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Factors Associated With Mental Health and Juvenile Justice Involvement Among Children With Severe Emotional Disturbance

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Recent research has highlighted the fact that there is an overrepresentation of children with mental health problems in the juvenile justice system. Thus, this study uses a clinical sample of children receiving mental health services to examine demographic (e.g., age, ethnicity), person-level (e.g., anxious and/or depressed), family-level (e.g., number of transitions in living situations), and school-level factors associated with being involved in the mental health and juvenile justice service systems (i.e., dual involvement). Analyses were conducted separately by gender to investigate differences in dual involvement and possible differences in the predictors of dual involvement. For boys and girls, older adolescents and a higher number of living transitions were associated with dual involvement. For girls only, depression and/or anxiety and social problems were associated with dual involvement. The findings highlight the need for greater collaboration among service systems given the strong overlap between mental health and juvenile justice involvement for many children.

Keywords: *juvenile justice; mental health; serious emotional disturbance; system of care*

According to the Surgeon General's report on mental health, more than four million children suffer from a major mental illness (Office of the Surgeon General, 2001). Researchers have documented that between 40% to 90% of children and adolescents involved in the juvenile justice system also suffer from a mental illness compared to 18% to 22% of the general youth population (Cocozza, Stern, & Blau, 2005; Kazdin, 2000; Teplin, 2001; Teplin, Abram, McClelland, Dulcan, & Mericle, 2002). Thus, it is likely that children's mental health problems play a major role in their offending behaviors. Despite these concerns, little is known about clinically related factors that might be associated with dual involvement in mental health and juvenile justice systems. The current study uses a subsample of children receiving community-based mental health services to examine factors that are associated with dual involvement. Furthermore, because relatively little attention has been given to differences in clinically relevant factors based on gender, the current study examines these factors separately by gender to predict whether a child with mental health problems also will become involved in the juvenile justice system.

Many children and adolescents who access community-based mental health services are diagnosed with a serious emotional disturbance (SED). *SED* is defined as having a clinical diagnosis, a functional impairment, and disturbances in multiple domains within the child's life (e.g., school, home, community, etc.; Pumariega & Winters, 2003). The SED population is estimated to encompass approximately 4.5 to 6.3 million children (6% to 8%) in the United States (Friedman, Katz-Leavy, Manderscheid, & Sondheimer, 1999). By definition, these children and adolescents experience problems across multiple domains and often require coordinated, multiple-systems intervention (Hansen, Litzelman, & Marsh, & Milspaw, 2004). Previous research using community samples has indicated that almost 46% to 88% of children involved with the juvenile justice system also were diagnosed with a SED (Lyons, Baerger, Quigley, Erlich, & Griffin, 2001).

Based on Bronfenbrenner's (1979) theory of social ecology, these children exemplify the postulation that behavior can be multiply determined. The social ecology concept posits that behavior can stem from internal biological and psychological mechanisms as well as external interactions with others across family, peer, and school domains. Because development has numerous contextual influences, the current study examines factors across a variety of domains (in addition to demographic factors such as gender and ethnicity), including person-level, family-level, and school-level factors to identify comprehensive, clinically relevant factors related to dual involvement. In doing so, the current study also adheres to best practice guidelines, which have been recommended by the President's New Freedom Commission (2002) and many other researchers (e.g., Greene, Peters, & Associates, 1998; Hansen et al., 2004).

Recent research has found that examining factors across multiple domains may be more insightful when trying to understand antisocial behavior, particularly because there may be gender differences in the predictors of risk (Gorman-Smith & Loeber, 2005). In that study, antisocial behavior among girls was more influenced by parenting variables such as parental monitoring than among boys, whereas antisocial behavior among boys was more influenced by deviant peers than among girls. Those findings hint at the possibility that particular ecological systems (e.g., family vs. school) might have unique, gender-based influences on development. Thus, the current study expands on this possibility by examining whether there also might be different predictors based on gender for dual involvement with an SED sample using factors that represent the multiple ecological systems within a child's life.

Demographic Factors

Although the violent crime index declined in 2003 for the ninth consecutive year (falling 48% from its 1994 peak), there continues to be areas of concern with respect to arrest rates. For example, between 1980 and 2003, arrest rates for simple assault increased 269% for females and 102% for males (Snyder, 2005). Although boys repeatedly are reported to be more violent than girls (Kashani, Jones, Bumby, & Thomas, 1999), that trend is changing, with rates of violence among girls quickly approaching the rates of violence among boys (Snyder, 2005). Even given these statistics, some research indicates the existence of chivalrous treatment of female offenders in the initial stages of criminal processing (Visher, 1983), with girls receiving "lighter" punishments for illegal behaviors.

Those findings bring to the forefront the significant controversy regarding disproportionate minority contact with the juvenile justice system. In Visser's (1983) study, older, European American girls were less likely to be arrested than were younger, African American girls. However, the published statistics indicate that antisocial behavior and juvenile justice involvement disproportionately involve minorities, with African American children and adolescents reported to engage in more violent behaviors compared to European American or Hispanic children and adolescents (Blum, Ireland, & Blum, 2003; Earls, 1994; Kashani et al., 1999; Snyder, 2005). Of the estimated 1,400 murder arrests in 1999 and 2003, 49% and 48% were African American adolescents, respectively (Snyder, 2005; U.S. Department of Justice, 2000). In fact, some have reported that ethnicity has a very strong effect size in terms of predicting violent behaviors across age ranges ($d = .17$, $p < .01$; Lipsey & Derzon, 1998). However, the federal Office of Juvenile Justice and Delinquency Prevention (OJJDP) repeatedly has raised the concern that the percentage of minority youth involved in the juvenile justice system is disproportionate to their representation in the general population. Specifically, recent estimates report that minority youth represent 34% of the juvenile population in the United States, but 62% of the nation's detained youth (Hsia, Bridges, & McHale, 2004). National and state data (Ekpunobi, Wilson, Chunn, Huang, & Davis, 2002; Frazier & Bishop, 1995; Leiber, 2002; Snyder, 2005) consistently report finding systemwide disproportionate minority contact. Thus, it is unclear whether ethnicity is a true risk indicator, is associated with some other risk indicator (e.g., poverty, access to prevention services), and/or whether systemwide problems exist in terms of the overidentification of African American youth for juvenile justice involvement.

Person-Level Factors

Although there is a myriad of person-level factors that might be associated with dual involvement, the current study selected three factors that previous research has identified as strongly and consistently linked with involvement in the juvenile justice system. These three factors are anxious and/or depressed, depressed and/or withdrawn, and inattention and/or hyperactivity symptoms.

Research has indicated that involvement with the juvenile justice system often co-occurs with internalizing symptoms such as depression and anxiety, particularly among girls (Simmons, 2002; Teplin et al., 2002). It is possible that high levels of internalizing symptoms increase the likelihood of "lashing out" behaviors that might increase the risk for juvenile justice contact. For example, girls are at a higher risk for suicidal ideation compared to boys, and suicidal ideation and suicide attempts are associated with an increased likelihood of antisocial behaviors (Chandy, Blum, & Resnick, 1996). From a socialization perspective, it is possible that because girls are socialized away from aggression throughout their lives, the outlet for internalized anger often is unrefined, resulting in overt, impulsive, and sometimes aggressive acts rather than healthy methods of exposing internalized feelings such as assertiveness or problem-solving strategies (Simmons, 2002). Furthermore, when females do attempt to address intense feelings through physical aggression, they often are punished more than males for doing so (e.g., Stueve, O'Donnell, & Link, 2001) without being taught alternate forms of conflict resolution. Consistent with the frustration-aggression hypothesis,

or that frustration can trigger aggression (Berkowitz, 1989), it is at that point that aggression might manifest itself among boys and girls. However, for some girls, increased consequences and social ridicule may lead to increased shame and guilt. Such isolation stifles their continued development and places them at further risk for developing psychological sequelae such as clinical depression and/or anxiety (Orbach-Isreal, 2003). Because of the different socialization influences on development (Maccoby, 1990), and because of the more intense accumulation of multiple risks (Gorman-Smith, Tolan, Loeber, & Henry, 1998; McCord, 1982), it is hypothesized that the links between internalizing symptoms (i.e., anxious and/or depressed, depressed and/or withdrawn) and dual involvement will be stronger for girls than for boys.

Antisocial behavior also has been linked with higher rates of attention-deficit/hyperactivity disorder (ADHD; Zoccolillo, 1993) and more general attention problems (e.g., Loeber, Green, Keenan, & Lahey, 1995). The combination of antisocial behavior, inattention, and hyperactivity-impulsivity sets into motion a pattern of person-environment interactions between the child and others, which often fosters and maintains individual differences among hyperactive and impulsive children compared to children who do not display such characteristics (Moffitt, Caspi, Rutter, & Silva, 2001). Although each of these factors has been linked to juvenile justice involvement individually, when combined, children can exhibit a general personality profile of disinhibition that can increase the risk for police contact (i.e., calls to the police, arrest decisions, court intake decisions). That possibility has been empirically validated, indicating that children who have hyperactivity, impulsivity, and attention problems (manifested as a general syndrome of disinhibition), and a history of conduct problems, are at the greatest risk for perpetuating antisocial behavior (Carlson, Tamm, & Gaub, 1997; Lynam, 1996, 1999).

Family-Level and School Factors

Children involved in the juvenile justice system often come from families with overextended resources. For example, high levels of caregiver strain have been linked with comorbid diagnostic profiles and greater psychological distress (Brannan & Heflinger, 1997; Garland, Aarons, Brown, Wood, & Hough, 2003); however, different patterns based on child gender have not been empirically investigated. Furthermore, research has indicated that as the number of living transitions increases, child functioning decreases (particularly in the school environment; Simmons, Burgeson, Carlton-Ford, & Blyth, 1988). If levels of functioning and school success decrease, there may be an increased likelihood of antisocial or delinquent behavior, raising the risk of becoming involved with the juvenile justice system. More generally, statistics indicate that family stressors such as a high number of living transitions and limited resources increases the risk of juvenile justice involvement (U.S. Department of Justice [USDJ], 1995).

School failures characterized by high absenteeism and poor academic performances have been identified as risk factors for juvenile justice involvement (USDJ, 1995). Some research indicates that this relationship might be stronger for girls compared to boys (e.g., Rankin, 1980; Thornton, Craft, Dahlberg, Lynch, & Baer, 2002). For example, some studies have documented that educational failure is an almost-universal correlate of delinquent girls,

whereas that is not necessarily the case among delinquent boys (Thornton, Craft, Dahlberg, Lynch, & Baer, 2002). Explanations for this difference are not immediately clear. However, some have speculated that girls who experience school failure resort to adopting a "bad girl" image to gain status because school success status appears unattainable (Koroki & Chesney-Lind, 1985). Thus, school failure might set into motion a pattern of peer rejection and confrontation with teachers and parents, resulting in the increased likelihood that those children will gravitate toward deviant peer groups to achieve a sense of acceptance. Because girls tend to emphasize social relationships to a greater degree than boys, it is likely that school failure might be a stronger factor for dual involvement for girls compared to boys.

However, some have argued (e.g., Hawley, 1999; Vaughn, Vollenweider, Bost, Azria-Evans, & Snider, 2003) that aggression can be adaptive in certain social contexts because it creates "dominance status." This dominance status sometimes functions to increase cohesion among the social group (Strayer & Trudel, 1984). Thus, if girls place more emphasis on social relationships and can achieve cohesion in a social group through aggression, it may be more likely that girls will resort to aggressive behaviors, raising the likelihood of juvenile justice contact. In contrast, some studies have indicated that school success is related to increased aggression among boys (but not among girls; Heimer & Matsueda, 1994). The hypothesized process is that a general increase in self-esteem, social acceptance, and admiration results in a decreased perceived likelihood of being punished for antisocial or risk-taking behaviors (Heimer & Matsueda, 1994). Thus, whereas school failure was related to increased likelihood of antisocial behavior among girls, school success was related to an increased likelihood of antisocial behavior among boys in some cases. It is hypothesized that school functioning will be differentially related to juvenile justice involvement for boys and for girls among clinically referred samples as well.

Hypotheses

In summary, the current study uses a clinical sample of youth identified with SED to determine what factors are related to dual involvement (i.e., mental health and juvenile justice system involvement) separately among boys and girls. The use of a clinical sample is important in the current investigation because it allows for the examination of factors across multiple ecological systems within the context of a clinically referred population. Because it is important to remove any variance accounted for by general delinquency behaviors when predicting dual involvement, delinquent behaviors are controlled in all analyses. It is hypothesized that a larger proportion of boys would be dually involved than girls (Hypothesis 1). Based on the previous research reviewed above, each of the proposed factors (i.e., anxious and/or depressed, depressed and/or withdrawn, social problems, ADHD-type symptoms, caregiver strain, high number of living transitions, and low school functioning) is hypothesized to be positively associated with dual involvement (Hypothesis 2). In addition, the family-level factors (caregiver strain and number of living transitions) are hypothesized to be equally important among boys and for girls in terms of their relationships to dual involvement (Hypothesis 3). However, based on previous research (e.g., Charles, Abram, McClelland, & Teplin, 2003; Simmons, 2002; Snyder, 2005), it is hypothesized that the person-level factors of anxious and/or depressed, depressed and/or withdrawn, and social

problems would be stronger predictors of dual involvement for girls than for boys (Hypothesis 4). Although previous findings have been somewhat inconsistent (Gorman-Smith & Loeber, 2005; Loeber & Farrington, 2000; Rankin, 1980; Thornton et al., 2002), it is hypothesized that school functioning would be a stronger predictor of dual involvement for girls than for boys (Hypothesis 5).

Method

Data Source

The current study uses a nationwide, representative subsample of children and adolescents receiving community-based mental health services through the Comprehensive Mental Health Services for Children and Their Families Program (funded by the federal Substance Abuse and Mental Health Services Administration, Center for Mental Health Services [CMHS]). More than 50,000 children and adolescents have entered this national program and received mental health services since 1993. The goal of that nationwide program is to provide services that are child-centered and family-focused, strengths-based, community-based, and culturally competent. The data used in the current study represents participants in this program between 1993 and 2002. Eligibility criteria for enrollment previously was determined by CMHS for purposes of the demonstration site grants and included: (a) being between age 5 and 18 years at intake (although only those at least age 11 years are included in the current study), (b) being a local county resident, (c) having a clinical diagnosis, (d) being separated or at risk of being removed from the home because of extreme behavioral or emotional difficulties, and (e) having multiple agency needs. The program also included an evaluation component that assessed system development and individual outcomes for children and families. All data collection protocols were established nationally. A full description of the national evaluation protocol and data-collection procedures is provided elsewhere (see Holden, Friedman, & Santiago, 2001).

Sample Selection

The current cross-sectional study focuses on European American and African American clinically referred children age 11 to 17 years who participated in the outcome study ($N = 1,168$). All children had at least one clinical diagnosis, with the most common diagnosis being a mood disorder (31%) followed by ADHD (22%). See Table 1 for percentages of children listed across all diagnostic categories. More than 68% of children had multiple diagnoses, with the average number of diagnoses being 1.86. In terms of psychotropic medication, 83% of children reported taking psychotropic medication on entry into the service system. The specific type of psychotropic medication was not identified in data collection and thus could not be reported here.

Procedures

Children were referred to their local community mental health program from a variety of sources, including caregivers, child-serving agencies (e.g., Department of Social Services,

Table 1
Descriptive Statistics for the Sample (N = 1,168)

Indicator	%	<i>M</i>	<i>SD</i>	Range
Age		13.86	1.78	11.00 - 17.00
Male	63			
African American	22			
Custody status				
Two-parent family	25			
Single-parent family	53			
Grandparents	6			
Adoptive and/or foster parents	5			
State custody	9			
Other relatives	4			
Caregiver education level				
Not a high school graduate	24			
High school graduate	35			
Attended some college	41			
Family income				
Less than U.S. \$15,000	46			
Above \$15,000	54			
Clinical diagnoses				
Mood disorder	31			
Attention-deficit/hyperactivity disorder	22			
Oppositional defiant disorder	15			
Conduct disorder	7			
Adjustment disorder	7			
Anxiety disorder	2			
Substance use disorder	3			

Department of Juvenile Justice, Department of Public Health), and schools. Consent forms for treatment and for participation in the evaluation process were signed by the primary caregiver (or legal guardian if different from the caregiver) and the child. Families were informed that an interviewer would be contacting them within a few days to schedule an interview. Interviews were scheduled as soon as possible, but no later than 30 days after the initiation of services.

Trained evaluators conducted in-home interviews lasting approximately 2 hrs for caregivers and 2 hr for children. All instruments were read to children and their caregivers to minimize possible error due to differential reading abilities. Caregivers received U.S. \$25 for their participation; children received gift certificates donated from local fast food restaurants.

Measures

Demographic Information Questionnaire (DIQ; Center for Mental Health Services [CMHS], 1997). The DIQ is a 37-item caregiver-reported questionnaire that measures child

and family characteristics such as age, race, ethnicity, risk factors, family structure, physical custody, referral source, presenting problems, family income living arrangements, education, household composition, physical health, and medications.

Person-Level Factors (Attention Problems, Social Problems, Anxious and/or Depressed, Depressed and/or Withdrawn)

All caregivers and children reported on the level of attention problems, social problems, anxious and/or depressed problems, and depressed and/or withdrawn problems using the Child Behavior Checklist (CBCL; Achenbach, 1991a) for caregivers, and the Youth Self Report (YSR; Achenbach, 1991b) for children. Caregiver and child reports of each construct were correlated highly with one another (at least $r = .20$, $p < .001$). Therefore, based on previous research using this procedure (Loeber et al., 2000), and the author's recommendation to combine reports (Achenbach, 1991a), composite scores were created by averaging the *T*-scores across caregiver and child reports for each construct separately. This composite score was used as the indicator of each person-level factor. Internal reliability ($> .82$), test-retest reliability ($> .87$ for all scales), and validity have been demonstrated in previous studies (Achenbach, 1991a).

Attention and hyperactivity and/or impulsivity. To assess levels of attention and hyperactivity, the current study utilized the Attention Problems subscale on the CBCL and YSR, which includes 20 items related to inattention, hyperactivity, and impulsivity. Sample items include, "Now or within the last six months, my child can't sit still, is restless, or is hyperactive" and "Now or within the last six months, I often act without thinking." It is important to note that the measure used taps not only attention problems but also hyperactivity and/or impulsivity. However, because the author of the measure titled the subscale "Attention Problems" in the analyses, the label of that scale is used but refers to attention and hyperactivity and/or impulsivity problems. Caregivers and children responded to each item on a 3-point scale, from 0 = *not true* through 2 = *very true or often true*. Caregiver and adolescent reports were correlated .32 ($p < .001$). The current study used the *T*-score composite from the Attention Problems subscale, with higher *T*-scores indicating higher levels of attention problems.

Anxious and/or depressed. Caregivers and adolescents reported levels of adolescent anxious and/or depressed using the Anxious/Depressed subscale from the CBCL for caregivers and the Anxious/Depressed subscale from the YSR for adolescents. The CBCL contains 14 items (e.g., "Now or within the past six months, my child has been unhappy, sad, or depressed," or "Now or within the past six months, my child has felt worthless or inferior"), and the YSR contains 16 items (e.g., "Now or within the past six months, I cry a lot," or "Now or within the past six months, I feel lonely"). Caregivers and adolescents responded on a 3-point scale, from 0 = *not true* through 2 = *very true or often true*. Caregiver and adolescent reports were correlated .28 ($p < .001$). The current study used the *T*-score composite from the Anxious/Depressed subscale, with higher *T*-scores indicating higher levels of anxiety and depression.

Social problems. Caregivers and adolescents reported levels of adolescent social problems using the Social Problems subscale from the CBCL for caregivers, and the Social Problems subscale from the YSR for adolescents. The CBCL and YSR contain 8 items, including “Now or within the past six months, my child gets teased a lot,” and “Now or within the past six months, my child is not liked by other kids.” Caregivers and adolescents responded on a 3-point scale, from 0 = *not true* through 2 = *very true or often true*. Caregiver and adolescent reports were correlated .42 ($p < .001$). The current study used the *T*-score composite from the Social Problems subscale, with higher *T*-scores indicating higher levels of social problems.

Depressed and/or withdrawn. Caregivers and adolescents reported levels of adolescent depression and withdrawal using the Depressed/Withdrawn subscale from the CBCL for caregivers and the Depressed/Withdrawn subscale from the YSR for adolescents. The CBCL contains 8 items (e.g., “Now or within the past six months, complains of loneliness,” and the YSR contains 6 items (e.g., “Now or within the past six months, I cry a lot,” or “Now or within the past six months, feels that nobody loves me”). Caregivers and adolescents responded on a 3-point scale, from 0 = *not true* through 2 = *very true or often true*. Caregiver and adolescent reports were correlated .20 ($p < .001$). The current study used the *T*-score composite from the Depressed/Withdrawn subscale, with higher *T*-scores indicating higher levels of depression and withdrawal.

Family-Level Factors

Caregiver strain. Caregivers reported on their levels of strain on the Caregiver Strain Questionnaire (CGSQ; Brannan & Heflinger, 1997). The CGSQ has 21 items that assess the degree to which a caregiver feels strained related to caring for a child with mental health needs. Items include, “interruption of personal time,” “financial strain,” and “feeling socially isolated.” Caregivers respond on a 4-point scale, with higher scores indicating more strain. The current study utilizes a composite strain score that is an average of the 21 items.

Living transitions. On the DIQ mentioned above, caregivers responded to the question, “How many times has the child changed living residences in the past six months?” Caregivers’ responses to that question were used as the indicator of the number of living transitions for each child.

School-Level Factors

To assess school functioning, caregivers completed the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1994). The current study utilized the School Role subscale, which assesses the degree of impairment in school functioning. Items included, “non-compliant behavior which results in persistent or repeated disruption,” “frequently truant,” and “disruptive behavior.” The CAFAS is rated on a 30-point scale (0 = no impairment, 10 = mild impairment, 20 = moderate impairment, 30 = severe impairment). Thus, higher scores indicate greater impairment in school functioning. Interrater reliability and validity

have been demonstrated in previous studies (Hodges & Wong, 1996), and mental health professionals were trained to achieve high interrater correlations ($> .80$) between their ratings and criterion ratings established by the author (Hodges, 1994).

Dual Involvement

To assess dual involvement, one dichotomized item from the Delinquency Survey (DS; CMHS, 1994) was utilized. That item was, "Have you ever been told to appear in court for something you were suspected of doing?" On this instrument, questions are directed toward the youth because previous research indicates that youth more accurately recall and report their own delinquent behaviors than do their caregivers or other adults (CMHS, 1994). Children responded 1 = no and 2 = yes.

Control Variable

Delinquency. Caregivers and adolescents reported levels of adolescent delinquent behaviors using the Delinquency subscale from the CBCL for caregivers and the Delinquency subscale from the YSR for adolescents. The CBCL contains 11 items (e.g., "Now or within the past six months, sets fires," and the YSR contains 11 items (e.g., "Now or within the past six months, I have been cruel to animals"). Caregivers and adolescents responded on a 3-point scale, from 0 = *not true* through 2 = *very true or often true*. Caregiver and adolescent reports were correlated $.38$ ($p < .001$). The current study used the *T*-score composite from the Delinquency subscale, with higher *T*-scores indicating higher levels of delinquency.

Analytical Approach

Preliminary descriptive statistics were conducted to determine the percentage of children and adolescents who were dually involved and the demographic configuration of those individuals compared to those who were not dually involved. Zero-order correlation analyses examined whether dual involvement was related to demographic, person-level, family-level, and school-level clinical variables of interest. To study the possibility that there may be differences in clinically relevant factors to predict dual involvement based on gender, two logistic regressions were conducted.

Results

Descriptive Statistics

Among the 1,168 children who participated in the current study, 545 (46.7%) indicated that, in addition to being involved in the mental health system, they also were involved with the juvenile justice system (623 were not involved). Chi-square analyses indicated that the proportion of boys who were dually involved (376 of 737, 51%) was significantly higher than

the proportion of girls who were dually involved (169 of 431, 39.2%), $\chi^2(1, n = 1,168) = 15.23, p < .001$. Thus, Hypothesis 1 was confirmed. In terms of other demographic variables, chi-square analyses indicated that the proportion of African American children who were dually involved (51.4%) was only slightly higher than the proportion of European American children who were dually involved (45.3%), $\chi^2(1, n = 1,168) = 2.93, p < .10$. Independent samples *t* tests indicated that there were no group differences based on socioeconomic status, $t(1,168) = -1.39, ns$. Zero-order correlations are reported in Table 2.

Independent samples *t* tests indicated that there were group differences based on age, with older children more likely to report having been involved with the juvenile justice system, $t(1,168) = 10.48, p < .001$. Using the total eight-scale score from the CAFAS, follow-up independent *t* tests indicated that among those children who were dually involved, girls had significantly higher levels of impairment ($M = 122.08$) compared to boys that were dually involved ($M = 113.08$), $t(499) = -2.00, p < .05$, and also compared to girls who were not dually involved ($M = 105.43$), $t(384) = -3.43, p < .001$. Among those children who were not dually involved, there were no significant gender differences in terms of levels of impairment, $t(545) = -1.03, ns$. Thus, preliminary analyses suggest that the mental health status among girls involved in the juvenile justice system is more severe than the mental health status of boys.

To test Hypotheses 2 through 5, two cross-sectional logistical regressions were conducted, one regression for each gender.¹ In Model 2, the demographic factors and control variables were entered (age, ethnicity, delinquency). In Model 2, all person-level factors were entered (inattention, social problems, anxious/depressed, depressed/withdrawn). In Model 3, all family-level factors were entered (number of living transitions, caregiver strain). In Model 4, the school-level factor was entered (school functioning).

Logistic Regression Model for Boys

The logistic regression models to examine the factors associated with dual involvement for boys and for girls are presented in Tables 3 and 4, respectively. For boys, the significant factors associated with dual involvement were age (odds ratio [OR] = 1.37, $p < .000$), with older boys more likely to be dually involved than younger boys, and delinquency (OR = 1.07, $p < .001$), with boys who had higher levels of delinquency more likely to be dually involved. Ethnicity was not associated with dual involvement when examined separately for boys and for girls. The overall model was significant at the .000 level according to the model chi-square statistic and predicted 64.7% of the responses correctly.

Block 2 included four additional person-level factors hypothesized to be associated with dual involvement. According to the block chi-square statistic, Block 2 was superior to Block 1 in terms of overall fit. The Social Problems factor was marginally significant in terms of its predictive ability (OR = .95, $p < .10$), with higher levels of social problems linked with a decreased likelihood of dual involvement. The added person-level factors listed in Table 3 increased the predictive power of the model. Block 2 was superior to the previous model at the .001 level, accounting for 65.9% of the responses correctly.

Block 3 included two additional family-level factors hypothesized to be associated with dual involvement. Within this block, a higher number of living transitions were associated

Table 2
Intercorrelations Among Demographic, Independent, and Dependent Variables^a

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Child age	—	.10**	.09**	.05	.12**	-.12***	-.23***	-.08**	-.05	.14***	.02	-.09**
2. Child gender	—	—	-.04	.01	.13***	.08**	.01	.07**	.02	.11***	-.02	-.08**
3. Socioeconomic status	—	—	—	.18***	.04	.04	.06*	.03	-.01	.16***	.12***	-.08**
4. Ethnicity	—	—	—	—	.01	.06*	.05	.13**	.06*	.05	.02	.02
5. Delinquency (control variable)	—	—	—	—	—	.49***	.14*	.34**	.26***	.23**	.46***	.28***
6. Attention problems	—	—	—	—	—	—	.61***	.61***	.40***	.05	.34***	.19***
7. Social problems	—	—	—	—	—	—	—	.57***	.47***	-.03	.13**	.08**
8. Anxious and/or depressed	—	—	—	—	—	—	—	—	.61***	.09**	.29***	.11***
9. Depressed and/or withdrawn	—	—	—	—	—	—	—	—	—	.06*	.27***	.11***
10. Living transitions	—	—	—	—	—	—	—	—	—	—	.21***	.11***
11. Caregiver strain	—	—	—	—	—	—	—	—	—	—	—	.23**
12. School functioning	—	—	—	—	—	—	—	—	—	—	—	—

a. All correlations reported above were Pearson (r) correlations with the exception of the correlations between child gender (male and/or female) and the remaining variables, and ethnicity (African American and/or European American) and the remaining variables. In these cases, point-biserial correlations were conducted (one dichotomous variable and one continuous variable).

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

Table 3
Cross-Sectional Logistic Regression Model to Predict
Dual Involvement Among Boys ($n = 737$)^a

Predictor	β (SE)	e^{β}	p
Demographic factors			
Age	0.31 (0.06)	1.37	.000
Ethnicity	-0.14 (0.11)	0.87	.21
Delinquency	0.06 (0.02)	1.07	.000
Person-level factors			
Inattention	-0.01 (0.02)	0.99	.49
Social problems	-0.02 (0.02)	0.98	.10
Anxious and/or depressed	-0.02 (0.02)	0.98	.20
Depressed and/or withdrawn	-0.01 (0.02)	0.99	.40
Family-level factors			
Living transitions	0.20 (0.08)	1.22	.02
Caregiver strain	0.14 (0.12)	1.15	.26
School-level factors			
School functioning	-0.01 (0.01)	1.00	.78
Constant	-4.01 (1.36)		
Omnibus model χ^2	116.46		
df	10		.000
-2 Log likelihood	707.78		
Cox & Snell R^2	0.18		
Nagelkerke R^2	0.24		

Note: e^{β} = exponentiated β .

a. The statistics reported are for the full model (i.e., Block 4).

with an increased risk for dual involvement ($OR = 1.22, p < .05$). However, levels of caregiver strain were not associated with dual involvement. According to the block chi-square statistic, Block 3 was superior to the previous models and was significant at the .001 level, accounting for 67.9% of the responses correctly.

Block 4 included an indicator that assessed school functioning and its possible link with dual involvement. According to the block chi-square statistics, Block 4 did not increase the predictive power of the model, indicating that school functioning was not associated with dual involvement among boys.

Logistic Regression Model for Girls

For girls, the significant demographic factors associated with dual involvement were age ($OR = 1.52, p < .000$), with older girls more likely to be dually involved than younger girls, and delinquency ($OR = 1.08, p < .001$), with girls who had higher levels of delinquency more likely to be dually involved. These findings were consistent with the findings for boys. However, unlike the findings for boys, the logistic regression for the girls indicated that ethnicity was a significant predictor ($OR = .75, p < .05$), with African American girls more likely to be dually involved than European American girls. The overall model was significant at the

Table 4
Cross-Sectional Logistic Regression Model to Predict Dual Involvement
Among Girls ($n = 431$)^a

Predictor	β (SE)	e^{β}	p
Demographic factors			
Age	0.42 (0.09)	1.52	.000
Ethnicity	-0.29 (0.16)	0.75	.05
Delinquency	0.08 (0.02)	1.08	.001
Person-level factors			
Inattention	0.03 (0.03)	1.07	.30
Social problems	-0.06 (0.02)	0.95	.01
Anxious and/or depressed	-0.06 (0.02)	0.94	.01
Depressed and/or withdrawn	0.02 (0.02)	1.02	.42
Family-level factors			
Living transitions	0.28 (0.09)	1.31	.01
Caregiver strain	-0.01 (0.17)	0.99	.97
School-level factors			
School functioning	0.01 (0.01)	1.00	.82
Constant	-6.44 (1.90)		
Omnibus model χ^2	111.01		
df	10		
Significance	0.000		
-2 Log likelihood	367.62		
Cox & Snell R^2	0.27		
Nagelkerke R^2	0.36		

Note: e^{β} = exponentiated β .

a. The statistics reported are for the full model (i.e., Block 4).

.000 level according to the model chi-square statistic and predicted 70.1% of the responses correctly.

Block 2 included four additional person-level factors hypothesized to be associated with dual involvement. Within this block, anxious and/or depressed was linked with a decreased likelihood that a girl was dually involved ($OR = .94$, $p < .01$), as was the social problems factor ($OR = .95$, $p < .01$). According to the block chi-square statistic, Block 2 was superior to Block 1 and was significant at the .001 level, accounting for 72.4% of the responses correctly.

Block 3 included two additional family-level factors hypothesized to be associated with dual involvement. Within this block, a higher number of living transitions were associated with an increased risk for dual involvement ($OR = 1.31$, $p < .001$). Caregiver strain was not associated with dual involvement. According to the block chi-square statistic, Block 3 was superior to the previous models and was significant at the .001 level, accounting for 74.4% of the responses correctly.

Consistent with the logistic regression for boys, Block 4 included an indicator that assessed school functioning and its possible link with dual involvement. According to the block chi-square statistics, Block 4 did not increase the predictive power of the model, indicating that school functioning was not associated with dual involvement among girls.

Discussion

The purpose of the current study was to extend research on factors that contribute to an increased likelihood for children's dual involvement in the mental health service system and the juvenile justice system. By taking a social ecological approach and exploring a variety of factors across domains (demographic factors, person-level factors, family-level factors, and school-level factors), the current study examined the possibility that clinically relevant factors associated with dual involvement might differ by gender.

Consistent with Hypothesis 1, boys were more likely to be dually involved than were girls. However, the girls who were dually involved had significantly lower levels of functioning than dually involved boys and girls who were not dually involved. Thus, girls who were dually involved had significantly more severe mental health problems, raising the question of whether we are waiting too long to intervene for this population. Are we missing the early warning signs among girls that might lead to involvement in the juvenile justice system? Although that might be the case, other research would posit that this finding is not surprising. For example, Silverthorn and Frick (1999) posited that when a girl engages in a predominantly "male" event (i.e., delinquency), she tends to be more severely impaired. Other researchers have found that girls who are involved in the juvenile justice system have higher rates of mental health problems compared to boys (National Mental Health Association, 2004). Indeed, this seems to be the case within the current sample.

In regard to Hypotheses 2 and 3, the findings from the current study also illuminate several clinically relevant factors that are associated with whether a child who has mental health problems also is involved in the juvenile justice system, although not all of the predicted relationships were significant. For boys and girls, children who were older and had more transitions in their living situations were more likely to be dually involved. The observed link between juvenile justice involvement and a high number of living transitions among boys and girls suggests the need to create stability in the lives of children and the possibility that with increasing caregiver burnout multiple placements may result (caregiver strain and number of living transitions correlated $r = .21, p < .001$ in the current sample).

There was some support for Hypothesis 4 that person-level factors of internalizing symptoms (i.e., anxious and/or depressed) and social problems would be stronger predictors of dual involvement for girls than for boys. Although the findings did not indicate unique factors for boys, several additional factors were found to be significantly related to whether girls become dually involved. Specifically, social problems significantly decreased the likelihood of dual involvement. Explanations for this finding were not immediately clear. However, the items within the Social Problems subscale indicate more peer rejection and isolation rather than social problems that are more related to deviant peer association. We know that association with deviant peers is linked strongly and consistently with antisocial behaviors (Catalano & Hawkins, 1996; Lipsey & Derzon, 1998), and that girls who have higher levels of social problems become more isolated (Dishion, Nelson, & Yasui, 2005). Thus, under these conditions, it might be less likely that these girls engage in antisocial behaviors that make them more likely to have contact with juvenile justice as part of a group of peers due to the decrease in frequency that they are within a peer group. The cross-sectional nature of the current study does not allow for the examination of whether these girls eventually gravitate

toward a deviant peer group, a possibility that recent research indicates may occur for girls to gain a sense of acceptance and belongingness (Dishion et al., 2005).

The anxious and/or depressed variable also was a significant predictor of dual involvement, but only for girls. However, the finding was opposite than predicted, with a higher level of anxious and/or depressed symptoms linked with a lower likelihood that girls will become involved in the juvenile justice system. Although research has indicated that anxiety and depression can contribute to antisocial behavior (Obeidallah & Earls, 1999), the opposite was true in the current study. Perhaps the link between depression and antisocial behavior is longitudinal in nature; however, when examined simultaneously, the link between these two constructs is not apparent. Or, perhaps high levels of anxiety and/or depression make it less likely that a person will take the risks involved in acts that might get one involved with the juvenile justice system.

Hypothesis 5 was not confirmed as levels of school functioning were not related to an increased likelihood of becoming dually involved among either boys or girls. However, follow-up logistic regression analyses indicated that school functioning does predict dual involvement ($OR = 1.02, p < .001$), but only when delinquency is not included as a control variable. Thus, it appears that there is overlapping variance between delinquency and levels of school functioning, with the correlation between these variables significant at the .001 level. These analyses are consistent with previous research (e.g., Loeber & Farrington, 2000), indicating that there is a strong likelihood that if levels of school functioning are low, delinquency behaviors may be more likely to occur.

Strengths, Limitations, and Implications

There are several strengths to the current study, including a closer empirical examination of clinical factors across a variety of domains that are associated with a child having not only mental health challenges but also involvement in the juvenile justice system. Also, to date, there are no known studies that have explored clinical factors across a variety of domains that might predict dual involvement in a clinical SED sample. An additional strength is the use of multiple reporters (e.g., caregivers and youth) to assess person-level factors such as anxious and/or depressed symptoms, attention, and social problems. Because different reports of externalizing symptoms were used, and because these reports were similar across reporters, there is confidence that the composite measures were more accurate than they would be otherwise (Loeber et al., 2000).

One limitation of the current study is that dual involvement was assessed with a single, child-reported question that asks whether he or she has ever been told to appear in court. It is unclear how participants interpreted this question and what it means in terms of how they were involved in the juvenile justice system. It is not known how deeply these children penetrated the juvenile justice system and whether their ultimate disposition was an adjudication, diversion, entry into secure custody, or probation. In future work, it would be informative to examine different reasons why children become involved in the juvenile justice system because it is possible that different clinical factors are more related to certain charges (i.e., reasons to appear in court) than others. Furthermore, future research should examine whether the same links hold for other populations of children because not all children with SED have been removed, or are at risk of being removed, from their homes (which was an eligibility

criterion in the current study). Thus, the findings from the current study should be generalized only to those children who have SED and are at risk of being removed from their homes because of their emotional or behavioral difficulties. Given the characteristics of the sample (e.g., low-income, high-risk neighborhoods), it is possible that these areas are policed more aggressively to offset the higher concentrations of crime and/or altercations. When this occurs, a lack of community resources (e.g., limited hospitalization coverage or alternative treatment locations) might contribute to more aggressive placement decisions and might make it more likely that these youth are detained rather than referred for mental health treatment. If this occurs, estimates of dual involvement could be erroneously inflated. In addition, the current study's use of cross-sectional data might be problematic if reciprocal causation is a possibility. It may be that juvenile justice decisions require mental health involvement rather than mental health problems making youths more likely to become involved in the justice system. Regardless of which comes first, the co-occurrence of mental health problems and juvenile justice involvement deserves more empirical attention. Thus, future research would benefit from using longitudinal data to examine clinical factors that might predict future involvement in the juvenile justice system among SED populations.

Finally, future research also would benefit from teasing apart the possible confounded influences of ethnicity, socioeconomic status, and system policies in relation to dual involvement. Until systemwide investigations can be conducted, it is unclear whether ethnicity is a true risk indicator, is associated with some other risk indicator (e.g., poverty, access to prevention services), or whether systemwide problems exist in terms of the overidentification of African American youth for juvenile justice involvement.

A number of important implications are derived from the current study. For example, the current study supports previous research (e.g., Foster, Qaseem, & Connor, 2004) highlighting the need for greater systemwide collaboration for children and adolescents with SED. Such collaboration could be achieved in many ways, including strategic planning, cost sharing, comprehensive screening and assessment, integrated management information systems, and cross-training of staff. Given the clear overlap between mental health and juvenile justice involvement for many children, mental health and juvenile justice must work together in multidisciplinary teams using clinical variables to help guide placement decisions (e.g., MacKinnon-Lewis, Kaufman, & Frabutt, 2002). Thus, the current study is in line with the recent legislation by advocating for comprehensive mental health treatment planning and cross-system service planning in which juvenile justice personnel can participate and have mental health staff housed within juvenile justice facilities. Unfortunately, the current system structure results in some parents having to give up their parental rights through placement of their children in other service systems (e.g., juvenile justice or child welfare) to receive mental health services (President's Freedom Commission, 2002). Clearly, this should not be the norm for treating children and adolescents.

A stronger understanding of the mental health needs of children and adolescents involved in the juvenile justice system could help in coordination and comprehensive treatment planning for our youth. In addition, the current study illuminated several gender-specific factors related to dual involvement. Thus, for both genders, increased attention to mental health assessments within the juvenile justice system will help to guide prevention and intervention strategies for our youth.

Notes

1. There are some limitations to using logistic regression analytic techniques. For example, normally distributed dependent variables are not possible because the dependent variable (dual involvement) takes on only two values, which counterindicates a classical regression assumption (Peng, Lee, Ingersoll, 2002). Logistic regression solves this problem, however, by applying the logit transformation to the dependent variable (for more information on this procedure, see DeMaris, 1995 or Peng et al., 2002).

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