentage of youth in each group by grade and gender**

Group	5 <sup>th</sup> Grade		7 <sup>th</sup> Grade	
	Girls	Boys	Girls	Boys
	% (n)	% (n)	% (n)	% (n)
CPDEP	8.59 (17)	16.46 (39)	8.08 (16)	17.72 (42)
CP	3.03 (6)	14.77 (35)	4.55 (9)	12.24 (29)
DEP	9.60 (19)	6.33 (15)	13.64 (27)	5.06 (12)
NONE	53.54 (106)	30.38 (72)	51.01 (101)	34.69 (82)
NO GROUP	25.24 (50)	32.06 (76)	22.72 (45)	30.29 (72)
<b>TOTAL<sup>a</sup></b>	<b>45.52 (198)</b>	<b>54.48 (237)</b>	<b>48.11 (198)</b>	<b>51.89 (237)</b>

**Note.** CPDEP = Comorbid CP and depression, CP = Conduct problems, DEP = Depressive symptomatology, NONE = No elevated depression or CP.

NO GROUP = A portion of the sample that did not fit into any of the four groups because the level of symptomatology for those individuals was between the mean and .5 SD above the mean for either CP or depression, or both.

<sup>a</sup>The totals represented in this row are the percentage of girls and boys in the full sample.

**Table 6. Unstandardized means and standard deviations for measures of depression and CP across reporter by grade**

	<b>Fifth Grade</b>	<b>Seventh Grade</b>
<b>Depression (parent-report)</b>	.16 (.20)	.17 (.24)
<b>Depression (child-report)</b>	.59 (.38)	1.83 (.47)
<b>CP (parent-report)</b>	.32 (.28)	.32 (.28)
<b>CP (teacher-report)</b>	.39 (.45)	.45 (.45)

**Table 7. Unstandardized means and standard deviations for measures of depression and CP across reporter by grade and gender**

	<b>Fifth Grade</b>		<b>Seventh Grade</b>	
	<b>Girls M (SD)</b>	<b>Boys M (SD)</b>	<b>Girls M (SD)</b>	<b>Boys M (SD)</b>
Depression (parent-report)	.14 (.19)	.18 (.21)	.14 (.20)	.20 (.26)
Depression (child-report)	.57 (.37)	.61 (.38)	1.86 (.51)	1.79 (.42)
CP (parent-report)	.25 (.22)	.39 (.31)	.24 (.23)	.38 (.30)
CP (teacher-report)	.25 (.39)	.51 (.47)	.31 (.38)	.57 (.47)

Table 8. Standardized means and standard deviations of levels of depression and CP by symptomatology group and grade

Group (fifth grade)		5 <sup>th</sup> grade		7 <sup>th</sup> grade	
		<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
CPDEP	Depression	1.11	.75	.70	.97
<u>n</u> = 56	CP	1.16	.51	.77	.74
CP-only	Depression	-.46	.26	-.01	.68
<u>n</u> = 41	CP	.93	.45	.73	.90
DEP-only	Depression	.87	.47	.30	.67
<u>n</u> = 34	CP	-.35	.22	-.14	.52
NONE	Depression	-.55	.30	-.36	.54
<u>n</u> = 178	CP	-.59	.25	-.44	.42

Note. CPDEP = Comorbid CP and depression, CP = Conduct problems, DEP = Depressive symptomatology, NONE = No elevated depression or CP.

Table 9. Standardized means and standard deviations of levels of depression and CP by symptomatology group, grade, and gender.

Group (fifth grade)		5 <sup>th</sup> grade		7 <sup>th</sup> grade	
		Girls <u>M (SD)</u>	Boys <u>M (SD)</u>	Girls <u>M (SD)</u>	Boys <u>M (SD)</u>
CPDEP $\underline{n}^a = 17$ $\underline{n}^b = 39$	Depression	1.29 (.71)	1.04 (.76)	.81 (1.11)	.65 (.92)
	CP	1.04 (.52)	1.20 (.50)	.74 (1.00)	.78 (.61)
CP-only $\underline{n}^a = 6$ $\underline{n}^b = 35$	Depression	-.45 (.20)	-.46 (.27)	.29 (.78)	-.06 (.66)
	CP	1.09 (.57)	.90 (.43)	.43 (.62)	.78 (.93)
DEP-only $\underline{n}^a = 19$ $\underline{n}^b = 15$	Depression	.95 (.43)	.77 (.53)	.38 (.73)	.21 (.60)
	CP	-.35 (.18)	-.35 (.26)	-.19 (.57)	-.09 (.48)
NONE $\underline{n}^a = 106$ $\underline{n}^b = 72$	Depression	-.59 (.31)	-.49 (.27)	-.40 (.53)	-.30 (.56)
	CP	-.64 (.23)	-.52 (.26)	-.54 (.35)	-.29 (.46)

Note. CPDEP = Comorbid CP and depression, CP = Conduct problems, DEP = Depressive symptomatology, NONE = No elevated depression or CP.

<sup>a</sup>Sample size for girls.

<sup>b</sup>Sample size for boys.

**Table 10. Percentage of youth in each symptomatology group in seventh grade based on group membership in fifth grade**

<b>Fifth Grade Group</b>	<b>Seventh Grade Group</b>				
	<b>CPDEP</b>	<b>CP</b>	<b>DEP</b>	<b>NONE</b>	<b>TOTAL</b>
	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>
<b>CPDEP</b>	<b>71.05 (27)</b>	<b>13.16 (5)</b>	<b>10.53 (4)</b>	<b>5.26 (2)</b>	<b>16.24 (38)</b>
<b>CP</b>	<b>25.00 (7)</b>	<b>50.00 (14)</b>	<b>3.57 (1)</b>	<b>21.43 (6)</b>	<b>11.97 (28)</b>
<b>DEP</b>	<b>13.04 (3)</b>	<b>8.70 (2)</b>	<b>39.13 (9)</b>	<b>39.13 (9)</b>	<b>9.83 (23)</b>
<b>NONE</b>	<b>1.38 (2)</b>	<b>4.14 (6)</b>	<b>8.97 (13)</b>	<b>85.52 (124)</b>	<b>61.97 (145)</b>

**Note.** CPDEP = Comorbid CP and depression, CP = Conduct problems, DEP = Depressive symptomatology, NONE = No elevated depression or CP.

**Table 11. Percentage of youth in each symptomatology group in fifth grade based on group membership in seventh grade**

<b>Fifth Grade Group</b>	<b>Seventh Grade Group</b>			
	<b>CPDEP</b>	<b>CP</b>	<b>DEP</b>	<b>NONE</b>
	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>
<b>CPDEP</b>	<b>69.23 (27)</b>	<b>18.52 (5)</b>	<b>14.81 (4)</b>	<b>1.42 (2)</b>
<b>CP</b>	<b>17.95 (7)</b>	<b>51.85 (14)</b>	<b>3.70 (1)</b>	<b>4.26 (6)</b>
<b>DEP</b>	<b>7.69 (3)</b>	<b>7.41 (2)</b>	<b>33.33 (9)</b>	<b>6.38 (9)</b>
<b>NONE</b>	<b>5.13 (2)</b>	<b>22.22 (6)</b>	<b>48.15 (13)</b>	<b>87.94 (124)</b>
<b>TOTAL</b>	<b>16.67 (39)</b>	<b>11.54 (27)</b>	<b>11.54 (27)</b>	<b>60.26 (141)</b>

**Note.** CPDEP = Comorbid CP and depression, CP = Conduct problems, DEP = Depressive symptomatology, NONE = No elevated depression or CP.

**Table 12. Percentage of girls in each symptomatology group in seventh grade based on group membership in fifth grade**

<b>Fifth Grade Group</b>	<b>Seventh Grade Group</b>				
	<b>CPDEP</b>	<b>CP</b>	<b>DEP</b>	<b>NONE</b>	<b>TOTAL</b>
	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>
<b>CPDEP</b>	<b>63.64 (7)</b>	<b>0.00 (0)</b>	<b>27.27 (3)</b>	<b>9.09 (1)</b>	<b>9.65 (11)</b>
<b>CP</b>	<b>33.33 (1)</b>	<b>33.33 (1)</b>	<b>33.33 (1)</b>	<b>0.00 (0)</b>	<b>2.63 (3)</b>
<b>DEP</b>	<b>16.67 (2)</b>	<b>8.33 (1)</b>	<b>41.67 (5)</b>	<b>33.33 (4)</b>	<b>10.53 (12)</b>
<b>NONE</b>	<b>0.00 (0)</b>	<b>2.27 (2)</b>	<b>11.36 (10)</b>	<b>86.36 (76)</b>	<b>77.19 (88)</b>

**Note.** CPDEP = Comorbid CP and depression, CP = Conduct problems, DEP = Depressive symptomatology, NONE = No elevated depression or CP.

**Table 13. Percentage of boys in each symptomatology group in seventh grade based on group membership in fifth grade**

<b>Fifth Grade Group</b>	<b>Seventh Grade Group</b>				
	<b>CPDEP</b>	<b>CP</b>	<b>DEP</b>	<b>NONE</b>	<b>TOTAL</b>
	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>
<b>CPDEP</b>	<b>74.07 (20)</b>	<b>18.52 (5)</b>	<b>3.70 (1)</b>	<b>3.70 (1)</b>	<b>22.50 (27)</b>
<b>CP</b>	<b>24.00 (6)</b>	<b>52.00 (13)</b>	<b>0.00 (0)</b>	<b>24.00 (6)</b>	<b>20.83 (25)</b>
<b>DEP</b>	<b>9.09 (1)</b>	<b>9.09 (1)</b>	<b>36.36 (4)</b>	<b>45.45 (5)</b>	<b>9.17 (11)</b>
<b>NONE</b>	<b>3.51 (2)</b>	<b>7.02 (4)</b>	<b>5.26 (3)</b>	<b>84.21 (48)</b>	<b>47.50 (57)</b>

**Note.** CPDEP = Comorbid CP and depression, CP = Conduct problems, DEP = Depressive symptomatology, NONE = No elevated depression or CP.

**Table 14. Percentage of girls in each symptomatology group in fifth grade based on group membership in seventh grade**

<b>Fifth Grade Group</b>	<b>Seventh Grade Group</b>			
	<b>CPDEP</b>	<b>CP</b>	<b>DEP</b>	<b>NONE</b>
	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>
<b>CPDEP</b>	<b>70.00 (7)</b>	<b>0.00 (0)</b>	<b>15.79 (3)</b>	<b>1.23 (1)</b>
<b>CP</b>	<b>10.00 (1)</b>	<b>25.00 (1)</b>	<b>5.26 (1)</b>	<b>0.00 (0)</b>
<b>DEP</b>	<b>20.00 (2)</b>	<b>25.00 (1)</b>	<b>26.32 (5)</b>	<b>4.94 (4)</b>
<b>NONE</b>	<b>0.00 (0)</b>	<b>50.00 (2)</b>	<b>52.63 (10)</b>	<b>93.83 (76)</b>
<b>TOTAL</b>	<b>8.77 (10)</b>	<b>3.51 (4)</b>	<b>16.67 (19)</b>	<b>71.05 (81)</b>

**Note.** CPDEP = Comorbid CP and depression, CP = Conduct problems, DEP = Depressive symptomatology, NONE = No elevated depression or CP

**Table 15. Percentage of boys in each symptomatology group in fifth grade based on group membership in seventh grade**

<b>Fifth Grade Group</b>	<b>Seventh Grade Group</b>			
	<b>CPDEP</b>	<b>CP</b>	<b>DEP</b>	<b>NONE</b>
	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>
<b>CPDEP</b>	<b>68.97 (20)</b>	<b>21.74 (5)</b>	<b>12.50 (1)</b>	<b>1.67 (1)</b>
<b>CP</b>	<b>20.69 (6)</b>	<b>56.52 (13)</b>	<b>0.00 (0)</b>	<b>10.00 (6)</b>
<b>DEP</b>	<b>3.45 (1)</b>	<b>4.35 (1)</b>	<b>50.00 (4)</b>	<b>8.33 (5)</b>
<b>NONE</b>	<b>6.90 (2)</b>	<b>17.39 (4)</b>	<b>37.50 (3)</b>	<b>80.00 (48)</b>
<b>TOTAL</b>	<b>24.17 (29)</b>	<b>19.17 (23)</b>	<b>6.67 (8)</b>	<b>50.00 (60)</b>

**Note.** CPDEP = Comorbid CP and depression, CP = Conduct problems, DEP = Depressive symptomatology, NONE = No elevated depression or CP

Table 16. Unstandardized regression coefficients and standard errors for the relationship between depression and CP for the whole sample and by gender

<b>7<sup>th</sup> Grade Symptomatology</b>		
	<b>Depression</b>	<b>Conduct Problems</b>
<b>5<sup>th</sup> Grade Symptomatology</b>	<b><u>b</u> (SE)</b>	<b><u>b</u> (SE)</b>
<b>Whole sample (<u>N</u> = 435)</b>		
Depression	.51** (.05)	.03 (.04)
CP	.10* (.05)	.66** (.04)
<b>Girls only (<u>n</u> = 198)</b>		
Depression	.59** (.07)	.06 (.06)
CP	.15 (.08)	.63** (.07)
<b>Boys only (<u>n</u> = 237)</b>		
Depression	.44** (.07)	.01 (.06)
CP	.08 (.07)	.62** (.06)

\***p** < .05  
**\*\*p** < .01

**Table 17. Standardized means and standard deviations for symptomatology and adjustment outcome constructs by gender**

	<b>Girls (<i>n</i> = 198)</b>		<b>Boys (<i>n</i> = 237)</b>	
	<b>5<sup>th</sup> grade</b>	<b>7<sup>th</sup> grade</b>	<b>5<sup>th</sup> grade</b>	<b>7<sup>th</sup> grade</b>
	<b><u>M</u> (<u>SD</u>)</b>	<b><u>M</u> (<u>SD</u>)</b>	<b><u>M</u> (<u>SD</u>)</b>	<b><u>M</u> (<u>SD</u>)</b>
<b>Symptomatology</b>				
Depression	-.08 (.78)	-.06 (.78)	.07 (.78)	.05 (.75)
Conduct Problems	-.25 (.64)	-.26 (.63)	.21 (.77)	.22 (.77)
<b>Adjustment Outcomes</b>				
Academic Adjustment		.26 (.74)		-.22 (.74)
Social Competence		.32 (.73)		-.27 (.78)
Antisocial Peers		-.21 (.87)		.17 (1.07)
Substance Use		-.06 (.97)		.05 (1.02)
Suicidality		-.02 (.53)		.02 (.63)

Table 18. Unstandardized regression coefficients and standard errors for the relationship between continuous measures of symptomatology (and gender) in fifth grade and adjustment outcomes in seventh grade

Adjustment Outcome	Predictors			
	CP	Depression	CP X Depression	Gender
	<u>b</u> (SE)	<u>b</u> (SE)	<u>b</u> (SE)	<u>b</u> (SE)
Academic Adjustment	-.33** (.05)	-.17** (.05)	.15* (.06)	-.29** (.07)
Social Competence	-.57** (.05)	-.14** (.05)	.10 <sup>+</sup> (.05)	-.29** (.07)
Antisocial Peer Relations	.35** (.08)	.18* (.07)	.03 (.09)	.16 (.10)
Substance Use	.33** (.08)	.13 <sup>+</sup> (.07)	-.02 (.08)	-.08 (.10)
Suicidality	.08 <sup>+</sup> (.04)	.15** (.04)	.07 (.07)	-.02 (.06)

<sup>+</sup>p < .10  
\* p < .05  
\*\* p < .01

**Table 19. Standardized means and standard deviations of adjustment outcomes in seventh grade for the four symptomatology groups assigned in fifth grade**

<b>Adjustment Outcome</b>	<b>Symptomatology Groups</b>			
	<b>None (<u>n</u> = 178)</b>	<b>Depression (<u>n</u> = 34)</b>	<b>Conduct Problems (<u>n</u> = 41)</b>	<b>Comorbid CP and Depression (<u>n</u> = 56)</b>
<b>Academic Adjustment</b>	.38 (.74)	.04 (.80)	-.35 (.50)	-.50 (.64)
<b>Social Competence</b>	.50 (.63)	.15 (.69)	-.60 (.59)	-.74 (.71)
<b>Antisocial Peer Relations</b>	-.34 (.64)	-.03 (.88)	.30 (1.18)	.61 (1.31)
<b>Substance Use</b>	-.30 (.75)	-.01 (1.15)	.40 (.98)	.44 (1.17)
<b>Suicidality</b>	-.13 (.26)	.00 (.43)	.10 (.65)	.27 (.97)

Table 20. Unstandardized regression coefficients in the relationship between categorical symptomatology groups assigned in fifth grade and adjustment outcomes in seventh grade (all pairwise comparisons using Bonferroni correction)

Adjustment Outcome	CPDEP vs. NONE	CP vs. NONE	DEP vs. NONE	CPDEP vs. DEP	CP vs. DEP	CPDEP vs. CP
Academic Adjustment	-.77**	-.63**	-.35	-.42	-.28	-.14
Social Competence	-1.09**	-.99**	-.33	-.76**	-.66**	-.11
Antisocial Peer Relations	.89**	.62**	.33	.56	.29	.28
Substance Use	.72**	.62*	.32	.40	.30	.10
Suicidality	.36**	.22	.14	.23	.09	.14

Note. CPDEP = Comorbid CP and depression, CP = Conduct problems, DEP = Depressive symptomatology, NONE = No elevated depression or CP

\* $p < .008$

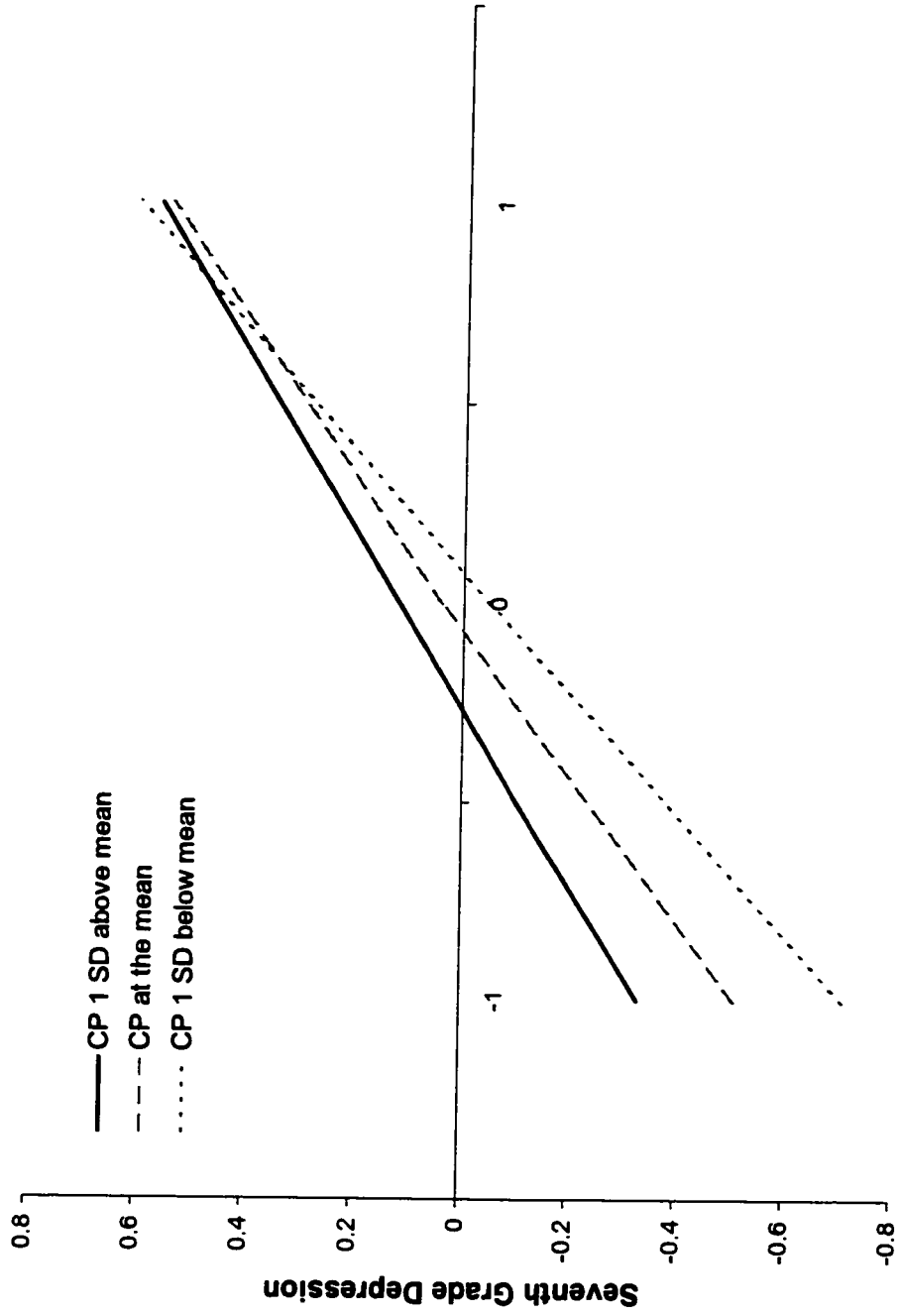
\*\* $p < .001$

**Table 21. Standardized means and standard deviations of symptomatology and adjustment outcomes by ethnic group**

	<b>Ethnic/Urbanicity Groups</b>		
	<b>Urban African American (<u>n</u> = 190)</b>	<b>Urban Caucasian (<u>n</u> = 111)</b>	<b>Rural Caucasian (<u>n</u> = 114)</b>
<b>Symptomatology</b>	<b><u>M</u> (<u>SD</u>)</b>	<b><u>M</u> (<u>SD</u>)</b>	<b><u>M</u> (<u>SD</u>)</b>
5 <sup>th</sup> Grade Depression	.02 (.80)	.03 (.79)	-.04 (.76)
7 <sup>th</sup> Grade Depression	.05 (.79)	.07 (.81)	-.13 (.68)
5 <sup>th</sup> Grade Conduct Problems	.18 (.81)	.01 (.78)	-.26 (.57)
7 <sup>th</sup> Grade Conduct Problems	.21 (.86)	-.09 (.61)	-.23 (.61)
<b>Adjustment Outcomes</b>			
Academic Adjustment	-.30 (.65)	.11 (.83)	.39 (.74)
Social Competence	-.26 (.78)	.12 (.82)	.28 (.76)
Antisocial Peer Relations	.13 (1.04)	-.03 (1.01)	-.25 (.90)
Substance Use	-.02 (.94)	.09 (.95)	-.08 (1.15)
Suicidality	.02 (.56)	.01 (.63)	-.02 (.63)

Table 22. Unstandardized regression coefficients and standard errors in the relationship between ethnic/urbanicity group and 1) symptomatology and 2) adjustment outcomes (all pairwise comparisons with Bonferroni correction \* $p < .017$ )

	Ethnic/Urbanicity Groups		
	Urban African American vs. Urban Caucasian	Urban Caucasian vs. Rural Caucasian	Urban African American vs. Rural Caucasian
Symptomatology	<u>b</u> (SE)	<u>b</u> (SE)	<u>b</u> (SE)
5 <sup>th</sup> Grade Depression	-.01 (.10)	.06 (.11)	.05 (.10)
7 <sup>th</sup> Grade Depression	-.01 (.09)	.18 (.10)	.06 (.09)
5 <sup>th</sup> Grade Conduct Problems	.18 (.09)	.24* (.10)	.42* (.09)
7 <sup>th</sup> Grade Conduct Problems	.28* (.09)	.14 (.10)	.42* (.09)
<b>Adjustment Outcomes</b>			
Academic Adjustment	-.42* (.09)	-.25* (.10)	-.67* (.09)
Social Competence	-.37* (.10)	-.16 (.11)	-.53* (.10)
Antisocial Peer Relations	.18 (.13)	.19 (.14)	.37* (.13)
Substance Use	-.14 (.12)	.17 (.14)	.03 (.12)
Suicidality	.01 (.07)	.03 (.08)	.04 (.07)



**Fifth Grade Depression**

Figure 1. Interaction between fifth grade CP and depression as predictors of seventh grade depression

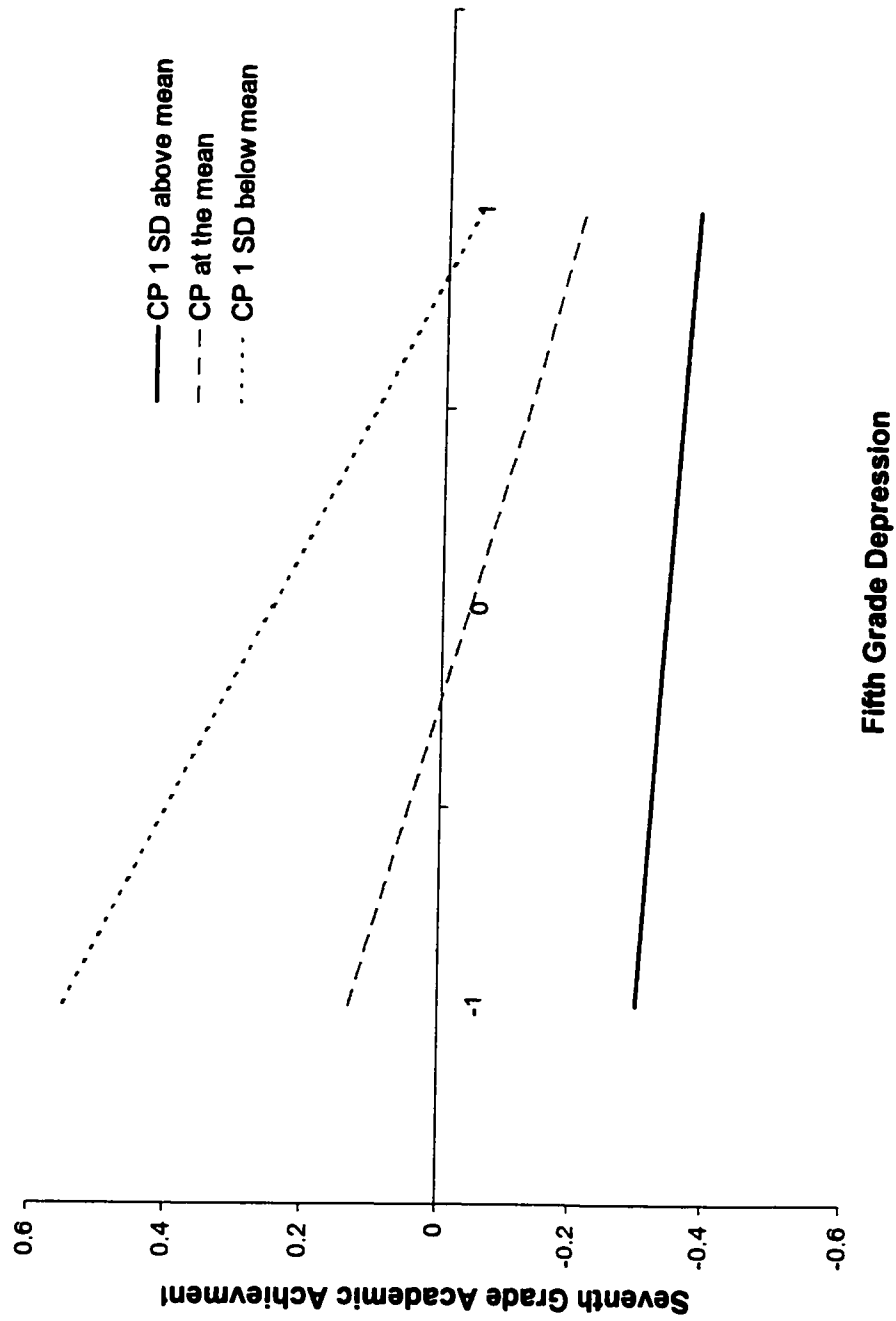


Figure 2. Interaction between fifth grade CP and depression as predictors of seventh grade academic achievement

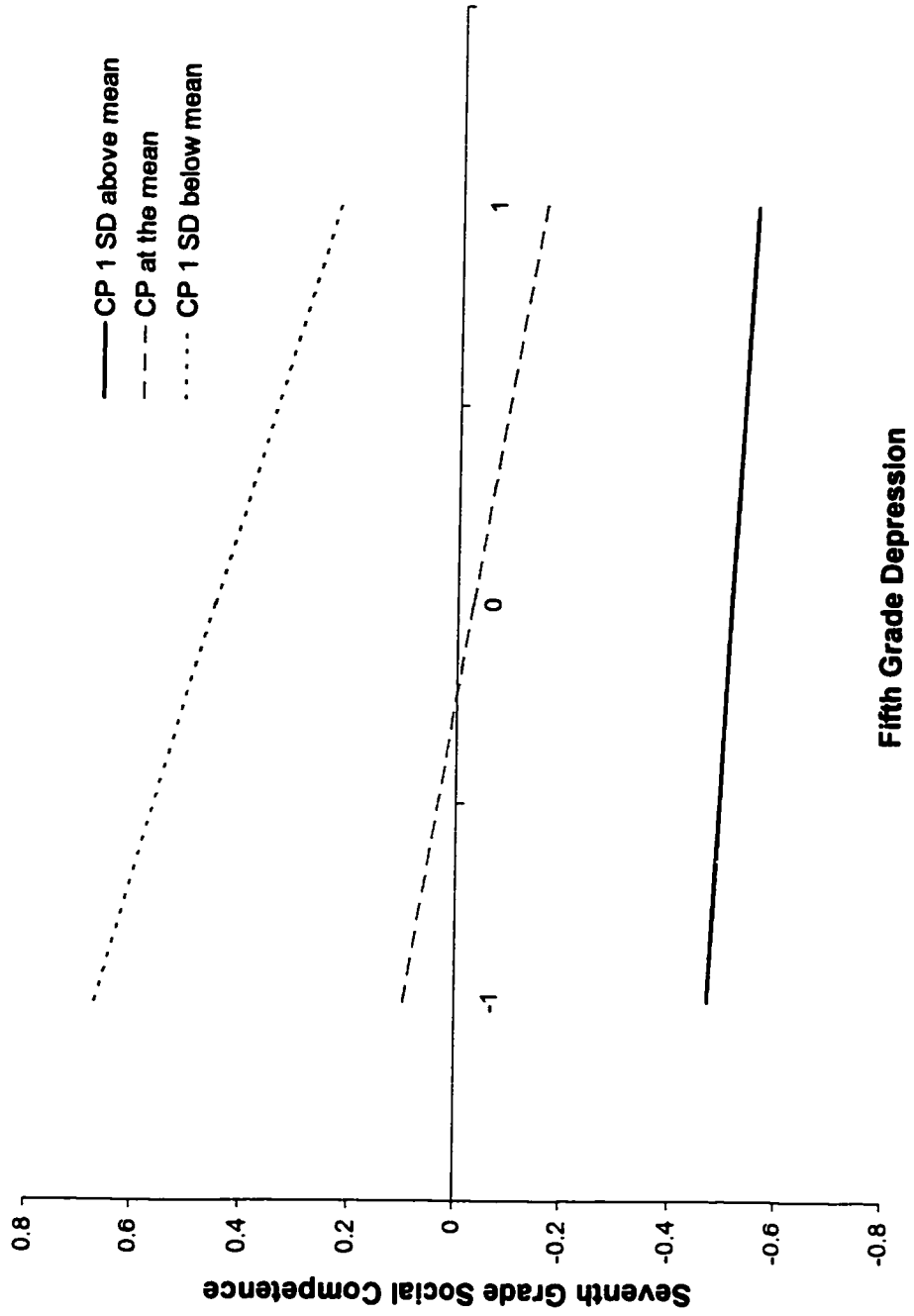
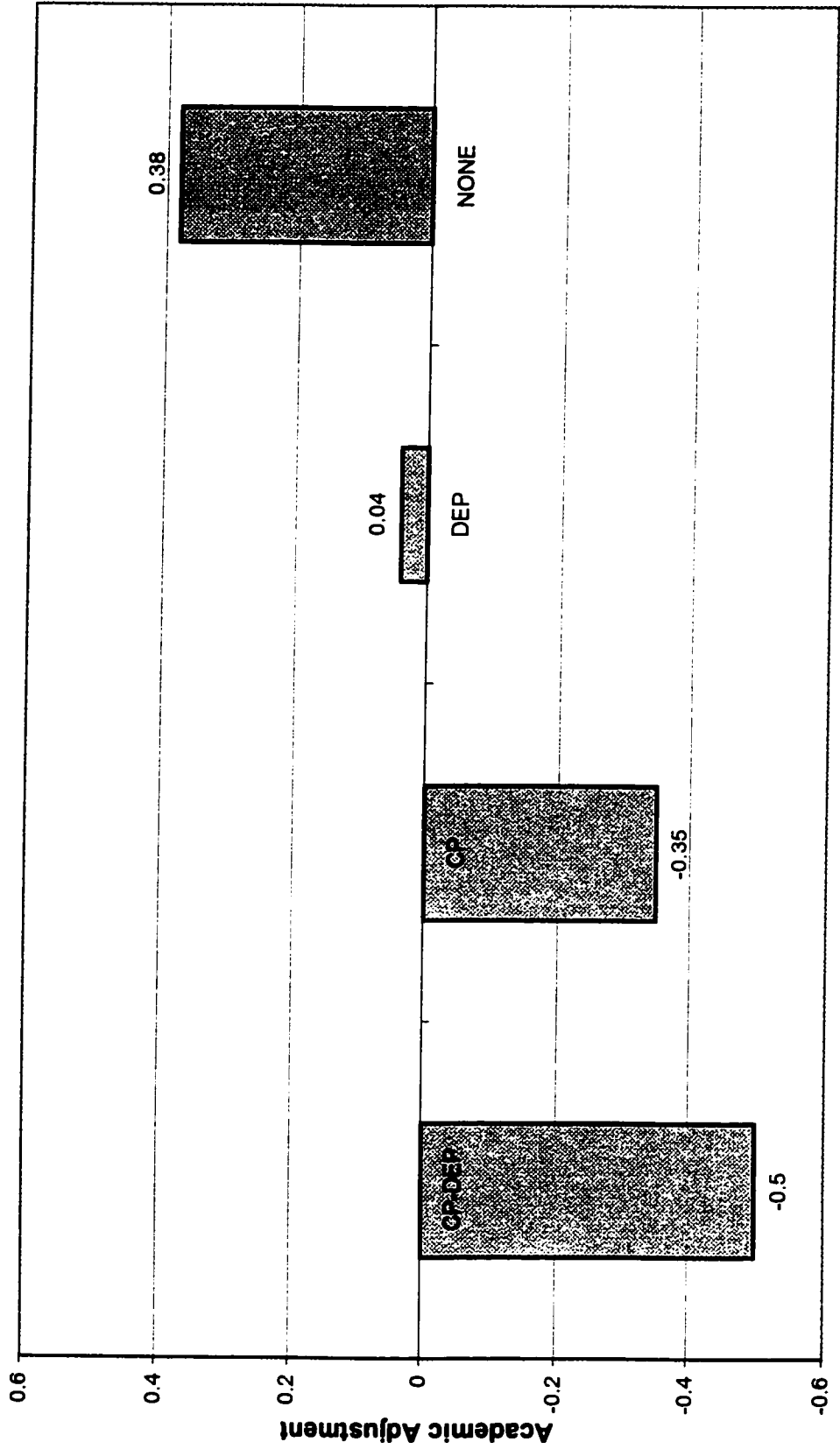


Figure 3. Interaction between fifth grade CP and depression as predictors of seventh grade social competence



**Symptomatology Groups**

Figure 4. Standardized mean level of academic adjustment in seventh grade by symptomatology group assigned in fifth grade

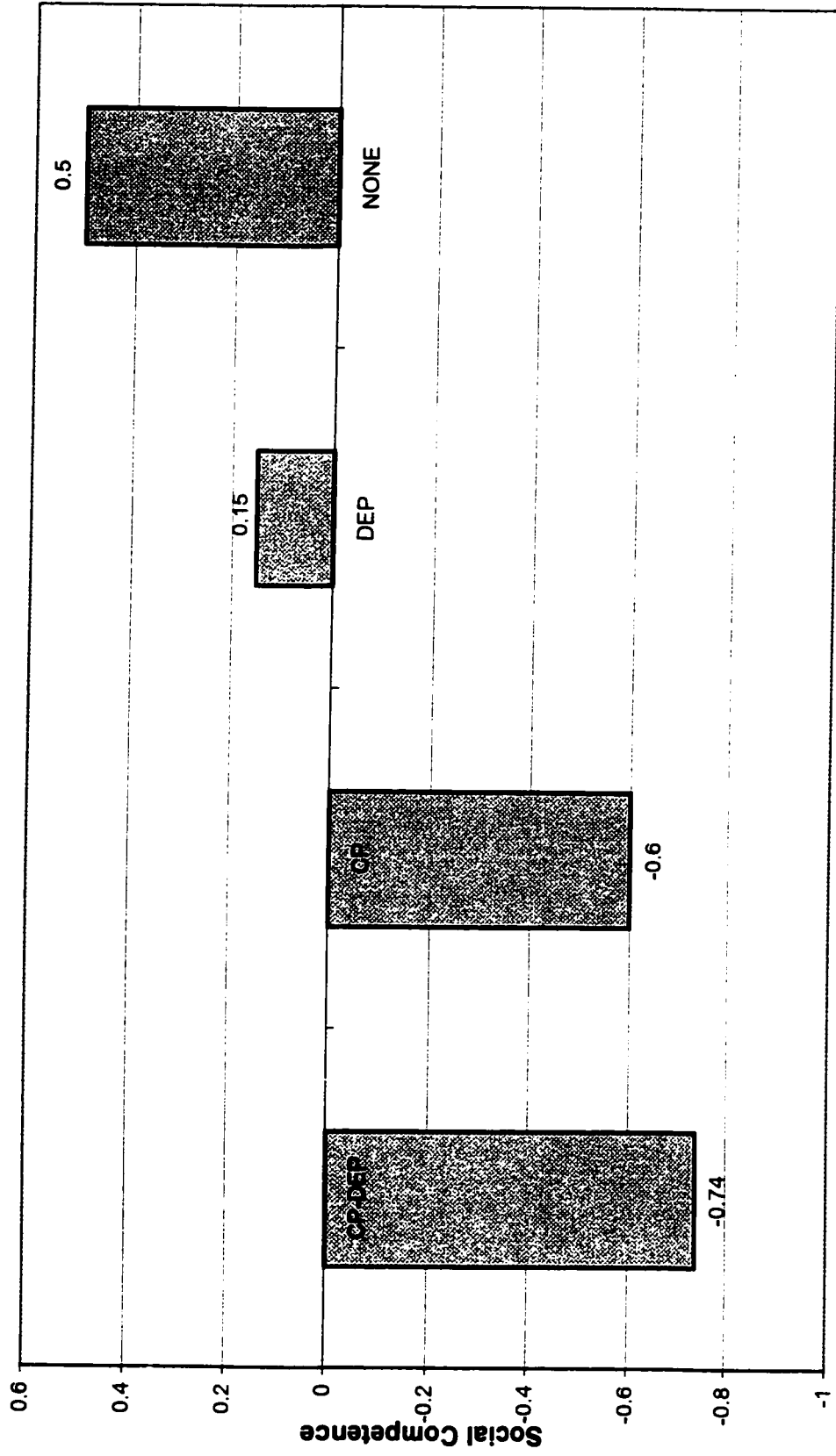


Figure 5. Standardized mean level of social competence in seventh grade by symptomatology group assigned in fifth grade

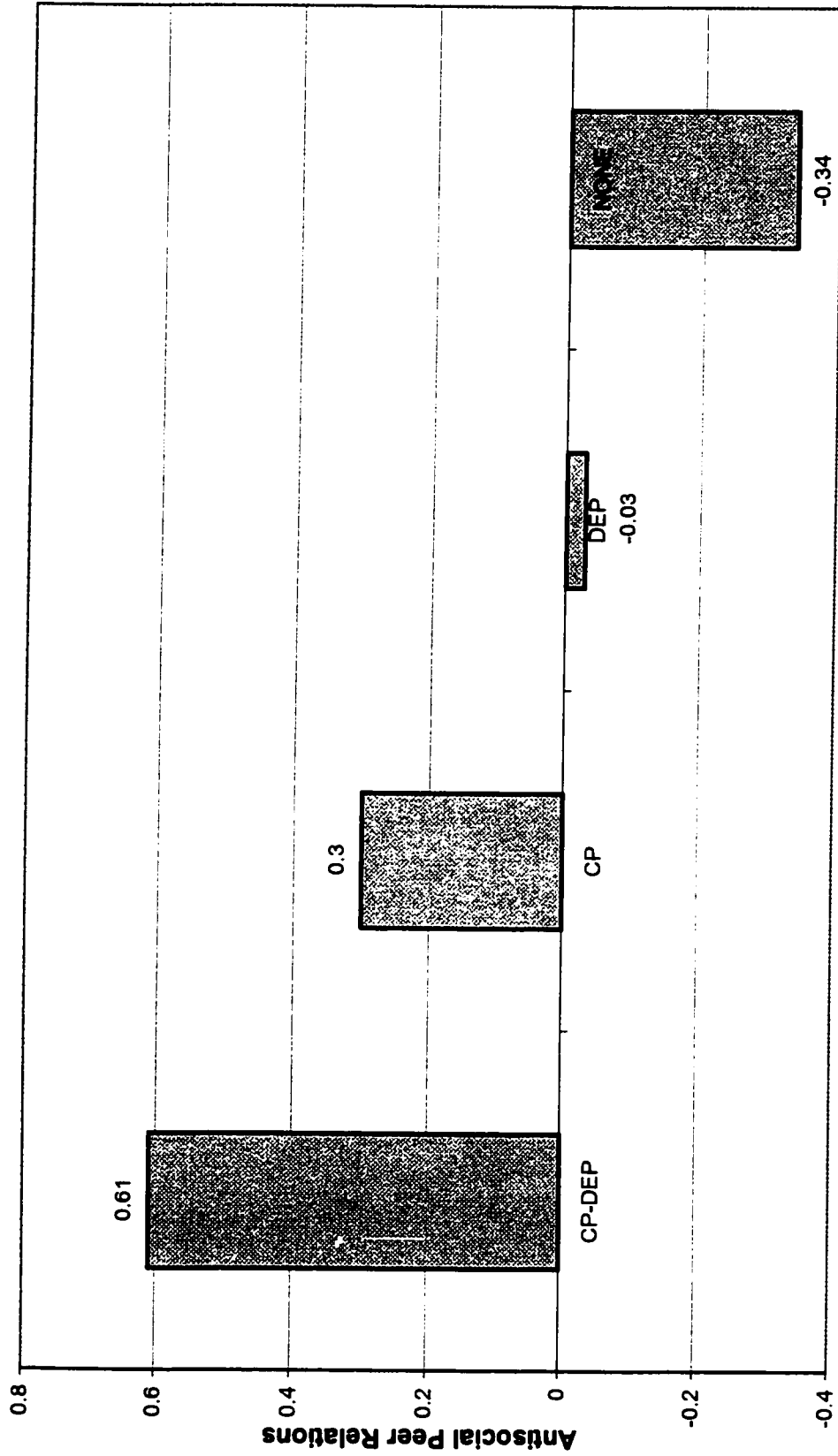
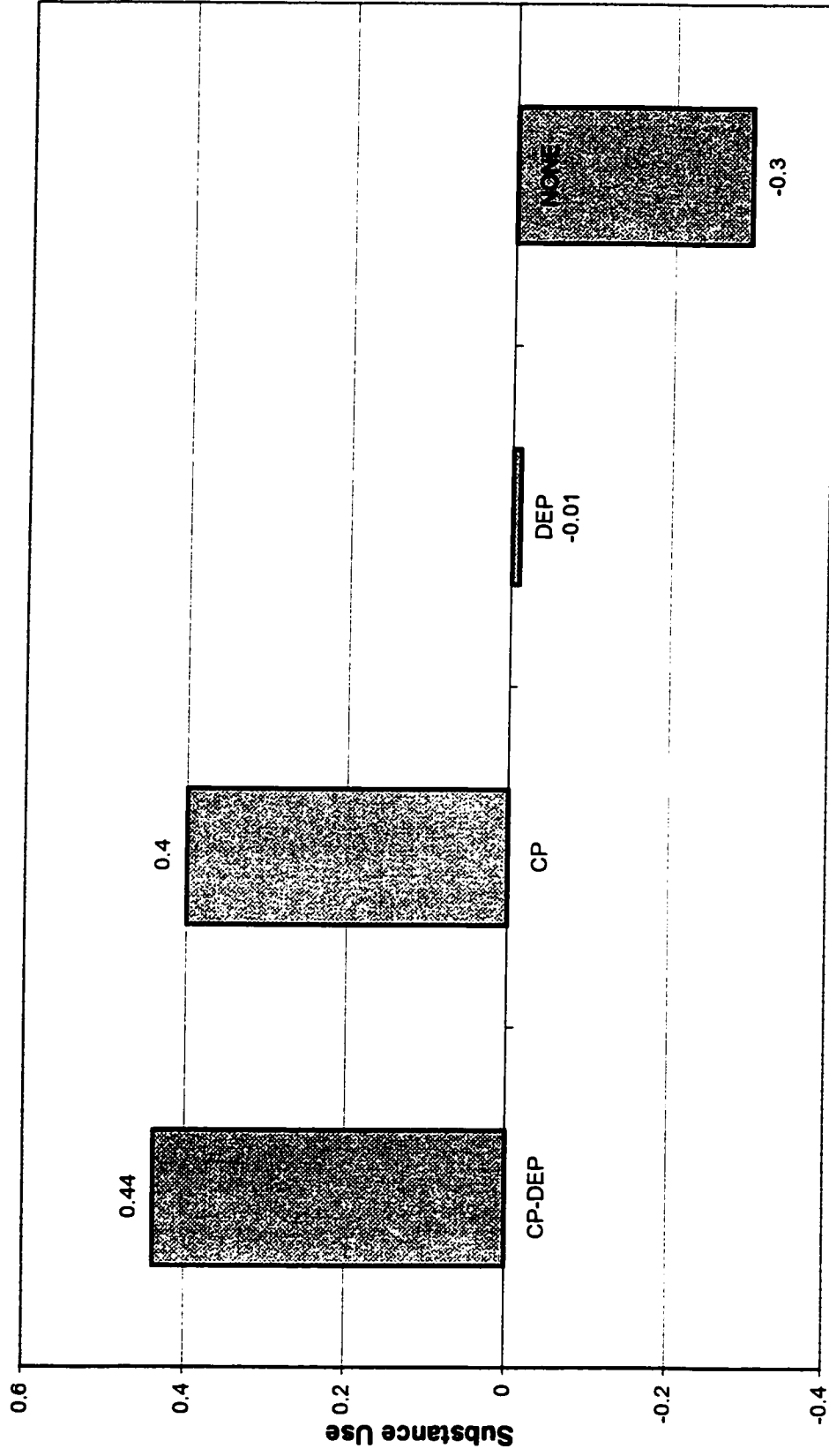


Figure 6. Standardized mean level of antisocial peer relations in seventh grade by symptomatology group assigned in fifth grade



**Symptomatology Groups**

Figure 7. Standardized mean level of substance use in seventh grade by symptomatology group assigned in fifth grade

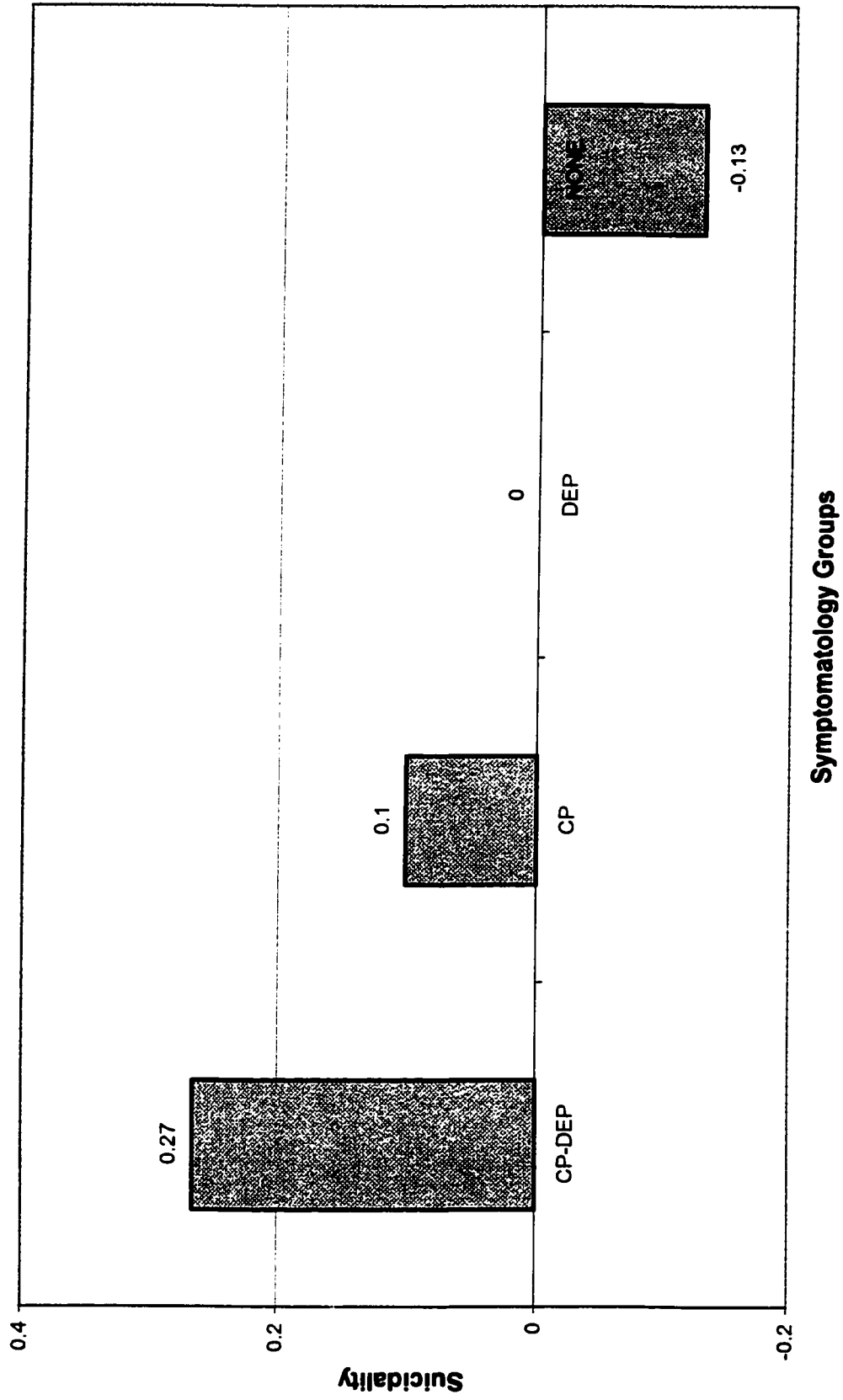
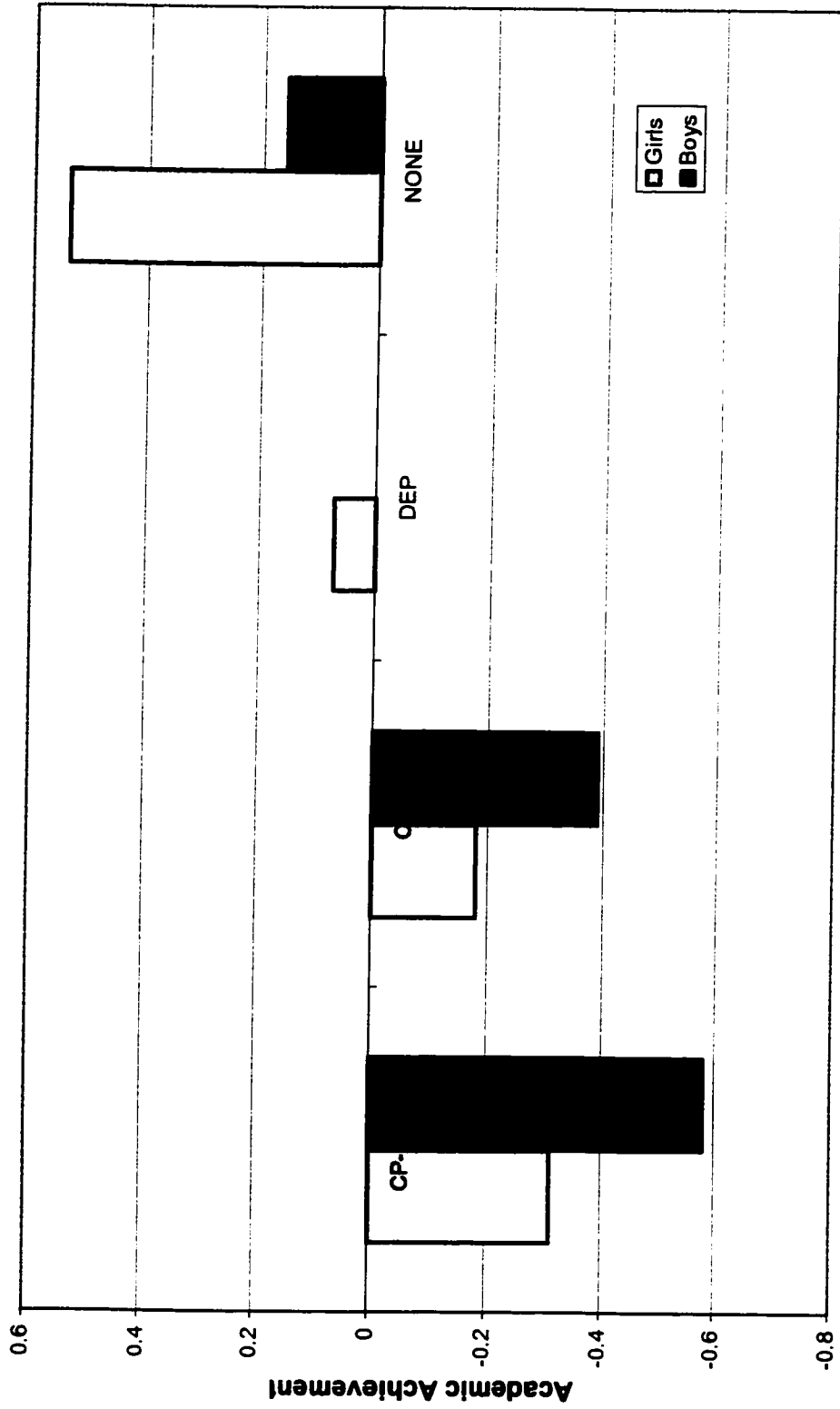
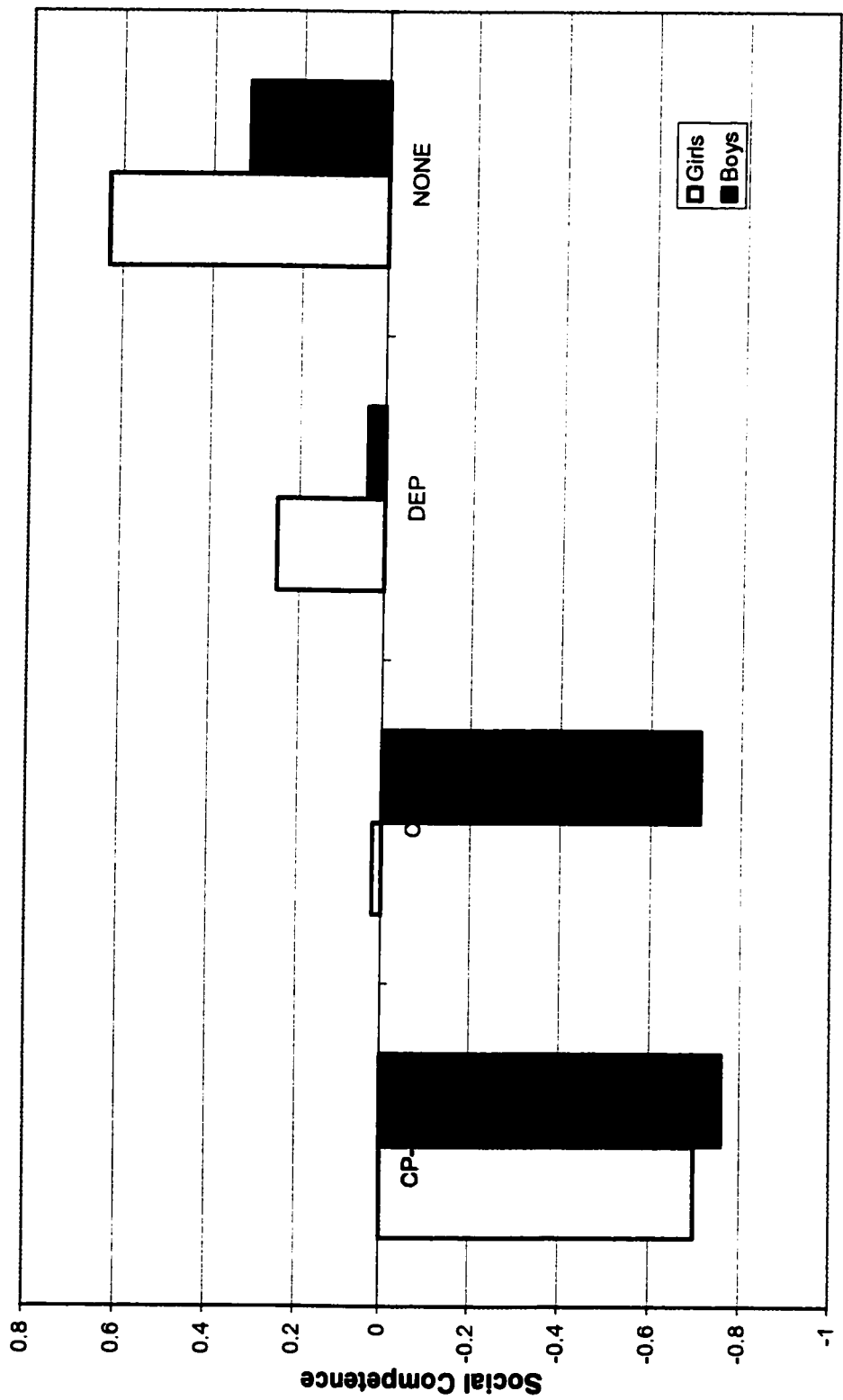


Figure 8. Standardized mean level of suicidality in seventh grade by symptomatology group assigned in fifth grade



**Symptomatology Groups**

Figure 9. Standardized mean level of academic adjustment in seventh grade by symptomatology group assigned in fifth grade and gender



**Symptomatology Groups**

Figure 10. Standardized mean level of social competence in seventh grade by symptomatology group assigned in fifth grade and gender

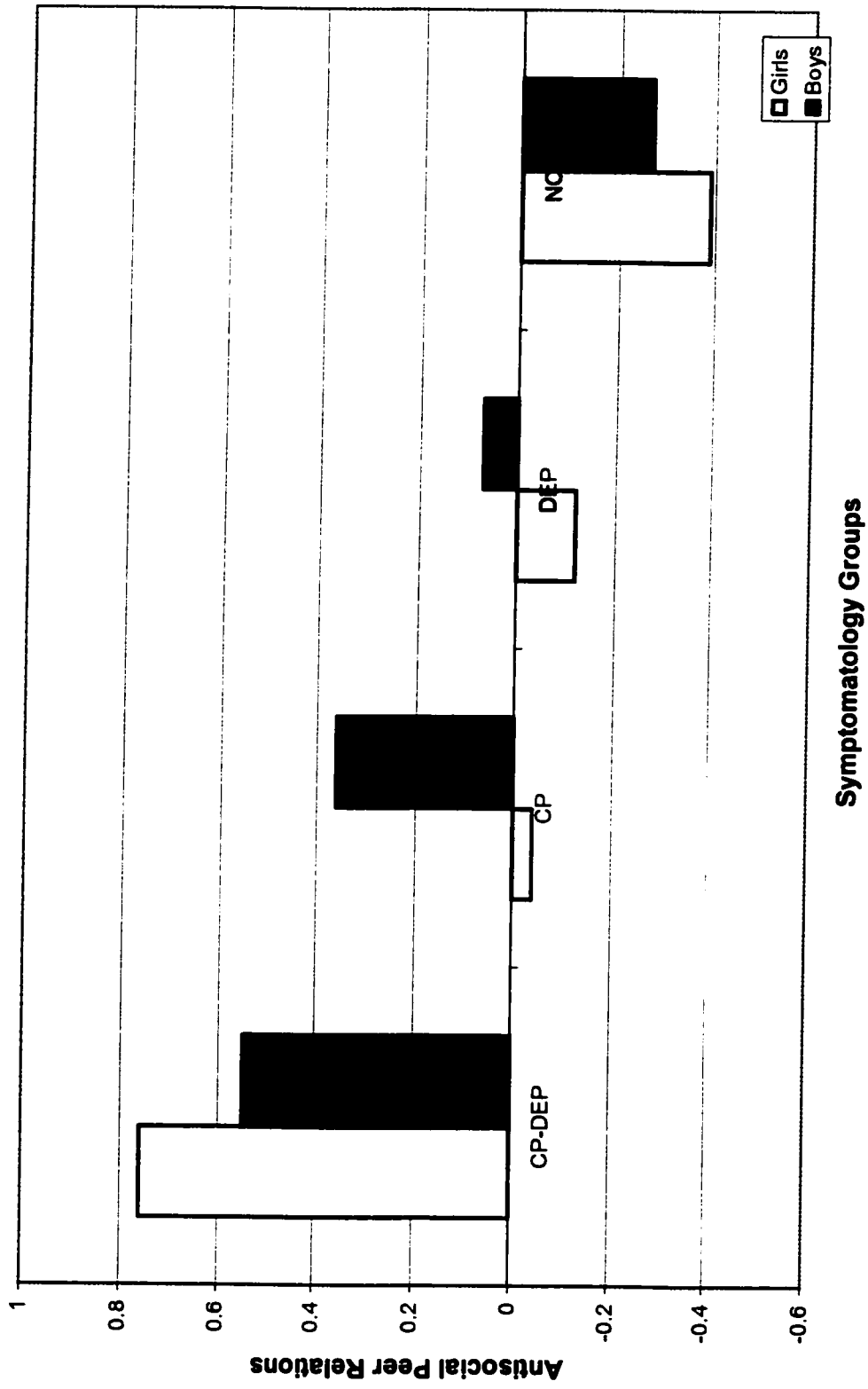
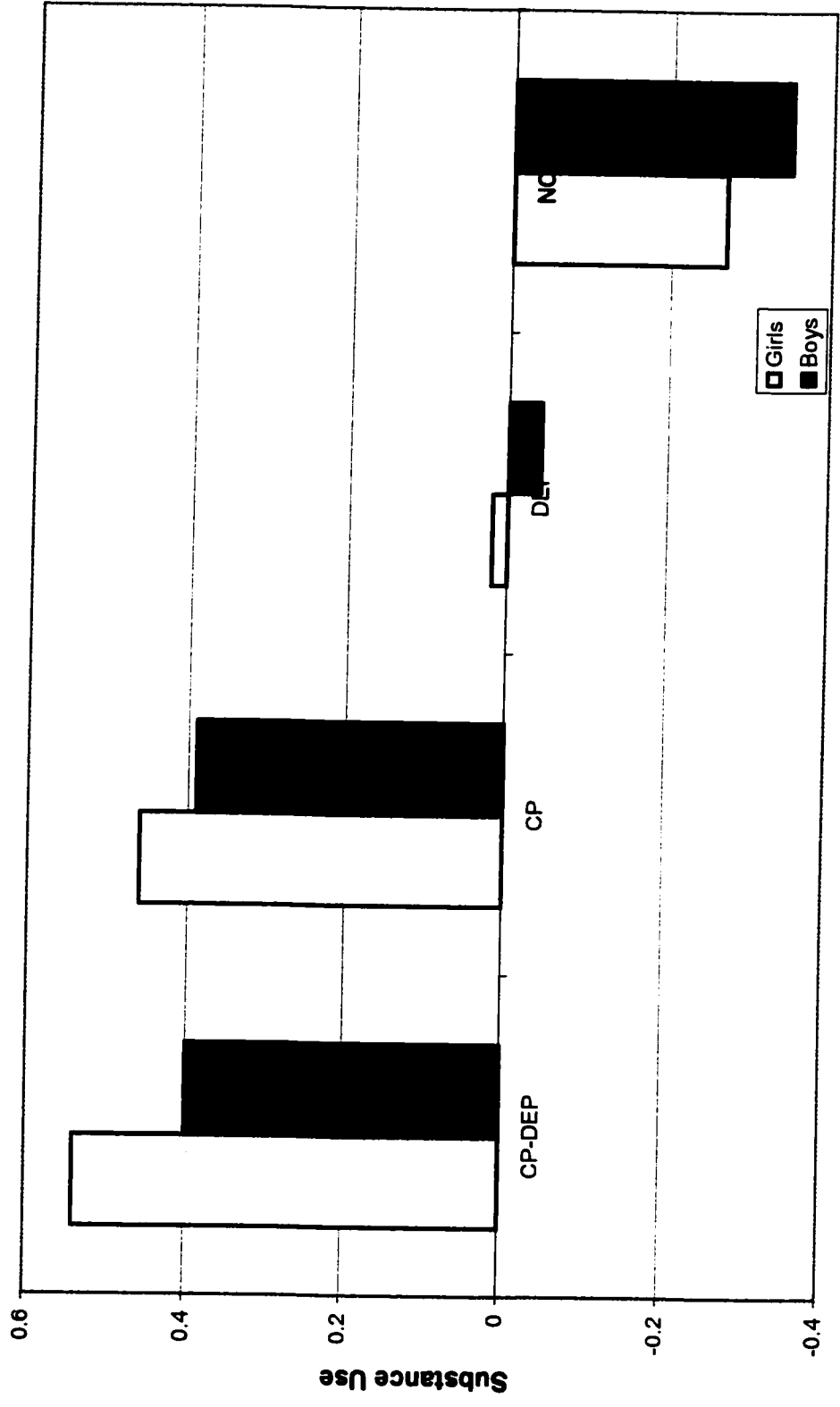
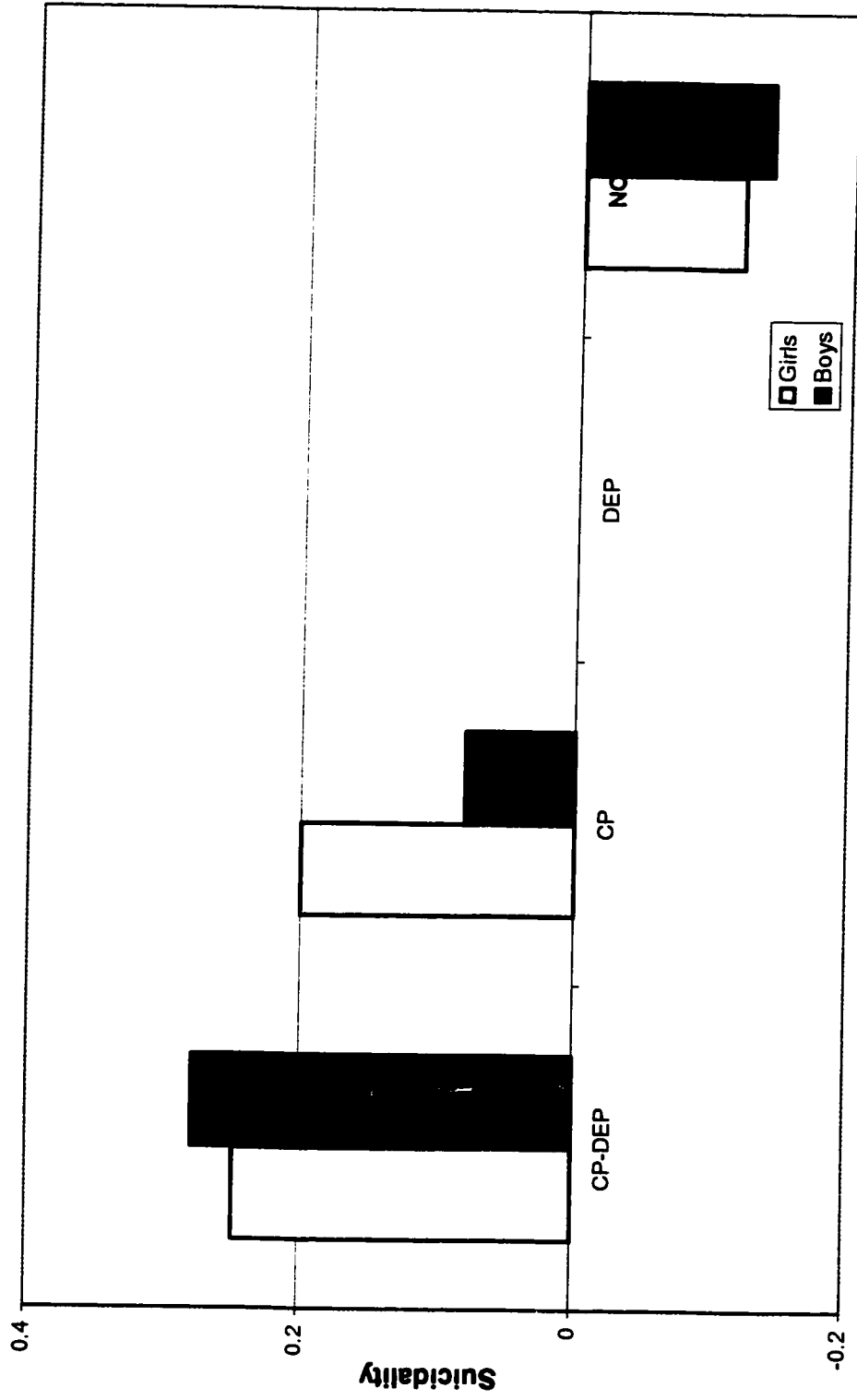


Figure 11. Standardized mean level of antisocial peer relations in seventh grade by symptomatology group assigned in fifth grade and gender



**Symptomatology Groups**

Figure 12. Standardized mean level of substance use in seventh grade by symptomatology group assigned in fifth grade and gender



**Symptomatology Groups**

Figure 13. Standardized mean level of suicidality in seventh grade by symptomatology group assigned in fifth grade and gender

## Discussion

This study examined the development of CP and depression in youth in terms of 1) their relative prevalence and stability over time, 2) their predictive relationship with one another, and 3) their relative relationship to a variety of adjustment outcomes, including suicidality, substance use, antisocial peer relations, social competence and academic adjustment. These areas were investigated using a sample of high-risk youth over a 2-year period, from fifth to seventh grade. First, youth were identified as having CP-only, depression-only, comorbid CP and depressive symptomatology, or no elevated CP or depressive symptomatology. Second, the prevalence and stability of CP, depressive symptomatology, and their comorbidity in youth over time was assessed. This involved examining their prediction of each other. Third, the relationships between symptomatology (e.g., CP, depression, or comorbid CP and depression) and a variety of adjustment outcomes were examined. This allowed for the assessment of the relative strength of each form of symptomatology as a predictor of different types of future adjustment problems. Fifth, ethnicity/urbanicity differences in symptomatology and adjustment outcomes were measured to provide more data on the relative risks associated with these demographic characteristics. The results of each of these analyses, and their implications, will be discussed in turn.

### Prevalence Rates

In the current study, 13% of the sample had comorbid elevated symptomatology. Across the 2-year period, 9% had elevated CP alone and 8% to 9% had elevated

depressive symptomatology alone. Forty-one to forty-two percent had no elevated symptomatology. Of course, prevalence rates depend on the cut-offs chosen and would vary considerably if more restrictive cut-offs (e.g., clinical level of problems) were used. However, the prevalence rates obtained in this study are similar to those of Capaldi (1991) and Miller-Johnson and colleagues (1998), who used similar cut-offs.

In a study of high-risk sixth grade boys, Capaldi (1991) reported similar rates of youth with comorbid CP and depressive symptomatology (13%), but higher rates of youth with CP-only (17 %) and depression-only (15%). The difference between these studies may be a result of the way group membership was calculated: Though Capaldi used a .5 SD cut-off for elevated symptomatology, she also used the same cut-off for “lack of symptomatology.” In this study, the symptomatology level had to be below the mean for “lack of symptomatology,” creating stricter criteria for group membership. Therefore, quite a few youth who would have been included in the CP-only and depression-only groups in the Capaldi study were excluded in the current study, increasing the relative percentage of youth in the comorbid group as compared to the single symptomatology groups. The methodology employed in the current study, though leading to higher rates of subject loss, creates “cleaner” symptomatology groups that are better differentiated.

In addition, it is likely that the different sample characteristics across the two samples (e.g., Capaldi’s sample comprised only boys and measured symptomatology in sixth, instead of fifth, grade) may have impacted prevalence rates. However, because the

levels of symptomatology for each sample were standardized separately, one cannot assess differences in absolute levels of symptomatology across the two samples.

In a sample of African American youth, Miller-Johnson and colleagues (1998) reported similar rates of youth with comorbid CP and depressive symptomatology (11%), but higher rates of youth with CP-only (18%), and lower rates of youth with depression-only (6%). Miller-Johnson and colleagues used the same strategy as Capaldi to standardize measures and create cut-offs for symptomatology groups, leading to the same issue of more lenient group inclusion and inability to compare absolute levels of symptomatology across studies. Again, it is likely that the different sample characteristics across the two samples (e.g., Miller-Johnson et al.'s sample comprised only African American youth and measured symptomatology in sixth, instead of fifth, grade) may have impacted prevalence rates.

Implications. This study suggests that comorbid symptomatology is more prevalent than either CP or depression alone in high-risk youth. Therefore, youth presenting with one of these forms of symptomatology are at great risk for manifesting the other form of symptomatology. This finding confirms that the norm for youth presentation of depression or CP is often one of comorbidity, and interventions targeted to at-risk youth should take this into account.

#### Hypothesis 1: Changes in Rates of Symptomatology

When examined separately by gender, the developmental changes in overall rates of symptomatology for boys and girls appear to be going in opposite directions. Though

the overall percentage of boys without symptomatology remained lower than the percentage of girls without symptomatology, the percentage of girls without symptomatology decreased slightly over 2 years while the percentage of boys without symptomatology increased slightly. This finding fits with previous research indicating overall higher rates of problems in boys, but increasing rates of problems across multiple symptomatology domains in girls during adolescence (Keenan & Shaw, 1997; Loeber & Keenan, 1994).

Depression. I hypothesized that in fifth grade, rates of depression would be similar across gender, but by seventh grade, rates of depression would be higher for girls than boys. In this study, it was found that girls were only slightly more likely to have elevated depression alone than boys in fifth grade, whereas in seventh grade girls were more than twice as likely to have elevated depression alone. This adolescent increase in depression in females relative to males is well documented in the literature (e.g., Angold & Rutter, 1992; Compas et al., 1997; Fleming, Offord & Boyle, 1989).

The small decrease in depression over time for boys observed in this sample has not been consistently observed in previous research, but has been reported by Costello et al. (1988) and Kashani et al. (1987). This decrease may be due to measurement error. It also may be an artifact of the standardization of symptomatology measures at each time point: If girls' absolute levels of depressive symptoms increased while boys' levels stayed the same, boys would appear to have lower standardized levels of depression, though only relative to girls, in seventh grade. It may be best, given these findings and

some inconsistency in the literature, to draw no conclusions about the stability of depression in boys at this time. Any potential decrease in prevalence is likely to be small.

Conduct problems. I hypothesized that rates of CP would be higher for boys than girls across both fifth and seventh grade, but the difference would be smaller in seventh grade. This was confirmed. Boys were five times more likely to have CP-only than were girls in fifth grade but only three times more likely to have CP-only than were girls in seventh grade. This is consistent with existing literature suggesting that boys are four times more likely than girls to have CP in childhood, but only twice as likely in adolescence (Cohen et al., 1993; Offord et al., 1987; Zoccolillo, 1993).

In this study, the change in CP rates over time was due to an increase in CP in girls and a decrease in boys. A developmental increase in CP for girls is well-documented (Keenan & Shaw, 1997; Robins, 1990; Zoccolillo, 1993). However, a decrease in CP for boys in early adolescence has not been reported. Again, the decrease noted in the current study is small and may be a result of standardizing the symptomatology measures separately for each time point. Therefore, absolute increases in symptoms cannot be assessed; only increases relative to other youth in the sample. When absolute levels of CP were examined separately by parent- and teacher-report (and, therefore, unstandardized), parent-report appeared stable over time and teacher-report appeared to increase slightly. This finding was the same across gender, suggesting that boys' absolute levels of CP were not decreasing over time.

In addition, the way in which CP were measured and self-reported by youth (i.e., item count for the number of different CP behaviors) may have contributed to apparent decreases. First, as a developmentally sensitive measure, there were many more types of behavior assessed in seventh grade as compared to fifth grade (33 vs. 19 items), which would lower the overall mean if the same number of items were endorsed at both time points. Second, boys may have endorsed a similar number of different types of CP, but the types of CP may be more severe or the number of incidents of each type is higher. For example, when items are examined separately, it is noted that fewer boys reported physical aggression and firesetting in seventh grade as compared to fifth grade, but more boys reported carrying a weapon and dealing drugs. Additionally, though more youth endorsed being in a gang fight in fifth grade than in seventh grade, the mean number of times they engaged in this behavior was much higher in seventh grade. Therefore, accurately measuring the development of CP over time requires accounting for frequency of and increasing severity of such behaviors.

Comorbid symptomatology. I hypothesized that boys would have overall higher rates of comorbidity. This was confirmed. The percentage of boys with comorbid symptomatology was approximately 2 times that of girls' across the 2 years (approximately 25% vs. 11%). Higher rates of comorbid symptomatology for boys than girls is consistent with existing literature (Bird et al., 1993; Costello et al., 1996; Esser et al., 1990). As mentioned earlier, rates of CP are very low in prepubertal girls, which naturally leads to low rates of comorbid CP and depression. Based on several previous

findings (Loeber & Keenan, 1994; Rutter, 1970; Zoccolillo, 1992), I also hypothesized that rates of comorbidity would increase more for girls than for boys from fifth to seventh grade. This was not found. Perhaps this pattern would be observed if these youth continue to be measured over a longer time frame, as they become older adolescents.

Implications. These data, in combination with previous research, confirm the gender differences in the development of psychopathology by comparing boys' and girls' relative standing on measures of depression, CP and their comorbidity. Though girls appear to look better than boys in fifth grade, their levels of symptomatology in multiple domains are increasing relative to boys. As these youth continue to be assessed throughout adolescence, one will better be able to determine the trajectories.

#### Hypothesis 2—Predictive Relationship between CP and Depression

Stability of CP and depression. Before examining predictive relationships, I examined the stability of CP and depression over time in several ways, including regression coefficients in the longitudinal prediction of continuous measures of symptomatology, changes in mean level of symptomatology over time for youth classified as being elevated for that symptomatology, and percentage of youth that maintained elevated symptomatology in a given group over time. Based on existing literature, I hypothesized that CP would be more stable than depression across time.

Analyses of regression coefficients confirmed that CP was more stable than was depression over time. The strength of the relationship between measures of CP across time ( $b = .66$ ) is consistent with previous findings that suggest CP are highly stable and

likely to persist over time (Esser et al., 1990; Rutter, 1976; Verhulst & van der Ende, 1992). Depression was also stable over time ( $b = .51$ ), though not as stable as CP, which is also consistent with existing research (Esser et al., 1990; Rutter, 1976; Verhulst & van der Ende, 1992). When examined separately by gender, the stability of CP did not differ across boys and girls, whereas depression appeared to be somewhat more stable for girls than boys in this sample. Both of these findings are consistent with previous research (as reviewed by Frick & Loney, 1999; McGee et al., 1992).

When mean levels of depression and CP were examined across each of the fifth grade symptomatology groups over 2 years, symptomatology levels appeared highly stable. Youth in the depressed group maintained elevated depression; youth in the CP group maintained elevated CP; and comorbid youth maintained both elevated CP and depression. A similar pattern emerged when the data were examined separately by gender.

However, each symptomatology group evidenced a pattern that looked like regression towards the mean. Youth with comorbid symptomatology had the highest mean levels of both CP and depression across all groups in fifth grade and their levels decreased by seventh grade. For youth with CP only, CP decreased over the 2-year period and depression increased. For youth with depression only, the opposite occurred; depression decreased and CP increased. For youth without symptomatology, initial mean levels of both depression and CP were the lowest across all groups, but they increased over the 2-year period, though still remaining below the mean. Although these findings

are consistent with regression to the mean, they also may be a result of standardizing the symptomatology measures within each time point which led to changes in relative standing, but not absolute level of symptomatology.

When examining the overall percentages of youth with elevated symptomatology in each of the four groups over a 2-year period, they appeared to remain relatively constant. However, there was movement of individuals among the groups. Youth without symptomatology demonstrated the most stability, followed by youth with comorbidity. The youth with only one form of symptomatology—CP or depression—were least likely to maintain the same group membership, with fewer than half of the members of the depressed group remaining in the same group 2 years later. Similar patterns of stability exist when the data are examined retrospectively, looking at the percentage of youth in seventh grade who were in each group in fifth grade.

When these numbers are compared to those for a high-risk sample of boys measured from sixth to eighth grade (Capaldi, 1992), they appear similar with the exception of a higher stability rate for the comorbid group in the current study. Again, the findings of the current study may represent better estimates because the procedure for determining group membership created more distinct groups. This difference is not explained by differences in sample gender composition because the stability rate for boys in the comorbid group in the current study was 74%, whereas the stability rate for Capaldi's all-boy sample was 48%.

When examining the data prospectively, youth with CP-only are more likely to become comorbid whereas youth with depression-only are more likely to have no subclinical symptomatology 2 years later. When examining the data retrospectively, youth with comorbidity were more likely to have been classified with CP-only than with depression-only 2 years earlier. These findings fit with the findings that CP predicts future depression more strongly than depression predicts future CP and that CP is more stable than depression, which is discussed later.

When examined separately by gender, similar patterns of prospective stability emerged. Stability rates for youth with no symptomatology or depression-only were similar across gender, but boys with comorbidity or CP-only had somewhat higher rates of stability than girls did. In part, girls had lower stability than boys because they had fewer members in the comorbid and CP-only groups in fifth grade (27 boys and 11 girls were in the comorbid group, and 25 boys and 3 girls were in the CP-only group). Therefore, any movement of girls from one group to another decreased the stability much more than the movement of boys from one group to another. The stability of CP is not thought to vary by gender (Frick & Loney, 1999) and it did not vary using the continuous analyses in this study, described above.

Girls and boys had different patterns of movement from one group to another over time. In general, it appears that girls had more movement between the comorbid group and the depression group whereas boys had more movement between the comorbid group and the CP group. These findings are consistent with the fact that CP is more common in

boys and depression is more common in girls in adolescence (e.g., Keenan & Shaw, 1997).

**Implications.** By examining stability with multiple approaches, one can better understand the developmental phenomena of CP and depression. Continuous measures of stability help us understand changes in constructs at a population level, which is useful in epidemiological work. However, while relative mean levels of symptomatology may appear similar across time in each group, there is significant individual variability within the groups. Though symptomatology may best be represented on a continuum, creating groups with cut-offs allows us to look at this variability and discover individual patterns: Who increases/decreases their existing level of symptomatology and who begins to show new forms of symptomatology? This allows for a more person-oriented, as opposed to variable-oriented, approach. Generally, these different types of analyses complement and confirm each other, with both being important for a full understanding of the phenomena. In summary, these analyses suggest that 1) comorbidity is highly stable, 2) CP are more stable than is depression, 3) girls are more likely to move between depression and comorbid symptomatology groups, whereas boys are more likely to move between CP and comorbid symptomatology groups.

**Prediction of symptomatology.** Based on existing research (Capaldi, 1992; Capaldi & Stoolmiller, 1999; Loeber & Keenan, 1994; Rohde et al., 1991; Zoccolillo & Rogers, 1991), I hypothesized that CP would predict depression more strongly than depression would predict CP. This hypothesis was confirmed. In this sample, fifth grade

CP predicted both CP and depression in seventh grade, but were a stronger predictor of seventh grade CP. Fifth grade depression was a significant predictor of seventh grade depression, but not of CP.

Gender differences. I also hypothesized that there might be gender differences in the strength and/or direction of the longitudinal relationship between CP and depression. When examined separately by gender, CP continued to predict CP and depression continued to predict depression, but CP no longer significantly predicted depression for both boys and girls. This change is most likely a result of the decreased power to detect statistical differences that occurred when the sample was split by gender. However, there was a trend for CP to predict depression in girls whereas it was clearly nonsignificant for boys. The effect size was approximately twice as large for girls. These analyses suggest that the significant prediction from CP to depression in the full sample is largely due to the relationship between CP and depression for girls.

Several studies have suggested that girls with CP are at higher risk for developing depression than are boys (Loeber & Keenan, 1994; Robins, 1986; Silverthorn & Frick, 2000). However, other studies have found a relationship between CP and depression for boys (Capaldi, 1992; Capaldi & Stoolmiller, 1999) and have not found a relationship between CP and depression for girls (Bardone et al., 1996; McGee et al., 1992). As mentioned in the introduction, these differences are most likely related to the age of the sample and the selection criteria. Both boys and girls with CP are at risk for developing depression, but the risk might be stronger for girls. Future studies comparing: 1) same-

age boys and girls, 2) on the same measures, 3) over the same time period, 4) at a variety of different developmental periods will help clarify any gender differences in the relationship between CP and depression.

When gender was examined as a predictor instead of a moderator, it significantly predicted CP, with boys having higher mean CP scores than girls. Again, this is consistent with literature recognizing the predominance of CP in boys versus girls and the relative severity of their symptomatology (e.g., Cohen et al., 1993; Offord et al., 1987). Gender did not predict depression, with similar mean scores across boys and girls. This finding is contrary to existing literature (e.g., Compas et al., 1997; Hammen & Rudolph, 1996; Kandel & Davies, 1982). The lack of a gender difference may be due to the young age of the sample, the high-risk nature of the sample, or the inclusion of parent-report in the measure of depression. Parent-report of internalizing problems may have led to an overall underreporting of depression because parents are unable to effectively assess their children's internal states. This dampening of levels of reported depression might have caused a floor effect, preventing the demonstration of differences between girls and boys. Additionally, parents may be more likely to notice, and consequently report, sad, withdrawn behavior in boys because it is more stereotypically incongruent for boys than girls.

Implications. The predictive relationship between CP and later depression found in this study supports the dual-failure model of development (Capaldi, 1992) and the stress-reaction model of Rudolph et al. (1994). These models posit that the profound

impact of early CP on multiple domains, including academic and social functioning, may lead to secondary symptomatology, such as depression. However, this predictive relationship was weak, suggesting that many times depression does not develop secondary to CP. Protective factors, such as increased parental warmth and involvement and prosocial peer support, may interrupt this pathway, preventing the onset of depression, and possibly decreasing the level of CP as well. Knowing that CP is a risk factor for depression increases the urgency of providing appropriate interventions for youth with CP.

### Hypothesis 3—Relationship between Symptomatology and Adjustment Outcomes

The differential prediction of adjustment outcomes by depression and CP was assessed both with continuous and categorical measures. First, using continuous measures of symptomatology, I hypothesized that depression and CP would predict adjustment problems across all domains assessed, with the exception of depression predicting antisocial peer relations. Second, using categorical analyses, I hypothesized that 1) comorbid youth would have significantly worse adjustment outcomes than youth with CP-only, depression-only, or no symptomatology; 2) youth with CP-only would have worse adjustment outcomes than youth with depression-only and no symptomatology; and 3) youth with depression-only would have worse adjustment outcomes than youth no symptomatology. The finding using each of the two analytic approaches will be discussed in turn.

Continuous measures. When examined as continuous measures, both depression and CP predicted worse academic adjustment and social competence and more involvement with antisocial peers. These results are also consistent with research indicating that CP are a risk factor for poor academic adjustment (e.g., Bardone et al., 1996; Capaldi, 1991, 1992; Capaldi & Stoolmiller, 1999; Fergusson & Horwood, 1995; Hinshaw, 1992; Lewinsohn et al., 1995;), poor social competence (e.g., Capaldi, 1991, 1992; Capaldi & Stoolmiller, 1999; Dishion, 1990; Robins, 1986), and antisocial peer relations (e.g., Capaldi, 1991, 1992; Keenan et al., 1995; Laird et al., 1999; Moffitt et al., 1996).

These results are consistent with research indicating that depression is a risk factor for poor academic adjustment (e.g., Bardone et al., 1996; Birmaher et al., 1996; Capaldi, 1991; Hammen et al., 1999; Kandel & Davies, 1986) and poor social competence (e.g., Birmaher et al., 1996; Capaldi, 1991; Capaldi & Stoolmiller, 1999; Hammen et al., 1999; Kovacs, 1997; Rudolph et al., 1994). However, the finding that depression is related to antisocial peer involvement is new and is contrary to Capaldi's (1991, 1992) findings with a sample of high-risk boys. Perhaps the inclusion of girls in this sample increased the relationship between depression and antisocial peer relationships, though no gender interaction was found.

Depressed girls may be more likely to associate with youth, especially males, who engage in delinquent behavior. There are several lines of research that support this hypothesis. Depressed youth are more likely to have antisocial relatives (Harrington et

al., 1997; Rende, Weissman, Rutter, Wickramaratne, Harrington, & Pickles, 1997), which may increase the proximity of antisocial peers. In addition, a strong relationship between female depression and marital discord has been repeatedly documented (e.g., Cummings & Davies, 1994; Downey & Coyne, 1990). One interpretation of this finding is that romantic partners of depressed females may be more prone to hostile, angry interpersonal interactions. Capaldi and Crosby (1997) reported assortative pairing for aggression in young at-risk couples, such that aggression was predicted by antisocial behavior in young men, whereas it was predicted by depressive symptoms in young women. These data suggest assortative mating between depressed females and antisocial males. In addition, several researchers have reported that depressed women had spouses or partners with adjustment problems and personality disorders, including antisocial personality disorder, that predated their marriages (Daley & Hammen, 2002; Merikangas, 1984; Quinton, Rutter, & Liddle, 1984).

CP, but not depression, predicted substance use. This finding is supported by a large literature reporting a strong relationship between CP and substance use (e.g., Boyle & Offord, 1991; Capaldi, 1991, 1992; Capaldi & Stoolmiller, 1999; Fergusson & Horwood, 1995; Henry et al., 1993; McMahon, 1999; Miller-Johnson et al., 1998; Robins & Regier, 1991) and a more inconsistent relationship between depression and substance use (e.g., Birmaher et al., 1996; Boyle & Offord, 1991; Capaldi, 1991, 1992; Capaldi & Stoolmiller, 1999; Cohen et al., 1993; McMahon, 1999; Miller-Johnson et al., 1998; Rohde et al., 1996). The literature does suggest a gender difference in the relationship

between CP and substance use such that CP is a stronger predictor of substance use for girls than boys (Bardone et al., 1996; Boyle & Offord, 1991; Lewis & Bucholtz, 1991; Lewis et al, 1991; Loeber & Keenan, 1994; McManus et al, 1984), but this relationship was not supported by the current study. Perhaps the youth were too young to comprise a sample with sufficient variability in the substance use measure (Miller-Johnson et al., 1998).

Conversely, depression, but not CP, predicted suicidality. The relationship between depression and suicidality is consistent with existing research (e.g., Andrews & Lewinsohn, 1992; Birmaher et al., 1996; Capaldi 1992; Brent et al., 1993; Capaldi & Stoolmiller, 1999; Lewinsohn et al., 1995; Martunnen et al., 1991, 1995), but the lack of relationship between CP and suicidality is inconsistent with existing data (e.g., Andrews & Lewinsohn, 1992; Apter et al., 1988; Lewinsohn et al., 1994; Martunnen et al., 1991). Suicidality is a very low baseline behavior, which suggests that larger samples of adolescents are needed to detect relationships. In addition, more meaningful information about the relationship between CP and suicidality could be ascertained if these measures were reassessed in later adolescence when suicidal behavior becomes more prevalent. In light of data suggesting a stronger relationship between CP and suicidality for girls than for boys (Cairns et al., 1988; Lewis et al., 1991; Wannan & Fombonne, 1998), it would be even more important to collect data on girls during adolescence because they have higher rates of both CP and suicidal behavior in later adolescence.

A significant CP X depression interaction for academic adjustment (and a trend for social competence) indicated that when CP are high, the overall level of academic adjustment is quite low and depression is not a significant predictor of academic achievement (and social competence). However, when CP are low, the overall level of adjustment is much higher and depression is a significant predictor of adjustment. These results suggest that CP have a stronger relationship with academic adjustment and social competence than does depression, and that comorbid symptomatology would be little worse than CP alone. Several researchers have reported that CP are much more detrimental than depression to academic adjustment (Capaldi, 1991, 1992; Capaldi & Stoolmiller, 1999; Cohen et al., 1985; McConaughy, Achenbach, & Gent, 1988), and other researchers have found that comorbid CP and depression is indeed worse than CP alone for academic adjustment (Capaldi, 1991, 1992; Frost, Moffitt, & McGee, 1989; Kovacs et al., 1988; McConaughy & Skiba, 1993). Similar findings have been reported for the differential relationship between CP and depression in predicting social competence (Asarnow, 1988; Cohen, Gottlieb et al., 1985; Cole & Carpentieri, 1990; McConaughy, Achenbach, & Gent, 1988; Renouf et al., 1997). However, the majority of the evidence appears to suggest that comorbid CP and depression is no worse than CP alone with regard to social competence (Asarnow, 1988; Capaldi, 1991, 1992; Cole & Carpentieri, 1990; Renouf et al., 1997).

It is important to note that, by testing the simultaneous effects of CP and depression, a conservative approach was employed in assessing the relationship between

symptomatology and adjustment. Though this approach may have reduced the likelihood of finding many significant associations, it allowed for the determination of each type of symptomatology's unique contribution, while controlling for gender, in predicting adjustment. Many previous studies have simply examined the relationship between one form of symptomatology and adjustment (e.g., Altman & Gotlib, 1988; Birmaher et al., 1996; Blechman et al., 1986; Keenan et al., 1995; Rao et al., 1993), leading to stronger associations that are not due to the unique effect of the predictor examined.

Symptomatology group analyses. When the relationships among CP, depression and adjustment outcomes were examined using categorical measures of CP and depression, four symptomatology groups could be created to directly examine the effect of comorbid CP and depression on adjustment in comparison to just one type of symptomatology alone. In general, the results consistently indicated that comorbid and CP-only symptomatology had the strongest effects on adjustment outcomes and were not significantly different from each other. Depression, on the other hand, appeared to be no more related to poor adjustment than having no elevated symptomatology.

For academic adjustment, antisocial peer relations, and substance use a similar pattern emerged: Youth with comorbid symptomatology or CP-only had worse outcomes than youth with no symptomatology, youth with comorbid symptomatology or CP-only were not significantly different from each other, and youth with depression-only were not significantly different from any of the other three groups. These findings are consistent with Capaldi's (1992) findings showing that CP and comorbid CP and depression are not

significantly different, but both were worse than depression and no symptomatology for academic adjustment, antisocial peer relations, and substance use. In Miller-Johnson and colleagues' (1998) study specific to substance use, very similar results were found: Overall, youth with CP and comorbid CP and depression had higher rates of substance use than youth with depression and no symptomatology. Other research suggests that comorbid symptomatology is worse than CP-alone for academic adjustment and substance use, but many of these studies were conducted on clinical samples, used diagnostic categories, were cross-sectional, and/or used very large samples that made it easier to detect significant group differences (Capaldi, 1991; Fleming, Boyle, & Offord, 1993; Frost, Moffitt, & McGee, 1989; Harrington et al., 1991; King et al, 1996; Kovacs et al., 1988; McConaughy & Skiba, 1993; Neighbors, Kempton, & Forehand, 1992; Riggs et al., 1995).

For social competence, the results were very similar: Youth with comorbid symptomatology and youth with CP-only had worse adjustment than youth with depression-only or no symptomatology, and the latter two groups were not significantly different from each other. In addition, CP-only and comorbid groups were not significantly different from each other. These results are similar to Capaldi's (1992) findings that youth with CP and comorbid CP and depression had significantly lower levels of parent- and teacher-report of peer acceptance (the closest measure to social competence) than youth with depression or no symptomatology. They are also consistent with previous research indicating that CP is worse than depression for social competence

and comorbid symptomatology is not necessarily worse than CP alone (e.g., Asarnow, 1988; Capaldi, 1991; Cole & Carpentieri, 1990; Hammen & Compas, 1994; Renouf et al., 1997; Rudolph, Hammen, & Burge, 1994; Zoccolillo, 1992).

For suicidality, the only significant group difference was between youth with comorbid symptomatology and those with no symptomatology. Youth with either CP- or depression-only were not significantly different from each other, nor were they different from youth in the comorbid group or the no symptomatology group. These findings are partially consistent with existing literature suggesting that comorbid CP and depression is related to the highest rates of suicidality (Angold et al., 1999; Brent et al., 1993; Capaldi, 1992; Hammen & Compas, 1994; Myers et al., 1991; Rohde et al., 1991; Shaffer, 1974). However, they are inconsistent with Capaldi's (1992) results demonstrating that comorbidity is significantly worse than either CP or depression alone. It is also inconsistent with research that implicates both CP (e.g., Andrews & Lewinsohn, 1992; Apter et al., 1988; Lewinsohn et al., 1994; Martunnen et al., 1991; Myers et al., 1991; Sack et al., 1993) and depression (e.g., Andrews & Lewinsohn, 1992; Birmaher et al., 1996; Borst et al., 1991; Brent et al., 1993; Lewinsohn et al., 1995; Martunnen et al., 1991; 1995) as individual risk factors for suicidality. The limited findings for suicidality are possibly related to the low reliability of the construct and low base rates of the phenomena (e.g., suicidal ideation and attempts) measured.

Though many of the groups were not significantly different for many of the adjustment outcomes, examining the graphs of mean adjustment outcomes for youth in

each of the four symptomatology groups presents a clearer picture. A consistent pattern emerged in which youth in the comorbid group had the poorest adjustment outcome, followed by youth in the CP-only group, followed by youth in the depression-only group, and ending with youth without elevated symptomatology having the best mean levels of adjustment outcomes. Most likely, the group differences did not meet significance because of the small sample size of several of the groups, especially the depression-only and CP-only groups. This small sample size led to reduced power to detect smaller differences among the groups.

Gender differences. Additionally, I had hypothesized that there may be gender differences in the strength of the relationships between symptomatology and adjustment outcome, but these were not supported by the data. Female gender did predict academic adjustment and social competence across both sets of analyses, which is consistent with previous research (Anastas & Reinherz, 1984; Cokley, 2001; Diamond & Onwuegbuzie, 2001). However, gender did not moderate the relationship between symptomatology and adjustment. That is, girls were not differentially impacted by CP compared to boys and boys were not differentially impacted by depression compared to girls. This finding is inconsistent with the gender paradox (Loeber & Keenan, 1994), which suggests that girls may have worse sequelae from CP and boys may have worse sequelae from depression.

The lack of findings could be related to several methodological limitations. First, the age of the sample may have resulted in low levels of both CP and depression. Developmentally, levels of depression and CP increase in adolescence, especially for

girls, making it more likely to find larger numbers of affected girls and a stronger relationship between symptomatology and adjustment. Additionally, adjustment may deteriorate over time, and the longer these youth have symptomatology, the more negative sequelae they will present. Second, in the group analyses, the distribution of youth with CP and depression was not equal, creating very small numbers of girls with CP-only and boys with depression-only. Visual inspection of the charts suggests that there may indeed be differences between boys and girls, but future studies will need very large samples to capture a large enough group of girls with CP to conduct meaningful analyses.

Implications. As mentioned above, each of these types of analyses provides different information that is useful in different contexts. Using symptomatology groups allows for a person-oriented approach, as opposed to the variable-oriented approach of continuous measures in a regression model. Using the person-oriented approach, one can look for different pathways for different sub-groups, that is, different patterns of behavioral madadaptation (Sroufe & Rutter, 1984). However, there is much evidence to suggest that continuous measures better represent the constructs of developmental psychopathology in childhood, and this study provided evidence that continuous measures were stronger predictors of adjustment outcome than was group membership. This may have been the case because the symptomatology groups were small, especially the depression group, decreasing the power to detect significant differences. Again, both approaches have their strengths and weaknesses and are useful for understanding

different questions. Regardless of the approach, it is important to examine subclinical elevations in symptomatology, especially when studying youth, because of the nature of symptom and disorder development (e.g., progression over time). This study confirmed that subclinical levels of symptomatology are related to poor outcomes over 2 years in early adolescence.

Overall, there were few differences between the results of the categorical and continuous analyses. CP appeared to be a stronger predictor than depression of almost all adjustment outcomes, with the exception of suicidality. The case of suicidality proved to be an interesting example of a different pattern of results emerging from the different types of analyses. Depression was a stronger continuous predictor of suicidality than was CP, but the CP-only group had a higher mean rating of suicidality than the depression-only group. This occurred because youth with elevated depression were removed from the sample in the categorical analyses because they did not meet the strict group criteria (i.e., they had elevated levels of depression, but their levels of CP were not below the mean). If these youth had been included, the depression-only group would have almost doubled in size and the mean level of depression would have increased. In addition, the comorbid group had the youth with the highest levels of depression, so they were not represented in the depression-only group either. Removing these youth greatly decreased the strength of depression to predict suicidality. Discrepancies like this are important to remember when examining other studies because their results might be quite different if they measured their symptomatology differently.

This example also makes an important case for measuring comorbid symptomatology. It suggests that the presence of depressive symptomatology is closely linked to the presence of CP; that is, few youth with depressive symptomatology did not have CP and the more depression they reported, the more CP they usually reported. Since these data also suggest that comorbid CP and depression are worse than depression alone for a variety of adjustment outcomes, if one was measuring the relationship between depression and an outcome without assessing CP, the results of the analyses would be misleading. One would assume that depression had a strong relationship with a given outcome, ignoring the role of highly comorbid CP.

The findings discussed in this section are consistent with the tenets of developmental psychopathology—symptomatology leads to maladaptive outcomes in part because it interferes with the normal acquisition of developmentally appropriate skills in cognitive, social and psychological domains (Sameroff, 1995; Sroufe & Rutter, 1984). Both depression and CP predict multiple adjustment difficulties, depending on the constellation of other risk and protective factors. Multifinality describes this phenomenon in which one condition can lead to multiple outcomes. Conversely, both depression and CP can predict to some of the same outcomes, such as academic problems and poor social competence. Equifinality describes the phenomenon in which multiple risks lead to the same outcome. The present study illustrates both multifinality and equifinality in the relationship among symptomatology and adjustment outcomes.

These findings also confirm that comorbidity is associated with poorer outcomes in terms of absolute levels of symptomatology and adjustment difficulties. From developmental psychopathology research, we know that individuals with multiple expressions of psychopathology (e.g., comorbidity) are at risk for multiple adjustment problems and increased severity of these problems. We also know that these individuals probably have more risk and fewer protective factors in biological, psychological, and environmental domains. Comorbidity is more common in youth, which suggests that it is associated with early age of symptom onset. Early age of symptomatology onset, with both CP and depression, is related to higher levels of risk and worse outcomes (e.g., Hammen & Rudolph, 1996; Hinshaw & Anderson, 1996; Keenan & Shaw, 1997; Moffitt et al, 1996). Therefore, it follows logically that comorbid psychopathology in youth is a marker for early onset, high levels of risk factors, and worse adjustment in multiple domains.

#### Hypothesis 4—Ethnic and Urbanicity Differences in Symptomatology and Adjustment Outcomes

Given the limited literature and the nature of this data set, no hypotheses were made about the relationship between ethnic groups/geographic locations—Urban African Americans, Urban Caucasians and Rural Caucasians—and symptomatology or adjustment outcomes. Overall, the findings indicate that urbanicity and African American ethnicity are both risk factors that independently contribute to symptomatology and adjustment.

In fifth grade, urban African Americans and Caucasians had significantly worse CP than rural Caucasians, suggesting that urbanicity was a stronger predictor than ethnicity. However, in seventh grade, urban African Americans had significantly worse CP than both urban and rural Caucasians, suggesting that ethnicity was a stronger predictor than urbanicity. Existing research on the relationship between minority status and CP is contradictory, but there is evidence to suggest higher rates of CP in African American youth (Elliot et al., 1983; Hope et al., 1998; Loeber et al., 1998). The existing literature on the role of urbanicity in relation to CP suggests a strong predictive relationship, which is largely a result of low SES, inner-city neighborhoods (e.g., Attar et al., 1994; Harnish, Dodge, Valente, & CPPRG, 1995; Rutter et al., 1970, 1975; Wichstrom et al., 1996). The different findings for fifth and seventh grade resulted from a decrease in the mean level of CP in urban Caucasian youth, as compared to that of urban African American and rural Caucasian youth, over the 2-year period. This decrease did not change the relative standing of the three groups, but it created a larger difference between urban African American and urban Caucasian youth (i.e., ethnicity effect) and a smaller difference between urban and rural Caucasian youth (i.e., urbanicity effect). These results suggest that both ethnicity and urbanicity are risk factors for CP. Future research should replicate these findings before making any interpretations regarding developmental differences in the relative strength of ethnicity versus urbanicity in the prediction of CP.

There were no significant differences in depression across the three groups and two time periods, which is consistent with some existing literature on the relationship between ethnicity and depression (Kandel & Davies, 1982; Pumariega et al., 1996; Schraedley et al., 1999), but inconsistent with research on the relationship between urbanicity and depression (e.g., Blazer et al., 1994; Cross-National Collaborative Group, 1992). The existing data relating urbanicity to increased rates of depression is mostly with adults, suggesting that this difference may not emerge until these youth are older. Similar changes may occur for the relationship between ethnicity and depression, since some studies with adults report higher rates of depression in Caucasians as compared to African Americans (e.g., Blazer et al., 1994; Roberts, 2000).

For academic adjustment, rural Caucasians were significantly better adjusted than both urban Caucasians and urban African Americans, and urban Caucasians were significantly better adjusted than urban African Americans. These results suggest that both ethnicity and urbanicity are independent predictors of academic adjustment, which is consistent with the existing research on ethnicity differences (e.g., Diamond & Onwuegbuzie, 2001; Hare, 1985; Hedges & Nowell, 1998), and adds to the limited research on urbanicity (e.g., Randhawn & Hunt, 1987; Rutter, 1973). It is important to remember that the urbanicity comparison is only for Caucasian youth, and all of the youth in this study were in high-risk, low resource communities. Rural Caucasian youth in this study may be better academically adjusted than their urban counterparts as a result of specific educational systems and/or family values in these areas.

For social competence, rural Caucasians and urban Caucasians were significantly better adjusted than urban African Americans, suggesting that ethnicity is the more powerful predictor. This finding is consistent with previous research indicating that African American youth are rated more poorly than Caucasian youth on measures of social competence (e.g., Coie et al., 1982; Feng & Cartledge, 1996; Finkelstein & Haskins, 1983; Sbarra & Pianta, 2001; Wiegel, 1985). As discussed earlier, these differences may be at least partly related to rater bias, since teachers were the primary reports for this construct. Urbanicity did not effect the level of social competence among Caucasians, and there is little existing data with which to compare this finding. There may be further demarcation in levels of urbanicity that provide more meaningful information in relation to social competence. For instance, inner-city youth may have lower levels of social competence than suburban youth, but not rural youth. In addition, urbanicity may have a differential impact on African American youth, but this study could not assess that relationship.

For antisocial peer relations, urban African Americans had significantly higher levels of involvement than rural Caucasians, suggesting that a combination of urbanicity and ethnicity factors contributed to poorer outcomes. These findings cannot be compared directly with existing research in this area, but are consistent with research demonstrating that urban inner-city areas, which have disproportionate numbers of minority youth, are associated with higher density of CP, crime rates and heavier gang presence (e.g., Aneshensel & Sucoff, 1996; Attar et al., 1994; Peeples & Loeber, 1994; Rutter et al.,

1970, 1975; Wichstrom et al., 1996). In these neighborhoods, there may be increased availability of antisocial peers. In addition, Werthamer-Larson, Kellam, & Wheeler (1991) have suggested that the use of ability tracking in large urban schools facilitates the coalescing of aggressive youth into one classroom.

There were no differences among the three groups for substance use. The lack of significant differences on these variables may be due to low levels of substance use in this age group (Miller-Johnson et al., 1998). Existing research suggests that substance use would be lower among African American as compared to Caucasian youth (e.g., Albrecht et al., 1996; Compton et al., 2000; Friedman & Ali, 1998; Oetting et al., 2000; Paschall et al., 2000), so examining these differences when the youth in this study are older may provide different results. No differences related to urbanicity were anticipated. It is interesting to note that previous research reports that CP are higher, but substance use is lower, in African American youth as compared to Caucasian youth. These findings together suggest that the predictive relationship between CP and substance use would not be as strong for African American youth as compared to Caucasian youth. Future studies should investigate this relationship.

There were no significant differences among the three groups for suicidality. Again, this finding may be a result of low levels of suicidality in this age group, but there is some evidence to suggest few ethnic differences in rates of suicidal behavior in adolescence (e.g., Roberts, 2000), and urbanicity has not been examined in relation to

suicidality. This relationship deserves reassessment when these youth are older adolescents.

Future research must examine the mediational role of other risk factors that are associated with ethnic minority status, such as SES, family composition, and neighborhood safety. In this study, the families of African American youth had a lower average SES (measured by combining parental education and employment) and higher numbers of single-parent families as compared to the Caucasian youth in urban and rural areas. Previous research indicates that when demographics are controlled for, ethnic differences in rates of symptomatology often attenuate or reverse (see review, Neff, 1984). However, previous research conducted with part of this sample found a relationship between ethnicity and CP with SES included in the model (Hope et al., 1998). It is also important for other studies to assess the difference between rural and urban African American samples to further understand the role of urbanicity in relation to multiple ethnicities. For example, some data indicates that the Black church in rural communities may act as a protective factor against the development of substance use (Albrecht et al., 1996).

Aside from determining relative rates of symptomatology and adjustment outcomes, it is important to examine the moderating role of ethnicity and urbanicity in the relations between symptomatology and adjustment. For example, Oquendo et al. (2001) found that the relationship between depression and suicide was stronger for Caucasians than African Americans, especially for females. Paton and Kandel (1978)

reported that African American males were less likely to use substances if they were depressed, whereas Caucasian males were more likely to use substances when depressed.

The relationship between demographic factors, such as ethnicity and urbanicity, and psychopathology (e.g., CP and depression) may change depending on the context of the behavior and/or the reporter. For instance, Hope et al. (1998) found a relationship between both urbanicity and ethnicity, and CP in the school setting (measured by teachers), but not in the home setting (measured by parents). Future research should examine the moderating effect of context and reporter on these relations.

As always, because of the heterogeneity within ethnic group—in terms of individual and environmental characteristics—researchers must refrain from making generalizations based on ethnic group (Caetano, Clark, & Tam, 1998; Foster et al., 1996). This study went one step forward by combining ethnicity and urbanicity to create slightly more circumscribed groups, but there is a long way to go. We can use these group differences as a starting point for understanding diversity among communities of people, knowing that there are many subgroups within each of the three groups. Similarly, although the rural group was somewhat homogeneously rural in this sample, the urban group included youth in a range of communities from inner-city to more suburban. Teasing these differences apart will lead to a clearer understanding of the relationship between urbanicity and multiple forms of symptomatology and adjustment outcomes.

### Limitations and Future Directions

Though this study improved on previous research by using a large, gender-balanced, ethnically diverse sample of high-risk youth, multiple-reporter constructs based on developmentally appropriate measures, and a comparison of both categorical and continuous analyses, there were also several limitations. First, despite initial appearances, the current sample was not large enough to adequately examine symptomatology group differences. Because of the criteria used to create the groups, a large number of subjects were dropped and several of the groups (e.g., depression-only) were very small. The stringent criteria were important to create groups with more distinct differences. Therefore, very large samples are needed to retain adequate group sample sizes.

Second, the age of the sample may have decreased the likelihood of finding certain associations. As mentioned in several places, assessment of CP, depression, and certain adjustment outcomes, such as substance use and suicidality, may prove more productive in later adolescence. At that time, higher levels of all indicators would be present in most samples to increase the ability to detect important findings. This reality is important for understanding the development of problems in girls because they tend to manifest symptomatology later than do boys. In the future, this sample will provide measures of both symptomatology and adjustment at multiple time points to examine longitudinal trajectories through adolescence and into adulthood. These data will provide more definitive information about the relative effects of early CP and depression on adjustment.

In addition, the limited findings related to substance use and suicidality are at least in part a result of the measures used. These measures comprised limited numbers of items and had low internal consistency. More comprehensive measures of substance use and suicidality would better operationalize these constructs and lead to more reliable results.

The current sample was not large enough to examine the moderating role of ethnicity on the relationship between symptomatology and adjustment outcomes. Though the moderating role of gender was examined, it is not clear if a bigger sample would have yielded more significant findings since the relationship between symptomatology group and adjustment outcomes looked very different graphically by gender. Future research should employ a larger sample to further investigate the potential moderating roles of gender and ethnicity.

Unfortunately, the limitations of multiple imputation prevented significance testing on a number of the stability analyses. In the future, one should be able to conduct chi-square analyses using missing data applications to provide more definitive results regarding the stability of symptomatology group membership. In addition, other data analytic strategies must be utilized to better define constellations of symptoms that better represent taxa in psychopathology. Taxometrics is one promising method that has been receiving increased attention lately (Meehl, 2001).

### Concluding Remarks

Understanding the relative predictive power of CP, depression and their comorbid presentation in relation to various adjustment outcomes will help plan appropriate secondary prevention and intervention strategies. In addition, determining who (by gender, ethnicity, or geographic location) is at higher risk for developing other forms of symptomatology and adjustment outcomes, based on their initial symptom presentation, is important for targeting interventions. There is much to learn about comorbidity, and this study, in conjunction with previous research, suggests that assessing for comorbid conditions in clinical research and practice is essential for a more complete understanding of youths' adjustment. As Rutter (1994, p. 100) argues, studying the comorbidity of psychiatric diagnoses fosters "a more rigorous examination of the concepts underlying psychiatric diagnosis and a more systematic critical testing of those concepts."

### Endnotes

<sup>1</sup> Berkson's bias refers to a sample bias towards severity of impairment. People with comorbidity have increased impairment and are, therefore, more likely to seek treatment. These patients are more likely to become part of a clinical sample.

<sup>2</sup>All ethnicity analyses were also conducted by examining the difference between Caucasians and African Americans for the two heterogeneous sites (i.e., Nashville and Seattle). These results were consistent with the ethnicity by urbanicity findings presented in this section. Caucasians had higher levels than African Americans of academic adjustment and social competence and lower levels of antisocial peer relations and CP. There were no significant differences for depressive symptomatology, substance use and suicidality.

## References

- Abikoff, H., & Klein, R. G. (1992). Attention-Deficit Hyperactivity and Conduct Disorder: Comorbidity and implications for treatment. Journal of Consulting and Clinical Psychology, 60, 881-892.
- Achenbach, T. M. (1991a). Integrative guide for the 1991 CBCL/4-18, YSR, and TRF profiles. Burlington, VT: University of Vermont, Department of Psychiatry.
- Achenbach, T. M. (1991b). Manual for the Child Behavior Checklist/4-18 and 1991 Profile. Burlington, VT: University of Vermont, Department of Psychiatry.
- Achenbach, T. M. (1993). Implications of multi-axial empirically based assessment for behavior therapy with children. Behavior Therapy, 24, 91-116.
- Achenbach, T.M., Conners, C. K., Quay, H. C., Verhulst, F. C., & Howell, C. T. (1989). Replication of empirically derived syndromes as a basis for taxonomy of child/adolescent psychopathology. Journal of Abnormal Child Psychology, 17, 299-323.
- Achenbach, T. M. Howell, C. T., Quay, H. C., & Conners, C. K. (1991). National survey of problems and competencies among four- to sixteen-year-olds: Parents' reports for normative and clinical samples. Monographs of the Society for Research in Child Development, 56 (3, Serial No. 225).
- Aguilar, B., Sroufe, L., A., Egeland, B., & Carlson, E. (2000). Distinguishing the early-onset/persistent and adolescence-onset antisocial behavior types: From birth to 16 years. Development and Psychopathology, 12, 109-132.

Aiken, L. S., & West, S. G. (1991). Multiple regression: Testing and interpreting interactions. Newbury Park, CA: Sage.

Albrecht, S. L., Amey, C., & Miller, M. K. (1996). Patterns of substance abuse among rural black adolescents. Journal of Drug Issues, 26, 751-781.

Alessi, N. E., & Magen, J. (1988). Comorbidity of other psychiatric disturbances in depressed, psychiatrically hospitalized children. American Journal of Psychiatry, 145, 1582-1584.

Allgood-Merten, B., Lewinsohn, P. M., & Hops, H. (1990). Sex differences and adolescent depression. Journal of Abnormal Psychology, 99, 55-63.

Altmann, E. O., & Gotlib, I. H. (1988). The social behavior of depressed children: An observational study. Journal of Abnormal Child Psychology, 16, 29-44.

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders (4<sup>th</sup> ed.). Washington, DC: Author.

Anastas, J. W., & Reinherz, H. (1984). Gender differences in learning and adjustment problems in school: Results of a longitudinal study. American Journal of Orthopsychiatry, 54, 110-122.

Anderson, J. C., Williams, S., McGee, R., & Silva, P. A. (1987). DSM-III disorders in preadolescent children. Archives of General Psychiatry, 44, 69-76.

Andrew, J. A., & Lewinsohn, P. M. (1992). Suicidal attempts among older adolescents: Prevalence and co-occurrence with psychiatric disorders. Journal of the American Academy of Child and Adolescent Psychiatry, 31, 655-662.

Aneshensel, C. S., & Sucoff, C. A. (1996). The neighborhood context of adolescent mental health. Journal of Health and Social Behavior, 37, 293-310.

Angold, A. & Costello, E. J. (1993). Depressive comorbidity in children and adolescents: Empirical, theoretical and methodological issues. American Journal of Psychiatry, 150, 1779-1791.

Angold, A., Costello, E. J., & Erkanli, A. (1999). Comorbidity. Journal of Child Psychology and Psychiatry, 40, 57-87.

Angold, A., & Rutter, M. (1992). Effects of age and pubertal status on depression in a large clinical sample. Development and Psychopathology, 4, 5-28.

Anthony, J. C., Warner, L. A., & Kessler, R. C. (1994). Comparative epidemiology of dependence on alcohol, controlled substances, and inhalants: Basic findings from the National Comorbidity Survey. Experimental and Clinical Psychopharmacology, 2, 244-268.

Apter, A., Bleich, A., Plutchik, R., Mendelsohn, S., & Tyano, S. (1988). Suicidal behavior, depression and conduct disorder in hospitalized adolescents. Journal of the American Academy of Child and Adolescent Psychiatry, 27, 696-699.

Asarnow, J. R. (1988). Peer status and social competence in child psychiatric inpatients: A comparison of children with depressive, externalizing, and concurrent depressive and externalizing disorders. Journal of Abnormal Child Psychology, 16, 151-162.

Attar, B. K., Guerra, N. G., & Tolan, P. H. (1994). Neighborhood disadvantage, stressful life events, and adjustment in urban elementary school children. Journal of Clinical Child Psychology, 23, 391-400.

Bardone, A. M., Moffitt, T. E., Caspi, A., Dickson, N., & Silva, P. (1996). Adult mental health and social outcomes of adolescent girls with depression and conduct disorder. Development and Psychopathology, 8, 811-829.

Bettes, B. A., & Walker, E. (1986). Symptoms associated with suicidal behavior in childhood and adolescence. Journal of Abnormal Child Psychology, 14, 591-604.

Biederman, J., Faraone, S., Mick, E., & Lelon, E. (1995). Psychiatric comorbidity among referred juveniles with major depression: Fact or artifact? Journal of the American Academy of Child and Adolescent Psychiatry, 34, 579-590.

Bird, H.R., Canino, G. J., Davies, M., Zhang, H., Ramirez, R., & Lahey, B. B. (2001). Prevalence and correlates of antisocial behaviors among three ethnic groups. Journal of Abnormal Child Psychology, 29, 465-478.

Bird, H. R., Canino, G., Rubio-Stipec, M., Gould, M. S., Ribera, J., Sesman, M., Woodbury, M., Huertas-Goldman, S., Pagan, A., Sanchez-Lacay, A., & Moscoso, M. (1988). Estimates of the prevalence of childhood maladjustment in a community survey in Puerto Rico. Archives of General Psychiatry, 45, 1120-1126.

Bird, H. R., Gould, M. S., & Staghezza, B. (1992). Aggregating data from multiple informants in child psychiatry epidemiological research. Journal of American Academy of Child and Adolescent Psychiatry, 31, 78-85.

Bird, H. R., Gould, M. S., & Staghezza, B. (1993). Patterns of diagnostic comorbidity in a community sample of children aged 9 through 16 years. Journal of American Academy of Child and Adolescent Psychiatry, *32*, 361-368.

Birmaher, B., Ryan, N. D., Williamson, D. E., Brent, D. A., Kaufman, J., Dahl, R. E., Perel, J., & Nelson, B. (1996). Childhood and adolescent depression: A review of the past 10 years. Part I. Journal of American Academy of Child and Adolescent Psychiatry, *35*, 1427-1439.

Blair, S. L., Blair, M. C. L., & Madamba, A. B. (1999). Racial/ethnic differences in high school students' academic performance: Understanding the interweave of social class and ethnicity in the family context. Journal of Comparative Family Studies, *30*, 539-555.

Blazer, D. G., Kessler, R. C., McGonagle, K. A., & Swartz, M. S. (1994). The prevalence and distribution of major depression in a national community sample: The national comorbidity survey. American Journal of Psychiatry, *151*, 979-986.

Blechman, E. A., McEnroe, M. J., Carella, E. T., & Audette, D. P. (1986). Childhood competence and depression. Journal of Abnormal Psychology, *95*, 223-227.

Borowsky, I. W., Ireland, M., & Resnick, M. D. (2001). Adolescent suicide attempts: Risks and protectors. Pediatrics, *107*, 485-493.

Borst, S. R., Noam, G. G., & Bartok, J. A. (1991). Adolescent suicidality: A clinical-developmental approach. Journal of the American Academy of Child and Adolescent Psychiatry, *30*, 796-803.

Boyle, M. H., & Offord, D. R. (1991). Psychiatric disorder and substance use in adolescence. Canadian Journal of Psychiatry, *36*, 699-705.

Brent, D. A., Kolko, D. J., Wartella, M. E., Boylan, M. B., Moritz, G., Baugher, M., Y Zelenak, J. P. (1998). Adolescent psychiatric inpatients' risk of suicide attempt at 6-month follow-up. Journal of the American Academy of Child and Adolescent Psychiatry, *32*, 95-105.

Breslau, N., Schultz, L., & Peterson, E. (1995). Sex differences in depression: A role for preexisting anxiety. Psychiatry Research, *58*, 1-12.

Briggs-Gowan, M. J., Carter, A. S., & Schwab-Stone, M. (1996). Discrepancies among mother, child, and teacher reports: Examining the contributions of maternal depression and anxiety. Journal of Abnormal Child Psychology, *24*, 749-765.

Brown, R. A., Lewinsohn, P. M., seeley, J. R., & Wanger, E. F. (1996). Cigarette smoking, Major Depression, and other psychiatric disorders among adolescents. Journal of the American Academy of Child and Adolescent Psychiatry, *35*, 1602-1610.

Caetano, R., Clark, C. L., & Tam, T. (1998). Alcohol consumption among racial/ethnic minorities: Theory and research. Alcohol Health and Research World, *22*, 233-238.

Cairns, R. B., Peterson, G., & Neckerman, H. J. (1988). Suicidal behavior in aggressive adolescents. Journal of Clinical Child Psychology, *17*, 298-309.

Campbell, S. B. (1991). Longitudinal studies of active and aggressive preschoolers: Individual differences in early behavior and in outcome. In D. Cicchetti &

S. L. Toth (Eds.), Internalizing and externalizing expressions of dysfunction: Rochester symposium on developmental psychopathology. Vol. 2 (pp.57-89). New Jersey: Lawrence Erlbaum Associates.

Campbell, S. B., & Ewing, L. J. (1990). Follow up of hard to manage preschoolers: Adjustment at age 9 and predictors of continuing symptoms. Journal of Child Psychology and Psychiatry, 31, 871-889.

Capaldi, D. M. (1991). Co-occurrence of conduct problems and depressive symptoms in early adolescent boys: I. Family factors and general adjustment at grade 6. Development and Psychopathology, 3, 277-300.

Capaldi, D. M. (1992). Co-occurrence of conduct problems and depressive symptoms in early adolescent boys: II. A 2-year follow-up at grade 8. Development and Psychopathology, 4, 125-144.

Capaldi, D. M., & Crosby, L. (1997). Observed and reported psychological and physical aggression in young, at-risk couples. Social Development, 6, 184-206.

Capaldi, D.M., & Stoolmiller, M. (1999). Co-occurrence of conduct problems and depressive symptoms in early adolescent boys: III. Prediction to young-adult adjustment. Development and Psychopathology, 11, 59-84

Caron, C., & Rutter, M. (1991). Comorbidity in child psychopathology: Concepts, issues and research strategies. Journal of Child Psychology and Psychiatry, 32, 1063-1080.

Caspi, A., Lynam, D., Moffitt, T. E., & Silva, P. A. (1993). Unraveling girls' delinquency: Biological, dispositional and contextual contributions to adolescent misbehavior. Developmental Psychology, *29*, 19-30.

Carlson, G. A., & Cantwell, D. P. (1979). A survey of depressive symptoms in a child and adolescent psychiatric population. Journal of the American Academy of Child Psychiatry, *18*, 587-599.

Carlson, G. A., & Kashani, J. (1988). Phenomenology of major depression from childhood through adulthood: Analysis of three studies. American Journal of Psychiatry, *145*, 1222-1225.

Chiles, J., Miller, M., Cox, G. (1980). Depression in an adolescent delinquent population. Archives of General Psychiatry, *37*, 179-183.

Cicchetti, D., & Toth, S. L. (1991). A developmental perspective on internalizing and externalizing disorders. In D. Cicchetti & S. L. Toth (Eds.), Internalizing and externalizing expressions of dysfunction: Rochester symposium on developmental psychopathology. Vol. 2 (pp.1-20). New Jersey: Lawrence Erlbaum Associates.

Cicchetti, D., & Rogosch, F. A. (1996). Equifinality and multifinality in developmental psychopathology. Development and Psychopathology, *8*, 597-600.

Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. Journal of Abnormal Psychology, *100*, 316-336.

Cohen, P., Cohen, J., Kasen, S., Velez, C. N., Hartmark, C., Johnson, J., Rogas, M., Brook, J., & Streuning, E. L. (1993). An epidemiological study of disorders in late childhood and adolescence—I. Age- and gender-specific prevalence. Journal of Child Psychology and Psychiatry, *34*, 851-867.

Cohen, N. J., Gottlieb, H., Kershner, J., & Wehrspann, W. (1985). Concurrent validity of the Internalizing and Externalizing profile patterns of the Achenbach Child Behavior Checklist. Journal of Consulting and Clinical Psychology, *53*, 748-757.

Cohen, P., Velez, C. N., Kohn, M., Schwab-Stone, M., & Johnson, J. (1987). Child psychiatric diagnosis by computer algorithm: Theoretical issues and empirical tests. Journal of the American Academy of Child and Adolescent Psychiatry, *26*, 631-638.

Coie, J. D., Dodge, K. A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. Developmental Psychology, *18*, 557-570.

Cokley, K. O. (2001). Gender differences among African American students in the impact of racial identity on academic psychosocial development. Journal of College Student Development, *42*, 480-487.

Cole, D. A. (1989). Psychopathology of adolescent suicide: Hopelessness, coping beliefs, and depression. Journal of Abnormal Psychology, *98*, 248-255.

Cole, D. A. (1990). The relation of social and academic competence to depressive symptoms in childhood. Journal of Abnormal Psychology, *99*, 422-429.

Cole, D. A., & Carpentieri, S. (1990). Social status and the comorbidity of child depression and conduct disorder. Journal of Consulting and Clinical Psychology, 58, 748-757.

Cole, D. A., Truglio, R., & Peeke, L. (1997). Relation between symptoms of anxiety and depression in children: A multitrait-multimethod-multigroup assessment. Journal of Consulting and Clinical Psychology, 65, 110-119.

Compas, B. E., Connor, J. K., & Hinden, B. R. (1998). New perspectives on depression during adolescence. In R. Jessor (Ed.), New perspectives on adolescent risk behavior (pp. 319-362). New York: Cambridge University Press.

Compas, B. E., & Hammen, C. L. (1994). Child and adolescent depression: Covariation and comorbidity in development. In R. J. Haggerty, L.R. Sherrod, N. Garnezy, & M. Rutter (Eds.), Stress, risk and resilience in children and adolescents: Processes, mechanisms, and intervention (pp. 225-267). New York: Cambridge University Press.

Compas, B. E., Oppedisano, G., Connor, J. K., Gerhardt, C. A., Hinden, B. R., Achenbach, T. M., & Hammen, C. (1997). Gender differences in depressive symptoms in adolescences: Comparison of national samples of clinically referred and nonreferred youths. Journal of Consulting and Clinical Psychology, 65, 617-626.

Compton, W. M., Cottler, L. B., Abdallah, A. B., Phelps, D. L., Spitznagel, E. L., & Horton, J. C. (2000). Substance dependence and other psychiatric disorders among

drug dependent subjects: Race and gender correlates. American Journal on Addiction, 9, 113-125.

Conners, C. K. (1990). Conners Rating Scales manual. North Tonawanda, NY: Multi-Health Systems.

Conduct Problems Prevention Research Group. (1992). A developmental and clinical model for the prevention of conduct disorder: The Fast Track program. Development and Psychopathology, 4, 509-527.

Conduct Problems Prevention Research Group. (2000a). Merging universal and indicated prevention programs: The Fast Track model. Addictive Behaviors, 25, 913-927.

Conduct Problems Prevention Research Group. (2000b). Social Competence—Teacher (Revised): Grade 4 technical report. Unpublished technical report.

Conduct Problems Prevention Research Group. (2000c). Teacher Rating of Student Adjustment: Grade 6 technical report. Unpublished technical report.

Conduct Problems Prevention Research Group. (2000d). Things That You Have Done: Grade 5 technical report. Unpublished technical report.

Conduct Problems Prevention Research Group. (2001a). School Adjustment—Child Report: Grade 6 technical report. Unpublished technical report.

Conduct Problems Prevention Research Group. (2001b). School Adjustment—Parent Report: Grade 6 technical report. Unpublished technical report.

Costello, E. J., Angold, A., Burns, B. J., Stangl, D. K., Tweek, D. L., Erkanli, A., & Worthman, C. M. (1996). The Great Smoky Mountains Study of Youth: Goals,

designs, methods, and prevalence of DSM-III-R disorders. Archives of General Psychiatry, *53*, 1129-1136.

Costello, E. J., Costello, A. J., Edelbrock, C., Burns, B. J., Dulcan, M. K., Brent, D., & Janiszewski, S. (1988). Psychiatric disorders in pediatric primary care: Prevalence and risk factors. Archives of General Psychiatry, *45*, 1107-1116.

Crick, N. R. (1996). The role of overt aggression, relational aggression, and prosocial behavior in the prediction of children's future social adjustment. Child Development, *67*, 2317-2327.

Crick, N. R., & Grotpeter, J. K. (1993). Relational aggression, gender, and social-psychological adjustment. Child Development, *66*, 710-722.

Cross-National Collaborative Group (1992). The changing rate of major depression: Cross-national comparisons. Journal of the American Medical Association, *268*, 3098-3105.

Cummings, E. M., & Davies, P. T. (1994). Maternal depression and child development. Journal of Child Psychology and Psychiatry, *35*, 73-112.

Cyranowski, J. M., Frank, E., Young, E., & Shear, M. K. (2000). Adolescent onset of the gender difference in lifetime rates of major depression: A theoretical model. Archives of General Psychiatry, *57*, 21-27.

Daley, S. E., & Hammen, C. (2002). Depressive symptoms and close relationships during the transition to adulthood: Perspectives from dysphoric women, their best friends, and their romantic partners. Journal of Consulting and Clinical Psychology, *70*, 129-141.

Dempster, A P., Laird, N. M., & Rubin, D. B. (1977). Maximum likelihood from incomplete data via the EM algorithm (with discussion). Journal of the Royal Statistical Society, B39, 1-38.

Diamond, P. J., & Onwuegbuzie, A. J. (2000). Factors associated with reading achievement and attitudes among elementary school-aged students. Research in the Schools, 8, 1-11.

Dishion, T. J. (1990). The family ecology of boys' peer relations in middle childhood. Child Development, 61, 874-892.

Dishion, T. J., Patterson, G. R., Stoolmiller, M., & Skinner, M. L. (1991). Family, school, and behavioral antecedents to early adolescent involvement with antisocial peers. Development Psychology, 27, 172-180.

Dodge, K. A., & Coie, J. D. (1987). Social information processing factors in reactive and proactive aggression in children's playgroups. Journal of Personality and Social Psychology, 53, 1146-1158.

Donovan, J. E., & Jessor, R. (1985). Structure of problem behavior in adolescence and young adulthood. Journal of Consulting and Clinical Psychology, 53, 890-904.

Downey, G., & Coyne, J. C. (1990). Children of depressed parents: An integrative review. Psychological Bulletin, 108, 50-76.

Durant, R. H., Getts, A., Cadenhead, C., Emans, S. J., & Woods, E. R. (1995). Exposure to violence and victimization and depression, hopelessness, and purpose in life

among adolescents living in and around public housing. Developmental and Behavioral Pediatrics, 16, 233-238.

Edelbrock, C., & Costello, A. J. (1988). Convergence between statistically derived behavior problem syndromes and child psychiatric diagnoses. Journal of Abnormal Child Psychology, 16, 219-231.

Edelbrock, C., Costello, A. J., Dulcan, M. K., Kalas, R., & Conover, N. C. (1985). Age differences in the reliability of the psychiatric interview of the child. Child Development, 56, 265-275.

Elliott, D. S., Ageton, S. S., Huizinga, D., Knowles, B. A., & Canter, R. J. (1983). The prevalence and incidence of delinquent behavior, 1976-1980: National estimates of delinquent behavior by sex, race, social class, and other selected variables (National Youth Survey Report No. 26). Boulder, CO: Behavior Research Institute.

Elliott, D. S., Ageton, S. S., & Huizinga, D., (1985). Explaining delinquency and drug use. Beverly Hills, CA: Sage.

Elliott, D. S., Huizinga, D., & Menard, S. (1989). Multiple problem youth: Delinquency, substance use, and mental health. New York: Springer-Verlag.

Eme, R. F., Kavanaugh, L. (1995). Sex differences in conduct disorder. Journal of Clinical Child Psychology, 24, 406-426.

Emler, N., Reicher, S., & Ross, A. (1987). The social context of delinquent conduct. Journal of Child Psychology and Psychiatry, 28, 99-109.

Esser, G., Schmidt, M. H., & Woerner, W. (1990). Epidemiology and course of psychiatric disorders in school-age children—Results of a longitudinal study. Journal of Child Psychology and Psychiatry, 31, 243-263.

Eyberg, S. M. (1992). Parent and teacher behavior inventories for the assessment of conduct problem behaviors in children. In L. VandeCreek, S. Knapp, & T. L. Jackson (Eds.), Innovations in clinical practice: A source book (Vol. 11, pp. 261-270). Sarasota, FL: Professional Resource Exchange.

Farrow, J. A., & French, J. (1986). The drug abuse-delinquency connection revisited. Adolescence, 21, 951-960.

Feehan, M., McGee, R., & Williams, S. M. (1993). Mental health disorders from age 15 to age 18 years. Journal of the American Academy of Child and Adolescent Psychiatry, 32, 1118-1126.

Feldman, M. & Wilson, A. (1997). Adolescent suicidality in urban minorities and its relationship to conduct disorders, depression, and separation anxiety. Journal of the American Academy of Child and Adolescent Psychiatry, 36, 75-84.

Feng, H., & Cartledge, G. (1996). Social skill assessment of inner city Asian, African, and European American students. School Psychology Review, 25, 228-239.

Fergusson, D. M., & Horwood, L. J. (1995). Predictive validity of categorically and dimensionally scored measures of disruptive childhood behaviors. Journal of the American Academy of Child and Adolescent Psychiatry, 34, 477-485.

Fergusson, D. M., Horwood, L. J., & Lloyd, M. (1991). Confirmatory factor analysis of attention deficit and conduct disorder. Journal of Child Psychology and Psychiatry, *32*, 257-274.

Fergusson, D. M., Horwood, L. J., & Lynskey, M. T. (1993). Prevalence and comorbidity of DSM-III-R diagnoses in a birth cohort of 15 year olds. Journal of the American Academy of Child and Adolescent Psychiatry, *32*, 1127-1134.

Fergusson, D. M., Horwood, L. J., & Lynskey, M. T. (1994). Structure of DSM-III-R criteria for disruptive childhood behaviors: Confirmatory factor models. Journal of the American Academy of Child and Adolescent Psychiatry, *33*, 1145-1155.

Fergusson, D. M., Lynskey, M. T., & Horwood, L. J. (1996a). Origins of comorbidity between conduct and affective disorders. Journal of the American Academy of Child and Adolescent Psychiatry, *35*, 451-460.

Fergusson, D. M., Lynskey, M. T., & Horwood, L. J. (1996b). Factors associated with continuity and changes in disruptive behavior patterns between childhood and adolescence. Journal of Abnormal Child Psychology, *24*, 533-553.

Feschbach, S. (1970). Aggression. In P. H. Mussen (Ed.), Carmichael's manual of child psychology (pp. 159-259). New York: Wiley.

Finkelstein, N. W., & Haskins, R. (1983). Kindergarten children prefer same-color peers. Child Development, *54*, 502-508.

Fishbein, D.H., & Perez, D. M. (2000). A regional study of risk factors for drug abuse and delinquency: Sex and racial differences. Journal of Child and Family Studies, 9, 461-479.

Fleming, J. E., Boyle, M. H., & Offord, D. R. (1993). The outcome of adolescent depression in the Ontario Child Health Study follow-up. Journal of the American Academy of Child and Adolescent Psychiatry, 32, 28-33.

Fleming, J. E., & Offord, D. R. (1990). Epidemiology of childhood depressive disorders: A critical review. Journal of the American Academy of Child and Adolescent Psychiatry, 29, 571-580.

Fleming, J. E., Offord, D. R., & Boyle, M. H. (1989). Prevalence of childhood and adolescent depression in the community Ontario Child Health Study. British Journal of Psychiatry, 155, 647-654.

Fombonne, E., Wostear, G., Cooper, V., Harrington, R., & Rutter, M. (2001a). The Maudsley long-term follow-up of child and adolescent depression: II. Psychiatric outcomes in adulthood. The British Journal of Psychiatry, 179, 210-217.

Fombonne, E., Wostear, G., Cooper, V., Harrington, R., & Rutter, M. (2001b). The Maudsley long-term follow-up of child and adolescent depression: II. Suicidality, criminality and social dysfunction in adulthood. The British Journal of Psychiatry, 179, 218-223.

Foster, S. L., Martinez, C. R., & Kulberg, A. M. (1996). Race, ethnicity, and children's peer relations. In T. H. Ollendick, & R. J. Prinz (Eds.), Advances in clinical child psychology, Vol. 18. (pp. 133-172). New York: Plenum Press.

French, L. A., & Picthall-French, N. (1998). The role of substance abuse among rural youth by race, culture, and gender. Alcoholism Treatment Quarterly, 16, 101-108.

Frick, P. J. (1998). Conduct disorders and severe antisocial behavior. New York: Plenum Press.

Frick, P. J., Kamphaus, R. W., Lahey, B. B., Christ, M. A. G., Hart, E. L., & Tannenbaum, T. E. (1991). Academic underachievement and the disruptive behavior disorders. Journal of Consulting and Clinical Psychology, 59, 289-294.

Frick, P. J., Lahey, B. B., Loeber, R., Tannenbaum, L., Van Horn, Y., Christ, M. A. G., Hart, E. L., & Hanson, K. (1993). Oppositional defiant disorder and conduct disorder: A meta-analytic review of factor analyses and cross-validation in a clinic sample. Clinical Psychology Review, 13, 319-340.

Frick, P. J., & Loney, B.R. (1999). Outcomes of children and adolescents with oppositional defiant disorder and conduct disorder. In H. C. Quay & Hogan (Eds.), Handbook of disruptive behavior disorders (pp. 507-524). New York: Kluwer Academic/Plenum Publishers.

Frick, P. J., O'Brien, B.S., Wootton, J. M., & McBurnett, K. (1994). Psychopathy and conduct problems in children. Journal of Abnormal Psychology, 103, 700-707.

Fridrich, A. H., & Flannery, D. J. (1995). The effects of ethnicity and acculturation on early adolescent delinquency. Journal of Child and Family Studies, 4, 69-87.

Friedman, A. S., & Ali, A. (1998). The interaction of SES, race/ethnicity and family organization (living arrangements) of adolescents, in relation to severity of use of drugs and alcohol. Journal of Child and Adolescent Substance Abuse, 7, 65-74.

Frost, L. A., Moffitt, T. E., & McGee, R. (1989). Neuropsychological correlates of psychopathology in an unselected cohort of young adolescents. Journal of Abnormal Psychology, 98, 307-313.

Garrison, C. Z., Jackson, K. L., Marsteller, F., McKeown, R., & Addy, C. (1990). A longitudinal study of depressive symptomatology in young adolescents. Journal of the American Academy of Child and Adolescent Psychiatry, 29, 581-585.

Ge, X., Conger, R. D., & Elder, G. H. (2001). Pubertal transition, stressful life events, and the emergence of gender differences in adolescent depressive symptoms. Developmental Psychology, 37, 404-417.

Ge, X., Best, K., M., Conger, R. D., & Simons, R. L. (1996). Parenting behaviors and the occurrence and co-occurrence of adolescent depressive symptoms and conduct problems. Developmental Psychology, 32, 717-731.

Goodyer, I. M., Herbert, J., Secher, S. M., & Pearson, J. (1997). Short-term outcome of Major Depression: I. Comorbidity and severity at presentation as predictors

of persistent disorder. Journal of the American Academy of Child and Adolescent Psychiatry, 36, 179-187.

Goodyer, I. M., Wright, C., & Altham, P. M. E. (1989). Recent friendships in anxious and depressed school age children. Psychological Medicine, 19, 165-174.

Gotlib, I. H., Lewinsohn, P. M., & Seeley, J. R. (1995). Symptoms versus a diagnosis of depression: Differences in psychosocial functioning. Journal of Consulting and Clinical Psychology, 63, 90-100.

Graham, J. W., Cumsille, P. E., & Elek-Fisk, E. (in press). Methods for handling missing data. In J. A. Schinka & W. F. Velicer (Eds.). Comprehensive handbook of psychology, Vol. 2. Research methods in psychology. New York: Wiley.

Graham, J. W., & Hofer, S. M. (2000). Multiple imputation in multivariate research. In T. D. Little, K. U. Schnabel, & J. Baumert, (Eds.). Modeling longitudinal and multiple-group data: Practical issues, applied approaches, and specific examples (pp. 201-218). Hillsdale, NJ: Lawrence Erlbaum Associates.

Graham, J. W., Hofer, S. M., Donaldson, S. I., MacKinnon, D. P., & Schafer, J. L. (1997). Analysis with missing data in prevention research. In K. Bryant, M. Windle, & S. West (Eds.). The science of prevention: Methodological advances from alcohol and substance abuse research (pp. 325-366). Washington, DC: American Psychological Association.

Grant, K., Lyons, A., Landis, D., Cho, M. H., Scudiero, M., Reynolds, L., Murphy, J., & Bryant H. (1999). Gender, body image, and depressive symptoms among low-income African American adolescents. Journal of Social Issues, 55, 299-316.

Greenbaum, P. E., Foster-Johnson, L., & Petril, A. (1996). Co-occurring addictive and mental disorders among adolescents: Prevalence research and future directions. American Journal of Orthopsychiatry, 66, 52-60.

Greenbaum, P. E., Prange, M. E., Friedman, R. M., & Silver, S. E. (1991). Substance abuse prevalence and comorbidity with other psychiatric disorders among adolescents with severe emotional disturbances. Journal of the American Academy of Child and Adolescent Psychiatry, 30, 575-583.

Hammen, C., & Compas, B. E. (1994). Unmasking unmasked depression in children and adolescents: The problem of comorbidity. Clinical Psychology Review, 14, 585-603.

Hammen, C., & Rudolph, K. D. (1996). Childhood depression. In E. J. Mash & R. A. Barkley (Eds.), Child psychopathology (pp. 153-195). New York: Guilford Press.

Hammen, C., Rudolph, K. D., Weisz, J., Rao, U., & Burge, D. (1999). The context of depression in clinic-referred youth: neglected areas in treatment. Journal of American Academy of Child and Adolescent Psychiatry, 38, 64-71.

Hare, B. R. (1985). Reexamining the achievement central tendency: Sex differences within race and race differences within sex. In H. P. McAdoo & J. L.

McAdoo (Eds.), Black children: Social, educational, and parental environments (pp. 139-155). Beverly Hills, CA: Sage Publications.

Harnish, J. D., Dodge, K. A., Valente, E., & Conduct Problems Prevention Research Group. (1995). Mother-child interaction quality as a partial mediator of the roles of maternal depressive symptomatology and socioeconomic status in the development of child behavior problems. Child Development, *66*, 739-753.

Harrington, R., Fudge, H., Rutter, M., Pickles, A., & Hill, J. (1991). Adult outcomes of childhood and adolescent depression: II. Links with antisocial disorders. Journal of the American Academy of Child and Adolescent Psychiatry, *35*, 434-439.

Harrington, R., Rutter, M., & Fombonne, E. (1996). Developmental pathways in depression: multiple meanings, antecedents, and endpoints. Development and Psychopathology, *8*, 601-616.

Harrington, R., Rutter, M., Weissman, M., Fudge, H., Groothues, C., Bredenkamp, D., Pickles, A., Rende, R., & Wickramaratne, P. (1997). Psychiatric disorders in the relatives of depressed probands: I. Comparison of prepubertal, adolescent and early adult onset cases. Journal of Affective Disorders, *42*, 9-22.

Hawkins, W. E., Hawkins, M. J., Sabatino, C., & Ley, S. (1998). Relationship of perceived future opportunity to depressive symptomatology of inner-city African-American adolescents. Children and Youth Services Review, *20*, 757-764.

Hayward, C., Gotlib, I. A., Schraedley, P. K., & Litt, I. F. (1999). Ethnic differences in the association between pubertal status and symptoms of depression in adolescent girls. Journal of Adolescent Health, 25, 143-149.

Hedges, L. V., & Nowell, A. (1998). Black-White test score convergence since 1965. In C. Jencks, & M. Phillips' (Eds.), The Black-White test score gap (pp. 149-181). Washington, DC: Brookings Institute.

Henry, B., Feehan, M., McGee, R., Stanton, W., Moffitt, T. E., & Silva, P. (1993). The importance of conduct problems and depressive symptoms in predicting adolescent substance use. Journal of Abnormal Child Psychology, 21, 469-480.

Herd, D. (1997). Sex ratios of drinking patterns and problems among blacks and whites: Results from a national survey. Journal of Studies on Alcohol, 58, 75-82.

Hinden, B. R., Compas, B. E., Howell, D. C., & Achenbach, T. M. (1997). Covariation of the anxious-depressed syndrome during adolescence: Separating fact from artifact. Journal of Consulting and Clinical Psychology, 65, 6-14.

Hinshaw, S. P. (1992). Externalizing behavior problems and academic underachievement in childhood and adolescence: Causal relationships and underlying mechanisms. Psychological Bulletin, 111, 127-155.

Hinshaw, S. P., & Anderson, C. A. (1996). Conduct and oppositional defiant disorders. In E. J. Mash & R. A. Barkley (Eds.), Child psychopathology (pp. 113-149). New York: Guilford Press.

Hinshaw, S. P., Lahey, B. B., & Hart, E. L. (1993). Issues of taxonomy and comorbidity in the development of conduct disorder. Development and Psychopathology, 5, 31-50.

Hinshaw, S. P., & Park, T. (1999). Research problems and Issues: toward a more definitive science of disruptive behavior disorders. In H. C. Quay & Hogan (Eds.), Handbook of disruptive behavior disorders (pp. 593-620). New York: Kluwer Academic/Plenum Publishers.

Hinshaw, S. P., Simmel, C., & Heller, T. L. (1995). Multi-method assessment of covert antisocial behavior in children: Laboratory observations, adult ratings, and child self-report. Psychological Assessment, 7, 209-219.

Hoberman, H. M., & Garfinkel, B. D. (1988). Completed suicide in children and adolescents. Journal of the American Academy of Child and Adolescent Psychiatry, 27, 689-695.

Hope, T. L., Bierman, K. L., & Conduct Problems Prevention Research Group. (1998). Patterns of home and school behavior problems in rural and urban settings. Journal of School Psychology, 36, 45-58.

Jessor, R. (1987). Problem-behavior theory, psychosocial development, and adolescent problem drinking. British Journal of Addiction, 82, 331-342.

Joiner, T. E., Catanzaro, S. J., & Laurent, J. (1996). Tripartite structure of positive and negative affect, depression, and anxiety and child and adolescent psychiatric inpatients. Journal of Abnormal Psychology, 105, 401-409.

Jolly, J. B., & Dykman, R. A. (1994). Using self report data to differentiate anxious and depressive symptoms in adolescents: Cognitive content specificity and global distress? Cognitive Therapy and Research, 18, 25-37.

Kagan, J., & Snidman, N. (1999). Early childhood predictors of adult anxiety disorders. Biological Psychiatry, 46, 1536-1541.

Kandel, D. B., & Davies, M. (1982). Epidemiology of depressive mood in adolescents. Archives of General Psychiatry, 39, 1205-1212.

Kandel, D. B., & Davies, M. (1986). Adult sequelae of adolescent depressive symptoms. Archives of General Psychiatry, 43, 255-262.

Kao, G. (2001). Race and ethnic differences in peer influences on educational achievement. In E. Anderson & D. S. Massey (Eds.), Problem of the century: Racial stratification in the United States (pp. 437-460). New York: Russell Sage Foundation.

Kashani, J. H., Beck, N. C., Hooper, E. W., Fallahi, C., Corcoran, C. M., McAllister, H. A., Rosenberg, T. K., & Reid, J. C. (1987). Psychiatric disorders in a community sample of adolescents. American Journal of Psychiatry, 144, 584-589.

Kashani, J. H., & Carlson, G. A. (1987). Seriously depressed preschoolers. American Journal of Psychiatry, 144, 348-350.

Kashani, J. H., Carlson, G. A., Beck, N. C., Hooper, E. W., Corcoran, C. M., McAllister, J. A., Fallahi, C., Rosenberg, T. K., & Reid, J. D. (1987). Depression, depressive symptoms, and depressed mood among a community sample of adolescents. American Journal of Psychiatry, 144, 931-934.

Kashani, J. H., Holcomb, W. R., & Orvaschel, H. (1986). Depression and depressive symptomatology in preschool children from the general population. American Journal of Psychiatry, 143, 1138-1143.

Kashani, J. H., Orvaschel, H., Rosenberg, T. K., & Reid, J. C. (1989). Psychopathology in a community sample of children and adolescents: A developmental perspective. Journal of the American Academy of Child and Adolescent Psychiatry, 28, 701-706.

Kashani, J. H., & Schmid, L. S. (1992). Epidemiology and etiology of depressive disorders. In M. Shafii & S. L. Shafii (Eds.), Clinical guide to depression in children and adolescents (pp. 43-64). Washington, DC: American Psychiatric Press.

Keenan, K., Loeber, R., Zhang, Q., Stouthamer-Loeber, M., & Van Kammen, W. B. (1995). The influence of deviant peers on the development of boys' disruptive and delinquent behavior: A temporal analysis. Development and Psychopathology, 7, 715-726.

Keenan, K., & Shaw, D. (1997). Developmental and social influences on young girls' early problem behavior. Psychological Bulletin, 121, 95-113.

Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eshleman, S., Wittchen, H., & Kendler, K. S. (1994). Lifetime and 12-month prevalence of the DSM-III-R psychiatric disorders in the United States: Results from the National Comorbidity Survey. Archives of General Psychiatry, 51, 8-19.

Kessler, R. C., & Neighbors, H. W. (1986). A new perspective on the relationships among race, social class, and psychological distress. Journal of Health and Social Behavior, 27, 107-115.

Kim, J. E., Hetherington, E. M., & Reiss, D. (1999). Associations among family relationships, antisocial peers, and adolescents' externalizing behaviors: Gender and family type differences. Child Development, 70, 1209-1230.

King, A. K., Ghaziuddin, N., McGovern, L., Brand, E., Hill, E., & Naylor, M. (1996). Predictors of comorbid alcohol and substance abuse in depressed adolescents. Journal of the American Academy of Child and Adolescent Psychiatry, 35, 743-751.

Kochman, T. (1987). The ethnic component in black language and culture. In J.S. Phinney & M. J. Rotheram (Eds.), Children's ethnic socialization: Pluralism and development (pp. 219-238). Newbury Park, CA: Sage Publications.

Kovacs, M. (1980). Rating scales to assess depression in school-aged children. Acta Paedopsychiatry, 46, 305-315.

Kovacs, M. (1997). Depressive disorders in childhood: An impressionistic landscape. Journal of Child Psychology and Psychiatry, 38, 287-298.

Kovacs, M. (1996). Presentation and course of Major Depressive Disorder during childhood and later years of the life span. Journal of the American Academy of Child and Adolescent Psychiatry, 35, 705-715.

Kovacs, M., Feinberg, T. L., Crouse-Novak, M. A., Paulauskas, S. L., & Finkelstein, R. (1984). Depressive disorders in childhood: I. A longitudinal prospective study of characteristics and recovery. Archives of General Psychiatry, *41*, 229-237.

Kovacs, M., & Goldston, D. (1991). Cognitive and social cognitive development of depressed children and adolescents. Journal of the American Academy of Child and Adolescent Psychiatry, *30*, 388-392.

Kovacs, M., Paulauskas, S., Gatsonis, C., & Richards, C. (1988). Depressive disorders in childhood: III. A longitudinal study of comorbidity with and risk for conduct disorder. Journal of Affective Disorders, *15*, 205-217.

Krueger, R. F., Moffitt, T. E., Caspi, A., Bleske, A., & Silva, P. A. (1998). Assortative mating for antisocial behavior: Developmental and methodological implications. Behavior Genetics, *28*, 173-186.

Lahey, B. B., Gordon, R. A., Loeber, R., Stouthamer-Loeber, M., & Farrington, D. P. (1999). Boys who join gangs: A prospective study of predictors of first gang entry. Journal of Abnormal Child Psychology, *27*, 261-176.

Lahey, B. B., & Loeber, R. (1994). Framework for a developmental model of oppositional defiant disorder and conduct disorder. In D. K. Routh (Ed.), Disruptive behavior disorders in childhood (pp. 139-180). New York: Plenum.

Lahey, B. B., Loeber, R., Hart, E., Frick, P., Applegate, B., Zhang, Q., Green, S., & Russo, M. (1995). Four-year longitudinal study of conduct disorder in boys: Patterns and predictors of persistence. Journal of Abnormal Psychology, *104*, 83-93.

Lahey, B. B., Loeber, R., Quay, H. C., Frick, P. J., Grimm, J. (1992).

Oppositional defiant and conduct disorders: Issues to be resolved for DSM-IV. Journal of the American Academy of Child and Adolescent Psychiatry, 31, 539-546.

Lahey, B. B., Miller, T. L., Gordon, R. A., & Riley, A. W. (1999). Developmental epidemiology of the disruptive behavior disorders. In H. C. Quay & Hogan (Eds.), Handbook of disruptive behavior disorders (pp. 23-48). New York: Kluwer Academic/Plenum Publishers.

Laird, R. D., Pettit, G. S., Dodge, K. A., & Bates, J. E. (1999). Best friendships, group relationships, and antisocial behavior in early adolescence. Journal of Early Adolescence, 19, 413-437.

Lengua, L. J., Sadowski, C. A., Friedrich, W. N., & Fisher, J. (2001). Rationally and empirically derived dimensions of children's symptomatology: Expert ratings and confirmatory factor analyses of the CBCL. Journal of Consulting and Clinical Psychology, 69, 683-698.

Lethermon, V. R., Williamson, D. A., Moody, S. C., & Wozniak, P. (1986). Racial bias in behavioral assessment of children's social skills. Journal of Psychopathology and Behavioral Assessment, 8, 329-337.

Lewinsohn, P. M., Hops, H., Roberts, R. E., Seeley, R. R., & Andrews, J. A. (1993). Adolescent psychopathology: I. Prevalence and incidence of depression and other DSM-III-R disorders in high school students. Journal of Abnormal Psychology, 102, 133-144.

Lewinsohn, P. M., Rohde, P., Klein, D. N., & Seeley, J. R. (1999). Natural course of adolescent major depressive disorder: I. Continuity into young adulthood. Journal of American Academy of Child and Adolescent Psychiatry, 38, 56-63.

Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (1994). Psychosocial risk factors for future adolescent suicide attempts. Journal of Consulting and Clinical Psychology, 62, 297-305.

Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (1995). Adolescent psychopathology: III. The clinical consequences of comorbidity. Journal of the American Academy of Child and Adolescent Psychiatry, 34, 510-519.

Lewis, C. E., & Bucholtz, K. K. (1991). Alcoholism, antisocial behavior and family history. British Journal of Addiction, 86, 177-194.

Lewis, D. O., Yeager, C. A., Cobham-Portorreal, C. S., Klein, N., Showalter, C., & Anthony, A. (1991). A follow-up of female delinquents: Maternal contributions to the perpetuation of deviance. Journal of the American Academy of Child and Adolescent Psychiatry, 30, 197-201.

Lilienfeld, S. O. (1992). The association between antisocial personality and somatization disorders: A review and integration of theoretical models. Clinical Psychology Review, 12, 641-662.

Lilienfeld, S. O., Waldman, I. D., & Israel, A. C. (1994). A critical examination of the use of the term and concept of comorbidity in psychopathology research. Clinical Psychology: Science and Practice, 1, 71-83.

- Lochman, J. E., & Conduct Problems Prevention Research Group. (1995). Screening of child behavior problems for prevention programs at school entry. Journal of Consulting and Clinical Psychology, 63, 549-559.
- Lochman, J. E., & Wayland, K. K. (1994). Aggression, social acceptance, and race as predictors of negative adolescent outcomes. Journal of the American Academy of Child and Adolescent Psychiatry, 33, 1026-1035.
- Loeber, R. (1982). The stability of antisocial and delinquent child behavior. A review. Child Development, 53, 1431-1446.
- Loeber, R. (1990). Development and risk factors of juvenile antisocial behavior and delinquency. Clinical Psychology Review, 10, 1-41.
- Loeber, R. (1991). Antisocial behavior: More enduring than changeable? Journal of the American Academy of Child and Adolescent Psychiatry, 30, 393-397.
- Loeber, R., Farrington, D. P., Stouthamer-Loeber, M., & van Kammen, W. (1998). Antisocial behavior and mental health problems: Risk factors in childhood and adolescence. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Loeber, R., Green, S. M., Lahey, B. B., Christ, M. A. G., & Frick, P. J. (1992). Developmental sequences in the age of onset of disruptive child behaviors. Journal of Child and Family Studies, 1, 21-41.
- Loeber, R., & Keenan, K. (1994). Interaction between conduct disorder and its comorbid conditions: Effects of age and gender. Clinical Psychology Review, 14, 497-523.

Loeber, R., Keenan, K., Lahey, B. B., Green, S. M., & Thomas, C. (1993). Evidence for developmentally based diagnoses of oppositional defiant disorder and conduct disorder. Journal of Abnormal Child Psychology, *21*, 377-410.

Loeber, R., & Schmalting, K. B. (1985). Empirical evidence for overt and covert patterns of antisocial conduct problems: A meta-analysis. Journal of Abnormal Child Psychology, *13*, 337-352.

Loeber, R., Wung, P., Keenan, K., Giroux, B., Stouthamer-Loeber, M., Van Kammen, W. B., & Maughan, B. (1993). Developmental pathways in disruptive child behavior. Development and Psychopathology, *5*, 103-133.

Maccoby, E. E. (1986). Social groupings in childhood: Their relationship to prosocial and antisocial behavior in boys and girls. In D. Olweus, J. Block, & M. Radke-Yarrow (Eds.) Development of antisocial and prosocial behavior (pp. 263-284). New York: Academic Press.

Maguin, E., & Loeber, R. (1996). Academic performance and delinquency. In M. Tonry (Ed.), Crime and justice: A review of research (Vol. 20, pp. 145-264). Chicago: University of Chicago Press.

Marriage, K., Fine, S., Moretti, M., & Haley, G. (1986). Relationship between depression and conduct disorder in children and adolescents. Journal of the American Academy of Child Psychiatry, *25*, 687-691.

Martunnen, M. J., Aro, H. M., Henriksson, M. M., & Lonnqvist, J. K. (1991). Mental disorders in adolescent suicide: DSM-III-R axes I and II diagnoses in suicides among 13- to 19-year-olds in Finland. Archives of General Psychiatry, *48*, 834-839.

Martunnen, M. J., Aro, H. M., Henriksson, M. M., & Lonnqvist, J. K. (1994). Antisocial behavior in adolescent suicide. Acta Psychiatrica Scandinavica, *89*, 167-173.

Martunnen, M. J., Henriksson, M. M., Hellevi, M. A., Heikkinen, M. E., Isometsa, E. T., & Lonnqvist, J. K. (1995). Suicide among female adolescents: Characteristics and comparison with males in the age group 13 to 22 years. Journal of American Academy of Child and Adolescent Psychiatry, *34*, 1297-1307.

Mau, W., & Lynn, R. (1999). Racial and ethnic differences in motivation for educational achievement in the United States. Personality and Individual Differences, *27*, 1091-1096.

McCauley, E., Meyers, K., Mitchel, J., Calderon, R., Schlordet, K., & Treder, R. (1993). Depression in young people: initial presentation and clinical course. Journal of American Academy of Child and Adolescent Psychiatry, *32*, 714-722.

McConaughy, S. H., Achenbach, T. M., & Gent, C. L. (1988). Multiaxial empirically based assessment: Parent, teacher, observational, cognitive, and personality correlates of Child Behavior Profiles for 6-11-year-old boys. Journal of Abnormal Child Psychology, *16*, 485-509.

McConaughy, S. H. & Skiba, R. J. (1993). Comorbidity of externalizing and internalizing problems. School Psychology Review, *22*, 421-436.

McGee, R., Feehan, M., Williams, S., & Anderson, J. (1992). DSM-III disorders from age 11 to age 15 years. Journal of the American Academy of Child and Adolescent Psychiatry, *31*, 50-59.

McIntosh, J. L. (1989). Trends in racial differences in U.S. suicide statistics. Death Studies, *13*, 275-286.

McMahon, R. J. (1999). Child and adolescent psychopathology as risk factors for subsequent tobacco use. Nicotine and Tobacco Research, *1*, S45-S50.

McMahon, R. J., & Estes, A. M. (1997). Conduct problems. In E. J. Mash & Terdel (Eds.), Assessment of childhood disorders (pp. 130-193). New York: Guilford Press.

McMahon, R. J., & Wells, K. C. (1998). Conduct problems. In E. J. Mash & R. A. Barkley (Eds.), Treatment of childhood disorders (2<sup>nd</sup> ed.) (pp. 111-207). New York: Guilford Press.

McManus, M., Alessi, N. E., Grapentine, W. L., & Brickman, A. (1984). Psychiatric disturbance in serious delinquents. Journal of the American Academy of Child Psychiatry, *23*, 602-615.

Meehl, P. E. (2001). Comorbidity and taxometrics. Clinical Psychology: Science and Practice, *8*, 507-519.

Merikangas, K. R. (1984). Divorce and assortative mating among depressed patients. American Journal of Psychiatry, *141*, 74-76.

Messer, S. C., & Gross, A. M. (1994). Childhood depression and aggression: A covariance structure analysis. Behaviour Research and Therapy, *32*, 663-677.

Millberger, S., Biederman, J., Faraone, S. V., Murphy, J., & Tsuang, M. T. (1995). Attention deficit hyperactivity disorder and comorbid disorders: Issues of overlapping symptoms. American Journal of Psychiatry, *152*, 1793-1799.

Miller, M. L., Chiles, J. A., & Barnes, V. E. (1982). Suicide attempters within a delinquent population. Journal of Consulting and Clinical Psychology, *50*, 491-498.

Miller-Johnson, S., Lochman, J. E., Coie, J. D., Terry R., & Hyman, C. (1998). Comorbidity of conduct and depressive problems at sixth grade: Substance use outcomes across adolescence. Journal of Abnormal Child Psychology, *26*, 221-232.

Mitchell, J., McCauley, E., Burke, P. M., & Moss, S. J. (1990). Phenomenology of depression in children and adolescents. Journal of the American Academy of Child and Adolescent Psychiatry, *27*, 12-20.

Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. Psychological Review, *100*, 674-701.

Moffitt, T. E., & Caspi A. (2001). Childhood predictors differentiate life-course persistent and adolescence-limited antisocial pathways among males and females. Development and Psychopathology, *13*, 355-375.

Moffitt, T. E., Caspi, A., Dickson, N., Silva, P., & Stanton, W. (1996). Childhood-onset versus adolescent-onset antisocial conduct problems in males: Natural history from ages 3 to 18 years. Development and Psychopathology, *8*, 399-424.

Moffitt, T. E., Lynam, D., & Silva, P. A. (1994). Neuropsychological tests predict persistent male delinquency. Criminology, *32*, 101-124.

Murphy, D. A., Marelich, W. D., & Hoffman, D. (2000). Assessment of anxiety and depression in young children: Support for two separate constructs. Journal of Clinical Child Psychology, *29*, 383-391.

Myers, K., McCauley, E., Calderon, R., Mitchell, J., Burke, P., & Schloredt, K. (1991). Risks for suicidality in major depressive disorder. Journal of the American Academy of Child and Adolescent Psychiatry, *30*, 86-94.

Neff, J. A. (1984). Race differences in psychological distress: The effects of SES, urbanicity, and measurement strategy. American Journal of Community Psychology, *12*, 337-351.

Neighbors, B., Kempton, T., & Forehand, R. (1992). Co-occurrence of substance abuse with conduct, anxiety, and depression disorders in juvenile delinquents. Addictive Behaviors, *17*, 379-386.

Newman, D. L., Moffitt, T. E., Caspi, A., Magdol, L., Silva, P. A., & Stanton, W. R. (1996). Psychiatric disorder in a birth cohort of young adults: Prevalence, comorbidity, clinical significance, and new case incidence from ages 11 to 21. Journal of Consulting and Clinical Psychology, *64*, 552-562.

Noam, G. G., Paget, K., Valiant, G., Borst, S., & Bartok, J. (1994). Conduct and affective disorders in developmental perspective: A systematic study of adolescent psychopathology. Development and Psychopathology, *6*, 519-532.

Nolen-Hoeksema, S., & Girgus, J. S. (1994). The emergence of gender differences in depression during adolescence. Psychological Bulletin, 115, 424-443.

Nolen-Hoeksema, S., Girgus, J. S., & Seligman, M. E. P. (1986). Learned helplessness in children: A longitudinal study of depression, achievement, and explanatory style. Journal of Personality and Social Psychology, 51, 435-442.

Norvell, N., & Towle, P. O. (1986). Self-reported depression and observable conduct problems in children. Journal of Clinical Child Psychology, 15, 228-232.

Nottelmann, E. D., & Jensen, P. S. (1995). Comorbidity of disorders in children and adolescents: Developmental perspectives. In T. H. Ollendick & R. J. Prinz (Eds.), Advances in clinical child psychology (Vol. 17, pp. 109-155). New York: Plenum Press.

O'Donnell, J., Hawkins, J. D., & Abbott, R. D. (1995). Predicting serious delinquency and substance use among aggressive boys. Journal of Consulting and Clinical Psychology, 63, 529-537.

Oetting, E. R., & Beauvais, F. (1990). Adolescent drug use: Findings of national and local surveys. Journal of Consulting and Clinical Psychology, 58, 385-394.

Oetting, E. R., Deffenbacher, J. L., Taylor, M. J., Luther, N., Beauvais, F., & Edwards, R. W. (2000). Methamphetamine use by high school students: Recent trends, gender and ethnicity differences, and use of other drugs. Journal of Child and Adolescent Substance Use, 10, 33-50.

Offord, D. R., Boyle, M. H., & Racine, Y. (1989). Ontario Child Health Study: Correlates of disorder. Journal of the American Academy of Child and Adolescent Psychiatry, 28, 856-860.

Offord, D. R., Boyle, M. H., Racine, Y. A., Fleming, J. E., Cadman, D. T., Blum, H. M., Byrne, C., Links, P. S., Lipman, E. L., MacMillan, H. L., Grant, N. I. R., Sanford, M. N., Szatmari, P., Thomas, H., & Woodward, C. A. (1992). Outcome, prognosis, and risk in a longitudinal follow-up study. Journal of the American Academy of Child and Adolescent Psychiatry, 31, 916-923.

Offord, D. R., Boyle, M. H., Szatmari, P., Rae-Grant, N., Links, P. S., Cadman, D. T., Byles, J. A., Crawford, J. W., Blum, H. M., Byrne, C., Thomas, H., & Woodward, C. A. (1987). Ontario Child Health Study: II. Six-month prevalence of disorder and rates of services utilization. Archives of General Psychiatry, 44, 832-836.

Oquendo, M.A., Ellis, S. P., Greenwald, S., Malone, K. M., Weissman, M. M., & Mann, J. J. (2001). Ethnic and sex differences in suicide rates relative to major depression in the United States. American Journal of Psychiatry, 158, 1652-1658.

Pabon, E., Rodriguez, O., & Gurin, G. (1992). Clarifying peer relations and delinquency. Youth and Society, 24, 149-165.

Paschall, M. J., Flewelling, R. L., & Faulkner, D. L. (2000). Alcohol misuse in young adulthood: Effects of race, educational attainment, and social context. Substance Use and Misuse, 35, 1485-1506.

Pataki, C. S., & Carlson, G. A. (1990). Major depression in childhood. In M. Hersen & C. G. Last (Eds.), Handbook of child and adult psychopathology (pp. 35-50). New York: Pergamon Press.

Patterson, G. R. (1982). Coercive family process. Eugene, OR: Castalia Press.

Patterson, G. R., Capaldi, D., & Bank (1991). An early starter model for predicting delinquency. In D. J. Pepler & K. H. Rubin (Eds.), The development and treatment of childhood aggression (pp. 139-168). Hillsdale, NJ: Lawrence Erlbaum Associates.

Patterson, G. R., Reid, J. B., & Dishion, T. J. (1993). Antisocial boys. Eugene, OR: Castalia Press.

Paton, S., & Kandel, D. (1978). Psychological factors and adolescent illicit drug use: Ethnicity and sex differences. Adolescence, 13, 187-199.

Pedersen, W., Mastekaasa, A., & Wichstrom, L. (2001). Conduct problems and early cannabis initiation: A longitudinal study of gender differences. Addiction, 96, 415-431.

Peeples, F., & Loeber, R. (1994). Do individual factors and neighborhood context explain ethnic differences in juvenile delinquency? Journal of Quantitative Criminology, 10, 141-154.

Pfeffer, C. R. (1986). The suicidal child. New York: The Guilford Press.

Pickles, A., Rowe, R., Simonoff, E., Foley, D., Rutter, M., & Silberg, J. (2001). Child psychiatric symptoms and psychosocial impairment: Relationship and prognostic significance. British Journal of Psychiatry, 179, 230-235.

Puig-Antich, J. (1982). Major depression and conduct disorder in prepuberty. Journal of the American Academy of Child Psychiatry, 21, 118-128.

Puig-Antich, J., Lukens, E., Davies, M., Goetz, D., Brennan-Quattrock, J., & Todak, G. (1985). Psychosocial functioning in prepubertal major depressive disorders. I. Interpersonal relationships during the depressive episode. Archives of General Psychiatry, 42, 500-507.

Pumariega, A. J., Johnson, N. P., Sheridan, D., & Cuffe, S. P. (1996). The influence of race and gender on depressive and substance abuse symptoms in high-risk adolescents. Cultural Diversity and Mental Health, 2, 115-123.

Quay, H. C. (1999). Classification of the disruptive behavior disorders. In H. C. Quay & Hogan (Eds.), Handbook of disruptive behavior disorders (pp. 3-21). New York: Kluwer Academic/Plenum Publishers.

Quay, H. C., & Peterson, D. R. (1987). Manual for the Revised Behavior Problem Checklist. (Available from H. C. Quay, University of Miami, Box 248074, Coral Gables, FL 33124).

Quinton, D., Rutter, M., & Liddle, C. (1984). Institutional rearing, parenting difficulties, and marital support. Psychological Medicine, 14, 107-134.

Radloff, L. (1977). The CES-D Scale: A new self-report depression scale for research in the general population. Applied Psychological Measurement, 1, 285-401.

Randhawa, B. S., & Hunt, D. (1987). Sex and rural/urban differences in standardized achievement scores and mathematics subskills. Canadian Journal of Education, 12, 137-151.

Rao, U., Weissman, M. M., Martin, J. A., & Hammond, R. W. (1993). Childhood depression and risk of suicide: A preliminary report of a longitudinal study. Journal of the American Academy of Child and Adolescent Psychiatry, 32, 21-27.

Reinherz, H. Z., Giaconia, R. M., Pakiz, B., Silverman, A. B., Frost, A. K., & Lefkowitz, E. S. (1993). Psychosocial risks for major depression in late adolescence: A longitudinal community study. Journal of the American Academy of Child and Adolescent Psychiatry, 32, 1155-1163.

Rende, R., Weissman, M., Rutter, M., Wickramaratne, P., Harrington, R., & Pickles, A. (1997). Psychiatric disorders in the relatives of depressed probands: II. Familial loading for comorbid non-depressive disorders based upon proband age of onset. Journal of Affective Disorders, 42, 23-28.

Renouf, A. G., & Harter, S. (1990). Low self-worth and anger as components of the depressive experience in young adolescents. Development and Psychopathology, 2, 293-310.

Renouf, A. G., Kovacs, M., & Mukerji, P. (1997). Relationship of depressive, conduct, and comorbid disorders and social functioning in childhood. Journal of the American Academy of Child and Adolescent Psychiatry, 36, 998-1004.

Rey, J. M., Bashir, M. R., Schwarz, M., Richards, I. N., Plapp, J. M., & Stewart, G. W. (1988). Oppositional disorder: Fact or fiction? Journal of the American Academy of Child and Adolescent Psychiatry, 27, 157-162.

Reynolds, W. M. (1989). Reynolds Child Depression Scale: Professional manual. Odessa, FL: Psychological Assessment Resources.

Riggs, P.D., Baker, S., Mikulich, S. K., Yough, S. E. & Crowley, T. J. (1995). Depression in substance-dependent delinquents. Journal of the American Academy of Child and Adolescent Psychiatry, 34, 764-771.

Roberts, A. (2000). Psychiatric comorbidity in White and African-American illicit substance abusers: Evidence for differential etiology. Clinical Psychology Review, 20, 667-677.

Roberts, R. E. (2000). Depression and suicidal behaviors among adolescents: The role of ethnicity. In E. Cuellar & F. A. Paniagua (Eds.), Handbook of multicultural mental health: Assessment and treatment of diverse populations (pp.359-388). New York: Academic Press.

Robins, L. N. (1986). The consequences of conduct disorder in girls. In D. Olweus, J. Block, & M. Radke-Yarrow (Eds.), Development of antisocial and prosocial behavior (pp. 385-414). Orlando, FL: Academic Press.

Robins, L. N. (1990). Conduct disorder. Journal of Child Psychology and Psychiatry, *32*, 193-212.

Robins, L. N., & Price, R. K. (1991). Adult disorders predicted by childhood conduct problems: Results from the NIMH Epidemiologic Catchment Area project. Psychiatry, *54*, 113-132.

Robins, L. N., & Regier, D. A. (1991). Psychiatric disorders in America. New York: Free Press.

Rohde, P., Lewinsohn, P. M., & Seeley, J. R. (1991). Comorbidity of unipolar depression: II. Comorbidity with other mental disorders in adolescents and adults. Journal of Abnormal Psychology, *100*, 214-222.

Rohde, P., Lewinsohn, P. M., & Seeley, J. R. (1996). Psychiatric comorbidity in problematic alcohol use in high school students. Journal of the American Academy of Child and Adolescent Psychiatry, *35*, 101-109.

Rotheram-Borus, M. J., & Phinney, J. S. (1990). Patterns of social expectations among black and Mexican-American children. Child Development, *61*, 542-556.

Rudolph, K. D., Hammen, C., & Burge, D. (1994). Interpersonal functioning and depressive symptoms in childhood: Addressing the issues of specificity and comorbidity. Journal of Abnormal Child Psychology, *22*, 355-371.

Russo, M. F., & Beidel, D. C. (1994). Comorbidity of childhood anxiety disorders: Prevalence, associated characteristics, and validation issues. Clinical Psychology Review, *14*, 199-221.

Rutter, M. (1973). Why are London children so disturbed? Proceedings of the Royal Society of Medicine, 66, 1221-1225.

Rutter, M. (1982). The city and the child. Annual Progress in Child Psychiatry and Child Development, 67, 353-370.

Rutter, M. (1994). Comorbidity: Meanings and mechanisms. Clinical Psychology: Science and Practice, 1, 100-103.

Rutter, M., Cox, A., Tupling, C., Berger, M., & Yule, W. (1975). Attainment and adjustment in two geographic areas: I. Prevalence of psychiatric disorder. British Journal of Psychiatry, 126, 493-509.

Rutter, M., & Graham, P. (1966). Psychiatric disorder in 10- and 11-year-old children. Proceedings of the Royal Society of Medicine, 59, 382-387.

Rutter, M., Tizard, J., & Whitmore, K. (1970). Education, health and behavior. London: Longman Group Ltd.

Ryan, N. D., Puig-Antich, J., Amrosini, P., Rabinovich, H., Robinson, D., Nelson, B., Iyengar, S., & Twomey, J. (1987). The clinical picture of major depression in children and adolescents. Archives of General Psychiatry, 44, 854-861.

Sack, W. H., Beiser, M., Phillips, N., & Baker-Brown, G. (1993). Co-morbid symptoms of depression and conduct disorder in First Nations children: Some findings from the Flower of Two Soils Project. Culture, Medicine, and Psychiatry, 16, 471-486.

Sameroff, A. J. (1995). General systems theories and developmental psychopathology. In D. Cicchetti & D. J. Cohen (Eds.), Developmental psychopathology,

Theory and methods. Wiley series on personality process (Vol. 1, pp.659-995). New York: Wiley.

Saylor, C. F., Finch, A. J., Furey, W., Baskin, C. H., & Kelly, M. M. (1984). Construct validity for measures of childhood depression: Application of multitrait-multimethod methodology. Journal of Consulting and Clinical Psychology, 52, 977-985.

Sbarra, D. A., & Pianta, R. C. (2001). Teacher ratings of behavior among African American and Caucasian children during the first two years of school. Psychology in the Schools, 38, 229-238.

Shaffer, D., Gould, M., & Hicks, R. C. (1994). Worsening suicide rate in Black teenagers. American Journal of Psychiatry, 151, 1810-1812.

Schafer, J. L. (1997). Analysis of incomplete multivariate data. New York: Chapman & Hall.

Schafer, J. L., & Olsen, M. K. (1998). Multiple imputation for multivariate missing-data problems: A data analyst's perspective. Multivariate Behavioral Research, 33, 545-571.

Schniering, C. A., Hudson, J. L., & Rapee, R. M. (2000). Issues in the diagnosis and assessment of anxiety disorders in children and adolescents. Clinical Psychology Review, 20, 453-478.

Schofield, J. W. (1981). Complementary and conflicting identities: Images and interaction in an interracial school. In S. R. Asher & J. M. Gottman (Eds.), The

development of children's friendships (pp. 53-90). New York: Cambridge University Press.

Schraedley, P. K., Gotlib, I. H., & Hayward, C. (1999). Gender differences in correlates of depressive symptoms in adolescents. Journal of Adolescent Health, 25, 98-108.

Schwartz, C. E. (1996). Early temperamental predictors of Stroop interference to threatening information at adolescence. Journal of Anxiety Disorders, 10, 89-96.

Serbin, L. A., Peters, P. L., McAffer, V. J., & Schwartzman, A. E. (1991). Childhood aggression and withdrawal as predictors of adolescent pregnancy, early parenthood, and environmental risk for the next generation. Canadian Journal of Behavioural Science, 23, 318-331.

Shaffer, D. (1974). Suicide in childhood and early adolescence. Journal of Child Psychology and Psychiatry, 15, 275-291.

Shaffer, D. (1988). The epidemiology of teen suicide: An examination of risk factors. Journal of Clinical Psychiatry, 49 (suppl), 36-41.

Shaffer, D. (1993). Suicide: risk factors and the public health. American Journal of Public Health, 83, 171-172.

Shafii, M., & Shafii, S. L. (1992). Clinical manifestations and developmental psychopathology of depression. In M. Shafii & S. L. Shafii (Eds.), Clinical guide to depression in children and adolescents (pp. 3-42). Washington, DC: American Psychiatric Press.

Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability, Psychological Bulletin, 86, 420-428.

Silverthorn, P., & Frick, P. J. (1999). Developmental pathways to antisocial behavior: The delayed-onset pathway in girls. Development and Psychopathology, 11, 101-126.

Simons, R. L., Whitbeck, L. B., Conger, R. D., & Conger, K. J. (1991). Parenting factors, social skills, and value commitments as precursors to school failure, involvement with deviant peers, and delinquent behavior. Journal of Youth and Adolescence, 20, 645-664.

Slotkin, J., Forehand, R., Fauber, R., McCombs, A., & Long, N. (1988). Parent-completed and adolescent-completed CDIs: Relationship to adolescent social and cognitive functioning. Journal of Abnormal Child Psychology, 16, 207-217.

Sroufe, L. A., & Rutter, M. (1984). The domain of developmental psychopathology. Child Development, 55, 17-29.

Starfield, B., Riley, A. W., Green, B. F., Ensminger, M. E. et al. (1995). The Adolescent Child Health and Illness Profile: A population-based measure of health. Medical Care, 33, 553-566.

Stark, K. D., Rouse, L. W., & Livingston, R. (1991). Treatment of depression during childhood and adolescence: Cognitive-behavioral procedures for the individual and family. In P. C. Kendall (Ed.), Child and adolescent therapy: Cognitive-behavioral procedures (pp. 165-206). New York: Guilford Press.

Stanger, C., & Lewis, M. (1993). Agreement among parents, teachers, and children on internalizing and externalizing behavior problems. Journal of Clinical Child Psychology, 22, 107-115.

Stormshak, E. A., Bierman, K. L., & Conduct Problems Prevention Research Group. (1998). The implications of different developmental patterns of disruptive behavior problems for school adjustment. Development and Psychopathology, 10, 451-467.

Taylor, D. C., & Ounsted, C. (1972). The nature of gender differences explored through ontogenetic analysis of sex ratios in disease. In C. Ounsted & D. C. Taylor (Eds.), Gender differences: Their ontogeny and significance (pp. 215-240). London: Churchill Livingstone.

Tremblay, R. E., Masse, B., Perron, D., LeBlanc, M., Schwartzman, A. E., & Ledingham, J. E. (1992). Early disruptive behavior, poor school environment, delinquent behavior, and delinquent personality: Longitudinal analyses. Journal of Consulting and Clinical Psychology, 60, 64-72.

Trites, R. L., & Laprade, K. (1983). Evidence for an independent syndrome of hyperactivity. Journal of Child Psychology and Psychiatry and Allied Disciplines, 24, 573-586.

Tsuang, M. T., Simpson, J. C., & Fleming, J. A. (1992). Epidemiology of suicide. International Review of Psychiatry, 4, 117-129.

U.S. Bureau of the Census. (1990). Statistical abstract of the United States (110<sup>th</sup> ed.). Washington, D.C.: U.S. Government Printing Office.

Velez, C. N., Johnson, J., & Cohen, P. (1989). A longitudinal analysis of selected risk factors for childhood psychopathology. Journal of the American Academy of Child and Adolescent Psychiatry, 28, 861-864.

Verhulst, F. C., & van der Ende, J. (1993). Six-year developmental course of internalizing and externalizing problem behaviors. Journal of the American Academy of Child and Adolescent Psychiatry, 31, 924-931.

Verhulst, F. C., & van der Ende, J. (1993). "Comorbidity" in an epidemiological sample: A longitudinal perspective. Journal of Child Psychology and Psychiatry, 34, 767-783.

Vitiello, B., Behar, D., Hunt, J., Stoff, D., & Ricciuti, A. (1990). Subtyping aggression in children and adolescents. Journal of Neuropsychiatry, 2, 189-192.

Waldman, I. D., & Lilienfeld, S. O. (2001). Applications of taxometric methods to problems of comorbidity: Perspectives and challenges. Clinical Psychology: Science and Practice, 8, 520-527.

Walker, J. L., Lahey, B. B., Russo, M. F., Frick, P. J., Christ, M. A., McBurnett, K., Loeber, R., Stouthamer-Loeber, M., & Green, S. M. (1991). Anxiety, inhibition, and Conduct Disorder in children: I. Relations to social impairment. Journal of the American Academy of Child and Adolescent Psychiatry, 30, 187-191.

Wallace, J. M., & Bachman, J. G. (1991). Explaining racial/ethnic differences in adolescent drug use: The impact of background and lifestyle. Social Problems, 38, 333-357.

Wannan, G., & Fombonne, E. (1998). Gender differences in rates and correlates of suicidal behavior among psychiatric outpatients. Journal of Adolescence, 24, 371-81.

Weigel, R. M. (1985). Demographic factors affecting assertive and defensive behavior in preschool children: An ethnological study. Aggressive Behavior, 11, 27-40.

Weiss, B., & Catron, T. (1994). Specificity of the comorbidity of aggression and depression in children. Journal of Abnormal Child Psychology, 22, 389-401.

Werthamer-Larsson, L., Kellam, S. G., & Wheeler, L. (1991). Effects of first grade classroom environment on shy behavior, aggressive behavior, and concentration problems. American Journal of Community Psychology, 19, 67-78.

Whitaker, A., Johnson, J., Shaffer, D., Rapoport, J. L., Kalikow, K., Walsh, B. T., Daives, M., Braiman, S., & Dolinsky, A. (1990). Uncommon troubles in young people: Prevalence estimates of selected psychiatric disorders in a nonreferred adolescent population. Archives of General Psychiatry, 47, 487-496.

Whitmore, E. A., Mikulich, S. K., Thompson, L. L., Riggs, P. D., Aarons, G. A., & Crowley, T. J. (1997). Influences on adolescent substance dependence: Conduct disorder, depression, attention deficit hyperactivity disorder, and gender. Drug and Alcohol Dependence, 47, 87-97.

Wichstron, L. (1999). The emergence of gender difference in depressed mood during adolescence: The role of intensified gender socialization. Developmental Psychology, 35, 232-245.

Wichstrom, L., Skogen, K., & Oia, T. (1996). Increased rate of conduct problems in urban areas: What is the mechanism? Journal of the American Academy of Child and Adolescent Psychiatry, 35, 471-479.

Williams, J. H., Ayers, C. D., Abbott, R.D., Hawkins, J. D., & Catalano, R. F. (1999). Racial differences in risk factors for delinquency and substance use among adolescents. Social Work Research, 23, 241-256.

Windle, M. (1990). A longitudinal study of antisocial behaviors in early adolescence as predictors of late adolescent substance use: Gender and ethnic group differences. Journal of Abnormal Psychology, 99, 86-91.

Woolston, J. L., Rosenthal, S. L., Riddle, M. A., Sparrow, S. S., Cicchetti, D., & Zimmerman, L. D. (1989). Childhood comorbidity of anxiety/affective disorders and behavior disorder. Journal of the American Academy of Child and Adolescent Psychiatry, 28, 707-713.

Zahn-Waxler, C. (1993). Warriors and worriers: Gender and psychopathology. Development and Psychopathology, 5, 79-89.

Zoccolillo, M. (1992). Co-occurrence of conduct disorder and its adult outcomes with depressive and anxiety disorders. A review. Journal of the American Academy of Child and Adolescent Psychiatry, 31, 547-556.

Zoccolillo, M. (1993). Gender and the development of conduct disorder. Development and Psychopathology, 5, 65-78.

Zoccolillo, M., & Rogers, K. (1991). Characteristics and outcomes of hospitalized adolescent girls with conduct disorder. Journal of the American Academy of Child and Adolescent Psychiatry, 30, 973-981.

Zoccolillo, M., Tremblay, R., & Vitaro, F. (1996). DSM-III-R and DSM-III criteria for conduct disorder in preadolescent girls: Specific but insensitive. Journal of the American Academy of Child and Adolescent Psychiatry, 35, 461-470.

## Gwynne O. Kohl

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### **EDUCATION**

- 2001-02      University of Washington School of Medicine, Seattle, WA  
Clinical Psychology Intern
- 1999-02      University of Washington, Seattle, WA: Ph.D. (expected 2002)  
Child Clinical Psychology
- 1996-99      University of Washington, Seattle, WA: M.S.  
Child Clinical Psychology
- 1988-92      Yale University, New Haven, CT: B.A., Psychology

### **HONORS AND AWARDS**

- 1994          APA Division 37: Child, Youth, and Family Services' Graduate and Undergraduate Student Research Award
- 1992          Distinction in Psychology Major, Yale University
- 1992          Finalist for Angier Senior Psychology Research Project Prize, Yale University
- 1992          Saybrook College Master's Award for Overall Achievement, Yale University
- 1991          Summa Cum Laude, Yale University
- 1991          Phi Beta Kappa
- 1988          National Merit Scholar, Bellaire High School, Houston, TX

### **RESEARCH EXPERIENCE**

- 1997-00      **Graduate Research Assistant, FAST Track Project, Department of Psychology, University of Washington**  
As UW site staff for NIMH-funded, multi-site conduct problems prevention project, conducted structured in-home clinical interviews with children and parents; trained and supervised teams of parent interviewers in administration of clinical interviews, including DISC; coordinated and supervised teams of data collectors for school records; assisted in design and pilot of court and police record data collection protocols; conducted structured teacher interviews; co-led social skills/friendship group for fifth grade girls.
- 1993-94      **Research Assistant, Department of Psychology, University of Illinois at Chicago**  
Assisted in development of pilot school programs with Roger Weissberg, specifically focusing on parent-school partnerships; coordinated community and prevention research groups, conducted data analysis related to risk and

- protective factors for the development of child and adolescent problem behaviors and competence, manuscript writing and editing, grant writing, conference planning for Society for Community Research and Action.
- 1994 **Project Interviewer, Chicago Youth Development Project, University of Illinois at Chicago**  
Conducted 3-hour structured clinical interviews of urban, minority, adolescent boys about involvement in high-risk behaviors and their social and familial correlates.
- 1991 **Student Intern, Yale Conduct Disorder Clinic, Yale University**  
Assessed children for Alan Kazdin's Conduct Disorder Treatment study with WISC and WRAT subtests and a battery of emotional and behavioral inventories, scored measures, compiled data, and observed problem-solving skills training and parent training sessions.
- 1990-92 **Research Assistant, Department of Psychology, Yale University**  
Assisted with research projects on women's health issues, including AIDS, employment and resilience, conducted library work, data collection, entry, and analysis, and manuscript preparation.

### **CLINICAL EXPERIENCE**

- 2001-(02) **Psychology Intern (Child Clinical Track), Department of Psychiatry and Behavioral Sciences, University of Washington School of Medicine**
- **Inpatient Child Psychiatry Unit**, Children's Hospital and Regional Medical Center  
Provided intensive case management, assessment, individual and family therapy, and behavior plan management for children and adolescents with severe mental health problems during their short-term hospitalization on a 15-bed secure unit.
  - **Consultation and Liaison Service**, Children's Hospital and Regional Medical Center  
Conducted psychiatric assessments and short-term behavioral interventions for children and adolescents on medical units, including Hematology/ Oncology, Cardiology, Intensive Care Unit, and general pediatric service. Interventions included: pain management, behavior management for protocol noncompliance, relaxation, and cognitive-behavioral therapy.
  - **Neuropsychological Service**, Children's Hospital and Regional Medical Center  
Conducted neuropsychological assessments with children and adolescents with a variety of medical, neurological, learning, and behavioral problems.

- **Outpatient Psychiatry Clinic, Children's Hospital and Regional Medical Center**  
 Conducted assessment and behavioral treatment for children and adolescents with a wide variety of mental health concerns; conducted individual and family therapy as well as parent consultation and coordination with schools.
- 2000-01      **Clinic Intake Worker and Teaching Assistant, Psychological Services and Training Center, Department of Psychology, University of Washington**  
 Conducted clinical phone assessments with prospective clients; provided crisis intervention services and referral resources for callers; served as emergency clinic backup; assisted clinic director in client-therapist assignments and determining suitability of prospective clients; conducted demonstration clinical intake interviews for beginning clinical students; assisted clinic director in teaching Clinical Methods: Interviewing and Ethics; assisted clinic director in supervising beginning clinical students.
- 1999-00      **Practicum Student, Adolescent Clinic, Children's Hospital and Regional Medical Center, Seattle, WA**  
 Conducted individual therapy with adolescent girls (CBT for eating disorder and externalizing behavior); acted as co-therapist for family therapy and parent consultation with master clinicians Elizabeth McCauley, Ph.D. and Laura Kastner, Ph.D.
- 1998-99      **Practicum Student, Neuropsychological Assessment Services, Children's Hospital and Regional Medical Center, Seattle, WA**  
 Conducted IQ, neuropsychological, socioemotional, and personality assessments of children and adolescents on the Inpatient Psychiatry Unit (IPU); wrote comprehensive psychological reports for each assessment.
- 1997-01      **Staff Therapist, Psychological Services and Training Center, Department of Psychology, University of Washington**  
 Provided substance use and parenting evaluations, individual adult therapy (DBT, CBT, and motivational interviewing), child-directed play therapy, and parent consultation. All therapy received hour-for-hour supervision.
- 1994-96      **Human Service Worker, Child Crisis Intervention Services, Monmouth Medical Center, Long Branch, NJ**  
 Planned and conducted psychoeducational groups with children and adolescents in crisis, curricula programming, crisis management including verbal de-escalation and physical restraint, customer satisfaction data collection and analysis.

- 1994-95      **Youth Advocate, Youth Advocate Program of Monmouth County, Eatontown, NJ**  
 Provided mentoring, support, and recreational counseling for delinquent adolescent girls in the local community.
- 1992-93      **Residential Social Worker, Mulberry Bush School, Standlake, England**  
 Provided recreational counseling, supervision, and play therapy for 31 behaviorally and emotionally disturbed children, included weekly psychological consultation, theory meetings and supervision.

### **TEACHING EXPERIENCE**

- 2001, Win      **Psychological Assessment of Children, Graduate Teaching Assistant, University of Washington**  
 Co-supervised graduate students in conducting standardized child assessments and parent interviews and writing integrated psychological reports; lectured on cultural issues related to standardized assessment; recruited and coordinated families for practice assessments.
- 1996, Fall      **Developmental Psychology, Graduate Teaching Assistant, University of Washington**  
 Taught weekly discussion sections for 100 undergraduates, organized review sessions, assisted in exam writing, graded essays, held office hours.

### **PUBLICATIONS AND PRESENTATIONS**

Kohl, G. O., Lengua, L. J., McMahon, R. J., & the Conduct Problems Prevention Research Group (2001). Parent involvement in school: Conceptualizing multiple dimensions and their relations with family and demographic risk factors. *Journal of School Psychology, 38*, 501-523.

Kohl, G. O., & Lengua, L. J. (2001, April). *Conduct problems, depressive symptomatology, and comorbidity: Relationship to youth adjustment*. Poster session presented at the meeting of the Society for Research in Child Development, Minneapolis, MN.

Kohl, G. O., & McMahon, R. J. (1999, April). *A multi-dimensional conceptualization of parent-school partnerships*. Poster session presented at the meeting of the Society for Research in Child Development, Albuquerque, NM.

Kohl, G. O. (1994, August). *Correlates of parent involvement in urban elementary school children*. Paper presented at the annual American Psychological Association Convention, Los Angeles, CA. (Invited presentation as winner of APA Division 37: Child, Youth, and Family Services' Student Research Award.)

**MANUSCRIPTS IN PREPARATION**

Kohl, G. O., Lengua, L. J., & McMahon, R. J. (2002). *Conduct problems, depressive symptomatology, their comorbidity and their relationship to youth adjustment: A critical review*. Manuscript in preparation.

Kohl, G. O., Lengua, L. J., & McMahon, R. J. (2002). *Conduct problems, depressive symptomatology, and their comorbid presentation: Adjustment in early adolescence*. Manuscript in preparation.

**CLINICAL CASE PRESENTATIONS AND GUEST LECTURES**

- 2000      *Conducting clinical intake interviews with children, adolescents and their parents*. Lecture delivered to psychology graduate students in Clinical Methods class.
- 2000      *Clinical case presentation of 24-year-old female being seen for individual therapy*. Presented at the clinical psychology graduate student colloquium.
- 1999      *Clinical case presentation of 9-year-old girl being seen for play therapy*. Presented at the clinical psychology graduate student colloquium.
- 1999, 2000      *Clinical case presentation of 30-year-old male being seen for individual therapy*. Presented at the graduate clinical personality assessment course.
- 1997      *FAST-Track: An example of a state-of-the-art community-based prevention program*. Guest lecture delivered to undergraduate psychology students.
- 1997      *Parent-school partnerships*. Guest lecture delivered to undergraduate psychology students.

**SPECIALIZED CLINICAL TRAINING**

- 2002      **Hypnosis:** Two-quarter weekly didactic on theory and practice of hypnotic techniques for analgesia and psychotherapy.  
*Instructor: Joseph Barber, Ph.D., University of Washington School of Medicine, Department of Rehabilitation Medicine*
- 2001      **Cognitive Behavioral Analysis System of Psychotherapy:** Six-session didactic and consultation seminar on theory and practice in the treatment of chronic depression in adults.  
*Instructor: Jack Carr, Ph.D., University of Washington School of Medicine, Department of Psychiatry and Behavioral Sciences*
- 2001      **Motivational Interviewing in the Treatment of Substance Use Disorders:** Weekend workshop on motivational interviewing techniques with difficult clients.  
*Instructor: Mary Larimer, Ph.D., University of Washington School of Medicine, Department of Psychiatry and Behavioral Sciences*

- 2000      **Crosscultural Consultation Group:** Weekly didactic and consultation group concerning cultural and clinical issues related to diverse clients.  
*Instructors: Kimberly Barrett, Ed.D., University of Washington Department of Psychology*
- 1999      **Anxiety Disorder Treatment Group:** Weekly didactic and case consultation group on the assessment and treatment of anxiety disorders.  
*Instructor: David Kosins, Ph.D., University of Washington Department of Psychology*
- 1998-99    **Assessment and Treatment of Addictive Behaviors:** Three-quarter weekly didactic and case consultation seminar; completion of a supervised substance use evaluation.  
*Instructors: G. Alan Marlatt Ph.D. and Jason Kilmer, Ph.D., University of Washington Department of Psychology*
- 1998      **Acceptance and Commitment Therapy (ACT) for the Treatment of "Emotional Avoidance" Disorders:** Sixteen-hour didactic and experiential workshop.  
*Instructor: Steve Hayes, Ph.D., University of Nevada at Reno*
- 1997-98    **Behavioral Assessment and Treatment:** Two-quarter weekly course on the fundamentals of behavioral theory, assessment, and treatment; emphasis on Dialectical Behavior Therapy (DBT) theory and techniques.  
*Instructor: Marsha Linehan, Ph.D., University of Washington Department of Psychology*
- 1997      **Assessment and Treatment of Suicidal Behavior:** Twenty-hour workshop on standards of care, crisis management, and long-term treatment strategies for acutely and chronically suicidal clients.  
*Instructor: Marsha Linehan, Ph.D., University of Washington Department of Psychology*

## **REFERENCES**

- David Breiger, Ph.D.**, Director, Neuropsychological Service, Children's Hospital and Regional Medical Center, (206) 526-2164
- Corey Fagan, Ph.D.**, Director, Psychological Services and Training Center, Department of Psychology, University of Washington (206) 543-6511
- Liliana Lengua, Ph.D.**, Associate Professor, Department of Psychology, University of Washington (206) 543-5655
- Elizabeth McCauley, Ph.D.**, Professor, Department of Psychiatry and Behavioral Sciences, University of Washington School of Medicine (206) 526-2165
- Robert McMahon, Ph.D.**, Professor, Department of Psychology, University of Washington (206) 685-9127