The Examination of Subgroup-Sensitive Risks and Needs among Delinquent Adolescents in the US

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Abstract : While there is growing evidence regarding the subgroup-sensitive nature of risk factors among delinquent adolescents, researchers have paid little attention to the tracking of risks and needs by subgroups (e.g., gender, ethnicity, and the timing of onset for delinquency) among youth who are currently involved in the juvenile court system. Therefore, greater empirical attention directed toward subgroup-sensitive risk factors experienced by delinquent adolescents is thought to be both timely and necessary. A final convenience sample of 2167 court-involved adolescents in the US was used to specify subgroup-sensitive risks and needs. The results demonstrated that there were various levels of risks according to subgroups associated with gender, ethnicity, and onset for delinquency group. The findings of this study add to the extant literature on delinquency by demonstrating the importance of considering subgroups associated with gender, ethnicity, and the timing of onset for delinquency when practicing treatment or intervention programs with delinquent adolescents.

Key Words : delinquency, adolescents, risk factor, youth at risk

I. Introduction

Juvenile arrest rates have stabilized after years (1986 to 1995) of large increases. However, the number of youth who committed violent acts under the age of 18 continues to account for almost thirty percent of the overall crime index, and concern continues to be expressed about the stable but still considerable number of juvenile criminal arrests and courts cases on the national level (U.S. Department of Health and Human Services, 2001).

In this context, research over the last several decades has been dedicated to finding out a variety of antecedent factors that initiate and shape these trends in juvenile delinquency and, more recently, to identifying predictive risk factors for delinquency. Examples of these risk factors include individual variables such as substance abuse, lack of leisure activity, poor academic achievement, and interpersonal risk factors including delinquent peer relationship, gang involvement, adverse family factors, mental health problems and finally, disorganized neighborhood settings (Elliott *et al.*, 1996; Sampson, 1997; Sampson *et al.*, 1997). For example, serious juvenile offenders tend to have unsupportive or indifferent parents who show low levels of parental warmth and acceptance or show high levels of parental hostility, while supportive parent-youth relationships protect youth from participating in serious antisocial behavior (Gorman-Smith & Tolan, 1998). According to Lyons, Baerger, Quigley, and Griffin (2001), 67% of youth in the correctional setting and 46% of youth on probation met the criteria for a serious mental health

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problem.

These factors are also thought to be particularly important during the adolescent years since a large body of theoretical and empirical research has linked adolescent delinquency to the aforementioned factors (e.g., Fox & Benson, 2000). Researchers have found that as children move into adolescence, the association with deviant peers becomes an important factor in delinquent involvement and may be the best explanation for youth participation in both initiation and contribution of adolescents' new delinquent behaviors (Patterson *et al.*, 2000).

However, relatively less attention has been paid to understanding how these differential risks and needs may require different treatments and interventions according to various subgroup types, including gender, ethnicity, and age of delinquency onset, as there are thought to be subgroup sensitive risks/needs among these special populations. For example, an adverse family environment can be a stronger risk factor for female adolescents in terms of their involvement in illegal behaviors (Chesney-Lind, 1997; Chesney-Lind & Okamoto, 2001; Hubbard, 2004). Caucasian youth are more likely than African American youth to present with substance abuse and depression, while African Americans are more likely than other racial and ethnic groups to have behavioral risks, Attention Deficit with Hyperactivity Disorder (ADHD) and related educational issues, and gang involvement (Zable & Nigro, 1998). Finally, youth who commit their first offenses at an early age (before 13 years) tend to have more family related risks (such as antisocial parents, parental psychopathology, and physical abuse within the home), and greater individual risks associated with mental health related problems including psychopathology (United States Department of Health and Human Services, 2001).

Therefore, while it is important to understand issues regarding the need for better assessment of juvenile offender populations more generally, specific research emphasis should be placed on the advancement of knowledge about subgroup-sensitive risks/needs in this population, including the advancement of the field's understanding about how such risks/needs can be explained by individual characteristics. In this context, gender, ethnicity, and the different timing of onset for delinquency may be the most significant components to be contained in the exploration of such subgroup differences. The literature supporting the further examination of the risks/needs of these special populations are discussed below.

1. Gender

Previous delinquency studies have revealed significant gender differences in terms of delinquent behaviors (Henggeler, 1989; Hubbard, 2004; Hubbard & Pratt, 2002; Huizinga & Elliott, 1987). That is, there is evidence of greater involvement in delinquency for males than females (Henggeler, 1989; Huizinga & Elliott, 1987).

While attention in the literature has been primarily on male adolescents, due to their greater involvement in delinquent behaviors, more recently there has been increased attention paid to female adolescents due to a growing awareness of different risks/needs according to gender (Hubbard, 2004). For example, Hubbard and Pratt (2002) reported that, while some risk factors of delinquency for female and male adolescents (e.g., personality and antisocial attitudes) were similar, other risk factors, including family relationships, mental health, substance abuse, and favorable relations with others (e.g., peers) were much stronger predictors of delinquency for female adolescents than for males.

In addition, these problems can have serious consequences for female adolescents because relationships tend to be more important for female adolescents than for males (Smith & Thomas, 2000). Thus, factors related to parental rejection and abuse may be more problematic and result in more harmful outcomes for adolescent females than for their male counterparts. Also, the likelihood of sexual abuse and internalizing

problems are much higher for female adolescents than male adolescents (Acoca, 1998; Chandy, Blum, & Resnick, 1996; Chesney-Lind, 1997; Chesney-Lind & Okamoto, 2001). Finally, female adolescents tend to use substances as another form of escaping when they are involved in the juvenile system without treatment to meet their needs (Hubbard, 2004). Taken together, the literature supports the assertion that gender is related to unique needs that must be attended to in assessment and intervention efforts in the systems that serve juvenile offenders.

2. Ethnicity

The issue of ethnicity also has gained increased attention in the juvenile justice literature because of the disproportionate minority representation present in the justice system (DeJong & Jackson, 1998). There are diverse factors that are more related to delinquent behaviors for minority youth (Taylor & Turner, 2002; National Center for Children in Poverty, 2002; Wilson, 1996). For example, compared to Caucasian adolescents, African American adolescents are disproportionately exposed to poverty and high risk environments such as disadvantaged neighborhoods. That is, thirty percent of African American children live in poverty compared to 9% of European American children (National Center for Children in Poverty, 2002) and African American youth are more likely than Caucasian youth to live in neighborhoods characterized by high crime rate, high unemployment rate, and poor schools (Wilson, 1996).

In addition to the risks posed by poverty, chronic neighborhood disadvantage, violence, and stressful life events, African American youth report greater exposure to discrimination events than their Caucasian counterparts (Taylor & Turner, 2002). These discrimination events, in turn, lead to internal conflicts among African American youth who have their own culture that is different from the mainstream culture. As such, larger societal problems such as structural (poverty, neighborhood disorganization, employment issues) issues and socio-cultural issues (differential roles / expectations) are often examined as risk factors for explaining minority youth's delinquency.

On the other hand, researchers also have reported that Caucasian juvenile offenders displayed significantly greater risk levels across a variety of mental health issues and substance abuse. That is, Caucasian youth are more likely than African youth to experience substance abuse, including early smoking and drinking problems, and mental health issues such as depression and suicide attempts (Zable & Nigro, 1998). Therefore, researchers should focus equally on minority youth and non-minority youth in the system, with different emphases on risks/needs according to ethnicity.

3. Age of onset

The issue of onset for delinquency has been widely studied (Elliott, 1996; Hawkins *et al.*, 1998; Moffit & Caspi, 2001) because of the serious adjustment issues and sustaining violent problems of early onset offenders. For example, early onset of substance use is associated with continued impairment in behavioral and emotional functioning in later adolescence (Giaconia *et al.*, 1994). Also, the link between early aggression and later serious violence behavior has been reported elsewhere (Hawkins *et al.*, 1998). Using National Longitudinal Youth Survey data, Elliott (1994) found that 45% of children who initiated violence before age 11 continued to be violent in their early 20s. In the Rochester Youth Development Study, Thornberry, Huizinga, and Loeber (1995) also found that 39% of children who initiated violence at age 10-12 engaged in violence in later years.

The terminology of "onset for delinquency was originally proposed by Moffitt (1993), who asserted that there were two distinct types of delinquency development: those who take part in delinquent acts at a relatively early age (i.e., early onset or life-course persistent offenders), and those who exhibit behavior problems during adolescence for the first time (i.e., late onset or adolescent limited offenders).

Early onset offenders engage in delinquency at an early age, and risk factors for this type include family dysfunction, family psychopathology, difficult child temperament, and cognitive and neuropsychological dysfunction (Moffit & Caspi, 2001). In the early onset group, the combination of a vulnerable and difficult infant and an adverse rearing context initiates a transactional process that evokes a chain of failed parent-child encounters (Moffit, 1993). This transactional process leads a child to lose opportunities to acquire and practice prosocial patterns of behavior, which in turn leads him to become a lifelong pattern of antisocial behavior (Moffit, 1993). On the other hand, late onset offenders engage in delinquency by becoming involved with delinquent peers and having perceptions of the consequences of antisocial behavior as reinforcing (Moffit & Caspi, 2001).

In turn, late onset offenders are likely to have a rebellious personality style that makes them more likely to be involved with delinquent behaviors as a misguided attempt to gain a sense of maturity (Moffit, 1993). Once societal acceptance of adult status is achieved, the major motivation underlying the antisocial behavior of this group is no longer present and therefore, their antisocial behaviors are dramatically decreased. Taken together, the literature supports the notion that different onset groups are related to unique pathways with dissimilar risks/needs.

4. Potential interactions

The aforementioned subgroup variables (gender, ethnicity, and different onset) also can create important interaction effects on risks and needs that delinquent adolescents experience. Studies have shown that there are dissimilar patterns of risks / needs faced by female adolescents or male adolescents of different races or onset groups (Neumark, Story *et al.*, 1997). For example, the degree of risks / needs around risky sexual behaviors may be different depending on ethnicity and gender. While sexual activity at an early age in female adolescents is associated with other risks /needs such as substance abuse and mental health issue for African American females, there is evidence that this is more strongly the case for Caucasian females (Ensminger, 1990).

Also, there can be an interaction effect between gender and onset on risks / needs, as female adolescents tend to experience a later onset of delinquency than male offenders (e.g., Loeber & Stauthamer-Loeber, 1998). Silverthorn and Frick (1999) have proposed a different "third developmental pathway which they label "delayed onset. Timing of involvement in delinquency for females has been asserted to be more similar to the male "late onset pathway, but the correlates (cognitive/ neuropsychological deficiency, temperamental characteristics, poor parenting practices, antisocial biological parents) are more comparable to the male "early onset pathway, as is the persistence. While factors such as parental and school-based socialization practices are thought to encourage girls to express behavior symptoms through internalizing behaviors during middle childhood, females become most antisocial soon after puberty and show delinquent behaviors when they are under the influence of relationships with males, who are more antisocial than females on average (Silverthorn & Frick, 1999).

Therefore, it has been argued that a female-specific theory would categorize all delinquent female adolescents in the same high-risk causal background as early onset males. At the same time, Gavazzi (2006) has reported that, while female adolescents in general face higher risks and needs (especially in the family domain), African American females report significantly higher risks than their Caucasian counterparts. Taken together, these studies suggest that consideration of both the separate and interactive influences of variables associated with gender, ethnicity and onset of delinquency simultaneously, which never have been examined comprehensively, may be most desirable in terms of proper assessment of risks/needs among delinquent adolescents.

II. Methods

The proposed research involves an examination of subgroup sensitive risks/needs associated with gender, ethnicity, and onset of delinquency after controlling for the current age and household composition of youth in court-involved youth.

1. Sample

The sample for this study included 2167 adolescents coming into contact with juvenile county courts of a large, Mid-western metropolitan area in the US. The sample ranged in age from 13 to 17 (M = 15.3, SD = 1.3). The sample of 794 female and 1373 male adolescents included 1235 Caucasians, and 932 African American youth. Other ethnic categories in this study were not included because those categories didn't have enough sample size to make their own categories. The majority (63%) of these youth came from single-parent-headed households. Regarding annual household income for the sample, 41% refused to report income, 37% resided in homes with income under $34,999, 11% resided in homes with income in the $35,000 - $ 54,999 range, and 11% of the youth resided in homes with income in the $55,000 and above.

2. Instruments

Information on the youth in the present sample was gathered through use of version 1.0 of the Global Risk Assessment Device (GRAD: Gavazzi *et al*., 2003). This device is an Internet-based instrument that is meant to rapidly and reliably measure potential threats to the overall development and well-being of adolescents penetrating the juvenile justice system (Gavazzi *et al*., 2003). There are 132 items that represent 11 different risks / needs domains, including: prior offenses, family / parenting problems, peer relationship issues, substance abuse, educational and vocational concerns, leisure activities, accountability, mental health issues, psychopathy, exposure to traumatic events; and health-related risk behaviors. Examples of items in each domain of the GRAD are as follows:

Prior Offenses:

"How often have the police or anyone else from law enforcement stopped you because of something you did?"

Family/Parenting:

"How often do you get into fights with adults who live in your home?"

Education/Vocation:

"Have you had a difficult time getting to school or staying in school for the entire day?"

Peer Relationships:

"Do you have friends who have been in trouble with the law?"

Substance Abuse:

"Have drugs and/or alcohol played a role in disrupting your academic performance?"

Leisure Activities:

"Do you ever have a lot of spare time?

Mental Health Issues:

"Do you have difficulty controlling your anger?

Psychopathy:

"Do you try to manipulate or use others?"

Traumatic Events:

"Have you ever witnessed domestic violence in the home?"

Accountability:

"Do you ever feel more mad instead of guilty when you get caught doing something wrong?"

Health-Related Risks:

"Have you gone without regular medical check-ups?"

Youth and caregiver(s) of the youth rate how true each item is now or within the past 6 months using the following scale: 0 = No/Never; 1 = Yes / A couple of times; 2 = Yes / A lot. Therefore, a higher score indicates that a youth is at a greater risk in terms of each domain.

Previous work has reported on the psychometric properties of the GRAD, including a solid factor

structure and reliability coefficients (Gavazzi *et al.*, 2003). Further, Gavazzi and Lim (2003) reported the concurrent validity for the Global Risk Assessment Device using a sample of 37 families of adolescents who participated in a family-based program designed to divert youth out of the justice system. Significant correlations among three domains of risk (family /parenting, substance use, and personality / behavior problems) and other measures (i.e., the family Events Checklist, the Youth Risk Behavior Survey, the Brief Symptom Inventory) generated preliminary evidence of the concurrent validity of this measure. Gavazzi *et al.*, (2003) also reported the predictive validity of this battery in a sample containing 224 families of adolescents who were assessed by intake workers in a juvenile court and subsequently referred for services. Results revealed those youth referred to mental health services had higher risk scores than did those youth who were not referred on all domains of risk contained in this battery (Gavazzi *et al.*, 2003). Cronbach alpha coefficients ranged from .87(Prior Offenses) to .97 (Family / Parenting) in the previous studies.

More recently, the GRAD has been used to examine both gender and race / ethnicity differences in the risks and needs of youthful offenders. For instance, gender differences have been examined in both detention (Gavazzi *et al.*, 2006) and status offender (Gavazzi *et al.*, 2005) populations. Also, the particular combination of both gender and race / ethnicity generates a complex picture of youth risks and needs regarding the family environments of African American and Caucasian males and females (Gavazzi, 2006). Cronbach alpha coefficients ranged from .87 (Prior Offenses) to .97 (Family/Parenting) in the previous studies.

Beyond the aforementioned 11 domains of GRAD risk / needs, demographic information including age, gender, ethnicity, and household composition and information regarding onset of delinquency collected by this tool were analyzed in this study. For the purpose of the analysis in the present study, a household composition variable was coded as a variable with the value of 0 for two parent family (i.e., Married and two biological parents and step family) and the value of 1 for single parent headed household. For the onset of delinquency variable youth who committed the first offense at "age 12 and under was categorized into the early onset group, and youth who committed the first offense after age 13 was coded as the late onset group. Cronbach alpha coefficients ranged from .73 (Prior Offenses) to .86 (Family/Parenting) in the present sample.

III. Results

A three way Multivariate Analysis of Covariance (MANCOVA) was used to identify subgroup sensitive risks and needs across gender, ethnicity, and onset of delinquency, after controlling for the current age of youth and household composition. Before the main analysis, demographic information was examined across three main variables including gender, ethnicity, and onset of delinquency. There were a few significant demographic differences according to ethnicity, and onset of delinquency. For example, White Caucasian youth were slightly older than African American youth ($t = -5.44$, $p < .001$), and early onset offenders were younger in terms of current age than later onset offenders ($t = -7.57$, $p < .001$) while there was no demographic difference according to gender.

Furthermore, chi-square analyses of demographic information according to subgroups showed that early onset offenders (70 % vs. 62%) and African American youth (80% vs. 50%) were significantly more likely to reside in single parent headed household compared to late onset offenders and White Caucasian youth ($\chi^2 = 7.54$ and $\chi^2 = 203$ with $df = 1$, $p < .001$, respectively). Also, chi-square analyses of subgroup distribution showed that male youth represented a greater percentage of the early onset group (16% vs. 10%; $\chi^2 = 13.92$ with $df = 1$, $p < .001$) compared to female youth. Finally, there were no differences in terms of percentage of gender associated with ethnicity, nor was

onset of delinquency associated with ethnicity. Hence, further analyses regarding risks and needs according to subgroups were conducted after controlling for current age of youth and household composition.

1. Multivariate Analysis of Covariance (MANCOVA).

To determine the comparability of the groups, a 2 (gender) × 2 (ethnicity: African-American and Caucasian) × 2 (onset of delinquency: early onset and late onset) three-way Multivariate analysis of covariance (MANCOVA) was performed with scores of the GRAD 11 domains as the dependent variables after controlling the variance accounted for by current age of youth and household composition. The correlation matrix among each GRAD domain scores is presented in <Table 1>, and indicates that most domain scores of the GRAD are significantly and moderately correlated.

Results of the three-way MANCOVA revealed

<Table 1> Correlation matrix among 11 GRAD domains

(n=2167)

	Account-ability	Education	Family/ Parenting	Health	Leisure	Peers	Mental Health	Prior Offenses	Psycho-pathy	Sub-stance Abuse	Trauma
Accountability	1										
Education	.49(**)	1									
Family/ Parenting	.57(**)	.47(**)	1								
Health	.41(**)	.36(**)	.46(**)	1							
Leisure	.43(**)	.41(**)	.48(**)	.43(**)	1						
Peers	.57(**)	.50(**)	.62(**)	.59(**)	.53(**)	1					
Mental Health	.65(**)	.56(**)	.70(**)	.56(**)	.53(**)	.72(**)	1				
Prior Offenses	.35(**)	.40(**)	.35(**)	.44(**)	.36(**)	.47(**)	.38(**)	1			
Psychopathy	.60(**)	.41(**)	.50(**)	.44(**)	.44(**)	.58(**)	.63(**)	.35(**)	1		
Substance Abuse	.38(**)	.38(**)	.37(**)	.47(**)	.33(**)	.47(**)	.49(**)	.44(**)	.36(**)	1	
Trauma	.45(**)	.37(**)	.58(**)	.59(**)	.40(**)	.62(**)	.65(**)	.36(**)	.46(**)	.40(**)	1

**P < .01.

<Table 2> Result of MANCOVA for main effect and interaction effect of gender, ethnicity, and onset for delinquency

(n=2167)

Source of variance	Hypothesis *df*	Error *df*	Wilks' lambda	Multivariate *F*	*p*
Gender	11	2147	.969	6.27	<.001
Ethnicity	11	2147	.911	19.09	<.001
Onset	11	2147	.990	2.05	<.05
Gender x Ethnicity	11	2147	.989	2.22	<.05
Ethnicity x Onset	11	2147	.992	1.53	ns
Gender x Onset	11	2147	.989	2.13	<.05
Gender x Ethnicity x Onset	11	2147	.997	.62	ns
Control variables					
Age	11	2147	.855	33.19	<.001
Household composition	11	2147	.969	6.23	<.001

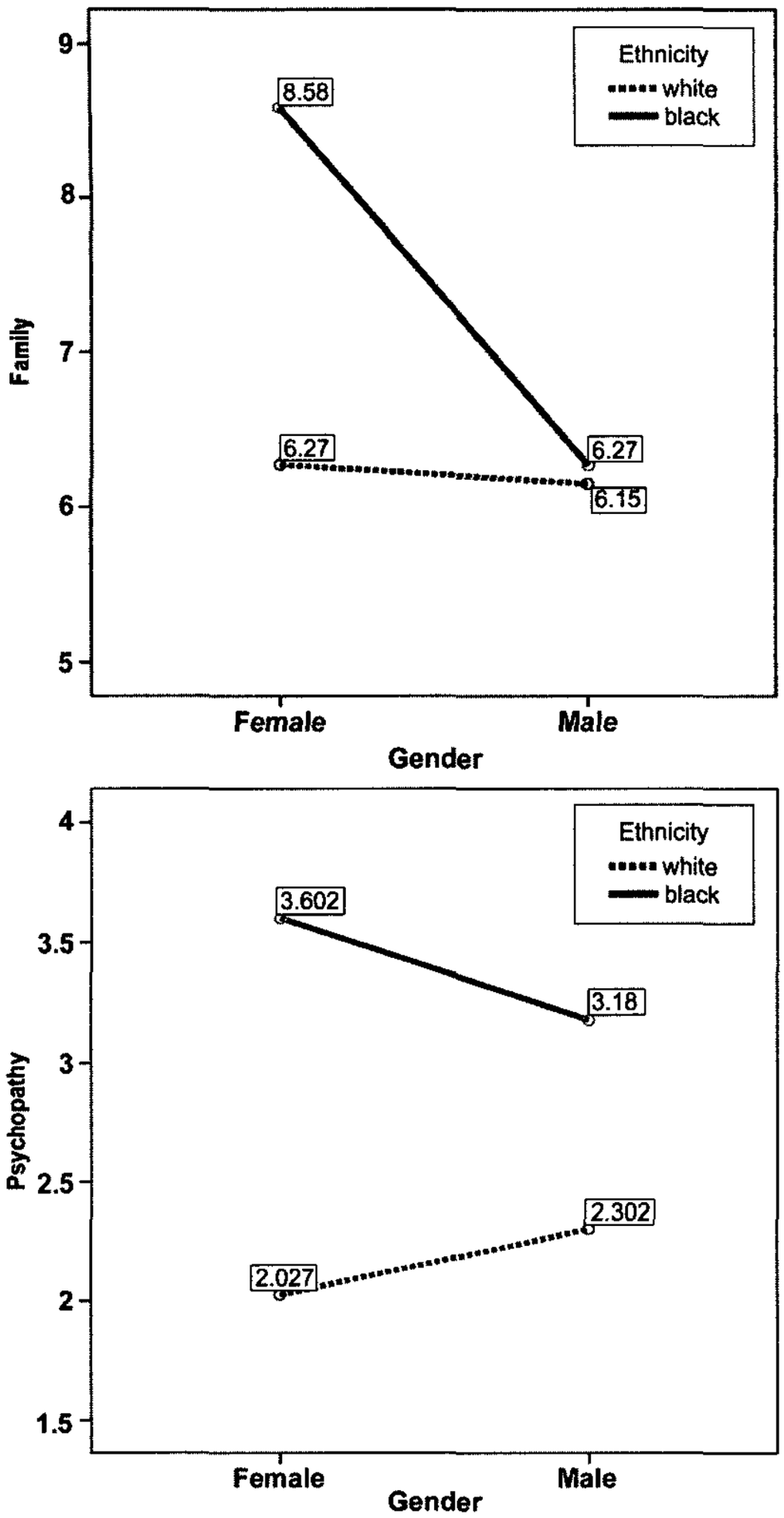
significant multivariate main effects (based on Wilks' Lambda) for gender [F (11, 2147) = 6.27, p < .001)], ethnicity [F(11, 2147) = 19.09, p < .001)], and onset of delinquency [F (11, 2147) = 2.05, p < .05)], as well as significant two way interaction effects for gender x ethnicity [F (11, 2147) = 2.22, p < .05)], and gender x delinquency onset [F (11, 2147) = 2.13, p < .05)]. Also, two controlling variables showed significant effects, in that there was a significant household composition effect [F (11, 2147) = 6.23, p < .001)] and a significant age covariate effect [F (11, 2147) = 33.19, p < .001]. There was no significant ethnicity x delinquency onset interaction effect, nor was there a three-way interaction effect. The results of MANCOVA for main effect and interaction effect of gender, ethnicity, and onset of delinquency are presented in <Table 2>.

Subsequent univariate analyses were conducted in order to identify the source of the significant multivariate effects regarding ethnicity, gender, onset of delinquency. <Table 3> displays only significant results for follow-up univariate analyses for main effect and interaction effect of gender, ethnicity, and onset of delinquency. In terms of the interaction effects of gender and ethnicity, African American female were significantly more likely to report higher risk scores on the GRAD domains related to family and psychopathy when compared to White Caucasian female youth, in tandem with non-significant group differences on the same domain scores in terms of both the African American and Caucasian male youth

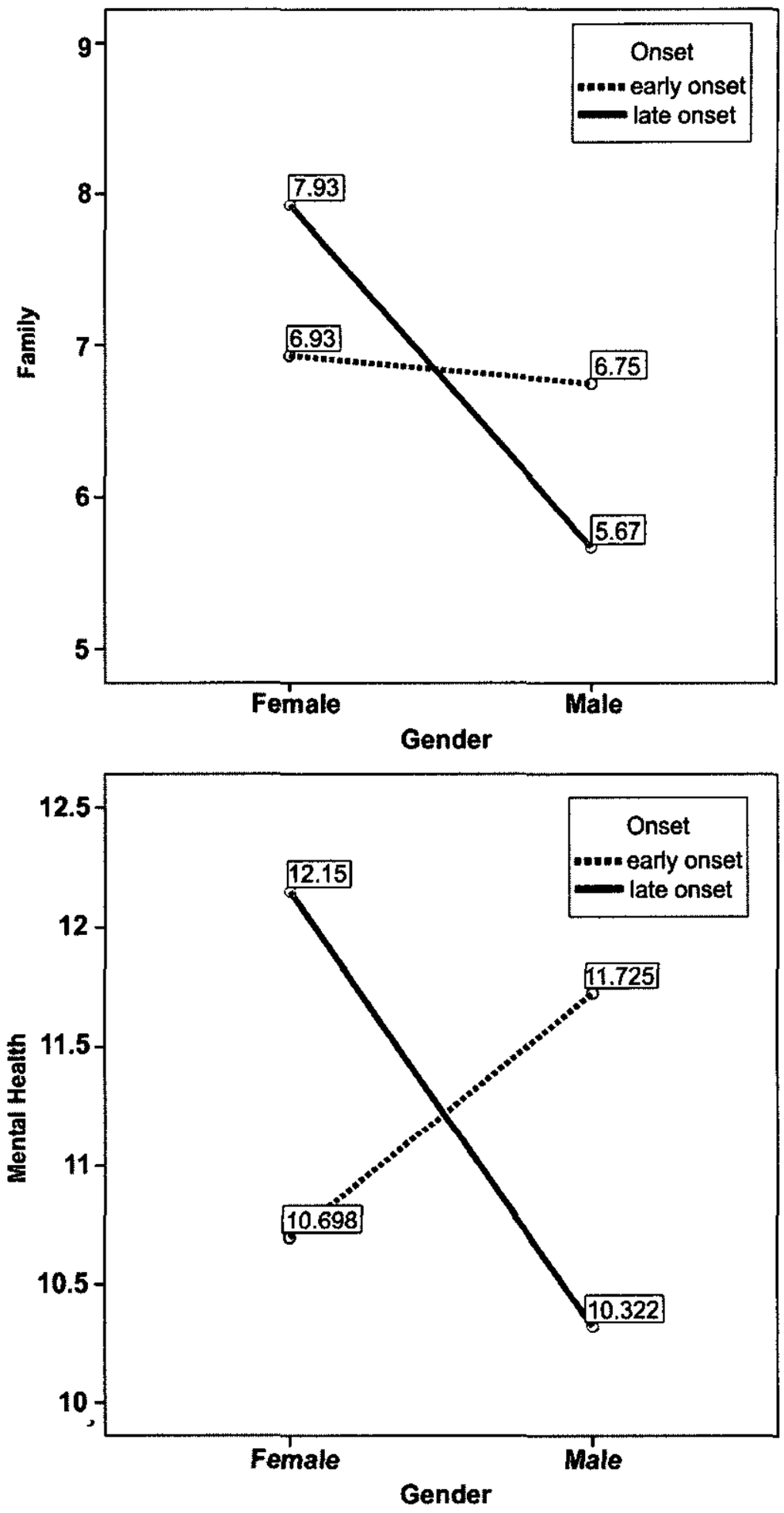
<Table 3> Follow-up univariate analyses for main effect and interaction effect of gender, ethnicity, and onset for delinquency

(n = 2167)

Source	Dependent variable	*df*	Mean square	Univariate *F*	*p*
Gender	Education	1	194.11	9.50	<.01
	Family	1	312.19	9.75	<.01
	Leisure	1	16.49	5.18	<.05
	Prior offense	1	66.27	14.78	<.001
Ethnicity	Accountability	1	135.72	16.53	<.001
	Education	1	341.55	16.71	<.001
	Family	1	291.90	9.11	<.01
	Health	1	282.61	38.61	<.001
	Leisure	1	46.85	14.72	<.001
	Peers	1	677.73	33.75	<.001
	Mental Health	1	664.25	7.53	<.01
	Prior offense	1	246.86	55.05	<.001
	Psychopathy	1	297.69	46.45	<.001
	Substance abuse	1	101.82	8.64	<.01
	Trauma	1	86.16	6.27	<.05
Onset	Prior offense	1	52.83	11.78	<.001
	Substance abuse	1	67.02	5.69	<.05
Gender x Ethnicity	Family	1	251.31	7.84	<.01
	Psychopathy	1	25.48	3.98	<.05
Gender x Onset	Family	1	224.84	7.02	<.01
	Mental Health	1	427.05	4.84	<.05
	Trauma	1	64.14	4.67	<.05
	Prior offense	1	24.57	5.48	<.05



<Figure 1> Interaction effects of gender and ethnicity on family and psychopathy.



<Figure 2> Interaction effects of gender and onset on family, mental health, trauma, and prior offense.

<Figure 1>. Regarding the significant gender x onset interaction effect, late onset female adolescents scored significantly higher on the GRAD domains associated with family, mental health, and trauma exposure in comparison to early onset female adolescents or there is no significant difference in the prior offense domain between the late onset female adolescent group and the early onset female adolescent group, while early onset male offenders scored significantly higher than late onset male offenders on the same GRAD domains < Figure 2>. Since the significant interactions effects of gender and ethnicity, and gender and onset are detected, the adjusted means for the dependent variables across subgroups are presented in <Table 4>.

Further, African American youth scored consistently higher than Caucasian youth on all 11 domains of the GRAD, and early onset youth reported significantly higher prior offenses and substance abuse problems than late onset youth. Finally, female youth reported significantly higher risks than male youth on the family domain, while male youth reported significantly higher scores than females on domains associated with educational / vocational issues, prior offenses, and leisure time risks.

<Table 4> Adjusted Means of Dependent Variables among Subgroups

(n = 2167)

Dependent variable	Group	Adjusted means	Group	Adjusted means
Accountability	White Female	2.75	Early onset female	3.25
	A.A. Female	3.80	Late onset female	3.30
	White Male	2.75	Early onset male	3.16
	A.A. Male	3.36	Late onset male	2.95
Education	White Female	3.74	Early onset female	4.68
	A.A. Female	5.60	Late onset female	4.67
	White Male	5.25	Early onset male	5.96
	A.A. Male	6.02	Late onset male	5.32
Family	White Female	6.28	Early onset female	6.93
	A.A. Female	8.59	Late onset female	7.93
	White Male	6.45	Early onset male	6.75
	A.A. Male	6.27	Late onset male	5.67
Health	White Female	2.46	Early onset female	2.90
	A.A. Female	3.47	Late onset female	3.03
	White Male	2.32	Early onset male	3.17
	A.A. Male	3.70	Late onset male	2.86
Leisure	White Female	1.87	Early onset female	2.03
	A.A. Female	2.35	Late onset female	2.19
	White Male	2.14	Early onset male	2.65
	A.A. Male	2.64	Late onset male	2.13
Peers	White Female	4.59	Early onset female	5.25
	A.A. Female	6.53	Late onset female	5.86
	White Male	4.42	Early onset male	5.63
	A.A. Male	6.18	Late onset male	4.97
Mental Health	White Female	10.23	Early onset female	10.70
	A.A. Female	12.62	Late onset female	12.15
	White Male	10.39	Early onset male	11.73
	A.A. Male	11.66	Late onset male	10.32
Prior Offense	White Female	1.62	Early onset female	2.31
	A.A. Female	2.84	Late onset female	2.15
	White Male	2.29	Early onset male	3.22
	A.A. Male	3.30	Late onset male	2.37
Psychopathy	White Female	2.03	Early onset female	2.92
	A.A. Female	3.60	Late onset female	2.71
	White Male	2.30	Early onset male	2.78
	A.A. Male	3.18	Late onset male	2.71
Substance Abuse	White Female	3.27	Early onset female	3.14
	A.A. Female	2.49	Late onset female	2.62
	White Male	3.25	Early onset male	3.24
	A.A. Male	2.59	Late onset male	2.61
Trauma	White Female	3.42	Early onset female	3.77
	A.A. Female	4.42	Late onset female	4.07
	White Male	3.70	Early onset male	4.26
	A.A. Male	4.01	Late onset male	3.45

A.A. : African American

IV. Conclusion

The present study was designed to comprehensively understand subgroup sensitive risks and needs experienced by delinquent adolescents. More specifically, the main purpose of this study was to identify different levels of risks and needs by subgroups associated with gender, ethnicity, and onset for delinquency.

The results generally supported subgroup sensitive risks, and the importance of the simultaneous consideration of ethnicity, gender, and delinquency onset. For example, African American female youth reported significantly higher risk scores on family and psychopathy domain compared to Caucasian female youth, in tandem with a general lack of differences among African American and Caucasian male youth. This result can be explained by results from previous studies showing that family factors and psychopathy issues are more closely associated with delinquent behaviors for female adolescents than male adolescents (e.g., Margolin & Gordis, 2000). For example, the subsequent criminalization of survival reactions to traumatic events including maltreatment or abuse at home is more frequently shown in female offenders (Chesney-Lind, 1997; Chesney-Lind & Okamoto, 2001). Also, earlier research has shown that family factors have components that distinguish African American youth's delinquent activities from those of white youth (Peterson *et al.*, 1994). Therefore, to be a female and a member of minority group seem to put the youth at risk for family and psychopathy related issues.

Also, the onset of delinquency had an effect on the court-involved male youth, and it was exactly the opposite of the findings related to the female adolescents. For males, early onset offenders scored significantly higher on the family, mental health, trauma and prior offense domains in comparison to late onset offenders. These findings are generally supported by previous studies that have indicated early onset offenders being more at risk for a variety of later life difficulties (Moffit, 1993) since they are significantly more likely to commit more violent and chronic crime in comparison to those adolescents whose delinquent behavior begins later (Loeber *et al.*, 2003). Originally, the importance of early onset for understanding patterns of criminal offending has been well established because of the serious adjustment issues (i.e., family related problem and mental health issues) and sustaining violent problems of early onset offenders (Thornberry *et al.*, 1995). In the Rochester Youth Development Study, Thornberry *et al.* (1995) found that thirty-nine percent of children who initiated violence at age 10-12 engaged in more problematic behaviors in later years. Therefore, literature about the onset for delinquency has consistently showed that early onset of delinquency is a strong predictor of later adjustment and serious problems as we can see from early onset male adolescents' higher level of family, mental health, trauma, and prior offense related issues in the present study.

However, the present study demonstrated that late onset female adolescents scored significantly higher on family, mental health, and trauma in comparison to early-onset female adolescents. The results are supported by studies proposing that there is a unique onset pattern for delinquency among female adolescents. According to Loeber and Stauthamer-Loeber (1998), female adolescents are more likely to become involved in delinquent behaviors at later ages, although female adolescents' risks do not seem to mimic that of later onset males. That is, most delinquent females show antisocial behaviors in adolescence but, unlike their late-onset male counterparts, they tend to show a serious and diverse set of long-term negative outcomes (i.e., illegal behaviors, substance abuse, family related risks) into young adulthood more similar to the early-onset male offenders. Therefore, there appears to be a female-specific effect in which late onset female offenders are more likely to resemble the characteristics (i.e., higher level of family, mental health & trauma issues) of early onset males.

While most prior research findings were indistinct in

risks and needs experienced by juvenile offenders to a large extent, the findings of subgroup-sensitive risk level in the present study add to the extant literature on delinquency by providing empirical support, and at the same time demonstrate the importance of considering subgroups associated with gender, ethnicity, and different onset for delinquency when practicing treatment or intervention programs with juvenile offenders. Recently, studies have started to focus on subgroup-sensitive issues in the lives of at-risk adolescents and a "different needs approach for this special population (Chesney-Lind, 1997; Chesney-Lind & Okamoto, 2001). That is, this new approach realizes that each subgroup of delinquent adolescents has its own pathway to delinquent behaviors, and thus there are dissimilar needs in regards to treatment and therapeutic interventions that target diverse subgroups.

In this context, practitioners, program developers, and policymakers should consider subgroup-sensitive risk factors when practicing and developing treatment strategies and intervention programs. The existing referral and treatment strategies for juvenile delinquency may have had limited understanding of these risks and needs in juvenile offenders because of the failure to integrate subgroup specific differences into practice. For program evaluators, programs developers, and professionals working with juvenile offenders, therefore, the findings of the present study provide evidence and rationale for the subgroup-sensitive intervention or treatment program development and practice among juvenile offenders.

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Received August 24, 2007
Revised November 6, 2007
Accepted November 7, 2007