Predicting Aggression in a High Risk Day Treatment Population

By

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ABSTRACT

This study examined the effectiveness of a day treatment program for 65 severely aggressive elementary school children who were referred to a day treatment program with severe disruptive behavior. Archival analysis of teacher and clinician ratings of functioning with respect to activity level, oppositional behavior, aggression, affective functioning, task completion, anxiety, social skills, parenting skills, abuse history, and parenting difficulties were carried out to determine what initial entry characteristics and what treatment response indicators best predicted reduction in aggression and membership in a persistently aggressive group.

Reduction in aggressive behaviors during first through second grade was best predicted by reductions in oppositional behaviors and improvement in social skills and parenting skills. Membership into the "persistently aggressive" group was best predicted by a resistance to treatment as indicated by poor scores on the Identifying Behavior Checklist in the areas of activity level, social skills, task completion, parenting skills, oppositional behavior/attitude, as well as, high scores on the aggression subscale on the Child Behavior Checklist on admission into the program. Implications for treatment of aggression in this population were discussed.

CHAPTER I

INTRODUCTION

This proposed study seeks to identify at an early age those children from a high-risk population who are at a high-risk of becoming chronically aggressive. It is assumed that given such early identification, preventative intervention may be more feasible. The following section will review the literature on aggressive behaviors, as well as, the predictability, outcome, risk factors and treatment of aggression in children.

Literature Review

Aggression and antisocial behavior constitute a major problem for our society, resulting in significant distress to individuals, families, neighborhoods, and entire communities (Hinshaw, Simmel, & Heller, 1995). Rates of such problems have continued to rise in recent years (Fingerhut & Kleinman, 1990). Understanding the roots of such behavior patterns – with the particular focus on the subgroup of children who progress to the persistent display of antisocial behavior – is an important clinical goal.

Early onset of aggression, particularly before age 8 to 10 years of age, has been associated with higher rates and severity of adolescent and adult antisocial behavior (Robins, 1966). The predictability of later antisocial behaviors from early aggression is well-documented. For example, there is fairly conclusive evidence from longitudinal studies linking early aggressive behavior to later aggressive, delinquent, or antisocial

behavior. (Farrington, 1991; McCord, 1983; Pulkkinen, 1983, Stattin & Magnusson, 1989; Tremblay et al., 1992; Huesmann, Eron, Lefkowitz, & Walder, 1984; Lilienfield & Waldman, 1990).

Olweus (1979) reviewed 16 longitudinal studies on aggression in childhood and adolescence, following up children from 1 to 18 years. He found an average correlation of .63 between measurement of aggression at time 1 and time 2. The magnitude of this correlation decreased with longer time intervals, but even when the interval was from 8 to 10 years, the test-retest correlation averaged .49. Olweus's (1984) review of 16 longitudinal studies of aggression covering periods of up to 21 years found the average stability coefficient for male aggression was .68. Loeber and Dishion (1983) reported that 30% to 43% of boys engaging in maladaptive aggressive behaviors at ages 4 through 11 continued the same behavior 4 to 9 years later. Magnusson, Stratton, and Duner (1983) report a stability coefficient for measures of aggression from teacher ratings at age 10 and 13 of .60.

Lefkowitz, et al.'s (1977) followed children from third grade to 10 years later and had peers rate the children's aggressiveness on those two occasions. The test-retest correlation was a modest .38, which indicates that portions of the children were only rated as aggressive at one age. Patterson (1982) reanalyzed Lefkowitz's et al.'s (1977) findings and found that 38.5% of the children rated by their peers as aggressive at or above the ninety-fifth percentile were rated at or above the same percentile years later. In comparison, the proportions for those initially rated at or above the eighty-fifth or ninetieth percentile were slightly smaller. All those initially rated at or above the ninety-

fifth percentile remained above the median 10 years later, compared with only four out of five children who were initially rated at or above the eighty-fifth percentile.

Robins (1966, 1978), after studying the course of pathology in children seen in a child guidance clinic, concluded that "Violent and aggressive behavior patterns do not appear in adults if they have been absent in childhood except of course in the context of specific physical or psychiatric disorders like mania, drug intoxication, or temporal lobe epilepsy" (Robins, 1978, p. 668).

Farrington (1978) conducted research on part of the Cambridge Study in Delinquent Development, which is a prospective longitudinal survey of a sample of 411 males. The males were first contacted in 1961 at the age of 8 and they included all boys in the second grade of 6 state primary schools in London. They followed the males for about 14 years. Farrington (1978) showed that 7 out of 10 of these males charged with a violent crime by the age of 21 (i.e., commission or threat of physical violence against another person) had been rated as highly aggressive, by their teachers, between the ages of 12 and 14. Similarly, 36.4% of 44 boys in this study that were rated as aggressive by their teachers at age 8 were also among the 76 boys that were found to be highest on self-reported measures of aggression at age 18. When investigating aggressive careers of the aggressive children in their study, Farrington (1978) found of the boys rated high on aggression at ages 12-14 and high on aggression at ages 8-10, 45.3% (24 out of 53) were also high on aggression at age 16-18. These findings suggest that aggressive tendencies are fairly stable over time.

Further prospective longitudinal studies using a sample of community based children by Magnusson, Stattin, and Duner (1983) and by Pulkkinen and Hurme (1984)

provide evidence to the same effect, although the proportion is 9 out of 10 in the Magnusson study and about 4 out of 10 in the Pulkkinen and Hurme study. This difference may be because the latter measured aggression and other disruptive behaviors at age 8 by means of peer ratings, compared with teacher ratings at early adolescence in the Farrington (1978) study for ages 8, 10, 12 and 14 and Magnusson et al. (1983) studies for ages 10 and 13. Similarly, Lewis et al. (1985) conducted a prospective study on a small sample of males who were clinically evaluated in adolescence and later arrested for murder in adolescence or early adulthood. The authors found that serious aggressive acts had occurred in all cases prior to the homicide, some dating back from the preschool years. Magnussonn et al. (1983) longitudinal study followed males until they were 26 years of age, and found that 87% if those males with four or more arrests averaged a higher teacher rating on aggression at ages 10-13. This study also found that the higher the aggressiveness score, as rated by their teachers at ages 10 and 13, the higher the probability that a boy will be found in the registers of police (Chi square = 81.51, with 18 *df* $p<0.001$; gamma = .54). The effect was similar but occurred slightly later for females: 82% of those with four or more offenses had been rated as highly aggressive at age 13 (Stattin & Magnusson, 1984).

In conclusion, this body of research clearly establishes that early predictors are indicative of behaviors and disorders suggestive of chronic aggression. This study seeks to understand those early predictors in this high-risk population.

Defining Aggressive Behaviors

The complexity inherent in understanding the problems of aggression in youth are best captured by the myriad definition and terms used to describe these youngsters.

Depending upon the discipline, different terms are used to describe these youth. Terms such as "aggressive", "violent", "conduct-disordered", "oppositional", "psychopathic", "under-aroused", "delinquent", and "antisocial" have all been used by different disciplines to describe youth with persistent and frequent aggressive behavior" (Connor, 2002, p.2). The multiple systems that serve these youngsters, including school, juvenile justice, and mental health systems, and the multiple professional disciplines that study these youngsters have all developed their own specific languages to describe these youngsters. This myriad of terms makes it confusing to the reader seeking a basic definition of aggression in children. Given that aggression is a heterogeneous condition, no single term is adequate to capture all the diverse presentations of such behavior in children. Because of its heterogeneous nature, attempts have been made to subtype aggression into more homogeneous categories.

Research on aggression is motivated by the realization that aggression is one of the most common and costly behaviors confronting juvenile justice personnel and mental health clinicians who treat referred children and adolescents. Subtyping aggression offers the hope of creating common classification that may facilitate communication across the many discipliners involved with these youngsters. Aggression subtypes are empirically derived from statistical techniques such as factor analysis and as such this classification is evidenced-based as opposed to theory-based (Connor, 2002). Because the current research on subtypes of aggression is so widely scattered in psychology and psychiatry literature, individual studies examining the validity of the various subtypes of aggression are discussed below.

There are many subtypes of aggression, such as overt/covert; reactive/proactive; instrumental hostile; predatory/affective; offensive/defensive; and relational aggression. However, for the purpose of this study, the focus will be on overt/covert forms of aggression.

The distinction between "overt" and "covert" forms of aggression has been a focus of psychometric research for years (Quay, 1986a, 1986b). Currently, this dimensional subtype of aggression has the most empirical research evidence to support its validity. Overt aggression is defined as an openly confrontational act of physical aggression. Examples include physical fighting, bullying others, using weapons in hostile acts, and open defiance of rules and authority figures. Covert aggression is defined as any hidden, furtive, clandestine act of aggression. Examples include behaviors such as stealing, fire setting, truancy, and running away from home. Oppositional defiant behaviors appear to lie on the midpoint of the overt-covert continuum (Connor, 2002).

Empirical support for this classification comes from several sources. Loeber and Schmaling (1985), examining 28 studies found in 22 reports of child and adolescent psychopathology, performed a meta-analysis to empirically determine underlying dimensions of juvenile aggressive behavior. These studies reported data on 11, 603 children and adolescents aged 2-18 years. Using the statistical technique of multidimensional scaling, they determined that antisocial behavior in youth, as rated by parents or clinician observers, could be conceptualized as one-dimensional and bipolar. The two poles of behavior revealed by this analysis are overtly confrontive antisocial behavior and furtive, covert acts.

In another study, parent ratings of child and adolescent conduct problems were analyzed to determine underlying dimensions of antisocial behavior (Achenbach, Conners, Quay, Verhulst, & Howell, 1989). This study utilized the factor analysis of parent ratings for 8, 194 American and Dutch children and adolescents aged 6-16 years. Consistent with the results of Loeber and Schmaling (1985), two conduct problem factors emerged from this analysis. One factor, labeled "aggressive", included overtly confrontational behaviors (e.g., defiance of authority figures, bullying, and physical fighting). The second factor was labeled "delinquent" behaviors and included covertly aggressive behaviors, substance abuse, and having delinquent companions.

The results from these factors provided some independent confirmation for the overt-covert dimension of aggressive behavior. More recently, additional support for this dimension has been found. In a study of children with Attention Deficit Hyperactivity Disorder (ADHD) and antisocial behaviors, stealing and property destruction formed a valid dimension of covert aggression that was distinguishable from more overt forms of aggression (Hinshaw, Simmel, & Heller, 1995). These studies support the internal validity of the overt-covert dimensions of aggression in children and adolescents.

The overt-covert continuum has also received external validation. Research on family management practices and parent-child interaction patterns has revealed associations with more covert forms of aggressive behavior and delinquency. In a study of preadolescent boys (i.e., grades 4, 7, and 10), disruptions in parental monitoring of their children's whereabouts, the kind of companions they kept, or the types of activities they engaged in, coupled with a lack of consistent parent-administered discipline for rule breaking acts, were associated with increased risk for delinquent behavior (r=.54)

(Patterson & Stouthamer-Loeber, 1984). Similarly, negative mother-child interaction patterns have been found to be associated with covert (i.e., stealing and cheating) forms of aggressive behavior in boys with ADHD (Hinshaw, et al., 1995).

One study has provided additional empirical support for the overt-covert dimensions as well as modifications to this dimension. Frick et al. (1993), in a meta-analysis of disruptive behavior children, studied 60 factor analyses published in 44 reports of 28, 401 children and adolescents aged 2-18 years. In this study, a second independent dimension emerged from the factor analysis; this dimension is called "destructive-nondestructive." When crossed with the overt-covert dimension, four quadrants of aggressive behaviors are empirically identified. Quadrant A is composed mainly of property violations, which are consistent with the covertly aggressive behaviors contained in the DSM-IV (APA, 1994) diagnosis of CD. Quadrant B contains mostly aggressive behaviors directed against people and is consistent with the overtly aggressive behaviors contained in the DSM-IV diagnosis of CD. Quadrant C contains status violations, which are also found in the DSM-IV symptom list for CD. Quadrant D is composed mainly of oppositional defiant behaviors, which are found in the separate DSM-IV diagnosis of ODD. This meta-analysis provides support for the distinct diagnoses of CD and ODD in the DSM-IV and it identifies orthogonal dimensions that permit a finer-grained analysis of the domain of antisocial and aggressive behaviors in youth (Connor, 2002).

Categories of overt aggression have been empirically examined in youth referred to residential treatment settings. When youth exhibiting high versus low rates of physical assault were compared, several differences were found in a cross sectional study design.

Connor, Melloni, & Harrison (1998) found that children and adolescents with high rates of assaultive behavior were found to have significantly higher frequencies of verbal threats to others, self-injurious behaviors, and property destruction; a greater number of lifetime out-of-home placements; and a greater frequency of physical abuse in their developmental histories.

Diagnoses Associated With Aggressive Behavior

Aggressive behaviors meet a certain range and severity of the diagnostic criteria for behavioral disorders, such as Oppositional Defiant Disorder (ODD) and Attention Deficit Hyperactivity Disorder (ADHD) in children, Conduct Disorder (CD) in childhood and adolescence, and later Antisocial Personality Disorder (ASPD) into adulthood. If a clear diagnosis of ODD or CD cannot be made, then the diagnosis of Disruptive Behavior Disorder, Not Otherwise Specified, is given. Aggressive behaviors are also associated with a range of psychotic disorder diagnoses. Aggressive and disruptive behavior patterns have increased and are the highest rates of referral for youth to mental health services (Mash & Barkley, 1996). The behavioral symptoms associated with these diagnoses are easily observed by adults in a youngster's environment, and commonly cause distress for those responsible for taking care of the child or adolescent, as well as the youth (Connor, 2002).

ADHD is presently thought to contain two major symptom domains: 1) inattention (sustained attentional deficits), and 2) hyperactive-impulsive behavior (disinhibition) (Mash & Barkley 1998). The essential features of ADHD is a persisting pattern of inattention and/or hyperactivity-impulsivity that is more severe and frequent than is typically seen in individuals at a comparable stage of development (APA, 1994).

Some symptoms must be present before the age of 7 years and must clearly interfere with developmentally appropriate social, academic, or occupational functioning. Symptoms must cause interference in two or more settings, such as home, school, community, or work. ADHA is not diagnosed if the symptoms occur only in the context of a pervasive developmental disorder, or a psychotic disorder, and if they are not better accounted for by another psychiatric disorder.

Prevalence studies on ADHD have utilized earlier versions of the DSM or ICD rather than the current DSM-IV and ICD-10. These studies indicate that the prevalence of ADHD ranges from 1.4% to 13.3% (Barkley, 1998; Szatmari, 1992). Prevalence is higher for males than for females, that is, the males-to-female ratios range from 2.5:1 to 5.6:1 (Szatmari, 1992). Prevalence is also affected by age and development, with adolescent samples having a generally lower prevalence rate than child samples.
The relationship between ADHD and aggressive behavior is important as ADHD is a risk factor for antisocial maladjustment in childhood, adolescence and adulthood. Several longitudinal studies have now followed children diagnosed in the elementary school years with ADHD for periods of 4-14 years. All of these studies have found, in comparison with normal controls (i.e., youth without ADHD and without other psychopathology), a higher rate of externalizing behavior and increased risk for aggressive behavior, delinquency, and other antisocial behavior (Taylor, Chadwick, Hepinstall, & Danckaerts, 1996).

The essential feature of ODD (APA, 1994) is a recurring pattern of defiant, disobedient, negativistic, and hostile behavior toward authority figures that is clearly more frequent, intense, and persistent across the child's or adolescent's development that

is typically observed in individuals of similar age and developmental level. Diagnosis requires that symptoms be present for at least six months and cause impairment in the youth's social, academic, or occupational functioning. The diagnosis is not made if ODD symptoms occur only during the course of a psychotic or mood disorder. In addition, the diagnosis of ODD is not given if symptoms occur within the context of CD or ASPD (in individuals over 18 years of age). In these cases, the more serious diagnosis takes precedence. Associated features include low self-esteem, mood lability, low frustration tolerance, swearing, and the possibility of early-onset alcohol and substance experimentation and misuse. Commonly, conflicts between the youth and parents occur at home; conflict can also occur with familiar adults and peers at school and the community. Because the symptoms of ODD are normal in preschoolers and adolescents, the diagnosis is only given when symptoms are more intense, more frequent, and cause more impairment than in children and adolescent of comparable age. Prevalence rates vary by the characteristics of the sample studied (clinical vs. community) and study design. Rates between two percent and sixteen percent have been reported (APA, 1994).

The onset of a clinically recognizable disorder (as contrasted to normal developmental oppositional symptoms) is usually evident by age eight years (APA, 1994). Lahey, Appelgate, & Barkley et al. (1994) report that the great majority of adolescents who meet the criteria for conduct disorder before the age of puberty met the criteria for oppositional defiant disorder at an earlier age. In an empirical study, Loeber, et al. (1990, unpublished, as cited in Loeber, Thomas, and Lahey, 1991) asked mothers of 10 to 13 year old clinic referred boys (N=87) at which age the mothers first noticed the

earliest manifestations of particular problem behaviors in their sons. At age 8, the onset of ODD symptoms peaked, but the onset of CD symptoms emerged at older ages.

The direct relationship between ODD and aggressive behavior is generally weak (August, Realmuto, Joyce, & Hektner, 1999) because children who meet diagnostic criteria for ODD, conflicts are usually verbal and do not escalate to physical aggression. However, rather then being directly related, ODD may be importantly related in a more indirect manner to the risk of developing aggressive behavior. The following literature review will cover the retrospective and prospective relationships between ODD and aggression.

In prospective studies, most children who meet diagnostic criteria for ODD do not develop CD at a later age. However, in retrospective studies, for those who do develop CD, the onset of symptomatic ODD generally occurs earlier in development than the onset of CD symptoms. (August, et al., 1999; Loeber, Lahey, & Thomas, 1991). For example, August, et al. (1999) found that only 2.3% of 43 children with an initial diagnosis of ODD and ADHD had developed CD at follow up. However, there were 10 children at follow-up with a diagnosis of CD in which each child had an initial diagnosis of ODD. In youth with CD, ODD symptoms predict later CD symptoms; such as CD symptoms predict ASPD in adults (Lahey, Applegate, Barkley, et al., 1994). In other words, ODD and CD seem to be strongly and developmentally related. Studies thus suggest that the onset of ODD symptoms may be a possible first step toward a life course characterized by the emergence of more serious antisocial and violent acts for some (but not all) children (August et al., 1999; Loeber, 1990).

Similarly, ODD symptoms in adolescent have been found