Chapter II

Review of Literature

This chapter provides a review of the studies on conduct disorder and related psychological variables. John. W. Best (1992) pointed out that review of related literature is “a summary of writings of recognized authorities and of research which provides evidence that the researcher is familiar with what is already known and what is still unknown and untested”. Since effective research is based upon past knowledge, the step helps to eliminate duplication of what has been done and provides useful hypotheses and helpful in suggestions for sufficient investigation”.

Numerous studies have been conducted related to the occurrence of conduct disorder in India as well as in foreign countries. These studies mainly examined the male female ratio, age of onset, the comorbidity, and the prevalence of conduct disorder.

In a 5-year study on 984 treated children between the ages of 5 to 17 years, Warren et al. (2001) examined the additional impairments outside the criteria for the CD diagnosis. Children with CD showed the worst problem and impairment scores in comparison with 11 common diagnoses. Compared with other treated children, children with CD achieved worse scores on 14 of 15 syndromes, including internalizing problems such as withdrawal and major depression. Moreover, the average child with CD had larger relapse scores in the 1.5- to 3-year period after
admission to treatment. This pattern, pervasive at intake and chronic in course, resembles a global disability more than a circumscribed problem managed with a narrow range of treatments specific to it.

Al-Banna (2008) examined the prevalence of conduct disorder in 77 young people in four juvenile detention centers in the United Arab Emirates (UAE). The prevalence of conduct disorder was 24.7%, and recidivism, as indicated by repeat admissions to the centers, was found to be associated with conduct disorder. Having a diagnosis of conduct disorder was associated with a lower educational and occupational level of the father, as well as living with a single parent or relatives. Among UAE nationals, conduct disorder was also associated with having a mother who was a non-UAE national.

Pajer et al. (2008) examined the associations between three social context domains (neighborhood, family characteristics, and parenting behaviors) and CD in adolescent girls, additionally testing for race moderation effects. The hypothesis was that disadvantaged neighborhoods, family characteristics such as parental marital status, and parenting behaviors such as negative discipline would characterize girls with CD. It was also hypothesized that parenting behaviors would mediate the associations between neighborhood and family characteristics and CD. The samples comprised of girls ages between 15 to 17 years from the community, and used a structured psychiatric interview to assign participants to a CD group (N = 52), or a
demographically matched group with no psychiatric disorder (N = 41). Each girl and parent also filled out questionnaires about neighborhood, family characteristics, and parenting behaviors. Neighborhood quality was not associated with CD in girls. Some family characteristics (parental anti-socialism) and parenting behaviors (levels of family activities and negative discipline) were characteristic of girls with CD, but not all. There was no moderation by race. The hypothesis that the association between family characteristics and CD would be mediated by parenting behaviors was not supported.

Nock, Kazdin, Hiripi, and Kessler (2006) found out that the estimated lifetime prevalence of CD in the US is 9.5% (12.0% among males and 7.1% among females), with a median age of onset of 11.6 years. Latent class analysis (LCA) identified five CD subtypes characterized by rule violations, deceit/theft, aggression, severe covert behaviors, and pervasive CD symptoms. A dose-response relationship was revealed between CD subtype severity and risk of subsequent disorders. Results also indicated that CD typically precedes mood and substance use disorders, but most often occurs after impulse control and anxiety disorders. Although both active and remitted CD is associated with increased risk of the subsequent first onset of other mental disorders, remitted CD is associated with significantly lower risk of subsequent disorders.

Sarkhel, Sinha, Arora, and DeSarkar (2006) examined the prevalence of conduct disorder and its DSM-IV subtypes and comorbid attention deficit hyperactivity
disorder (ADHD) in four schools of Kanke block among students of classes V to X. Conduct disorder was found in 4.58%; the ratio of boys to girls being 4.5:1. Childhood onset was found in 73% and adolescent onset in 27%. Mild conduct disorder was found in 36%, moderate in 64% and severe conduct disorder in none. Comorbid ADHD was found in 36%, hyperactive-impulsive being predominant. Significant difference was found in temperament between students with and without conduct disorder with difficult temperament predominating in the former and easy in the latter. Lying, bullying and cruelty to animals were the most frequent symptoms.

El Behary et al.(2004) estimated the prevalence of conduct disorder on a sample of 2123 students. The results revealed that the 207 (19.5%) of the students were positive for CD; out of which 142 (25%) were males, and 65 (13.5%) were females. Male to female ratio was 1.9: 1. In technical schools, 157 (19.3%) students were positive for CD; 114 (25.8%) males, and 43 (11.6%) females. Male to female ratio was 2.7: 1. In general schools, 50(50.2%) students were positive for CD; 28(22.1%) males and 22(18.1%) females. Male to female ratio was 1.2: 1. Regarding the clinical types, 79 (78.2%) students were adolescent onset type, while 22 (21.8%) students were childhood onset type. Regarding severity, 57(56.4%) students of mild degree, 31 (30.7%) students of moderate degree, and 13 (12.9%) students of severe degree of CD. With the increase in the age of onset, there was a decrease in the severity of CD.
The age of onset of CD was higher in females than in males. So CD is a major problem, as it affects a higher percent of our students in the secondary schools.

Maughan and colleges (2004) reported that CD was significantly more common in boys than in girls, and increased in prevalence with age. Among children who met the diagnostic criteria for CD, status violations and other non-aggressive conduct problems increased with age, while aggressive symptoms became less common. Gender differences in ODD varied by reporter. Estimates of age trends in ODD depended heavily on treatment of overlaps with CD. Following DSM-IV guidelines (where ODD is not diagnosed in the presence of CD), rates of ODD fell with age; if that constraint was released, and clinically significant rates of oppositionality persisted at similar levels from early childhood to middle adolescence. CD and ODD showed high levels of overlap, and both diagnoses showed substantial comorbidity with other non-antisocial disorders.

Van der Valk, Oord, Verhulst and Boomsma (2003) estimated the genetic, shared environmental, and non-shared environmental contributions to stability and change in internalizing and externalizing problems. Maternal Child Behavior Checklist ratings were obtained for 3,873 twin pairs at age 3 and 1,924 twin pairs at age 7. For 1,575 twin pairs, ratings were available at both ages. For internalizing/externalizing ratings, genetic, shared, and non-shared environmental factors explained about 59/51%, 10/30%, and 31/19% of the variance at age 3, and 40/52%, 31/32%, and 29/16% of
the variance at age 7. The phenotypic correlation of $r=0.38/0.54$ between problems assessed at 3 and 7 years of age was explained for 65/55% by genetic factors, for 23/37% by shared environmental factors, and for 11/8% by non-shared environmental factors. The genetic, shared environmental, and non-shared environmental correlations between ages 3 and 7 were 0.51/0.57, 0.47/0.66, and 0.13/0.24, respectively. Genetic and shared environmental factors were most important for the stability of internalizing and externalizing problems between ages 3 and 7. Non-shared environmental factors were mainly age-specific. For internalizing problems, shared environment may become more important from early to middle childhood;

Slutske (1998) examined the association between retrospectively reported childhood conduct disorder (CD) and the history of alcohol dependence (AD) in a sample of 2,682 male and female. There was a strong association between CD and AD in both men (tetrachoric $r = .34$; odds ratio $= 2.8$) and women (tetrachoric $r = .53$; odds ratio $= 9.9$). Genetic factors accounted for most of the association between CD and AD liability in men and women, with the remainder of the association being due to non-shared individual-specific environmental factors. Genetic influences common to CD and AD accounted for 17% and 35% of the genetic variation in AD liability in men and women, respectively, and accounted for 11% and 23% of the total variation in AD liability in men and women, respectively. The result suggested that there are
common genetic risk factors for CD and AD or that CD itself is an important genetically influenced risk factor

Lahey et al. (1998) found that the DSM-IV approach to subtyping CD distinguishes subgroups that differ markedly in level of physical aggression. There was a steep decline in aggression occurring around an age of onset of 10 years, but the number of nonaggressive behaviors was unrelated to the age of onset of CD. In the field trials sample, youths who met the criteria for the adolescent-onset type were more likely to be girls, less likely to meet criteria for oppositional defiant disorder, and less likely to have a family history of antisocial behavior than the childhood-onset type, but these latter findings were not confirmed in the household sample.

Children in the poorest households are three times more likely to have a mental illness than children in the best-off households (Department of Health, 1999). Poverty and social disadvantage are most strongly associated with deficits in children’s cognitive skills and educational achievements (Duncan & Brooks-Gunn, 1997). In the behavioral domain, conduct disorder and attention-deficit hyperactivity disorder show links with family poverty and this is most marked for children in families facing persistent economic stress. The relationship between poverty and childhood disorders appears to be more marked for boys than for girls, and seems to be stronger in childhood than in adolescence. Rates of childhood disorders vary in different
neighborhoods and communities. Early studies in the UK suggested that risks of disorder in inner-city areas were twice than those in small towns (Rutter et al, 1975).

Miech et al. (1999) examined low socioeconomic status (SES) as both a cause and a consequence of mental illnesses by investigating the mutual influence of mental disorders and educational attainment, a core element of SES. The analyses were based on a longitudinal panel design and focused on four disorders: anxiety, depression, antisocial disorder, and attention deficit disorder. It was found that each disorder has a unique relationship with SES, highlighting the need for greater consideration of antisocial disorders in the status attainment process and for further theoretical development in the sociology of mental disorders to account for disorder-specific relations with SES.

The correlation between parental income and children’s mental health can be quite large. Lefebvre and Merrigan (1998) used data from the Canadian National Longitudinal Survey of Children and Youth Cycle I to assess the effect of family income on measures of children’s hyperactivity, emotional disorder, conduct disorder, indirect aggression, and pro-social behaviour. It was found that parental income had a small but statistically significant effect on all outcomes. The effect of income was smaller on the other measures of socio-emotional functioning.

Lipman and his colleagues (1994) defined psychiatric disorders as the number of symptoms of conduct disorder, hyperactivity, and emotional disorder displayed in the
last six months. They defined social impairment by parents’ evaluation of how well their child got along with his teachers, family, and peers. Among 4- to 11-year-olds in the 1983 wave of the Canadian Child Health Study, the odds of a very low-income child having a psychiatric disorder was more than twice that of a higher-income child. The chance of a social impairment for 4- to 16-year-old children whose family income was low was 9.4 percent compared to 6.3 percent for children whose family income was high. Chances were lower for more affluent children. However, in the 1987 wave of the same data set, the prevalence of psychiatric disorders did not differ by children’s family income. Social disorders still remained more common among children whose parents were poor.

Children and adolescents from the lower socioeconomic strata, particularly males from larger urban areas, exhibited more aggressive behavior, and are more likely to be identified as delinquent than their age mates from the middle class (Atwater, 1992; Elliott, 1996; Fergusson, Lynskey, & Horwood, 1996; Loeber & Dishion, 1983; Loeber, Green, Keenan, & Lahey, 1995).

Parents from lower-income families are more likely than middle-class parents to rely on physical punishment to discipline aggression and noncompliance, thereby modeling aggression even as they are trying to suppress it (Dodge & Pettit, 2003; Patterson, DeBaryshe, & Ramsey, 1989). Lower-income parents are more inclined to endorse aggressive solutions to conflict and to encourage their children to respond
forcefully when provoked by peers (Dodge & Pettit, 2003; Jagers, Bingham, & Hans, 1996).

Non-marital childbearing has increased over the last 30 years (Wu, Bumpass, & Musick, 2001) resulting in an increase in single parent families. When looking at first births, more than four of five first births among black women and one of three among white women occurred outside of marriage in the mid 1990s. Children of unmarried mothers are substantially more likely to drop out of school, live in poverty, and be labeled with a conduct disorder. In addition to lower levels of income, single parent families have lower educational attainment, fewer resources, higher familial stress and poorer psychological well being (Conger, Conger, & Elder, 1997; Kim-Cohen, Moffitt, Caspi, & Taylor, 2004; McLloyd, 1990; O'Connor et al., 1998). Single mothers are noted to deal more aggressively with their sons than mothers of intact families. Without a positive male role model, young males may turn to peers for belonging, socialization, and guidance on how to become a man.

Blomfield and Barber, (2010) investigated the association between participation in extracurricular activities and indicators of positive and negative development for Australian adolescents, and whether these associations were mediated by the characteristics of adolescents’ friends. Extracurricular participation was positively associated with higher academic track enrolment university aspirations and school belonging and negatively associated with skipping school; participation in team sports
was related to greater alcohol use. In addition, friend characteristics were found to mediate the association between activity participation and developmental indicators.

**Home environment and conduct disorder**

This section mainly examines studies related to the influence of home environment on the development of childhood disorders, particularly focusing on conduct disorder.

Shaw (2002) described a developmental model of the origins of early conduct problems. It was found out that child, family, and sociodemographic factors all play a significant role in the development of early conduct problems. In particular, the quality of the care giving environment during the child’s second year differentiates clinical impairment according to both parent and teacher report six years later.

Kunitz, Levy, McCloskey, and Gabriel (1998) examined the importance of childhood abuse as a risk factor for conduct disorder in Navoja population. The importances of each form of abuse and conduct disorder as risk factors for alcohol dependence and for being a perpetrator and/or victim of domestic violence was explored. The prevalence of physical and sexual abuse before age 15 was found to be within limits observed in other populations. Each form of abuse was a risk factor for conduct disorder. Along with conduct disorder, physical abuse was a risk factor for alcohol dependence. Physical abuse and alcohol dependence were independent risk factors for being involved in domestic violence as both perpetrator and victim. There
appears to have been no secular trend in the incidence of childhood abuse over the past several generations, but there is suggestive evidence that domestic violence has become more common.

Shaw et al. (1996) examined the risk factors from infancy associated with the development of preschool disruptive behavior problems across child, parent, and socio-demographic domains. Risk factors that consistently were associated with the prediction of age five disruptive behaviors included disorganized attachment classification at 12 months, and maternal personality risk, and childrearing disagreements during the second year. In addition, infants with disorganized attachment status at 12 months and whose mothers perceived them as difficult in the second year showed significantly higher aggressive problems at age five than those with only one of the above two risk factors. When pathways leading to clinically-elevated aggression at age five were explored, infant disorganized attachment status, maternal personality risk, and childrearing disagreements demonstrated equivalent predictive validity as child aggression assessed at age 3 years.

Waldman et al. (2012) conducted a study on a representative sample of twin children and adolescents for testing the hypothesis that a substantial proportion of the genetic and environmental influences underlying conduct disorder (CD) are shared with three socio emotional dispositions: prosociality, negative emotionality, and daring. It was found that caretaker ratings of each dispositional dimension were
uniquely associated with a latent CD dimension that included both caretaker and youth reports of CD as indicators. Behavior genetic analyses indicated that moderate-to-high additive genetic and moderate non-shared environmental influences underlie all three dispositions and CD, with modest shared environmental influences on prosociality. Forty percent of the additive genetic influences and all of the non-shared environmental influences on the latent CD dimension were shared in common with the three socio-emotional dispositions. The finding that CD shared a substantial proportion of its genetic influences with the three distinct socio-emotional dispositions suggests new perspectives on the heterogeneous etiology of CD and new approaches to exploring its specific etiological mechanisms.

The study conducted by Harden et al. (2007) on the marital conflict and conduct problems of twin pairs proved the relationship between home environments and the development of conduct problems. The children–of–twins design was used to test whether associations between marital conflict frequency and conduct problems can be replicated within the children of discordant twin pairs. A sample of 2,051 children aged 14 to 39 years and 1,045 twins was used to estimate the genetic and environmental influences on marital conflict and to determine whether genetic or environmental selection processes underlie the observed association between marital conflicts and conduct problems. The obtained results indicated that genetic and non-shared environmental factors influence the risk of marital conflict. Furthermore,
genetic influences mediated the association between marital conflict frequency and conduct problems. These results highlighted the need for quasi-experimental designs in investigations of intergenerational associations.

A study on family change, parental discord and early offending pointed out the relationships between exposure to family change, exposure to parental discord during the period from birth to 10 years and risks of offending by the age 13 years was carried out by Fergusson, Horwood & Lynskey (1992) on a birth cohort of New Zealand children. This study showed that while exposure to parental discord during middle and early childhood led to increased risks of early offending, exposure to family change in the absence of parental discord did not lead to increased risk of offending. The results also suggested that children with a history of early conduct problems were particularly susceptible to parental discord but that the effects of discord did not vary with the child’s gender. These results persisted even when errors of measurement in the reporting of offending were taken into account using latent class methods.

In a household survey of an urban population, Hare and Shaw (1965) found behavior disorders for children to be related both to neurosis and to a number of other indices of ill health in either parent. An association between psychiatric disorders in children and parental physical and mental ill health has been established.
Yeh and colleagues (2004) observed that parents of African American, Asian/Pacific Islander American, and Latino youths were generally less likely than parents of non-Hispanic whites to endorse etiologies consistent with biopsychosocial beliefs about mental illness. Some racial/ethnic differences were evident for sociological causes, but none existed for spiritual or natural disharmony etiologies. Analysis controlling for factors including child symptomatology produced fewer significant racial/ethnic differences but a similar pattern of results. It was concluded that racial/ethnic differences in parental beliefs about the causes of child problems exist in an at-risk sample, and having implications for the help-seeking, utilization, and effectiveness of biopsychosocially oriented mental health services for diverse populations.

Wamboldt and Wamboldt (2000) have done research on the role of the family in the onset and outcome of childhood disorders. Behavioral genetics research indicated that shared environment, including issues of parental monitoring and discipline, is important in the development and outcome of externalizing disorders. Differential parental treatments of one sibling are critical in internalizing disorders. Criticism is associated with poor outcome of many childhood medical and psychiatric disorders. Chronic illness in a child changes the family dynamics toward being more structured and less emotionally warm and communicative. The family’s role in adherence to treatment is critical, and families with high levels of criticism have more difficulty.
They found out that families can cause problems, but many times the problems families have are in response to child’s problems.

Kochanska, Barry, Aksan, and Bolt (2008) conducted a study on a developmental model of maternal and child contributions to disruptive conduct on first six years. This Multi-trait multi-method study examined, in a longitudinal design, paths linking early maternal responsiveness to the child with the child's future conscience and disruptive behavior in 102 mother-child dyads. This analysis involving sequential regression and tests of mediation showed that child responsive stance at 25-38 months fully mediated the link between maternal responsiveness in infancy and conscience at 52 months; and conscience fully mediated the link between child responsive stance and future disruptive behavior at 67 months. It was observed that examination of the developmental links among early maternal behavior, the child’s responsive stance toward the mother, conscience, and disruptive behavior is a promising step toward elucidating mechanisms of children's adaptive and maladaptive trajectories.

In a study by Rutter (1994) found significant associations between family discord and conduct disorder in children. He also discussed the need to differentiate between risk indicators and risk mechanisms, the conceptualization of risk mechanisms, measurement issues, and the research strategies needed to test causal hypotheses and pointed out the effects need to use natural experiments to arrive at the causal chain effects.
In a prospective study by Shaw, Winslow, and Flanagan (1999) examined the effects of marital status and family relations on young children’s adjustment among African-American and European-American families. The effects of divorce and family relations on young children’s development were investigated prospectively, using an ethnically diverse sample of approximately 300 low-income families. Also examined the moderating effects of ethnicity on child adjustment in always two-parent, to-be-divorced, already-divorced, and always single-parent families. The results indicated that to-be-divorced European-American and African-American families demonstrated higher rates of preschool-age behavior problems, and already divorced families showed similar trends. Parental conflict and behavior problems accounted for pre-divorce differences in child behavior problems, whereas rejecting parenting accounted for differences in problem behavior between always single-parent and always two-parent families. The results are discussed in terms of the importance of ethnicity in influencing young, low-income children’s adjustment to different family structures.

Slee (1996) conducted an exploratory study to investigate mothers' perceptions of family climate in families with conduct disordered children in comparison with families with normal children. Mothers in 19 families with an independently diagnosed conduct disordered child and 19 matched comparison mothers completed the Moos Family Environment Scale. In addition, 9 mothers and their conduct
disordered children and matched comparison groups were video-taped interacting in their homes. Mothers with a conduct disordered child perceived the family climate as less cohesive, less encouraging of the expression of feeling, and more conflictual than their counterparts. They also perceived families to be more control oriented and less organized than their matched controls. Independent behavioral observations supported the view that the mothers with conduct disordered children were control oriented.

Dadds et al. (1992) conducted a study of interaction patterns in a sample of families with depressed (DEP), conduct-disordered (CD), mixed DEP-CD, and comparison children (aged 7 to 14 years) in the homes during the evening meal. Observational measures were taken of positive and aversive behaviors and affect expression for parents, the referred children, and their siblings. It was found that CD children express high levels of aversive behavior and anger and are part of a family system marked by conflict and aggression. The depressed children were exposed to maternal aversiveness, but did not show any evidence of elevated levels of anger or aversiveness. This was also true for the mixed-disorder children. High levels of depression in both groups of depressive children were associated with low levels of conflict and anger in family members. Overall, siblings showed very similar patterns of behavior and were exposed to similar patterns of parental behavior as the referred children. It was discussed in terms of family models that emphasize the function of aggression and depression in the maintenance of child psychopathology.
Matthews (2011) did a study on family risk factors and conduct disorder among committed male and female juveniles in Barbados. The differences between juveniles with and without a conduct disorder diagnosis on family risk factors was investigated in a sample of 71 male and female youth, aged 11 to 16 years, from a juvenile facility in Barbados. Psychological reports and case notes were coded for presence and absence of a diagnosis of CD and family risk factors. Gender differences were also investigated among those with a CD diagnosis. Mann-Whitney and Pearson Chi-square analyses revealed that significantly more juveniles with CD compared to those without CD were from low income homes and families characterized by parental conflict and psychopathology.

In a study of opposite-sex twin pairs, Madeline, Wendy, Andrew, and Nicholas (2011) examined the role of harsh discipline in explaining sex differences in conduct disorder: Retrospective reports of harsh discipline experienced between ages 6 to 13 years and CD symptoms experienced before age 18 were obtained via structured psychiatric telephone interviews. Boys reported higher mean levels of HD and CD than girls, both between and within families, and the results of model-fitting analyses suggested that differences in the use of harsh disciplinary practices for sons versus daughters may partially explain the sex difference in the prevalence of CD. Between families, the relation between HD and CD was greater for girls than boys, but within families, there was no evidence of sex difference in the relation between harsh
discipline and CD. Inconsistency between within-family and between family results suggested that factors that differ between families are confounded with sex differences in the relation between hash discipline and CD. A more stringent test of sex differences involves eliminating these between-family differences by studying boys and girls within the same family.

Jewell and Stark (2003) attempted to differentiate the family environments of youth with conduct disorder compared to youth with depressive disorder. Participants were 34 adolescents from a residential treatment facility. It was indicated that adolescents with CD described their parents as having a permissive and ambiguous discipline style, while adolescents with a depressive disorder described their relationship with their parents as enmeshed. A discriminant function analysis, using the two family environment variables of enmeshment and laissez-faire family style as predictors, correctly classified 82% of the participants.

Rey, Walter, Plapp, and Denshire (2000) did a study on family environment in attention deficit hyperactivity, oppositional defiant and conduct disorders. The study examined whether there were differences in family environment among patients with attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder and conduct disorder. A poorer family environment was associated with conduct disorder and oppositional defiant disorder and predicted a worse outcome (e.g., admission to a non-psychiatric institution, drug and alcohol abuse). Quality of the family
environment did not vary according to ADHD diagnosis or gender. While there was no association between the quality of the family environment and a diagnosis of ADHD among referred adolescents. There was an association with conduct disorder. Interventions that improve family environment in the early years of life may prevent the development of conduct problems.

Cadoret et al. (1995) examined on genetic-environmental interaction in the genesis of aggressiveness and conduct disorders. It was found that biological background of antisocial personality disorder predicted increased adolescent aggressiveness, conduct disorder, and adult antisocial behaviours, and adverse home environment (defined as adoptive parents who had marital problems, were divorced, were separated, or had anxiety conditions, depression, substance abuse and/or dependence, or legal problems) independently predicted increased adult antisocial behaviors. Adverse adoptive home environment interacted with biological background of antisocial personality disorder to result in significantly increased aggressiveness and conduct disorder in adoptees in the presence of but not in the absence of a biological background of antisocial personality disorder. It concluded that environmental effects and genetic-environmental interaction account for significant variability in adoptee aggressiveness conduct disorder, and adult antisocial behavior and have important implications for the prevention and intervention of conduct disorder and associated conditions such as substance abuse and aggressiveness.
Gross, Shaw, and Moilanen (2008) conducted a study on reciprocal associations between boys’ externalizing problems and mothers’ depressive symptoms. Although much has been written about the utility of applying transactional models to the study of parenting practices, relatively few researchers have used such an approach to examine how children influence maternal wellbeing throughout their development. Using a sample of males from predominantly low-income families, the study explored reciprocal relations between boys’ overt disruptive behavior (boys’ ages 5 to 10 years) and maternal depressive symptoms. In middle childhood, evidence was found for both maternal and child effects from boys’ ages 5 to 6 using both maternal and alternative caregiver report of child aggressive behavior. In the early adolescence model, consistent maternal effects were found, and child effects were evident during the transition to adolescence (boys’ ages 11 to 12 years).

Cicchetti and Toth (2005) found out that child maltreatment exemplifies a toxic relational environment that poses significant risks for maladaptation across biological and psychological domains of development. Research on child maltreatment can inform developmental theory, but more importantly, it can enhance the quality of clinical, legal, and policy-making decisions for maltreated children. A developmental psychopathology perspective is directed toward the discussion of the psychological and neurobiological squeal of child maltreatment.
Patrick et al. (2005) examined the joint contribution of early parental warmth, communication and tracking, and early child conduct problems on monitoring in late childhood. The relationship of parental warmth, communication, and tracking (WCT), and child conduct problems in early elementary school (age 5.5 years) to monitoring in late elementary school (age 9.5 years) was longitudinally examined in a sample of 267 boys and girls. WCT in kindergarten was associated with lower kindergarten levels and less growth of conduct problems into the first grade, and was prospectively associated with effective monitoring in the third and fourth grades. Overt and covert conduct problems in kindergarten and growth in covert problems during kindergarten and first grade were associated with less effective later monitoring.

May et al. (2004) explored racial/ethnic patterns of parental beliefs about the causes of child problems. The parents of 1,338 youths with identified mental problems were asked about their beliefs about the causes for their children’s problems from a questionnaire with 11 etiological categories. It showed that parents of African American, Asian/Pacific Islander American, and Latino youths were generally less likely than parents of non-Hispanic whites to endorse etiologies consistent with biopsychosocial beliefs about mental illness. Some racial/ethnic differences were evident for sociological causes, but none existed for spiritual or nature disharmony etiologies. Analyses controlling for factors including child symptomatology produced fewer significant racial/ethnic differences but a similar pattern of results. It was concluded
that racial/ethnic differences in parental beliefs about the causes of child problems exist in an at-risk sample, and implications for the help-seeking, utilization, and effectiveness of biopsychosocially oriented mental health services for diverse populations are discussed.

Kendler, Aggen, and Patrick (2013) studied the structure of genetic and environmental risk factors for CD. The design was population-based twin registry in the setting Virginia. The participants consisted of two thousand seven hundred and sixty-nine members of male-male twin pairs from the Virginia Adult Twin Study of Psychiatric and Substance Use Disorders. Main outcome measure was retrospective self-reported symptoms of CD. The results showed that the best-fitting multivariate twin model included two genetic factors, one shared environmental common factor, and one non-shared environmental common factor, along with criterion-specific genetic and non-shared environmental effects. The CD criteria with the strongest loadings on the two genetic factors respectively were those reflecting rule breaking (e.g., playing hooky) and overt aggressive acts (e.g., hurting people). The shared environmental common factor had salient loadings on a distinct set of criteria reflecting covert delinquent acts (e.g., stealing and hurting animals). Loadings on the single non-shared environmental common factor were more uniform and less selective. Scores on the three familial CD factors were differentially associated with a range of personality, psychopathology, and demographic factors. From a genetic
perspective, the DSM criteria for CD do not reflect a single dimension of liability. The familial risk to CD is composed of two discrete dimensions of genetic risk, reflecting rule breaking and overt aggression, and one dimension of shared environmental risk, reflecting covert delinquency. These three familial factors differ meaningfully in their association with a range of relevant validators.

Lahey et al. (1988) conducted a study on psychopathology in the parents of children with conduct disorder and hyperactivity. The biological parents of 86 outpatient children aged 6 to 13 years were assessed using a structured diagnostic interview. Both mothers and fathers of children with conduct disorder (N = 37) were more likely to exhibit antisocial personality disorder, and fathers were more likely to abuse substances. CD mothers exhibited more depression and the triad of antisocial personality disorder, substance abuse or somatization disorder. In contrast, attention deficit disorder with hyperactivity (ADD/H) (N=18) was not associated with any parental disorder. However, fathers of children with both CD and ADD/H, which was associated with greater aggression and persistent law-breaking in children than CD alone, were markedly more likely to have a history of aggression, arrest, and imprisonment. These results confirmed the findings that CD is linked to parental psychopathology but ADD/H is not. When CD and ADD/H co-occur, however, there is markedly more aggression and illegal activity in both fathers and children.
Frick et al. (1992) examined on familial risk factors like parental psychopathology and maternal parenting to oppositional defiant disorder and conduct disorder in a sample of 177 clinic-referred children (aged 7–13 yrs). An association was found between a diagnosis of conduct disorder (CD) and several aspects of family functioning: maternal parenting (supervision and persistence in discipline) and parental adjustment (paternal antisocial personality disorder and paternal substance abuse). Children with oppositional defiant disorder were intermediate to families of children with CD and clinic control children on all variables, but differed from control children only in having a higher rate of paternal substance abuse and paternal antisocial personality disorder (APD). When both parental APD and deviant maternal parenting were entered into 2 × 2 logit-model analyses predicting CD, only parental APD was significantly associated with CD, and no interactions between parental adjustment and maternal parenting were found.

A meta-analytic research was conducted by Connell and Goodman (2002) on the association between psychopathology in fathers versus mothers and children's internalizing and externalizing behavior problems. In light of the selective focus on maternal (vs. paternal) psychopathology as a risk factor for child development, this meta-analysis examined the relative strength of the association between psychopathology in mothers versus fathers and the presence of internalizing and externalizing disorders in children. Associations were stronger between maternal than
paternal psychopathology and the presence of internalizing (but not externalizing) problems in children, with all average effect sizes being small in magnitude. Relations were moderated by variables that highlight theoretically relevant differences between psychopathology in mothers versus fathers (e.g., age of children studied, type of parental psychopathology) and by variables related to methodological differences across studies (e.g., method of assessing psychopathology in parents and children, type of sample recruited, familial composition.

Jenkins, Dunn, O’Connor, Rasbash, and Simpson (2005) conducted a longitudinal study on mutual influence of marital conflict and children’s behavior problems. Children (4 to 17 years; N=296) residing in 127 families drawn from a general population were investigated at Time 1 and two years later. These nested data analyzed using multilevel modeling, controlling for previous child behaviour or marital conflict revealed that marital conflict about children predicted change in children’s behaviour. Children’s behavior also predicted an increase in marital conflict, particularly in stepfamilies. Difference between siblings in exposure to conflict and the extent to which siblings were a source of argument increased more in stepfamilies than in biological families. Boys were exposed to more conflict over time than were girls.

Fergusson and Lynskey (1993) studied the effects of maternal depression on child conduct disorder and attention deficit behaviours. The relationships between maternal
history of depressive symptoms during children's middle childhood (8–11 years) and/or concurrent maternal depressive symptoms on the one hand and teacher and self-reports of conduct disorder and attention deficit behaviours when the children were 12 and 13 years old on the other were studied in a birth cohort of New Zealand children.

Examination of the joint effects of maternal history of depression and concurrent depressive symptoms on child behaviour showed consistent and statistically significant associations between maternal history of depression and behaviour reports. However, associations between maternal concurrent depressive symptoms and child behaviour were generally non-significant when the effects of maternal history of depression were controlled. These results persisted when errors of measurement in behaviour reports were taken into account. However, after adjustment for potentially confounding social and contextual factors the correlations between maternal history of depression and child behaviour reduced to the point of both practical and statistical non-significance. Hence, it was concluded that, for this cohort, the association between maternal depressive symptoms and externalizing behaviour in early adolescence arose largely from the effects of common contextual factors (principally social disadvantage and marital instability) that influenced both rates of maternal symptomatology and rates of childhood problem behaviours.

Barry et al. (2005) examined how self-reported maternal stress and distress are associated with child disruptive behaviors. Mother and teacher ratings of child
disruptive behavior problems (attention problems, aggression, and delinquency) were collected for 215 male participants, ranging in age from 9 to 12 years. Participating mothers also provided self-report data on socioeconomic status (SES), parenting stress, and distress (depression and anxiety/somatization). Low SES was significantly associated with both mother- and teacher-reported child disruptive behavior problems. Regression analyses indicated a relation between parenting stress and mother-reported child disruptive behavior problems, even when controlling for SES. The results also indicated a significant relation between maternal distress and mother-reported child disruptive behavior problems (particularly attention problems), even when controlling for SES and parenting stress. Maternal stress and distress were not significantly related to teacher-reported child disruptive behavior problems. It was concluded that although the lack of an association between teacher-reported behavior problems and maternal stress and distress could be interpreted as a rater bias by these mothers, it may be that the mothers' symptoms are associated with a stressful home environment, thus exacerbating child disruptive behavior problems and eventually leading to a reciprocal relation between symptomatology in mothers and children.

O'Connor et al. (1998) conducted a study on genotype–environment correlations in late childhood and early adolescence on antisocial behavioral problems and coercive parenting. As part of the Colorado Adoption Project, adopted children were classified as being at genetic risk ($N = 38$) or not at genetic risk ($N = 50$) for
antisocial behavior based on their biological mothers self-report history of antisocial behavior collected prior to the birth of the child. From age 7 through ages 12, adoptive parents reported on the negative control, positive parenting, and inconsistent parenting they used in managing their child's behavior. Repeated measures analysis of variance indicated that children at genetic risk were consistently more likely to receive negative parenting from their adoptive parents than children not at genetic risk, indicating an evocative genotype-environment correlation. However, the findings also showed that most of the association between negative parenting and children's externalizing behavior was not explicable on the basis of at evocative gene-environment correlation and that an additional environmentally mediated parental effect on children's behavior was plausible.

Maikovich, Jaffee, Odgers, and Gallop (2008) studied the effects of family violence on psychopathology symptoms in children previously exposed to Maltreatment. Although many studies suggested that family violence is associated with child psychopathology, multiple features of the home environment might account for this association, such as poverty and caregiver psychopathology. The study used latent difference score structural equation modeling to test if witnessing home violence and / or experiencing harsh physical discipline predicted changes in psychopathology symptoms among 2,925 youth aged 5-16 years previously exposed to violence. It was found that harsh physical discipline predicted child-specific
changes in externalizing symptoms, whereas witnessing violence predicted child-specific changes in internalizing symptoms across time.

In a longitudinal research employing complex measurement and analytic strategies, Smith and Stern (1997) have generated new, more intricate conceptualizations of the relationship between family life and delinquency, all of which have important implications for intervention with delinquents and their families. The results highlighted the link between different family processes and delinquency, reciprocal relationships between parenting and delinquency, the effects of family context on parenting and delinquency, and the family as one cause of delinquency among many.

Tzoumakis, Lussier, and Corrado (2012) conducted a study on female juvenile delinquency, motherhood, and the intergenerational transmission of aggression and antisocial behavior. The study explored the intergenerational transmission of aggression and antisocial behavior by examining mothers' juvenile delinquency, their pregnancies, and its impact on their children's aggressive behavior. The sample consisted of the first 181 biological mothers recruited as part of the Vancouver Longitudinal Study on the Psychosocial Development of Children (British Columbia, Canada). It was found that mothers who were juvenile delinquents were more likely to experience social adversity, to use substances during pregnancy and to offend in adulthood. Furthermore, mothers who reported juvenile delinquency had children who were more physically aggressive and had an earlier onset of physical aggression. This
pattern of association held when controlling for socio demographics, social adversities, prenatal substance exposure, and criminal involvement in adulthood. The study findings highlighted the importance of understanding the role and impact of female delinquency and motherhood on the intergenerational transmission of antisocial behavior.

There is mounting evidence that exposure to parental discord is the critical factor leading to behaviour problems in children. This evidence includes the findings that:

1) Children from divorced homes display more behavior problems than children from homes in which a parent has died (Emery, 1982; Long & Forehand, 1987; Rutter & Giller, 1983).

2) Children from conflict-free broken homes display less behaviour problems than children from high-conflict broken homes (Mechanic & Hansell, 1989).

3) Parental discord in intact families is associated with greater risks of delinquency (Mechanic & Hansell, 1989).

4) The extent of parental discord is proportional to the likelihood of child behavior problems (Rutter & Giller, 1983).

5) Children display more behavioral problems if conflict continues after family change (Wallerstein, 1985).
6) Many of the problems seen in children from broken homes are apparent before separation occurs (Lambert, Essen, & Mead, 1977; Rutter & Giller, 1983).

The behavioral and biological consequences of risky family environments represent an integrated risk profile that is associated with mental health disorders across life span, including depression and aggressive hostility, major chronic illnesses including hypertension and cardiovascular disease and early death. There is overwhelming documentation in the research literature that overt conflict and aggression in the family are associated both cross-sectional and prospectively with an increased risk for a wide variety of emotional and behavioral problems in children, including aggression, conduct disorder, delinquency and antisocial behavior, anxiety, depression and suicide (Emery, 1982, 1988; Grych & Finchman, 1990; Wagner, 1997). Empirical efforts to tie different types of maltreatment and abuse in the home to different forms of psychopathology reveal only a general association of family violence and child psychopathology (Emery & Billings, 1998).

Families characterized by high levels of conflict, aggression, and hostility are often lacking in acceptance, warmth, and support. However, there is evidence that inadequate emotional nurturance is independently associated with poor mental health outcomes. The adjectives of cold, unsupportive, and neglectful covers a wide range of family characteristics and measures in the research literature, including emotional
neglect of children; parenting that is unresponsive or rejecting; lack of parental availability for, involvement in, and supervision of child activities; lack of cohesiveness, warmth, and support within the family; and experience of alienation, detachment, or feelings of lack of acceptance by children. Research studies that assess these characteristics of family life reports shows reliable association between them and a broad array of mental health risks, including internalizing symptoms such as depression, suicidal behavior, and anxiety disorders (Chorpita & Barlow, 1998; Kaslow, Deering, Racusia, 1994), and externalizing symptoms such as aggressive, hostile, oppositional, and delinquent behavior (Barber, 1996; Rothbaum & Weisz, 1994; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994).

In the attachment theory, caregiver’s early responsiveness was seen as promoting security, which in turn, fostered the child’s positive orientation toward the parent and willingness to please the parent and to embrace parental rules and values (Bretherton, Golby, & Cho, 1997; van Ijzendoorn, 1997). Researchers inspired by the construct of mutuality and reciprocity, rooted in part in the attachment theory, proposed that even brief parental responsiveness play fosters child willingness to cooperate with the parent, assessed as compliance with parental requests (Parpal & Maccoby, 1985; Waters & Park, 1989). A cycle of exchange of compliance between the mother and the child lays ground for a positive reciprocal set: the child becomes receptive to and willing to embrace material socialization efforts (Maccoby, 2007). The mother’s early
responsiveness to the child begets the child’s future ‘responsive stances’ toward the mother and her influence. That stance, in turn, leads the child to accept, embrace, and internalize maternal values and standards- the formation of conscience. Finally, the child’s conscience then serves as a significant protective factor that reduces the risk of developing disruptive behavior problems, including manifestations of oppositional defiant disorder (ODD) and, conduct disorder, and related callous- unemotional traits.

In general, parenting behavior that is high in warmth and support, and consistent in regard to discipline, as well as low in harshness and rejection, has been related to lower levels of both internalizing and externalizing adjustment problems (Conger et al., 1993; Grant et al., 2003; Lengua, Wolchik, Sandler, & West, 2000; Patterson, 2002). Some investigators (Grant et al., 2003) have argued that negative parenting mediates the relation between stress and the children’s adjustment; it is also the case that children’s coping is a mediator of the relationship between parent socialization and children’s adjustment.

Because acceptance and control have been posited as core dimensions of parental behavior (Baumrind, 1991: Maccoby & Martin, 1983), a two factor model of parenting underlies much of the current work in the area of child and adolescent socialization (e.g., Berndt, Cheung, Lau, Hau, & Lew, 1993; Miller, Cowan, Cowan, Hetherington, & Clingempeel, 1993). This two-factor model posits that acceptance and control are positively related to the adjustment of children and adolescents. Although
they may live in the same home, siblings do not experience their family environment in precisely the same way. Most obviously, in families with more than one child, each child has a unique constellation of siblings. In addition, parenting not only varies between families but also within families, because the same parent may use different child-rearing techniques and behaviors with different children. For example, in a study of genetic and environmental determinants of adolescent depression and antisocial behavior, 60% of the variance in adolescent antisocial behavior and 37% of the variance in depressive symptoms could be accounted for by nonshared environmental factors, specifically conflictual and negative parental behavior directed to an adolescent; when harsh parental behavior was directed at siblings, it appeared to have protective effects for an adolescent a phenomenon known as the sibling barricade. (Reiss et al., 1995).

In a community-based study, a history of physical abuse was associated with significant functional impairments, such as poor social competence and psychiatric problems (Fisher et al., 1997). Twenty-four percent of children and adolescents with histories of physical abuse met criteria for a mood disorder: 31% met criteria for attention-deficit/hyperactivity disorder, conduct disorder, or oppositional defiant disorder; and more than 55% met criteria for an anxiety disorder. Child maltreatment has also been linked to a variety of disorders in adulthood, such as trauma related anxiety and distress, depression, and criminal behaviour, which underscores the
intensity and impact of early childhood abuse across life cycle (Widom, 1989). Child abuse is also significantly associated with more arrests as a juvenile or adult.

Patterson’s coercion theory (Patterson, 1982; Patterson et al., 1992) has greatly improved the understanding of how familial processes may foster aggressive behavior patterns in children. Patterson’s contribution is particularly important because he demonstrated that adult’s responses to aggressive child behaviors follow an escape-avoidance paradigm. To avoid escalation of children’s aggression, adults often fall into the reinforcement trap of giving in to children’s aggression to reduce their own discomfort. Children consequently learn that aggression pays off.

Several studies have found that parental conflict and aggression or a conflict atmosphere in the home is related to offspring’s personal or violent crimes rather than property crimes (e.g., McCord, 1979; Pulkkinen, 1983). Familial processes relevant to the development of aggression in children may start early life. One study reported that birth complications combined with maternal rejection in the first year of life predicted violent crimes (Raine, Brennan, & Mednick, 1994). It is possible for previously non-aggressive youth to acquire aggressive behavior patterns through victimization by others within and outside of their families (Baumrind, 1991; Olweus, 1978). Familial explanations of aggressive behaviour do not necessarily extend to covert acts as well.

Pulkkinen (1983) found that physical punishment up to the teenage years was related to theft offenses but not to violent offenses. It is assumed that physical
punishment and authoritarian parenting enhance the likelihood of children becoming more furtive in their motivations and actions. Furthermore, some children have never been socialized by their parents to be honest and respect the property of others. This is common among neglectful parents or parents who hold an indistinct or weak moral stance in these respects. At the same time it should be recognized that some covert acts, especially lying, often involve from prior problem behaviour, overt or covert. Children’s lying, in these instances, resembles an escapee behaviour that serves to minimize the chances of detection and punishment by adults. Thus, there is plenty of research evidence that indicate some familial processes are related to overt problem behaviour and violence whereas other familial processes are associated with covert problem behaviour and property offenses.

Links have been reported between marital discord and children’s psychological problems (Baruch & Wilcox, 1944; Gassner & Murray, 1969; Porter & O’Leary, 1980; Towle, 1931). A wide range of adjustment problems are predicted by marital conflict (Grych & Fincham, 1990), especially externalizing (e.g. aggression and non-compliance, Holden & Ritchie, 1991; Jenkins & Smith, 1991; Jouriles, Barling, & O’Leary, 1987) and other forms of maladjustment (Long, Forehand, & McCombs, 1988). Children of parents who divorce exhibit heightened aggression, impulsivity, hyperactivity, anxiety, and emotional problems as many as 11 years before the divorce (Block, Block, & Gjerde, 1986), with elevated marital conflict before the
divorce implicated in these relations. On the basis of extensive review of the literature on children with depressed parents, Downey and Coyne (1990) concluded that “marital discord is a viable alternative explanation for the general adjustment difficulties of children with a depressed parent”. Thus the significance of marital conflict in the development of children in families is well established, although the relations are stronger in clinical than in non-clinical samples (Fincham & Osborne, 1993). However, the mechanism through which marital conflict affects children are little understood (Emery, 1982).

McCloskey, Figueredo, and Koss (1995) examined the link between different forms of family aggression and children's symptoms of psychopathology. The study was to understand what forms children’s problems might take in violent homes and whether close ties within the family (to the mother or a sibling) buffered children. Interviews with 365 mothers and one of their children between ages of 6 and 12 years about abuse in the home, support and closeness within the nuclear family, and mothers; and children’s mental health formed the basis of this study. Families were recruited from battered women’s shelters and the community. Different forms of abuse in the home were found to be highly interrelated, and children of battered women were more at risk for child abuse. Domestic violence predicted children’s general psychopathology, but the study uncovered little evidence for the presence of specific sorts of behaviors as a result of family dysfunction. Although mothers
experiencing conjugal violence were more likely to have mental health problems, their mental health did not mediate the children’s response to family conflict. Finally, there were fewer siblings and parental warmth in families marked by aggression, although when it was present, family social support failed to buffer children. Although the general pattern of results was consistent across respondents (mother and child), there was low agreement on symptoms of child psychopathology.

In a comparison of urban and rural communities that were similar in terms of SES, Rutter (1981) found that behavioral and reading problems were twice as prevalent in the urban sample, largely because families in the urban setting experienced a variety of stressors (e.g., crowded living conditions) at higher rates than families in the rural setting. In addition, many urban schools provide less than optimal settings for acquiring skills and information.

The reviews given in the preceding section related to home environment describes that the development of conduct disorder is an interaction of genetic and environment influences. From a contextual perspective, childhood environmental influences have also been associated with long-term functioning, adult psychopathology, and personality disorders. These family characteristics may include adverse caregiving, emotional and physical maltreatment or neglect, sexual abuse, and parental loss or divorce etc.
Coping and conduct disorder

Very few studies have been reported on coping in childhood disorders, especially in children with conduct disorder. The ways of coping in stressful situations may be a probable factor in the development of childhood disorders. Coping can be generally classified as active ways of coping, which is the adaptive ways of coping and avoidant coping, which is known as the maladaptive ways of coping. This section reviews some of the important coping studies in conduct disorder children.

Burgess et al. (2006) examined the attributions, emotional reactions, and coping strategies of shy/withdrawn and aggressive girls and boys to examine whether such social cognitions differ within the relationship context of friendship. Drawn from a sample of fifth and sixth graders (M age=10.79 years) 78 shy/withdrawn, 76 aggressive, and 85 control children were presented with hypothetical social situations that first involved unfamiliar peers, and then a mutual good friend. It revealed group and gender differences and similarities, depending on the relationship context. A central message to this study were friends' involvement during interpersonal challenges or stressors mitigates children's attributions, emotions, and coping responses.

Compas, Malcarne and Fondacaro (1988) conducted a study on coping with stressful events in older children and young adolescents. Both the capacity to generate alternative solutions to cope with stressful events and the strategies actually used to
cope with interpersonal and academic stressors were examined in a sample of junior high school age youngsters. Subjects were moderately consistent in the generation and use of problem- and emotion-focused coping with the two types of events, and they adjusted the number of problem-focused alternative solutions they generated to match their appraisals of the controllability of the cause of interpersonal stressors. The number of alternative solutions generated and strategies used for interpersonal stressors was related to both self-reports and maternal reports of internalizing and externalizing emotional/behavioral problems. Specifically, the problem-focused alternatives generated and strategies used were negatively related to emotional/behavioral problems, whereas the emotion-focused alternatives generated and strategies used were positively related to emotional/behavioral problems. Coping with academic stress was not related to emotional/behavioral problems. Self-reported emotional/behavioral problems varied as a function of the match between perceived control and the generation of problem-focused alternatives for coping with social stressors but did not vary as a function of the match between perceived control and other coping strategies.

Ebata and Moos (1994) found out that the way in which adolescents respond to stressors may be an important predictor of how successfully they adapt to the challenges of the teen years. The study examined coping responses in four groups of youth (healthy controls, adolescents with rheumatic disease, adolescents with conduct
problems and depressed adolescents) using eight narrow-band scales hierarchically organization into broader-band domains of approach and avoidance coping. Also the association between coping responses and individual differences in adjustment was examined. Adolescents in the four groups did not differ in their use of approach coping; however, depressed adolescents and adolescents with conduct disorder use more avoidance coping than rheumatic disease and healthy adolescents. Overall, adolescents who use more approach and less avoidance coping are better adjusted. The results suggested that efforts to change, manage, or positively reappraise a problematic situation actively, are important for good long-term adjustment. Adolescents who engage in more avoidance coping may be at greater risk for poorer adjustment to subsequent life stressors and crises.

Rossman (1992) assessed children’s perceptions of what they did to feel better in stressful situations, and the role of these perceptions in moderating the relationship between stress and the outcome. A total of 345 children of 6-12 year old from diverse backgrounds were interviewed. Children’s perceptions of what they do to relieve distress could be organized into six factors including the use of social support, distraction/avoidance, and other categories of coping, which show continuity with those identified for infants and toddlers. Several types of coping served as compensatory moderators of the relationship between stress and self-worth.
Herman-Stahl, Stemmier, and Petersen (1995) conducted a short-term longitudinal study examining the structure of coping behavior and the relationship between coping style and depression during adolescence. The sample consisted of 603 adolescents in grades 6–11 who were surveyed in the fall of 1989 and again in the fall of 1990. A two-dimensional model of coping was found using confirmatory factor analysis with the factors being approach and avoidant coping. Four cross-sectional and seven longitudinal coping groups were formed to explore group differences in depression. Approach copers reported the fewest symptoms of depression, while avoidant copers reported the most. Subjects who changed over time from approach to avoidant coping evidenced a significant increase in depressive symptoms, whereas subjects who switched from avoidant to approach coping displayed a significant decrease in depression over a one-year period. These findings imply that adolescents who are able to elicit social support, engage in problem solving, and cognitively restructure events within a positive light are more likely to successfully negotiate the challenges of adolescence.

Dumont and Provost (1999) conducted a study on resilience in adolescents, protective role of social support, coping strategies, self-esteem, and social activities on experience of stress and depression. In this study, 297 adolescents (141 eighth graders and 156 eleventh graders) were classified into 3 groups created from crossing scores of depressive symptoms and frequency of daily hassles: well adjusted, resilient,
and vulnerable. A discriminant function analysis was performed to investigate group differences on self-esteem, social support, different strategies of coping, and different aspects of social life. The analysis revealed that self-esteem, problem-solving coping strategies, and antisocial and illegal activities with peers helped to discriminate groups: Well-adjusted adolescents had higher self-esteem than adolescents in the 2 other groups; in addition, resilient adolescents had higher self-esteem than vulnerable adolescents. For the second significant discriminating variables, antisocial and illegal activities with peers, both resilient and vulnerable adolescents had higher scores than well-adjusted adolescents. Finally, resilient adolescents had higher scores on problem-solving coping strategies than adolescents in the two other groups.

Sandler et al. (1994) identified four-factor model coping strategies which consists of four conceptually distinct coping factors,

1. Active coping involves cognitive decision making, direct problem solving, seeking understanding, positive thinking and optimistic thinking.

2. Avoidant coping is avoidant actions, repression, and wishful thinking.

3. Support seeking coping is support for actions and support for feelings.

4. Distraction involves physical release of emotion, and distracting actions.

Studies have found that children’s use of active or approach coping strategies relates to lower psychological problems, (Sandler, Tein, & West, 1994; Krantz, Clark,
Pruyn & Usher, 1985) whereas use of avoiding coping strategies relates to higher psychological problems (Armistead et al., 1990; Sandler et al., 1994).

Herpertz et al. (2001) explained that boys with early onset of conduct disorder (CD), most of whom also meet diagnostic criteria of a co-morbid attention deficit hyperactivity disorder (ADHD), tend to exhibit high levels of aggression throughout development. While a number of functional neuroimaging studies on emotional processing have been performed in antisocial adults, little is known about how CD children process emotional information. Functional magnetic resonance imaging data were analyzed in 22 male adolescents aged 12 to 17 years with childhood onset CD compared to 22 age matched male healthy controls. In order to consider the likely confounding of results through ADHD co-morbidity, a supplementary study including 13 adolescent subjects was performed with pure ADHD who were compared with healthy controls. To challenge emotional processing of stimuli, a passive viewing task was applied, presenting pictures of negative, positive or neutral valence. When comparing CD/combined disorder patients with healthy controls, we found enhanced left-sided amygdala activation in response to negative pictures as compared to neutral pictures in their patient group. In addition, these boys exhibited no reduced activation in the orbito abnormalities in amygdala activation but showed decreased neural activity in the insula only in response to negative pictures. Increased rather than reduced amygdala activation may indicate an enhanced response
to environmental cues in adolescents with early-onset CD and is not consistent with the assumption of a reduced capacity to take note of affective information in the social environment. Further studies with an emphasis on developmental aspects of affect regulation are needed to clarify the relationship between CD and adult personality pathology associated with different modes of persistent antisocial behavior.

A study conducted by Godwin (2003) analyzed the coping styles prevalently adopted by Nigerian youths (120 males and 85 females) in the age range of 19-24 years. The results indicated that attempts to try to face difficult life situations in an ambivalent manner, and to withdraw from problems they encounter in their life as most typical responses. The males occasionally withdrew from the problems by taking alcohol, drugs or joining cults and females by praying and hoping for the better. It was also more typical of females to get emotionally upset as compared to males who confronted the problem and tried to solve it. Seeking help and advice is very important at this stage and parents, friends, grandparents and siblings are the people they mostly turn to and rely on most.

Longitudinal studies by Feldman and Weinberger (1994) examined self-restraint as a mediator of family influences on boy’s delinquent behavior. It was found that parenting practices measured at both pre- and mid-adolescence predicted delinquent acts only indirectly via their association with boys’ self-restraint. In addition, general family functioning at preadolescence, independent of other scores, predicted boys’
levels of self-restraint four years later. There was no evidence that boys’ self-restraint at preadolescence systematically affected the quality of parenting that they subsequently received. Parents’ and their families’ role in children’s development of self-regulatory skills may be a primary vehicle by which they ultimately influences adolescents’ problem behavior.

Eisenberg et al. (1998) examined relations of teachers and parents reports of children’s shyness (i.e., social inhibition) at the ages 6-8, 8-10, and 10-12 years to dispositional regulation, emotionality, and coping. Shyness was positively related to internalizing negative emotion. Coping by doing nothing were examined for parent-related shyness, behavioral inhibition/non-impulsivity, attention focusing, and avoidant coping; it was negatively related to positive emotionality, instrumental coping, seeking support from teachers (at younger ones), and for teacher rated – shyness, and attentional control. Often prediction held over several years and/or across reporters. Parent reported internalizing negative emotion at age 4-6 predicted shyness at ages 6-8 and 8-10, but primarily for children low in attention shifting. Teacher –rated shyness was related to low social status; parent-rated shyness correlated with boy’s adult-rated social status at age 4-6 and with style of social interaction, particularly for girls. The relation between parent and teacher reported shyness with the age. The overall pattern of findings was partially consistent with the conclusion that parent-rated shyness reflected primarily social wariness with
unfamiliar people (i.e., temperamental shyness), where as teacher-rated shyness tapped social inhibition due to social evaluation concerns.

Hastings, Anderson and Kelly (1996) examined gender differences in coping and daily stress in conduct-disordered (N=69) and non-conduct-disordered adolescents (N=69). The results indicated similar patterns of gender differences in stress and coping, although CD adolescents reported a higher frequency of stress and maladaptive coping strategies than NCDs. Girls reported more daily stress and greater use of coping associated with both social relationships and emotional venting. A significant interaction effect distinguished girls with CD from other groups by their higher level of daily stress, more frequent use of self-injurious behavior and emotion-focused coping, and deficits in active coping.

A comparative study was done by Csorba et al. (2006) on dysfunctional attitudes and coping strategies in Hungarian adolescents suffering from certain child psychiatric disorders. The study compared dysfunctional attitudes and coping strategies of various mono-diagnostic groups recruited from a sample of 158 adolescent outpatients (54 males, mean age 16.0 and 104 females, mean age 15.9) suffering from major depression (N=35), dysthymia (N=20), social phobia (N=11), generalized anxiety disorder (GAD N=12), conduct disorder (N=15) and adjustment disorder (N=65). The questionnaires and tests used in the study were the shortened standard Hungarian version a) of Dysfunctional Attitude Scale (Burns 1980) and b) of
Ways of Coping Checklist (Folkmann et al.;1986). Patients were collected from the 5-county, representative, cross-sectional pool of "Pannonia" Transdanubian Adolescent Psychiatric Survey. Diagnoses were confirmed by the M.I.N.I. International Neuropsychiatric Diagnostic Interview, Hungarian version, and patients with comorbid diagnoses were excluded from the study. Contrary to expectations, the patient samples differed from one another significantly only in a few test items, but all the differences that had been found were as expected between the internalizing (overcontrolled) and externalizing (undercontrolled) disorder domains. The major depression group had a significantly higher score in achievement scale than those in the group of adjustment disorder (behavioural subtype). Dysthymic adolescents had a significantly higher level of support seeking than the patients suffering from conduct disorder. The variation seen in some parameters (autonomy and passive coping scales) of two samples of the internalizing disorder group and of externalizing one (behavior disorder and adjustment disorder samples) was probably due to the differences among groups.

In a longitudinal study, Zhou et al.(2008) examined relations of parenting and temperament (effortful control and anger/frustration) to children’s and externalizing problems in 425 native Chinese children (6-9years) from Beijing. Children’s experience of negative life events and coping efficacy was examined as mediators in the parenting and temperament-externalizing relations. Parents reported on their own
parenting. Parents and teachers rated temperament. Children reported on negative life events and coping efficacy. Parents, teachers, children, or peers rated children’s externalizing problems. Authoritative and authoritarian parenting and anger/frustration uniquely predicted externalizing problems. The relation between authoritarian parenting and externalizing was mediated by children’s coping efficacy and negative school events. The results suggest some cross-cultural universality in the developmental pathways for externalizing problems.

Carver and Connor-Smith (2010) found that biological and goal-based views of human nature provide an especially useful basis for construing coping; the five-factor model of traits adds a useful set of individual differences. Coping responses to adversity and to the distress that results is categorized in many ways. Meta-analyses link optimism, extraversion, conscientiousness, and openness to more engagement coping; neuroticism to more disengagement coping; and optimism, conscientiousness, and agreeableness to less disengagement coping. Relations of traits to specific coping responses reveal a more nuanced picture. Several moderators of these associations also emerged: age, stressor severity, and temporal proximity between the coping activity and the coping report. Personality and coping play both independent and interactive roles in influencing physical and mental health.

Bloomquist (1996) examined the relation between mother-child interaction behaviors, disruptive child behavior, and maternal characteristics within the context of
maternal facilitation of children's problem solving. In a group comparison analysis, mothers of disruptive children took over the task more and provided fewer closed-ended questions than mothers of non-disruptive children. Subsequent regression analyses found higher levels of mothers' taking-over behavior predicted children's off-task behavior in the analogue tasks; lower frequency of mothers' closed-ended question behavior predicted higher teacher and parent ratings of disruptive behavior at school and home; and higher maternal depression predicted fewer mothers' closed-ended questions during the analogue.

Skinner (1995) proposed that periods of high stress are particularly important times that affect the development of children’s control beliefs as well as their coping strategies and psychological problems. Parental divorce is a highly stressful experience for almost all children; it increases psychological problems for some children whereas others adapt without long term ill effects. Research on children’s stress, coping and efficacy provides insight into the differential impact of divorce on children. Several studies provide important evidence about how stress and coping affects the mental health of the children of divorce.

Many studies have reported that children’s use of active or approach coping strategies relates to lower psychological problems, (Sandler, Tein, & West, 1994; Krantz, Clark, Pruyn & Usher, 1985) whereas use of avoiding coping strategies relates to higher psychological problems (Armistead et al., 1990; Sandler et al., 1994).
Research suggests that many of the early emotion regulation coping behaviors continue to play a role during childhood and may moderate the relationship between distress and adjustment. Avoidance and distraction behaviors appear to continue to be important and to serve protective functions (Rieder & Cicchetti, 1989).

Social support in coping also appears to be useful for school-age children (e.g., Wolchik, Sandler, & Braver, 1987) for both emotional (Altshular & Ruble, 1987) and instrumental purposes (Le Gall & Gumerman, 1984). Cognitive appraisal and behavioral coping skills relevant for potentially aggressive situations (Dodge, Pettit, McClaskey & Brown, 1986) and social situations (Spivak & Shure, 1982) have been emphasized in other works. These studies highlight the continued importance of several types of emotion regulation coping for children, but little is known about the total set (i.e., the diversity) of behaviors children would report as useful for reducing emotional distress.

The most active area of coping research is concerned with the association of coping with psychological adjustment and psychological symptoms of psychopathology. Active coping has been positively related to adjustment, whereas disengagement modes of coping (e.g., avoidance) tend to be negatively related (Compas et al., 2001). Sandler et al. (1994) found that avoidant coping was positively associated with levels of depression, anxiety, and conduct problems when assessed concurrently.
Assistance seeking coping style involves family; friends' involvement during interpersonal challenges or stressors mitigates children's coping responses. The problem-focused alternatives generated and strategies used were negatively related to emotional/behavioral problems, whereas the emotion-focused alternatives generated and strategies used were positively related to emotional/behavioral problems. Children who engage in more avoidance coping may be at greater risk for conduct disorder than children who engage in active mode of coping.

**Personality / temperament and conduct disorder**

Out of the many contributing factors, temperament and personality is a biologically based trait that in most of the cases is a risk factor predisposing children to conduct disorder. This section presents the personality or temperamental characteristics associated with conduct disorder.

Robison, Frick and Sheffield (2005) presented an article on temperament and parenting: implications for understanding developmental pathways to conduct disorder and explained on how certain temperamental vulnerabilities can disrupt normal developmental processes during early childhood, such as the development of emotional regulatory abilities and the development of the affective components of conscience, to place a child at risk for acting in an antisocial and aggressive manner. The article also explained how the quality of parenting that a child experiences interacts with the child's temperament to either increase or decrease the child's risk for
problem behavior. Identifying those parent factors that can enhance the development of children at risk for conduct problems due to temperamental vulnerabilities could be very important for enhancing interventions for children with severe behavior problems.

Simonoff et al. (2004) explored the independent and joint effects of childhood characteristics on the persistence of antisocial behavior into adult life. A total of 225 twins were interviewed regarding childhood and adult psychiatric disorder, psychosocial functioning, and psychosocial and cognitive risk factors. It was found that childhood hyperactivity and conduct disorder showed equally strong prediction of antisocial personality disorder (ASPD) and criminality in early and mid-adult life. Lower IQ and reading problems were most prominent in their relationships with childhood and adolescent antisocial behavior. In multivariate modeling, childhood conduct disorder and hyperactivity predicted adult ASPD even when intervening risk factors were accounted for. The number of hyperactive and conduct symptoms also predicted adult outcome. It was concluded that Childhood disruptive behavior has powerful long-term effects on adult antisocial outcomes, which continue into middle adulthood. The importance of number of symptoms, the presence of disruptive disorder, and intermediate experiences highlight three areas where interventions might be targeted.
Rettew, Copeland, Stanger, and Hudziakn (2004) investigated the association between child temperament and DSM-IV disorders in children. A total of 156 probands (97 boys, 59 girls; mean age = 10.78 years) and 154 randomly selected siblings were assessed using the Junior Temperament and Character Inventory (JTCI) and a structured DSM-IV interview. Subjects were placed in non-overlapping groups of (1) attention-deficit hyperactivity disorder (ADHD) only, (2) disruptive behavior disorders (DBD) only, (3) DBD plus an affective and/or anxiety disorder (DBD+Int), and (4) controls with no diagnosis. Many JTCI scales were found to differ between diagnostic groups and controls. Regression analyses showed independent associations between low persistence and ADHD-only group membership, high novelty seeking (NS), and the DBD-only group and between high harm avoidance (HA) and DBD+Int group membership. The interaction NS × HA was related to the ADHD-only group.

Joyce and Oakland (2005) studied the temperamental differences among children with conduct disorder and oppositional defiant disorder. Temperament-based learning style preferences of 80 children, ages 8 to 17, 40 with conduct disorder (CD) and 40 with oppositional defiant disorder (ODD) were examined using the Student Styles Questionnaire (SSQ). The SSQ measures four dimensions of learning style preferences based on temperament theory (extroverted-introverted, thinking-feeling, practical-imaginative, and organized-flexible). Their T-scores were compared for strength of preference between the two disorders. In addition, analysis for frequency
of preference among children with CD and ODD was compared to the frequency of
preference typically found in the general population. When comparing the strength of
temperament preferences of children with CD and ODD significant differences were
noted only for practical-imaginative styles. Children with ODD displayed a stronger
preference for acquiring and assessing new information in practical styles than did
children with CD. Students with CD or ODD did not differ significantly for strength
of preference on extroverted-introverted, thinking-feeling, and organized-flexible
styles. When comparing the frequency of temperament preferences of children with
CD and ODD to preference rates found in the general population, significant
differences were noted only for children with ODD. They more often indicated a
preference for practical and thinking styles.

O’Connell (1984) has done a comparative study on a comparison of children
with conduct disorder versus childhood depression. This study sought to clarify the
similarities and the differences between these two depressive disorders and conduct
disorder. Conduct disordered children were hypothesized to demonstrate an active
temperament which is accelerated by parenting involving an intrusive/restrictive style
and depressed children were hypothesized to demonstrate a passive temperament
which is potentiated by parenting involving low nurturance. It was found that conduct
disordered and depressed children formed entirely distinct groups with regard to core
symptoms but overlapped in secondary symptoms and associated features.
Psychosocial stressors occurred with high frequency in both groups. Self report personality measures did not differentiate the groups. Behavioral instances of the same dimensions indicated depressed children had lower self-esteem and more anxiety and conduct disordered children had more anger and external locus of control. The predicted pattern of parental style and temperamental differences was not found although conduct disordered children were found to be more temperamentally active and distractible. It was concluded that clear behavioral differentiation between conduct disorder and depressed groups is attainable if core symptoms are focused upon. Personality differences are not demonstrable with self report measures but behavioral measurement indicates power conflicts for conduct disorder and affective conflicts for depression. The parenting/temperament interaction model was concluded to be too global for effective application to complex diagnostic differentiation.

Eremsoy (2007) investigated the predictors of conduct problems and callous-unemotional (CU) traits in a non-clinical sample of children from different socioeconomic levels. It was hypothesized that conduct problems and CU traits will be associated with different risk factors. Regression analysis were conducted in order to find out the predictors of conduct problems/hyperactivity and CU traits. Results showed some significant differences between risk factors of conduct problems/hyperactivity and CU traits. Predictors according to mother’s and teachers’ ratings were not the same, except for some overlapping variables. The findings
indicated that teachers could not differentiate conduct problems/hyperactivity symptoms and CU traits appropriately from each other. However, they could make more reliable comparisons between two groups of children with conduct problems who differ on severity of CU levels as compared to mothers. The results were discussed in terms of using of multiple informants for assessing different problem areas in children. Although significant differences were found between the control group and the two conduct group; the significant differences between the two conduct groups were limited.

Brody, Stoneman, and McCoy (1994) conducted a study on forecasting sibling relationships in early adolescence from child temperaments and family processes in middle childhood. They developed a model to account for variation in the quality of sibling relationships across a 4-year span from middle childhood to early adolescence. They tested this model on a sample of 71 families, in which older siblings’ ages ranged from 6 to 11 years, and those of younger siblings ranged from 4 to 9 years. The study also assessed continuity and discontinuity over time in sibling relationship quality. The descriptive analyses revealed an increase of negative sibling relationship qualities. The hypothesized paths involving children’s temperaments, inter-parental conflict, positivity in parent-child relationships, and differential negativity in parent-sibling relationships were supported, accounting for 27% to 34% of the variation in sibling relationship quality.
A review of literature carried out by Keenan, Loeber and Green (1999) found that the study of conduct disorder was primarily limited to boys. The lack of research on girls resulted from a premise that CD in girls is rare. However, CD in girls is a relatively common psychiatric diagnosis, and appears to be associated with several serious outcomes, such as antisocial personality disorder and early pregnancy. Understanding gender differences in the course and severity of CD may lead to important information about etiology. Empirical studies on precursors, developmental course, and risk factors and treatment for CD in girls are reviewed, while highlighting the similarities and differences between girls and boys. Generally, CD symptoms in girls are stable. Precursors to CD in girls probably include oppositional defiant disorder and temperamental factors, but also may include certain negative cognitions. What distinguishes CD in girls is the high risk they have to develop comorbid conditions, especially internalizing disorders. Risk factors for CD in girls partly overlap with those known for boys, but some factors appear to be highly salient for girls. Finally, there may be some significant effects of gender on treatment efficacy. Implications of these findings for future etiologic research are discussed.

In a longitudinal study, Bates et al. (1991) found that child’s difficult temperament reported by their mothers at 6 and 24 months of age correlated with externalizing behavior problems at 5 and 6 years of age. However, it is not specific to conduct
disorder because it is also found in ADHD and internalized problems such as anxiety and depression.

Impulsiveness is the most crucial personality dimension that predicts antisocial behavior (Lipsey & Derzon, 1998). White al., (1994) carried out a study intended to find the different measures of impulsiveness that predicts delinquency at the ages 10 and 13 years like teacher-rated impulsiveness (e.g., acts without thinking), self-reported impulsiveness, self-reported under control (e.g., is unable to delay gratification), motor restlessness (from videotaped observations), and psychomotor impulsiveness (on the trail making test). Impulsiveness as pediatric temperamental dimension may inhibit socialization processes, by entailing difficulties with relationships or poor social adaptation. Although impulsiveness is far from specific to conduct disorder (it is also associated with ADHD and ODD), it is particularly marked in the more severe forms (e.g., among prison inmates).

Many studies show that hyperactivity predicts later offending. In the Copenhagen Perinatal Project, hyperactivity (restlessness and poor concentration) at ages 11-13 years significantly predicted arrests for violence up to age 22 years, especially among boys experiencing delivery complications (Brennan, Mednick, & Mednick, 1993). The highest rate of violence was among males with both motor restlessness and concentration difficulties (15%), compared to 3% of the remainder (Klinteberg, Anderson, Magnusson, & Stattin, 1993).
Predisposition to negative emotionality has been found to be positively correlated with externalizing problems in children (Eisenberg, Fabes, Nyman, Bernzweig, & Pinuelas, 1994). According to Rothbart and Bates (1998), “negative emotionality” or sometimes called “negative reactivity” is an important dimension of difficult temperament, which is assumed to be rooted genetically in conduct disorder. The presence of a difficult child is stressful for the parents; in a number of cases, parents develop negative attitudes toward the difficult child, resulting in increasingly maladaptive parent-child interactions and coercive familial cycles (Patterson & Bank, 1987) often seen in families with conduct disordered children. Psychoticism (tough-mindedness, interpersonal hostility, self-centredness, affective coldness) seems to be predictive of conduct disorder and antisocial behaviour in both boys and girls insofar as this dimension reflects a tendency toward antisocial attitudes and impulsive behavior. Extraversion and neuroticism seem to be particularly important in delinquent girls and less serious delinquent behaviour, whereas people who commit extremely violent acts are usually relatively introverted.

Along with impulsiveness, attention problems, low IQ, and low school achievement could all be linked to deficits in the executive functions of the brain, located in the frontal lobes. These executive functions include sustaining attention and concentration, abstract reasoning, concept formation, goal formulation, anticipation and planning, programming and initiation of purposive sequence of motor
behavior, effective self monitoring and self awareness of behavior, and inhibition of inappropriate or impulsive behaviors (Moffit & Henry, 1991). A number of constructs refer to a poor ability to control behavior. They include impulsiveness, hyperactivity, restlessness, clumsiness, failure to consider consequences before acting, a poor ability to plan ahead, short time horizons, low self control, sensation seeking, risk taking, and a poor ability to delay gratification.

Frick (2009) reviewed on several attempts to extend the construct of psychopathy to children and adolescents. The research suggests that the presence of callous-unemotional (CU) traits may be particularly important. Specifically, the presence of these traits designates a clinically important subgroup of youth with childhood-onset conduct problems who show a particularly severe, aggressive, and stable pattern of antisocial behavior. Also, children with CU traits show numerous emotional, cognitive, and personality features that are distinct from other antisocial youth that are similar to features found in adults with psychopathy. The research on CU traits has important implications for understanding the different causal pathways through which children develop severe antisocial and aggressive behavior, as well as implications for diagnosing and intervening with antisocial youth.

Cadoret, Leve and Devor (1997) found that aggressive behavior has been defined in numerous ways to include behaviors ranging from the milder forms of aggression such as throwing a temper tantrum or pouting to the more serious expressions of
aggression in violent crimes. In fact, Harre and Lamb (1983) found more than 250 different definitions of aggression have been shown to consist of at least four subcomponents: physical aggression, verbal aggression, anger, and hostility. Clearly, there are many different ways the psychological construct of aggression can be defined, and each of these definitions has different implications for the extent to which aggression is influenced by one’s genetic make-up. Most of the research on aggression, however, has focused solely on the construct of physical aggression.

Cote et al. (2001) examined girls’ developmental trajectories of disruptive behaviors during the elementary school years and to predict conduct disorder symptoms and diagnosis in adolescence with trajectories of these behaviors. The sample was 820 girls from the province of Quebec followed over 10 years (1986-1996). A semi parametric mixture model was used to describe girls’ developmental trajectories of teacher-rated disruptive behaviors between the ages of 6 and 12 years. The trajectories were used to predict conduct disorder symptoms and diagnosis when the girls were on average 15.7 years. Four groups of girls following trajectories with distinct levels of disruptive behaviors were identified: a low, medium, medium-high, and high trajectory. Prediction with the trajectories indicated that girls on the medium, medium-high, and high trajectories reported a significantly higher number of conduct disorder symptoms in adolescence. However, only the girls on the medium- high and high trajectories were at significantly higher risk to meet DSM-III-R criteria for
conduct disorder, compared with girls in the low group (odds ratio: 4.46) More than two thirds of the girls with conduct disorder were in the medium or higher-level trajectories. The results suggested that there is an early-onset type of conduct disorder in girls.

Flouri (2008) examined how the socio-economic environment may be related to temperament. A particularly under researched question in temperament research is how socio-economic disadvantage (SED) may moderate the temperament-parenting and the temperament-child psychopathology links. The paper argues that, to develop theory, future temperament studies should seek to explore how the timing, specificity or accumulation, level and duration and change of SED may be related not only to temperament but also to links between temperament and parenting and between temperament and child psychopathology.

Muris and Ollendick (2005) studied the temperament factors that are involved in the pathogenesis of child psychopathology. It is argued that besides the reactive temperament factor of emotionality/neuroticism, the regulative process of effortful control also plays an important role in the etiology and maintenance of internalizing and externalizing problems in youths. More specifically, vulnerability to child psychopathology is determined by a temperament that is characterized by high levels of emotionality/neuroticism and low levels of effortful control. Models are hypothesized in which reactive and regulative temperament factors either have
interactive or additive effects on the development of psychological disorders in children, or conceptualized in terms of a developmental psychopathology perspective.

Rutter (1997) found out that nature and nurture do not operate independently of each other, and, to an important degree, genetic effects on behavior come about because they either influence the extent to which the individual is likely to be exposed to individual differences in environmental risk or they affect how susceptible the individual is to environmental adversities. The time has come for an explicit research focus on the forms of interplay between genes and environment and on how this interplay is involved in the casual mechanisms for the origins of antisocial behavior and for its persistence or desistance over time. Molecular genetics has an even greater potential than quantitative genetics for understanding environmental risk mechanisms and the interplay between nature and nurture.

Taylor and Iacono (2007) tested differences in personality traits measured by the Multidimensional Personality Questionnaire (MPQ) in a community sample of adolescents with definite or probable conduct disorder (CD) diagnoses that did not progress to a diagnosis of antisocial personality disorder (ASPD) by early adulthood (n = 43), those with definite or probable ASPD that persisted into early adulthood (n = 68), or controls with neither a CD nor an ASPD diagnosis (n = 716) to examine whether antisocial behavior disorders that differed in course were associated with differences in personality traits. Boys and girls with ASPD were significantly
different from controls on Constraint, and those with ASPD were significantly lower on Constraint than those with only CD. It suggested that individual differences in certain personality traits may contribute to differences in the type of antisocial behavior disorder that emerges and thereby to the course of antisocial behavior.

Hemphill (1996) summarized the risk factors for the development of conduct disorder, which include the characteristics of conduct-disordered children, their parents and families (e.g., children's problem-solving skills, parental psychopathology, family communication and interactions). It is crucial to the enhanced effectiveness of future interventions that risk factor research is utilized to guide the development of both a theory of development of, and treatments for, conduct disorder.

Capaldi and Stoolmiller (1999) have done a prediction of young-adult adjustment from early adolescent conduct problems and depressive symptoms were examined for an at-risk sample of approximately 200 males. Conduct problems and depressive symptoms were expected to show stability to young adulthood. It was predicted that early adolescent conduct problems would be associated with a broad range of adjustment problems in young adulthood due to cumulative adjustment failures. Early adolescent depressive symptoms were expected particularly to predict poor relationships with parents and peers. Additive and interactive effects of the two predictors were examined. Conduct problems and depressive symptoms showed
significant stability to young adulthood. Conduct problems were associated with a broad range of adjustment problems including continuing problems in peer associations, substance use, self-esteem, relationships with parents, and new problems in non-completion of education, unemployment, driver's license suspensions, and causing pregnancies. Depressive symptoms predicted particularly to problems in social relationships. Higher levels of both conduct problems and depressive symptoms in early adolescence did not predict to increased difficulties for any one outcome over either problem alone, either due to main or interaction effects. Such co-occurrence, however, did result in problem outcomes in multiple areas, thus, the poorest adjustment overall.

Krueger (1994) studied the relationship between personality and criminal behavior in a representative birth cohort of 862 18-year-olds. Personality was assessed with the Multidimensional Personality Questionnaire (MPQ). Delinquency was assessed via three data sources: self-reports, informant reports, and official records. Variable-centered analyses revealed that MPQ scales indexing negative emotionality and behavioral constraint were consistent predictors of delinquency across the 3 data sources. Person-centered analyses revealed that youths abstaining from delinquency were uniquely characterized by low interpersonal potency. Youths involved in extensive delinquency were uniquely characterized by feelings of alienation, lack of social closeness, and risk taking. Advances in understanding criminal behavior can be
made through research that places the personality-delinquency link in a developmental context;

Osuna and Louna (1993) determined whether certain personality traits in adolescents and children were significantly associated with juvenile maladjustment, and, if so, whether these psychological variables could be used in individual criminological classification in a total of 303 subjects (185 males and 118 females) ranging in age from 11 to 21 years. All subjects were from centers under the administration of the juvenile court and from the Murcia City Penitentiary (Spain). Impulsivity and attention-perception were found to be highly diagnostic of maladjustment, and thus appear to be complementary traits that provide a useful means of classifying individuals for criminological prognosis. In addition, different personality traits were found to be effective in distinguishing subgroups characterized by different patterns of criminal behaviour.

Osuna, Alarcón and Luna (1992) in a study of personality traits in juvenile maladjustment explained the role of some personality traits, in minors and adolescents experiencing problems in their social integration in a sample of 189 subjects (110 male and 79 female) ranging in age from 11 to 18 years. All the subjects were from centers under the administration of the juvenile court of Murcia, Spain. Each subject underwent individual clinical psychological examination as well as psychometric and psychological studies. The results showed a statistically significant association
between the scores on some of the tests used and variables related to familial and social maladjustment. These personality traits define a set of individuals with a characteristic profile, for whom unfavorable biographical events have made integration in, and adaptation to, the established social milieu difficult.

The review of studies examining the role of personality characteristics reveals the casual status of childhood personality pathology, indicating how, why, and when the maladaptive personality traits in childhood predict adult personality disorders.

**Adjustment and conduct disorder**

Children with conduct disorder have a high risk of developing adjustment problems. So far very few studies have been done on this topic. Some of the important reviews are in the following section.

Campbell, Shaw, and Gilliom (2000) examined the early emergence and developmental implications of externalizing behavior problems in toddlers and preschoolers, are discussed with an emphasis on which young children are truly at risk for continuing problems. The extant literature is reviewed with a focus on the stability of early externalizing behavior and the diverse pathways that young children, primarily boys, with early-emerging problems may follow. Findings from a number of studies, both epidemiological and high risk, suggest that the small subgroup of boys with multiple risk factors that include especially high levels of early hyperactivity and
aggression, and high levels of negative parenting and family stress, are most likely to
evidence continuing problems at school entry.

Shinn, Ramsey, Walker, Stieber, Ramsey, and O’neill (1987) investigated the
efficacy of selected home and school setting variables as predictors of school
achievement, adjustment, and delinquency in an ongoing longitudinal study of
antisocial and at-risk boys. Three construct scores (one derived primarily from school
data sources and two from home setting data sources) along with two discrete
observation codes recorded on families served as predictors in this study. Criterion
variables to be predicted included math, reading, total achievement, receiving special
education services, and delinquency. The predictor variables were all recorded when
the subjects were in the fourth grade; the criterion variables were recorded when they
were in the seventh grade. The resulting multiple Rs ranged from .50 for delinquency
to .81 for math achievement. No more than two predictor variables were used in each
of the regression analyses. Results are discussed in terms of the importance of
assessing both the school and home environments of students at risk for behavioral
adjustment problems that involve antisocial behavior patterns.

A longitudinal study by Walker, Stieber, Ramsey, and O’neill (1993) investigated
the efficacy of three different regression models in predicting arrest rate over the fifth
to seventh grade range for a sample of antisocial and at-risk control middle school
boys (N=76). These boys were selected from a larger sample of approximately 200
boys and their families for inclusion in a long term longitudinal study beginning in the fourth grade. Subjects in the study were identified when they were in the fifth grade and school measures of adjustment were recorded annually for them on two occasions (fall, spring) through the ninth grade. Predictors were derived from the following variables: (a) teacher ratings of social skills; (b) direct observations of academic engagement in classroom settings; (c) direct observations of the playground social behavior of target subjects and peers; and (d) discipline contacts with the principal's office as extracted from archival school records. These predictor variables appeared to assess respectively teacher related and peer related forms of school adjustment. The regression models investigated yielded R-Squares of approximately 30 between arrest rate and two to three predictor variables in each analysis. However, following the deletion of two subject cases that represented extreme instances of under prediction (i.e., subjects who were arrested [i.e., seven arrests each] but whose fifth grade behavioral profiles suggested they would not be), the obtained R-Squares increased to approximately .55.

Cramer and Kelly (2004) studied the use of defense mechanisms by male and female adolescents with a diagnosis of conduct disorder in comparison with the defense use of adolescents with a diagnosis of adjustment reaction. Because conduct disorder was associated with a developmental lag in several areas of psychological functioning, these adolescents showed immaturity in the use of defenses. As
compared with adjustment reaction children, conducts disordered youths were more likely to use the immature defense of denial, and less likely to use the mature defense of identification.

Capaldi and Patterson (1991) have done a study on the relation of parental transitions to boys' adjustment problems and it was hypothesized that the number of parenting transitions would define a continuum that would co-vary with the magnitude of the adjustment problems experienced by boys in the family. Intact, single-mother, stepfather, and multiple-transition families were selected from 206 predominantly lower and working class families in the Oregon Youth Study and compared on a comprehensive measure of boys' adjustment at Grade four. Boys who had experienced multiple transitions showed the poorest adjustment. This relationship was still significant after controlling for socioeconomic status and per capita income. In the second set of analyses, the hypothesis that maternal antisocial behavior (MAB) contributes directly to relationship transitions and indirectly to child adjustment problems was tested in a structural equation model. A mediational model including and parenting practices was used to predict child adjustment measured two years later. Number of transitions was highly related to MAB. The antisocial mother was most at risk for transitions and unskilled parenting practices, which in turn placed her son at risk for poor adjustment.
Vitaro and Tremblay (1994) studied the impact of a prevention program on aggressive children's friendships and social adjustment. A group of 46 aggressive boys aged 8 to 9 years participated in a prevention program aimed at reducing their externalizing problems in the short term and at preventing delinquency in the long term. Outcome measures were collected during the 3-year period following the prevention program. At that time, the boys were 10, 11, and 12 years old. Outcome measures included teacher ratings of aggressiveness and self-report of delinquent behaviors. The boys' friends were rated on disruptive behaviors by their classmates. The experimental boys' outcome measures were compared to the measures obtained from 58 aggressive boys in a control group. The disruptive ratings of the experimental and control subjects' best friends were also compared. Differences in teacher-rated aggressiveness between the two groups increased from one year to the next for the 3-year follow up period. Similarly, the friends' disruptive scores differed increasingly between the two groups over the 3-year period. The effect of the prevention program on the subjects' friendships and the mediating impact of friends with regard to social adjustment were stressed.

A study conducted by Davies and Cummings (1994) on the impact of marital conflict on children found that children’s concerns about emotional security play a role in their regulation of emotional arousal and organization, and in their motivation to respond in the phase of marital conflict. Over time these response processes and
internalized representations of parental relations that develop have implications for children’s long-term adjustment. Emotional security is seen as a product of past experiences with marital conflict and as a primary influence on future responding.

Tremblay, Mâsse, Pagani and Vitaro(1996) conducted a montreal prevention experiment on childhood physical aggression to adolescent maladjustment. it describes a longitudinal-experimental study aiming both to understand the development of aggressive kindergarten boys and to test the effectiveness of a bimodal intervention strategy / the experimental intervention was implemented from a pragmatic perspective / that is, the objective was to attenuate aggressive behavior and thus prevent delinquency involvement / 2 modes of intervention (i.e., parent training and child [social skills] training) were directed at variables that have been postulated to be causes of delinquency (i.e., poor parenting and aggressive behavior) / thus, if a change in these behaviors would lead to less delinquency involvement, then the hypothesis that such variables are causally linked to delinquency involvement would be supported main focus of the chapter is the [Montreal] prevention experiment / examine whether the intervention had an impact on aggression and later delinquent behavior / the longitudinal aspect of the experiment reported herein and some results from an associated epidemiological study will be presented to provide a context for the intervention and its results the longitudinal-experimental study began in the spring of 1984 when each kindergarten teacher from the 53 Montreal schools with the
lowest SES index. was asked to assess each of their male students / the intervention
started when the boys were, on average, 7 yrs of age (i.e., entering 2nd grade) / the
intervention lasted 2 school years and ended when the boys were, on average, 9 yrs of
age the total sample of boys assessed in kindergarten was assessed annually from age
10—11 years after the end of the intervention / at the time of the writing of this
chapter, data were available up to age 15

In a prospective study by Shaw, Winslow and Flanagan (1999), they investigated
the effects of divorce and family relations on young children’s development
prospectively, using an ethnically diverse sample of approximately 300 low-income
families. The moderating effects of ethnicity on child adjustment in always two-
parent, to-be-divorced, already-divorced, and always single-parent families also
examined. Results indicated that to-be-divorced European- American and African-
American families demonstrated higher rates of preschool-age behavior problems, and
already divorced families showed similar trends. Parental conflict and behavior
problems accounted for pre divorce differences in child behavior problems, whereas
rejecting parenting accounted for differences in problem behavior between always
single-parent and always two-parent families. The results are discussed in terms of the
importance of ethnicity in influencing young, low-income children’s adjustment to
different family structures.
Snyder (1998) attempted to explain the causal mechanisms connecting marital conflict to child adjustment. At the same time, there has been an accumulation of findings indicating that gender may be playing a significant and complex role in the relationship between marital conflict and child adjustment. However, the majority of the frameworks which have been proposed have largely overlooked these complex gender findings. The main theoretical frameworks in the field are summarized, and the implications of the accumulated gender findings for each framework are outlined. It is argued that gender may be a moderator of many of the mechanisms outlined in existing theoretical frameworks linking marital conflict to child adjustment and needs to be more effectively incorporated in future research.

Capaldi (1991) studied co-occurrence of conduct problems and depressive symptoms in early adolescent boys and also the familial factors and general adjustment at Grade six. Clinical studies indicate that depression and conduct disorder frequently co-occur in children. Research on the correlates of depression in children has frequently failed to control for this co-occurrence, and little is known about the family background and characteristics of children displaying both problem behaviors. An at-risk community sample of 203 early adolescent boys in the Oregon Youth Study was divided into the following groups: (a) those showing elevated conduct problems and depressed mood, (b) those showing elevated conduct problems only, (c) those showing elevated depressed mood only, and (d) those with neither problem.
Multimethod, multiagent assessments were conducted at Grade six. The four groups were compared using multivariate analyses of variance. Demographic variables, parental characteristics, family-management practices, and boys’ adjustment showed some deficits in all three risk groups, and the patterns of deficits varied between groups. As hypothesized, the boys with conduct problems and depressed mood showed the poorest adjustment. Results were consistent with the failure model, which hypothesizes that boys with conduct problems are at risk for failing to develop competence in areas such as academic skill and peer relations. In addition, their noxious behaviours lead to poor relationships with parents and peers. These problems result in failures and rejection, which make them vulnerable to depressed mood.

In a 6-year longitudinal study, Ge and Conger (1999) studied the influences on adolescent adjustment problems by examining relationships between adolescent emotional and behavioral problems and late adolescent personality among more than 400 youths who were followed from 7th grade to the last year of high school. Results suggest that psychological distress and behavioral problems experienced during the adolescent years (7th–10th grades) are significantly related to personality structure during the final year of high school (12th grade). Psychological distress in adolescence was primarily related to the Multidimensional Personality Questionnaire (MPQ) super factors of negative and positive emotionality, whereas delinquency and substance use problems were primarily related to the MPQ super factor of constraint.
These relationships remained significant even when personality characteristics in 9th grade were taken into account. That is, emotional and behavioral problems predicted change in personality traits during the adolescent years. Moreover, both initial level and change in distress and problem behaviors were predictive of late adolescent or early adult personality. This finding suggests that personality formation is a dynamic process, dependent on the growth or decline, as well as the magnitude of earlier developmental problems. Because earlier research has shown that these developmental problems are affected by both distal and proximal environmental contexts as well as by the formative nature of adolescence, intervention efforts aimed at the reduction of maladjustment and the enhancement of healthy personality development should target early adolescent social contexts.

The above studies showed that children with conduct disorder have a high risk of developing adjustment problems. Specifically, risk factors associated with conduct disorder and the effects of symptoms of conduct disorder on a child’s psychosocial context have been linked to overlap with other psychological disorders. In this way, there seems to be reciprocal effects of co-morbidity with certain disorders, leading to increased overall risk for children.