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The influence of poverty on the development and maintenance of conduct disorder and perpetuation of crime and violence

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The Influence of Poverty on the Development and Maintenance of Conduct Disorder and Perpetuation of Crime and Violence

by

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Abstract

Jamaica has one of the highest murder rates per capita in the world, as well as a high rate of other crimes. With this study, I examined how factors such as income, social-ecological factors of poverty (S-E factors of poverty), and symptoms of conduct disorder (CD) were related to criminality in a sample of 79 male Jamaican parolees and probationers. Participants ranged in age from 18 to 74 years old and were all of African descent. I interviewed participants using the World Health Organization Composite International Diagnostic Interview (WHO-CIDI), a survey to assess S-E factors associated with poverty, and the Historical/Clinical/Risk Management (HCR-20). My results indicate that my measure of respondents' income was not associated with propensity for crime. However, severity of CD and an increased number of S-E factors of poverty were positively associated with propensity for crime in adulthood. Results also indicate that S-E factors of poverty mediate the relationship between severity of CD and propensity for crime. These findings provide evidence that psychologists should pay attention to S-E factors when diagnosing and treating CD. They also suggest that Jamaican officials working to reduce the level of crime in Jamaica may make greater strides by focusing their efforts on developing policies to eliminate social and environmental risk factors.

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Introduction

Conduct Disorder (CD), along with other antisocial behavior disorders, is the most common diagnosis for which children and adolescents are referred to mental health clinics (Costin & Chambers, 2007; Reid, 1993). The prevalence rate for CD, which is more common in males than females, ranges widely from approximately 1% to 10% in the general population (American Psychiatric Association [APA], 2000), and from 10% to 16% in mental health facilities for children (Nock, Kazdin, Hirpi, & Kessler, 2006). Research suggests that early development of CD is predictive of more antisocial behaviors in adulthood, including more engagement in criminal activities (Reid, 1993). Furthermore, this has been verified by research indicating that early onset and severe CD are associated with increased propensity for crime and violence (Cohen, Cohen, & Brook, 1993; Lahey, Loeber, Quay, Applegate, Shaffer et al., 1998; Moffitt, Caspi, Dickson, Silva, & Stanton, 1996). Thus, research to better understand CD is important because this condition not only affects the individual with the diagnosis; it directly impacts others in society.

Researchers have made greater strides in understanding and treating psychological disorders in adult populations; however, these advances are not paralleled in the range of treatments available for childhood disorders. This may be due to two key factors. First, children rarely report their psychological problems, and this makes it difficult to assess that a child is experiencing problems worthy of treatment. This phenomenon may be partly due to the finding that children generally have a less sophisticated understanding of their mental states than adults (Achenbach & Edelbrock, 1978). Thus, even if the child is aware that there is a problem, the child may not be able to clearly articulate the nature of this issue. Second, most childhood diagnoses are contingent upon the use of data provided by informants in the

child's life rather than concerns expressed directly by the child (Achenbach & Edelbrock, 1978).

Until the first edition of the Diagnostic and Statistical Manual (DSM) was published in the 1950s (APA, 1952), adult categories of psychological disorders were inaccurately applied to children. Once the first edition of the DSM was published, all youth were diagnosed with one of two disorders: Childhood Schizophrenia or Adjustment Reaction (Achenbach & Edelbrock, 1978). Even decades after the first publication of this manual, the diagnostic criteria for children were wholly inadequate. A study by Achenbach and Edelbrock (1978) found that 70% of children and adolescents with mental illnesses were either unclassified or classified as having an adjustment disorder. Needless to say, this failure in diagnostic acumen likely resulted in, at best, only mediocre treatments much of the time. However, advances in statistical research methods began to improve this process for how CD was assessed.

A series of factor analytic studies conducted between the 1960s and late 1970s identified Internalizing syndromes (e.g., personality problems) and Externalizing syndromes (e.g., conduct problems) occurring in a clinical population of children and adolescents (Achenbach & Edelbrock 1978). These studies found that the most frequently occurring problems were Aggressive Behavior and Delinquent Behavior, which most frequently classified boys. More recent studies, conducted between the early 1980s and late 1990s refined the symptom features of these aggressive and delinquent behaviors (e.g., Frick, Van Horn, Lahey, Christ, Loeber, Hart, Tannennbaum, & Hanson, 1993) and found support for a multifaceted definition of CD. Specifically, CD was found to have two dimensions: (1) an overt dimension that contains the aggressive CD symptoms and (2) a covert dimension that

contains the delinquent or nonaggressive CD symptoms (e.g., truancy and vandalism). Currently, the most recent edition of the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision [*DSM-IV-TR*]; APA, 2000) identifies CD as a repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated. Further, this manual has adopted a multidimensional approach to diagnosing CD that consists of four categories that are thought to fall along the overt and covert dimensions previously discussed.

These four categories are (1) aggressive to people and animals (bullying, fighting, using a weapon, being physically cruel to people and/or animals, stealing while confronting a victim, and forcing someone into sexual activity); (2) destruction of property (deliberately engaged in fire setting with the intention of causing serious damage and deliberately destroyed other's property); (3) deceitfulness or theft (breaking into someone's house, building, or car; conning others; and stealing without confronting a victim); and (4) serious violations of rules (frequently staying out at night despite parental prohibitions, running away from home overnight, and frequently being truant from school). The overt CD behaviors include those involving direct confrontation or disruption of the environment (e.g. stealing while confronting a victim), whereas the covert CD behaviors include those that usually occur without someone else's awareness (e.g., has stolen without confronting a victim). A meta-analytic study consisting of 60 factor analyses from 44 published studies, with 28,401 children and adolescents (aged 6-16), confirmed these "overt-covert" dimensions and extracted another bipolar dimension of "destructive-nondestructive" (e.g., vandalism-truancy; Frick et al., 1993). Even though the DSM-IV-TR is composed of CD symptoms that fall along these two bipolar dimensions, it employs a categorical approach for diagnosing CD,

and is only modified by ratings of severity. Therefore, for the purposes of the present study, I have conformed to this method of diagnosing CD and utilize a categorical approach for CD severity (i.e., mild, moderate, and severe) to make group comparisons. I, however, used a dimensional approach to learn how the level of severity of CD is associated with other relevant variables, such as crime in adulthood.

Youth living in impoverished neighborhoods with a high crime rate and many deviant peer groups also exhibit many overt antisocial behaviors (De Coster et al., 2006). These externalizing antisocial behaviors may serve a useful function in this environment because they allow individuals who lack prosocial skills to gain access to limited resources and they give the appearance of toughness for the purpose of self-protection in a difficult neighborhood (Moffitt, 1993). Perhaps it is because of the presentations of these symptoms, particularly, more externalizing antisocial behaviors in boys than girls, and more severe antisocial behaviors in impoverished neighborhoods, that there is such a high prevalence rate of CD for boys living in poverty.

DSM-IV-TR Specifiers

The specifiers of CD facilitate diagnosis and have many implications for prognosis. The DSM-IV-TR (APA, 2000) classifies CD according to when it first appears (i.e., childhood-onset type, adolescent-onset type, and unspecified onset) and its severity level (i.e., mild, moderate, and severe). The childhood-onset type is diagnosed if at least one criterion characteristic of CD is present before age 10 years, whereas the adolescent-onset type is diagnosed only in the absence of criteria characteristic of CD prior to age 10 years (APA, 2000). As the name suggests, unspecified onset simply means that the age of onset is unknown. The childhood-onset type is also referred to as “life-course-persistent” because

antisocial behaviors are very likely to persist into adulthood, whereas the adolescent-onset type is referred to as “adolescence-limited” because antisocial behaviors are very likely not to continue beyond the transition period into adulthood (Moffitt, 1993). The severity specifiers are somewhat ambiguous and require a clinician to make a judgment call about level of severity based on the presentation of symptoms. Clinicians can specify CD as mild if only a few antisocial behaviors in excess of those required to making the diagnosis occur, and if these behaviors cause only minor harm to others (APA, 2000). They can specify CD as moderate if the number of antisocial behaviors and the effect of these behaviors are intermediate between mild and severe, and as severe when many antisocial behaviors in excess of those required to make the diagnosis are present or when these behaviors cause considerable harm to others (APA, 2000). It is obvious from these descriptions that prognosis is worse for youth whose antisocial behaviors began in childhood versus adulthood and for youth whose antisocial behaviors are severe.

Diagnostic Problems

Concerns regarding diagnosing CD as a psychiatric disorder. The DSM-IV-TR (APA, 2000) syndromal CD diagnostic criteria conflict with its definition of mental disorder, which requires that symptoms be considered a manifestation of internal dysfunction (i.e., a psychological or biological dysfunction) to warrant a diagnosis (Wakefield, Kirk, Pottick, Hsieh, & Tian, 2006). Furthermore, the DSM states that several social-ecological factors, including lack of supervision, association with delinquent peers, and neighborhood exposure to violence, predispose individuals to develop CD (APA, 2000). The aforementioned conflict indicates a major problem with the diagnostic criteria for CD and suggests that one of the difficulties clinicians have with diagnosing CD is in deciding the extent to which antisocial

behaviors should be attributed to an internal dysfunction or social-ecological factors. A major consequence of this problem is that CD assessment instruments may have a high false positive rate for individuals exposed to poverty's social-ecological factors. This is not an easy issue to resolve, but the section on biological versus social-ecological theories of causation will more closely examine it and provide an analysis that could help researchers decide whether to focus their efforts on an internal dysfunction or social-ecological factors.

Giving equal weight to all symptoms. An examination of the symptoms that make up CD reveals that they are not equally severe, yet the DSM-IV-TR gives them equal weight in its criteria for a CD diagnosis. In addition, it uses a symptom count; thus, if a child only displays two antisocial behaviors, this does not meet the numerical criteria for a diagnosis of CD, regardless of the severity of these indicators. Conversely, the appearance of just three mildly antisocial behaviors can result in a diagnosis of CD. These factors are important in the diagnosis of CD for two main reasons. First, the current criteria might miss troubled youth who do not exhibit the number of antisocial behaviors required for a diagnosis, which may exclude them from treatment. Second, clinicians may diagnose CD when behaviors are frequent but not severe, which may consequently lead to the detrimental effects of labeling for these youths.

Diagnostic questions for the current study. These nosological distinctions are important in the present study for two reasons. First, they not only allowed me to test previous findings that have suggested that early onset and severe forms of CD predict higher incidents of violence in adulthood, but they allowed me to do this using a retrospective approach rather than the longitudinal method used by other authors (Moffitt et al., 1996). Second, I was able to assess the nosological ambiguity that exists in the relationship between

these different subtypes of CD and incidents of adult violence. Specifically, some research suggests that the various categories of CD are dimensional in nature and thus increase linearly from mild to severe (Frick et al., 1993). If this is accurate, we might expect a positive linear relationship between CD symptom severity and increased instances of adult violence. However, it is also possible that these subtypes are categorically related to adult violence. In the latter situation, it would be possible that those diagnosed as having had severe CD in childhood might behave very differently as adults than those diagnosed with mild or moderate subtypes. In fact, all three subtypes might display independent relationships with levels of adult violence. By examining these issues, I hope to advance both the diagnostic and prognostic aspects of the CD literature.

Theories of Causation for CD and Crime and Violence

Several researchers have proposed a number of theories of causation of antisocial behaviors (De Coster et al., 2006; Lahey & Waldman, 2003; Slutske, Cronk, & Nabors-Oberg, 2003; Snyder, Reid, & Patterson, 2003). These include the social learning model of causation (Snyder et al., 2003), developmental propensity model of causation (Lahey & Waldman, 2003), social mechanisms of community influences model (Wikstrom & Sampson, 2003), biological theories of causation (Slutske, et al., 2003), and social-ecological theories of causation (De Coster et al., 2006). Of these, two prominent theories of causation for CD and other antisocial behaviors are biological and social-ecological (De Coster et al., 2006; Slutske, et al., 2003). However, it is worth briefly describing the other theories before describing biological and social-ecological theories because each theory incorporates a number of similar causal factors.

Integrative models. The social learning model of causation suggests that persistent and serious antisocial behaviors occur because children fail to acquire an increasingly sophisticated array of skills, which reduces their ability to self-regulate emotions, problem-solve, engage in autonomous rule following, and relate effectively to others (Snyder et al., 2003). This theory also suggests that children gravitate toward settings, activities, and people who are compatible with their own experiences. Thus, unskilled antisocial children seek out niches which bring them in contact with other antisocial peers and minimal supervision (Snyder et al., 2003).

The developmental propensity model of causation posits that youth with early- versus late-onset CD tend to exhibit antisocial behaviors for different reasons (Lahey & Waldman, 2003). In particular, this theory suggests that youth with earlier ages of onset of antisocial behaviors have atypical temperament (e.g., an oppositional temperament) and low cognitive ability (Lahye & Waldman, 2003). These factors are relatively persistent characteristics, which, according to this model, may explain why early-onset CD often continues into adulthood.

The social mechanisms of community influence model suggest that criminal offending is ultimately a result of individual choice, which may be encouraged by contextual factors. Thus, an individual may be motivated by his limited options or lack of choices to engage in unlawful behaviors when he is in a setting where he perceives a low risk of detection or sanctions (Wikstrom & Sampson, 2003).

Biological theories of causation for antisocial behaviors. Since ancient times, the association of the brain with illness has been an area of great exploration (e.g., trephination) (Dimopoulos, Robinson, & Fountas, 2008). Although we have advanced greatly since these

early efforts, this process has not been without its horrors and controversies (e.g., lobotomies, electroconvulsive therapy, etc.; Rose, Wykes, Leese, Bindman, & Fleischmann, 2003). However, scientists were aptly focusing on the role of the central nervous system (CNS) and its neurotransmitters in the control of behaviors, both normal and abnormal. Several researchers have found that low levels of the neurotransmitter serotonin play an important role in aggression (Linnoila, Virkkunen, Scheinin, Nuutila, Rimon, & Goodwin, 1983). Thus, research examined the effectiveness of psychopharmacological treatments such as selective serotonin reuptake inhibitors (SSRIs) for CD and other antisocial behaviors (Bukstein, 2003; McMahon & Wells, 1998). This, however, has had little or no success (McMahon & Wells, 1998), which suggests that although neurotransmitters may cause aggression, it does not contribute to the other antisocial behaviors that are prominent in CD. The association between serotonin and aggression may be spurious. That is, life-stressors appear to be associated with an increased risk for both CD and mood disorders (Nock et al., 2006). Therefore, low serotonin levels may be associated with depression as opposed to CD aggressive symptoms.

Because of the inconclusive evidence on neurotransmitters, other researchers turned to hormones, such as testosterone, to explain the presence of antisocial behaviors (Lahey, McBurnett, Loeber, & Hart, 1995). Researchers noted that antisocial behaviors, including aggression, are more prevalent in boys, who have higher levels of testosterone than girls, and tested the relationship between hormones and CD (Pihl, Vant, & Assaad, 2003). However, the results of this research do not explain why girls show more covert antisocial behaviors than boys, or why some girls with normal testosterone levels engage in aggressive behaviors. In fact, research has found that boys with high physical aggression had lower testosterone

levels than boys with low aggression (Pihl et al., 2003). Thus, the evidence for a testosterone-aggression relation in humans is inconclusive.

Other researchers look to genetic factors to explain the presence of antisocial behaviors (Lyons, True, Eisen, Goldberg, Meyer, et al., 1995). Because monozygotic (MZ) twins have 100% of the same genes while dizygotic (DZ) twins do not, studying both pairs of twins raised in similar or different environments is an excellent way to determine the heritability of physical and behavioral characteristics, and an excellent way to separate genetic from environmental causes of disease (Slutske, Heath, Dinwiddie, Madden, Bucholz, et al., 1997). Twin studies are frequently used to determine genetic influence on criminality among children with CD (Slutske et al., 1997). These studies have produced inconsistent results over the years, with earlier studies providing more support for genetic influence compared to later studies, which provide greater support for environmental influence (Lyons et al., 1995). Whereas later twin studies found no difference in concordance rate between MZ males and DZ males, earlier twin studies reported a 50% concordance rate for criminality in male MZ twins and 23% concordance rate among male-male DZ pairs (Lyons et al., 1995). Later studies used double-blind experiments and random assignment, whereas earlier studies did not. The later studies suggested that the family or shared environment, and not genetic factors, is primarily responsible for CD and criminal activity (Lyons et al., 1995). The methodological soundness of later studies strengthens arguments for the importance of social and environmental influences over genetic influences in the etiology of CD and perpetuation of crime.

Social-ecological theories of causation and maintenance of antisocial behaviors. Imagine a community in which certain members of society deliberately carry out social and

economic activities that foster a culture of crime and violence. This has occurred in certain "garrison communities," in Kingston, Jamaica, which now has one of the highest rates of poverty and crime in the country, as well as a high level of social disorganization. These communities are referred to as "garrison communities" because of their political allegiance to one of two parties in Jamaica and the fact that some members of parliament have, in the past, funded criminal gangs and drug dons, who have a hold on the residents and control that constituency, in an effort to influence the majority of vote for one political party (Henry-Lee, 2005). This is an extreme example of a very corrupt system, but it exemplifies the influence of social-ecological factors on antisocial behaviors.

Research demonstrates that social-ecological factors, such as a criminogenic street context and deviant peer associations, influence the high prevalence rate of antisocial behaviors in some U.S. communities (De Coster et al., 2006; Hannon & Defina, 2005). Deviant peer association in particular is a very common feature of disadvantaged neighborhoods, which strongly influences the development and maintenance of antisocial behaviors (Moffitt, 1993; Sampson & Groves, 1989).

One theory that explains why deviant peer associations cause delinquency, especially in adolescents, is "social mimicry" (Moffitt, 1993). Social mimicry, which is a concept borrowed from ethology, occurs when two animal species share a single niche with limited resources and one of the species adopts the behavior of another species, which allows it to better obtain these resources (Moynihan, 1968). In other words, adolescents with limited resources, who are in close contact with deviant peers, may engage in behaviors similar to their peers for the purpose of immediate rewards. This is true for some adolescents in communities, such as inner city neighborhoods, where the crime rate is high and the reward

for illegal activities outweigh the costs of being caught. This is, of course, in contrast to the lower crime rate in neighborhoods, such as some poor rural communities, with high cohesiveness, in which individuals can be readily identified and held accountable for their actions. The higher crime rate in the inner city communities with poor social structure in Kingston, Jamaica, compared to the significantly lower crime rate in poor rural Jamaican communities, is an excellent example of this. Similarly, this distinction can be made between poor urban and rural communities within the U.S. and exemplifies that it is social and environmental factors associated with poverty rather than poverty itself that influence crime and violence.

Regarding the influence of S-E factors on the development of CD, the DSM-IV-TR indicates that certain social and environmental problems may predispose individuals to develop CD (APA, 2000). However, it also indicates that CD should not be diagnosed when the antisocial behaviors are simply a reaction to the social context (APA, 2000). This diagnostic inconsistency and difficulty with parsing out the extent to which an internal dysfunction versus the social context contribute to CD suggests that a diagnostic system that includes S-E factors might resolve these problems and be more useful for diagnosing and treating antisocial behaviors.

Although antisocial behaviors occurring in childhood and adolescents were not specifically identified as CD in an earlier edition of the DSM, the DSM-II, from the 1970s; it described both social and environmental problems that may directly contribute to the development of CD (APA, 1968). For instance, the DSM-II (1968) indicates that individuals exhibiting antisocial behaviors usually have inconsistent parental supervision and may have acquired their values, behaviors, and skills from deviant peer groups (APA, 1968). This

inclusion of social and ecological problems in its description of factors contributing to aggressive and delinquent behaviors consistent with CD provides an example of an approach that might be more useful for diagnosing CD. The present study has examined the influence of S-E factors in the relationship between CD and crime and violence in an effort to determine the extent to which S-E factors should be acknowledged when diagnosing CD.

Summary

The prominent biological theories of causation of CD have produced inconsistent or inadequate evidence and support for the hypothesis that CD is primarily caused by a specific biological diathesis. Furthermore, many researchers argue that social and environmental factors play a greater role in predicting antisocial behaviors than biological factors (Hannon & Defina, 2005; Moffitt et al., 1996; Sampson & Groves, 1989). Consequently, I have chosen in the present study to examine a simple path model that places key environmental factors as intervening variables in the relationship between CD and adult violent behaviors. Specifically, my model posits that the relationship between CD and adult violence cannot be properly understood without an examination of the role of poverty-related factors in this relationship.

How are Poverty and Race Associated with CD and Crime?

The economist Jeffery Sachs (2005) suggested that there are two types of poverty: absolute poverty and relative poverty. The former is poverty in which individuals do not have access to basic necessities such as food and water. The latter is poverty commonly seen in developed countries, in which people have access to basic necessities but do not earn enough to live above the poverty line defined by their country. These two types of poverty appear to be highly associated with single-parent households, larger families with many children, and

limited resources (Sachs, 2005). However, research suggests that crime and violence are higher in communities with relative poverty than in those with absolute poverty. This may be due to the availability of more crime targets (i.e., greater density of victims), a lower probability of arrests due to more suspects, and more opportunities to escape in communities with relative poverty, such as urban areas (Glaeser & Sacerdote, 1999). African Americans are more likely to experience relative poverty than Whites. Data from the U.S. Census Bureau indicate that approximately 1 in 4 Blacks versus 1 in 10 Whites live below the federal poverty line (DeNavas-Walt, Proctor, & Lee, 2005). Two authors (Oliver & Shapiro, 1997) attribute this difference to historical factors that have prevented many Blacks from accumulating wealth resources over the years. For example, state policies prevented Blacks from owning land or accumulating assets that they could pass on from generation to generation, and other policies prevented Blacks from gaining quality education and job training opportunities (Oliver & Shapiro, 1997). In addition, the Federal Housing Authority (FHA), in 1940, included a "restrictive covenant" in its policies that once legally prevented Blacks from owning homes in certain White neighborhoods (Oliver & Shapiro, 1997).

Although the majority of Jamaicans are Black, similar factors prevented many Jamaicans from gaining access to many resources and the best communities. Many of the best areas in Jamaica are properties, such as resort areas, owned by wealthy individuals who might no longer live in the country. The result of these factors was that poorer Jamaicans were left with the worse land to occupy. Some of these areas are now referred to as "captured land" in Jamaica because they were not purchased. Other poor Jamaicans also moved to underdeveloped inner city communities and other disadvantaged neighborhoods. Therefore, it is not surprising that these are the areas with the highest crime rate in Jamaica. The fact is

that many of the communities occupied by some Blacks in the U.S. and Jamaica have a high level of social disorganization due to poverty, which research suggests creates an environment that fosters more antisocial activities (DeCoster et al., 2006; Hannon & Defina, 2005).

Antisocial behaviors show a high association with poverty (DeCoster et al., 2006; McNulty & Bellair, 2003; Sampson & Groves, 1989), and children from a low socioeconomic status (SES) are more likely to develop CD and engage in crime and violence as adults compared to children from a high SES (Eamon & Mulder, 2005; Loeber, Green, Keenan, & Lahey, 1995). This is not to say that antisocial behaviors do not occur in families above the poverty line. Evidence, however, suggests that CD in individuals from a higher SES is often not as pervasive and is more amenable to treatment (Elliot, Ageton, & Canter, 1979). This is because of a lower probability of apprehension and public labeling by the juvenile justice system, more prosocial self-images, and retention of partial commitment to conventional goals (e.g., obtaining an education), all of which protect youth from prolonged engagement in delinquent behaviors (Elliot et al., 1979).

Research attempting to understand the relationship among race, poverty, and antisocial behaviors has attributed much of the etiology for antisocial behaviors almost exclusively to demographic factors such as race and SES (Piper, 1985; Thornberry, 1973), while overlooking other important social and ecological factors that might better explain the relationship between poverty and antisocial behaviors. The problem with focusing only on demographic variables is that minorities and poor individuals are more likely to engage in antisocial behaviors because of residential constraints that concentrate them in disadvantaged neighborhoods (McNulty & Bellair, 2003; Oliver & Shapiro, 1997). One of the few studies

that compared Blacks to Whites from neighborhoods similar in terms of socioeconomic disadvantage and level of social disorganization found that the prevalence rate for antisocial behaviors was similar between the two groups (Hannon & DeFina, 2005). In another study, DeCoster and colleagues (2006) controlled for demographic variables (i.e., SES, race, ethnicity, and single parent household), while examining the effects of social-ecological factors (i.e., criminogenic street context, deviant peer associations, and a high level of social disorganization within the community). They found that social-ecological factors were better predictors of antisocial behaviors than demographic variables. These findings indicate that contextual factors, and not race or exclusively SES, are important variables to examine to better understand antisocial behaviors.

In the context of these findings, Jamaica stands out as a country in need of intervention and research. Jamaica had the highest murder rate per capita in the world in 2005, and as of 2006 was ranked third in the world behind South Africa and Colombia (Sullivan, 2006). The highest rate of crime in Jamaica is in the most impoverished neighborhoods, and youth who most often come in contact with the juvenile justice system are from these communities (Henry-Lee, 2005). Furthermore, the great disparity in wealth between the rich and poor neighborhoods in Jamaica offers many crime targets, which several authors indicate leads to more criminal activities (Glaeser & Sacerdote, 1999). Because of these factors, I selected Jamaica upon which to focus this study. It was an ideal location to further study these phenomena because it possesses all of the key social-ecological predictors of CD previously discussed (i.e., high levels of social disorganization, criminogenic street context, etc.); however, it lacks the internal racial disparities seen in the

United States. Thus, this context may avoid the confounding factors of race that exist in similar communities in the United States.

Purpose of the Present Study

This review has highlighted a significant gap in the literature related to CD. Specifically, although researchers have examined the influence of social-ecological factors associated with poverty on the development of adult antisocial behaviors (De Coster et al., 2006; Hannon & Defina, 2005; McNulty & Bellair, 2003; Sampson & Groves, 1989), there appears to be a dearth of research that has simultaneously linked CD with both of these variables. Psychological research examining the relationship between CD and antisocial behaviors (Lahey et al., 1998; Moffitt et al., 1996) has not considered the influence of social-ecological factors on the development of antisocial behaviors. The reasons for this gap could be because psychological research is less concerned with the influence of social and environmental factors on the development of antisocial behaviors and psychologists have traditionally attributed CD to an internal dysfunction and/or demographic variables (Wakefield et al., 2006). Furthermore, the difficulties with conducting longitudinal studies due to a high rate of attrition and time and resources required (Prinz & Miller, 1994) may discourage researchers from studying participants from childhood to adulthood based on CD specifiers (i.e., onset and severity) and exposure to social-ecological factors. Identifying CD in addition to many of the social-ecological factors associated with poverty will, therefore, improve our understanding of how antisocial behaviors develop.

Due to the absence of research examining the relationship among social-ecological factors of poverty, CD, and crime and violence, the purpose of the present study is to elucidate the relationship between these variables. Toward this end, I have examined the potential role of poverty-associated factors as mediators in the relationship between CD symptoms and adult antisocial behaviors. My hypotheses were as follows:

Hypothesis 1:

The influence of low SES on the development of antisocial behaviors (CD and crime and violence) is best explained by the social-ecological factors associated with poverty, and not poverty itself (i.e., exclusively income below the poverty line; Figure 1a).

Hypothesis 2:

The relationship between CD and propensity to engaging in crime and violent behaviors in adulthood will be mediated by the social-ecological factors associated with poverty (Figure 1b).

Hypothesis 3:

Respondents who fulfilled the diagnostic criteria of early onset and severe CD as youths will endorse a greater number of social-ecological factors of poverty than respondents who fulfilled the diagnostic criteria for late onset and mild CD.

Hypothesis 4:

Respondents who experienced the greatest number of social-ecological factors associated with poverty as youths will be convicted of more severe crimes than respondents who experienced fewer of these factors.

Hypothesis 5:

Respondents who met the diagnostic criteria for severe forms of CD as youths will be convicted of more severe crimes than respondents who met the criteria for mild or moderate forms of CD.

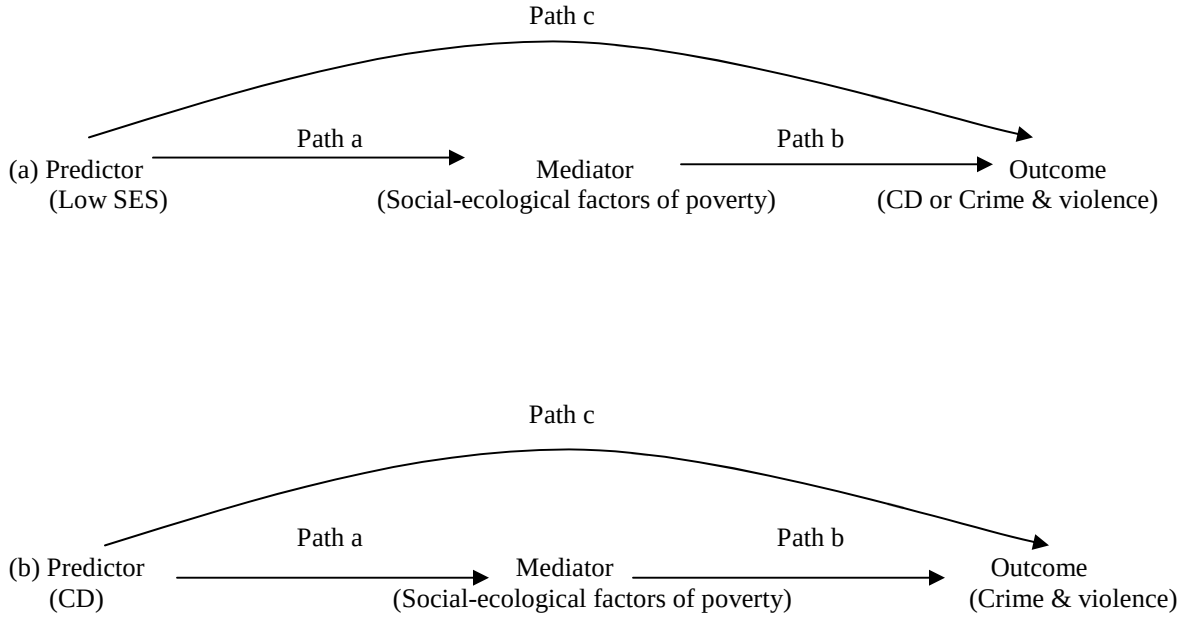

Figure 1. Putative mediator effects of the social-ecological factors of poverty in the relationships between SES and CD or propensity for crime and violence (a), and between CD and propensity for crime and violence (b).

Methodology

Participants

The present study consisted of 79 male participants from Jamaica. All participants were parolees and probationers who were recruited regardless of the nature of the crime for which they were convicted. Parolees and probationers with a memory impairment due to any known cause (e.g., brain injury, psychological conditions, dementia, etc.), or a history of psychosis were excluded from this study. Data were obtained only from adult participants between the ages of 18 and 74. This age criterion was utilized for two reasons. First, the World Health Organization Composite International Diagnostic Interview (WHO-CIDI), which was used to assess for CD, has only been validated with adults (Kessler & Ustun, 2004). Second, I was interested in determining if a cross-sectional approach could be used to both retrospectively assess CD symptoms, as well as determine if CD symptoms assessed with this approach would predict specific outcomes in adulthood. Consequently, all participants had to be adults.

All participants were interviewed to assess for social-ecological factors associated with poverty, symptoms meeting criteria for a CD diagnosis (including onset type and severity level), general demographic information, propensity for engaging in crime and violence, and severity of the actual crime each participant committed.

Measures

I assessed participants using one-on-one interviews in which I both read questions to and recorded the responses from participants. Thus, I was able to obtain data even from participants who were illiterate. Further, I reviewed each participant's criminal records to ensure consistency between what the participant reported about his life and what his records indicated. The specific measures used in this study included the following instruments: (1)

the Social-Ecological Factors of Poverty Survey, (2) World Health Organization Composite International Diagnostic Interview (two sections), and (3) Historical/Clinical/Risk Management (HCR-20).

Social-ecological factors of poverty survey. Social-ecological factors of poverty were measured using an interview composed of questions adapted from De Coster and colleagues (2006). Participants were asked about their parents' participation in community activities, supervision received while growing up, cohesiveness of their family while growing up, whether they were from a criminogenic street context (e.g., deviant peer associations, easy accessibility of guns, and a violent street environment), and the level of social disorganization within the community in which they grew up (e.g., poor or no schools and absence or low involvement of community organizations). The overall score from this interview was used as a measure of the level of social-ecological factors associated with poverty that participants experienced while they were growing up (Appendix A).

World Health Organization Composite International Diagnostic Interview (WHO-CIDI). The WHO-CIDI is a fully structured diagnostic interview that generates a number of psychological diagnoses according to definitions and criteria of both the DSM-IV-TR (APA, 2000) and ICD-10 (WHO, 1992) diagnostic systems (Kessler & Ustun, 2004). The WHO-CIDI includes a screening module and 41 sections, including 22 sections (diagnoses), 4 sections (functioning), 2 sections (treatment history), 4 sections (risk factors), 7 sections (socio-demographic correlates), and 2 sections (methodological factors). The World Health Organization coordinated a series of face-to-face household surveys in 28 countries around the world using the WHO-CIDI as part of a world mental health survey initiative (Kessler & Ustun, 2004), which indicates that this interview method is relevant for international use.

Concurrent validity was established by comparing diagnoses based on the WHO-CIDI with diagnoses made by clinicians using criteria from the DSM. This indicated that the WHO-CIDI has good concurrent validity (i.e., a correlation coefficient of .78; Kessler, Abelson, Demler, Escobar, Gibbon, et al., 2004).

I used two portions of the WHO-CIDI. First, I used the conduct disorder (CD) section of the WHO-CIDI to retrospectively assess participants' symptoms of CD and to qualify the onset type and severity level of this condition in participants (Appendix B). A range of severity scores for CD was calculated using the total number of CD symptoms participants endorsed as well as the level of "interference" they reported. For example, if participants endorsed symptoms of CD, they were also asked to rate how much these symptoms interfered with their school, work, social life, or personal relationships using the following ratings: *a little*, *some*, *a lot*, or *extremely*. Thus, participants who endorsed more symptoms and reported the greatest level of interference as a result of these symptoms were deemed to meet criteria for a more severe form of CD than participants who endorsed fewer symptoms and reported less interference. Second, I used the screening and demographics sections of the WHO-CIDI (Kessler & Ustun, 2004) to obtain participants' social and demographic information (Appendix C). This instrument was used to obtain the following information from each participant: age, racial/ethnic background, employment history, educational background, SES, relationship status and history, and family background (e.g., single- versus two-parent household and male- versus female-headed household).

In the present study, poverty as measured by low SES referred exclusively to an annual income below Jamaica's poverty line. In Jamaica, during the time of the interviews, the poverty line was set at an annual income of JA$78,765 (or US$890.00). Therefore,

participants who earned below this amount annually earned below Jamaica's poverty line and were thus classified as low SES. Participants were asked to indicate their income by selecting from a range of incomes included in the WHO-CIDI. The lowest range of income was between JA$1 and JA$1,999, and the highest range was JA$1,000,000 and above. Participants could also indicate that they were not earning any money if they did not have an income. In all, there were 33 ranges of incomes, and a score of 0 representing no income, from which participants could select. Therefore, participants obtained a score of between 0 and 33 to represent their SES, where 0 represented no income and 33 represented the highest income that a participant could earn. These scores were used in the analysis to examine the relationships among SES, S-E factors of poverty, CD, and propensity to crime.

Historical/Clinical/Risk Management (HCR-20). The HCR-20 is a 20-item measure designed to assess propensity for criminal and violent behavior (Webster, Douglas, Eaves, & Hart, 1997). The 20 items on the HCR-20 are composed of 10 historical variables (H; e.g., previous violence, age of first violent incident, early maladjustment at home, school, or in the community, etc.); 5 clinical items (C; e.g., lack of insight, negative attitudes, impulsivity, etc.); and 5 risk management variables (R; e.g., lack of personal support [i.e., lack of help from family and friends], feasibility of future plans, level of stress, etc.; Appendix D). Each item is rated on a 3-point scale, with 0 indicating that available information contraindicates the presence of the item, 1 indicating that available information suggests the possible presence of the item, and 2 indicating that available information indicates the presence of the item. The HCR-20 produces numerical scores for each of its three scales and the total score for all scales. The HCR-20 deliberately avoids providing a cutoff score to make a final risk judgment of "low," "moderate," or "high" for engaging in

future crime and violence because of the difficulties with making a decision about risk suitable for all situations (Webster et al., 1997). The instrument developers instead recommend that the assessor using the HCR-20 make the final decision regarding risk of violence using the 3-point scale: "low," "moderate," or "high." For research they also recommend treating the HCR-20 as an actuarial scale and simply summing the numeric item codes to yield a total score ranging from 0 to 40. Therefore, for the purpose of the present research, the HCR-20 was treated as a continuous variable, using the total score, with higher scores representing an increased propensity to engaging in crime and violence. Multivariate analyses demonstrated that the HCR-20 has good predictive validity for the risk of violence (r = .50; Douglas, Yeomans, & Boer, 2005).

Design

The present study used a retrospective, cross-sectional research design to examine the relationships among S-E factors of poverty, CD, propensity for crime and violence, and actual crime for which participants were convicted. The cross-sectional research design made it possible to evaluate the relationships among the aforementioned variables using data collected at a single point in time.

Procedures

Recruitment. A letter outlining the objectives and rationale for the present study was sent to the Commissioner of Corrections and Permanent Secretary, at the Ministry of Justice in Jamaica to obtain permission to collect data from participants at probation offices in Jamaica. Individuals who were on parole or probation were asked if they would be willing to participate in this study by writing or calling them (see Appendix E for a copy of my Consent Form).

Assessment. All participants were assessed using an interview format. First, the WHO-CIDI was used to retrospectively assess for the presence, age of onset, and severity of CD and obtain socio-demographic information from each participant. This was followed by an interview to obtain information from participants about their experience with social-ecological factors associated with poverty. Following these assessments, the HCR-20 was used to assess for participants' propensity to crime and violence. Finally, information about the crime each participant committed was obtained from his record to assess the severity of the crime that resulted in incarceration.

Compensation. All participants were given U.S. $10.00 as compensation for participating in the study. The participants were informed that they would be compensated in this manner prior to conducting the interview.

Analyses of Research Questions

Hierarchical multiple regression analyses were used to examine the hypothesized mediation relationships (Frazier, Tix, & Barron, 2004; see Figure 1). For a multiple regression analysis with three independent variables when a medium effect size is predicted, Cohen (1992) recommends a sample size of 76. The present study had a sample size of 79 participants. In addition to conducting multiple regression analyses, a bivariate correlation analysis was used to examine the relationship between S-E factors and severity of actual crimes, and one-way ANOVA techniques were used to more specifically examine the extent of mean differences between groups. In particular, a one-way ANOVA was conducted to determine the mean difference in S-E factors of poverty reported by participants diagnosed with different onset-type and levels of severity of CD. A one-way ANOVA was also

conducted to examine the mean difference in severity of the actual crimes committed by participants diagnosed with moderate or severe CD versus mild CD.

Results

The present study consisted of 79 male parolees and probationers. All participants were Jamaican citizens of African descent. The mean age of participants was 39 years old, and the age range was 18 to 74 years old. While 45.6% (n = 36) of the participants in this study met the criteria for CD based on the WHO-CIDI (Kessler & Ustun, 2004), 54.4% (n = 43) did not meet criteria.

Participants were also assessed with regard to their SES (i.e., income), which consisted of a range of scores from 0 to 33 with each score representing the amount of money a participant earned annually; their S-E factors of poverty; and their overall propensity for crime and violence (i.e., HCR-20 scores). With regard to SES, 38 (48.1%) of the participants were below Jamaica's poverty line, and an equal number (n = 38) were above. Three participants reported that they did not know their annual incomes, and they were not included in the analysis involving SES. The mean SES score was 22, which represented a range of incomes between JA$30,000 and JA$34,999 (i.e., US$338.98 and US$395.47, respectively). Although the highest score that participants could obtain on the measure of S-E factors of poverty was 80, the mean score for this variable with the present sample was 22, with a range of 2 to 41. Since higher scores indicate more exposure to social and environmental factors associated with poverty, this suggests that this sample was exposed to relatively low levels of S-E factors of poverty. Finally, the total score that participants could have obtained on the HCR-20 was 40. A higher score on this measure indicated an increased likelihood of engaging in crime and violence. The mean score that participants obtained on this measure was 7.22, and the range of scores was 2 to 16.

The most frequently occurring crime that participants committed was murder. Thirty-three participants (i.e., 41.77%) were convicted of this crime. This crime was also the most severe crime committed by participants in this study. The least frequently occurring crime that any participant committed was reckless driving (or driving without a driver's license). One participant was convicted of committing this crime. This was the least severe crime committed by any participant. Figure 2 depicts the various types of crimes, in order of severity, from least (i.e., reckless driving) to most severe (i.e., murder) for which participants in this study were convicted.

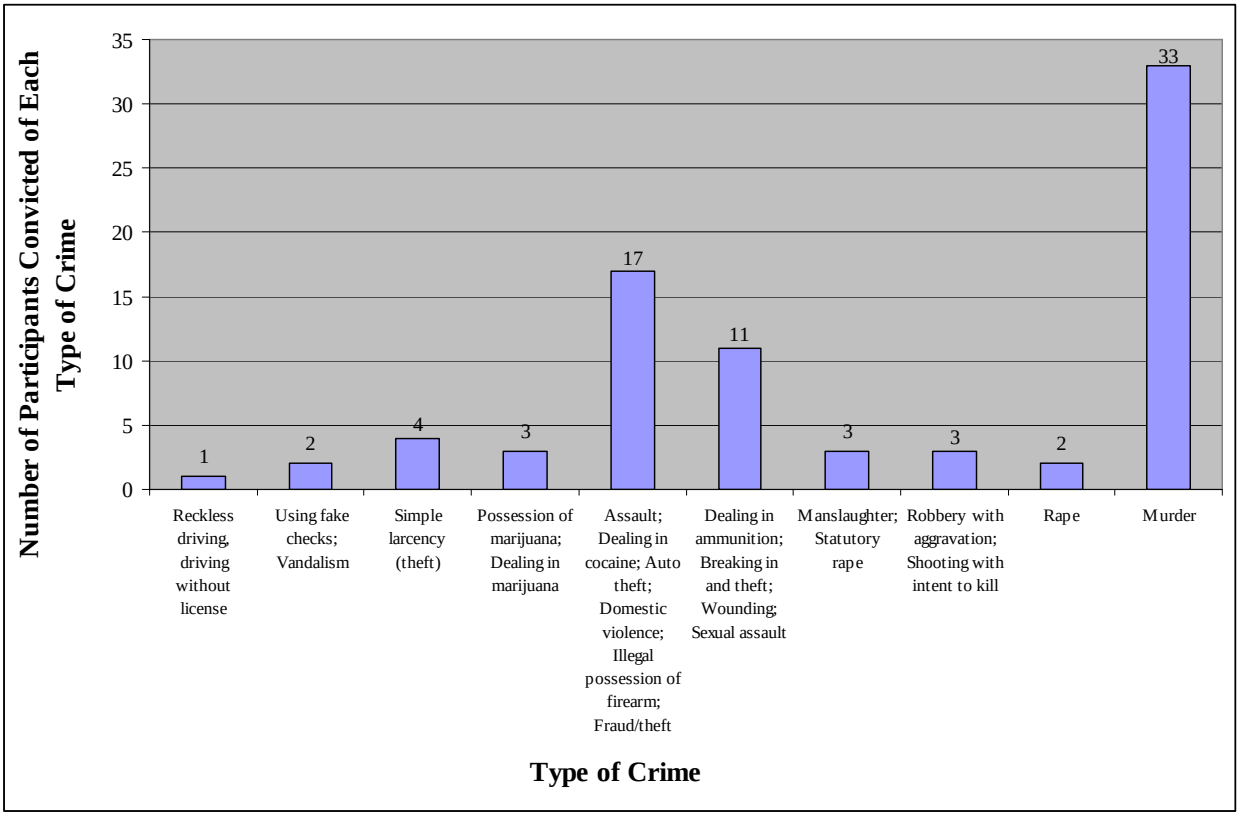

Figure 2. Total number of parolees and probationers who were convicted of each type of crime, and severity of crime from least severe (i.e., reckless driving) to most severe (i.e., murder).

Preliminary Analyses

Before conducting the main analyses of this study, I first screened the data to confirm that the relevant variables of this study were normally distributed. After confirming this, I calculated simple correlation coefficients between all the continuous variables in my study (see Table 1). S-E factors of poverty was positively correlated with propensity for crime and violence (i.e., HCR-20) and severity of CD, but negatively correlated with severity of type of crime for which participants were convicted. Propensity for crime and violence was positively correlated with severity of CD.

Table 1

Descriptive Statistics for and Intercorrelations Between the Key Variables of Interest

	M	*SD*	1	2	3	4	5
1. Income (SES)	22	10	_	-.04	-.02	.14	.02
2. S-E Factors	1.82	9.58		_	.38***	.52***	-.23*
3. HCR-20	7.22	3.52			_	.29**	-.06
4. CD Severity Score	6.49	5.15				_	.05
5. Severity of Crime	8.13	2.90					_

Note. A mean SES score of 22 represented an income of between Jamaican (JA)$30,000 and JA$34,999; higher scores indicate more income and a higher SES.
* p<.05. ** p<.01. ***p<.001.

Hypothesis 1

I expected that S-E factors of poverty would mediate the relationship between SES and antisocial behaviors (i.e., both my measure of CD symptoms and HCR-20 scores). However, because our preliminary correlations indicated that there were no significant relationships between SES and either of these two measures of antisocial behaviors, no additional tests of mediation were necessary because one of the required preconditions for mediation in both conditions was not confirmed. Thus, only partial support was found for the hypothesis that S-E factors of poverty would be a better predictor of CD and participants' HCR-20 scores than SES (i.e., unlike SES, S-E factors of poverty scores were significantly associated with both CD and HCR-20 scores; see Table 1). Participants who endorsed a greater number of S-E factors of poverty also reported experiencing a greater level of severity of CD symptoms and a greater propensity for crime and violence.

Hypothesis 2

I expected that the association between CD severity and propensity for crime and violence would be mediated by S-E factors of poverty. To test this hypothesis, I first regressed the mediator (S-E factors of poverty) on the predictor variable (CD severity); $F(1, 77) = 26.12$, $p < .001$. Second, I regressed the dependent variable (propensity for crime and violence), on the predictor variable (CD severity); $F(1, 77) = 7.15$, $p < .01$. Finally, I regressed the dependent variable on both the predictor and mediator; $F(2, 76) = 6.71$, $p < .01$. As can be seen in Table 2 (Equations 1, 2, & 3, respectively), all of the conditions of complete mediation were met, confirming this hypothesis. The final step revealed that the strength of the relationship between CD severity and propensity for crime and violence is no longer significant when S-E factors of poverty are added to the final equation. This suggests

that S-E factors of poverty mediate the relationship between CD severity and respondents' propensity for engaging in crime and violence.

Table 2

Regressions Utilized to Assess the Role of S-E Factors of Poverty as a Mediator Between Conduct Disorder (CD) and Propensity for Crime and Violence

Regression Equations	Dependent Variable for Each Equation	Predictor(s) Entered	R^2	Beta (SE Beta)	β
1.	CD severity	S-E factors of Poverty	.25***	.94 (.18)	.50***
2.	HCR-20	CD severity	.09**	.20 (.08)	.29**
3.	HCR-20	S-E factors of poverty	.15*	.11 (.05)	.30*
		CD severity		.10 (.08)	.14

Note. *p<.05. **p<.01. ***p<.001.

Hypothesis 3

A one-way analysis of variance (ANOVA) was conducted to determine whether participants diagnosed with an earlier age of onset of CD (i.e., childhood-onset) would endorse significantly more S-E factors of poverty than participants diagnosed with a later age of onset of CD (i.e., adolescent-onset). Propensity for crime and violence is strongly associated with S-E factors of poverty (De Coster et al., 2006), and an earlier age of onset of CD symptoms is associated with propensity for crime and violence (Moffitt et al., 1996). Therefore, it was hypothesized that participants diagnosed with childhood-onset CD would have been exposed to more S-E factors of poverty while growing up than participants diagnosed with adolescent-onset CD. The mean difference for the number of S-E factors of poverty endorsed by participants not diagnosed with CD, participants diagnosed with an earlier age of onset of CD (i.e., childhood-onset), and participants diagnosed with a later age of onset of CD (i.e., adolescent-onset) was examined. This was done to more specifically identify the average number of S-E factors of poverty reported by each group and to determine the group reporting exposure to the greatest mean number of S-E factors of poverty. ANOVA results indicated a significant mean difference between the groups, F (2, 76) = 12.96, p<.001, η^2 = .25. Participants who did not meet the diagnostic criteria for CD endorsed the fewest number of S-E factors of poverty, whereas participants who met the diagnostic criteria for adolescent-onset CD endorsed the greatest number of S-E factors of poverty. A Bonferroni post hoc test revealed a significant mean difference between participants not diagnosed with CD and participants with childhood-onset CD (p<.001), as well as between participants not diagnosed with CD and participants with adolescent-onset CD (p<.001). The post hoc test also revealed that although participants with adolescent-onset

CD reported a greater average number of S-E factors of poverty than participants with childhood-onset CD, the difference between these two groups was not significant (see Table 3). This does not support my hypothesis since it was expected that participants with childhood-onset CD would have a significantly greater number of S-E factors of poverty than participants with adolescent-onset CD.

Table 3

Means and SD of One-Way ANOVA of Conduct Disorder (CD) Onset Type on Social-Ecological (S-E) Factors of Poverty

	CD Onset Type		
	No Diagnosis	Childhood-Onset	Adolescent-Onset
S-E Factors			
M	17.19[ab]	26.19[a]	27.47[b]
SD	8.38	8.22	8.29
n	43	21	15

Note. Shared superscripts denote values that are significantly different.
[a, b]$p < .001$

A one-way ANOVA was also conducted to examine which of the four groups – participants not diagnosed with CD, participants with mild CD, participants with moderate CD, and participants with severe CD – reported being exposed to the greatest mean number of S-E factors of poverty. Because a greater severity level of CD is associated with an increased likelihood of later engagement in crime and violence (Moffitt et al., 1996), it was expected that participants with a greater severity of CD would have endorsed more S-E factors of poverty than participants with no CD or mild CD. The ANOVA results revealed a significant difference between the groups for the mean number of S-E factors of poverty that participants reported F (3, 75) = 9.17, p<.001, η^2 = .27. As expected, participants who did not meet the diagnostic criteria for CD reported being exposed to the fewest number of S-E factors of poverty, whereas participants who met the diagnostic criteria for moderate and severe forms of CD reported being exposed to a greater number of S-E factors of poverty. A Bonferroni post hoc test revealed significant mean differences between participants not diagnosed with CD and participants diagnosed with mild CD (p<.05), and between participants not diagnosed with CD and participants diagnosed with moderate CD (p<.001) (see Table 4). There were, however, no significant differences between participants diagnosed with mild, moderate, and severe CD, although participants diagnosed with moderate and severe CD reported a greater mean exposure to S-E factors of poverty than participants diagnosed with mild CD (see Table 4). Therefore, my hypothesis that participants with a more severe form of CD would have been exposed to significantly more S-E factors of poverty than participants with mild or moderate CD was not supported.

Table 4

Means and SD of One-Way ANOVA of Conduct Disorder (CD) Severity on Social-Ecological (S-E) Factors of Poverty

	CD Severity			
	No Diagnosis	Mild CD	Moderate CD	Severe CD
S-E Factors				
M	17.19[ab]	24.50[a]	28.17[b]	28.00
SD	8.38	7.85	8.99	3.65
n	43	14	18	4

Note. Shared superscripts denote values that are significantly different.
[a]$p < .05$. [b]$p < .001$.

Hypothesis 4

There was no support for the hypothesis that respondents who experienced the greatest number of S-E factors of poverty as youths would be convicted of more severe crimes than respondents who experienced fewer of these factors. To test this hypothesis, the actual crimes that parolees and probationers committed were used in the analysis. The severity of their crimes was ranked from least to most severe for this analysis. Jamaica does not assign a severity score to various types of crimes; instead the Jamaican legal system makes only two classifications for crimes: minor crimes and major crimes (Jamaica Constabulary Force, personal communication, April 13, 2010). For example, major crimes include murder, shooting with intent to kill, robbery with a deadly weapon, break-ins, and rape; and minor crimes include driving without a driver's license, possession of marijuana, simple larceny, and forgery. Therefore, to obtain a wider range for capturing the severity of crimes from least to most severe, the present study used the Oregon Criminal Justice Commission Crime Seriousness Scale ("Oregon Criminal Justice Commission," 2010). The Crime Seriousness Scale ranks severity of crime on an 11-point scale and provided a guideline for ranking the severity of crimes for which participants in the present study were convicted. For example, it ranks murder as an 11 and possession of illegal drugs for personal use as a 1. The crimes committed by participants in this study ranged from an offense with low seriousness (i.e., driving without a drivers license; n = 1) to an offense with high seriousness (i.e., murder; n = 33; see Figure 2).

A bivariate correlation revealed that there was a significant negative relationship between S-E factors of poverty and severity of crimes, $r = -.23$, p (one-tailed) $<.05$. However, this hypothesis was not supported because of the negative association between S-E factors of

poverty and severity of actual crime for which participants were convicted. This association reveals that participants in this study who reported experiencing more S-E factors of poverty as youths were convicted of less severe crimes, on average, than participants who reported experiencing fewer S-E factors of poverty.

Hypothesis 5

There was support for the hypothesis that participants who met the diagnostic criteria for a severe form of CD would be convicted of a more severe type of crime than participants with mild or moderate forms of CD. Only participants meeting the diagnostic criteria for CD while growing up (n = 36) were used in this analysis. A one-way ANOVA was conducted to identify the mean difference in severity of type of crime committed by participants with mild CD, participants with moderate CD, and participants with severe CD. ANOVA results revealed a significant mean difference between the groups, F (2, 33) = 4.07, p<.05, η^2 = .20. In addition, an LSD post hoc test revealed a significant mean difference between participants with mild and severe forms of CD (p<.05). It revealed a significant mean difference between participants with mild and moderate forms of CD (p<.05). It, however, revealed that there was no significant difference between participants with moderate and severe forms of CD (see Table 5).

Table 5

Means and SD of One-Way ANOVA of Conduct Disorder (CD) Severity on Severity of Type of Crime Resulting in Conviction

	CD Severity		
	Mild CD	Moderate CD	Severe CD
Severity of Crime			
M	6.07[ab]	8.56[a]	9.75[b]
SD	3.47	2.38	2.50
n	14	18	4

Note. Shared superscripts denote values that are significantly different.
[a,b]$p < .05$.

Discussion

Low SES in the absence of social and environmental factors was not a predictor of propensity to crime and violence. This supports the first hypothesis and suggests that regardless of a person's income, a high level of supervision, family togetherness, and living in a low crime neighborhood with few deviant peers are some factors that may insulate youth against future engagement in crime and violence in adulthood. It is possible that low SES poorly predicted crime and violence because with the present sample this variable appeared to be relatively equally distributed across both urban and rural areas. However, S-E factors of poverty are more prevalent in urban than rural areas (Glaeser & Sacerdote, 1999). Rural communities are more likely to have a greater level of network closure, and people can be more readily held accountable for their actions. The present study consisted of participants from both urban and rural areas in Jamaica. This confirms what previous studies (DeCoster et al., 2006; Hannon & DeFina, 2005) have found. Specifically, it appears that the social and environmental factors of poverty are better predictors of adult crime and violence than merely looking at an individual's income. The present study did not distinguish between participants living in urban versus rural areas. Therefore, future research could examine the number of S-E factors of poverty reported by each group and specifically evaluate whether one group is more likely to engage in crime and violence because of these factors.

In support of previous research, both the severity level of CD and S-E factors of poverty were associated with an increased likelihood of committing a crime. The present study has taken this analysis further by demonstrating that S-E factors were a better predictor than CD of tendency towards crime and violence. The present research also sought to determine whether S-E factors of poverty mediated the relationship between CD and

criminality, and this hypothesis was confirmed. Thus, it appears that the social and environmental factors associated with poverty explain the relationship between CD in childhood or adolescence and propensity for adult criminality. In the context of Jamaica, in particular, because of the social context, the accuracy of diagnosing, treating, and preventing CD might significantly be improved by assessing for the level of S-E factors that youth are experiencing.

Research has found that youth are more likely to lead a life of crime and violence in adulthood if they were diagnosed with severe CD versus mild or no CD. The present study found an association between increased severity of CD and increased likelihood of committing a crime, which supports previous research. I also expected that participants diagnosed with a more severe form of CD or an earlier age of onset of CD would endorse more S-E factors than participants with mild or later age of onset of CD. However, participants diagnosed with CD, regardless of the CD specifier, reported being exposed to more S-E factors of poverty than participants not diagnosed with CD. Therefore, based on the results of the present study, it appears that regardless of the severity level or onset-type of CD that youth have, those youth exposed to a greater number of social and ecological problems have a worse prognosis than their counterparts who experience significantly fewer of these problems. These results suggest that researchers should pay attention to S-E factors of poverty when trying to understand how CD, in childhood or adolescence, influence future engagement in crime and violence in adulthood.

I found no support for my fourth hypothesis, which examined the relationship between the actual crimes for which participants were convicted and the number of S-E factors of poverty they reported experiencing while growing up. Surprisingly, however,

participants who committed less serious offenses reported that they experienced more S-E factors of poverty than participants who committed more serious offenses. One possible explanation for this is that parolees who committed more serious crimes (e.g., murder) spent many years (i.e., more than 20 years) in prison before being released and are, therefore, older. For example, the mean age, at the time of interview, for participants who were convicted of committing murder was 53 years old, whereas the mean age for participants who committed all other crimes combined was 28 years old. Older participants grew up at a time in Jamaica's history, between the 1970s and 1980s, when there was more stability, less poverty, and less social and environmental problems, especially those associated with poverty. Participants who were convicted of murder also had to demonstrate that they had a stable environment, with strong family support to which to return as a requirement for their release from prison. Thus, contrary to Hypothesis 4, participants who were convicted of more serious crimes reported experiencing fewer social and environmental problems than participants who were convicted of less serious crimes.

My final hypothesis provides support for previous research which has demonstrated that youth diagnosed with a more severe form of CD have a worse prognosis for adult criminality than youth diagnosed with a less severe form of CD. In particular, the present study found that parolees and probationers who were convicted of more serious crimes endorsed symptoms consistent with a greater severity of CD than parolees and probationers who were convicted of less serious crimes.

The present research has some obvious limitations worth noting. Although I was able to gather a large quantity of data from each participant in this study (e.g., each participant was interviewed for approximately 1 hour, and each participant's judicial file was reviewed

to corroborate his oral history), my overall sample size is relatively small. This relatively small sample size may have reduced the overall power of my analyses; however, I was able to enlist the minimum sample size necessary to reveal a medium size effect with the statistical procedures I utilized in this study (Cohen, 1992). Another potential weakness of the present study is that due to the cross-sectional nature of my design, I was forced to rely on retrospective reports of CD symptoms from participants. Although the WHO-CIDI was designed to accurately diagnose this condition in adults, the findings of this study may need to be replicated longitudinally with a sample of children with a formal CD diagnosis who are then subsequently assessed in adulthood to rate their level of involvement with adult criminality. Additionally, the results of the present study may not generalize well to all populations because I interviewed only Jamaican male parolees and probationers. Thus, we can say little about the experiences of Jamaican women with similar backgrounds, nor would it be wise to overstate the potential relevance of these findings to Jamaican men who are presently incarcerated.

Despite these limitations, one of the greatest strengths of this study is that it is one of the first of its kind to address these issues in a Jamaican context. Exploring these issues with this population is important because Jamaica not only has one of the highest murder rates per capita in the world; it also has a high rate of other crimes. Males commit the largest proportion of crimes in Jamaica, and thus research, like the present study, is necessary if researchers and community activists hope to understand and change this phenomenon. For future research, the U.S. and other Caribbean Islands may be appropriate places to test the generalizabilty of these findings. In particular, the U.S. Virgin Islands might be an ideal place

in which to replicate the present study because it has a similar crime trend to that of Jamaica (de Albuquerque & McElroy, 1999).

By identifying factors that are associated with crime, as well as the ways in which they are associated with it, I will be able to provide recommendations to improve policies and develop more effective treatment and prevention programs. One of the most profound implications of this study is that our understanding of criminality cannot be limited to assessing individual and innate characteristics of criminals; rather, researchers and policy-makers must begin to look more at the role of environmental vectors and systemic factors contributing to adult criminality. The findings of this study strongly suggest that adopting a purely medical model (i.e., looking for causes of delinquent and criminal behaviors inside the individual) may be a less fruitful endeavor than focusing upon ecological factors in the lives of young and older men who engage in crimes.

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Appendices

Appendix A: Social-Ecological Factors Associated with Poverty Survey

1. Measure of level of supervision and participation in community activities

When you were growing up, how often:

Did your parent(s) supervise and monitor your activities (e.g., made sure you went to school and were home at a certain time, communicated with your teachers about your progress in school, made sure you did not hang out with "bad company," etc.)?

□ Very often □ Often □ Sometimes □ Rarely □ Never
0 1 2 3 4

Did your parent(s) participate in any parent/teacher organizations?

□ Very often □ Often □ Sometimes □ Rarely □ Never
0 1 2 3 4

Did your parent(s) participate in any sports activities within your community?

□ Very often □ Often □ Sometimes □ Rarely □ Never
0 1 2 3 4

Did your parent(s) participate in any activity within a church organization or any other organization in your community?

□ Very often □ Often □ Sometimes □ Rarely □ Never
0 1 2 3 4

2. Measure of network closure and collective supervision

When you were growing up:

How often did your parent(s) communicate with your friends' parents?

□ Very often □ Often □ Sometimes □ Rarely □ Never
0 1 2 3 4

If your parent(s) saw a neighbor's child getting into trouble, how often would they tell their neighbor about it?

□ Very often □ Often □ Sometimes □ Rarely □ Never
0 1 2 3 4

If a neighbor saw you getting into trouble, how often would he/she tell your parent(s) about it?

□ Very often □ Often □ Sometimes □ Rarely □ Never
0 1 2 3 4

3. Measure of family cohesiveness

When you were growing up, how often:

Did you feel that your family members paid attention to you (e.g., wanted to know how you were doing or interested in activities that you engaged in)?

□ Very often □ Often □ Sometimes □ Rarely □ Never
0 1 2 3 4

Did you feel that people in your family understood you?

□ Very often □ Often □ Sometimes □ Rarely □ Never
0 1 2 3 4

Did you and your family have fun or spend quality time together?

□ Very often □ Often □ Sometimes □ Rarely □ Never
0 1 2 3 4

4. Measure of criminogenic street context

When you were growing up, how often:

Did any of your friends use drugs such as marijuana or alcohol?

□ Very often □ Often □ Sometimes □ Rarely □ Never
4 3 2 1 0

Did you or other members of your community carry a weapon (e.g., knife, machete, or gun) for self-protection?

□ Very often □ Often □ Sometimes □ Rarely □ Never
4 3 2 1 0

Could you readily access a gun if you wanted to obtain one?

□ Very often □ Often □ Sometimes □ Rarely □ Never
4 3 2 1 0

Did you ever witness any violence (e.g. fighting, beating, stabbing, or shooting) in your community?

□ Very often □ Often □ Sometimes □ Rarely □ Never
4 3 2 1 0

Did you feel that you could have been killed before you got to the age of 18 years-old?

□ Very often □ Often □ Sometimes □ Rarely □ Never
4 3 2 1 0

Were you a victim of a crime in your community (by crime I mean robbery, assault, stabbing, shooting, etc.)?

□ Very often □ Often □ Sometimes □ Rarely □ Never
4 3 2 1 0

5. Measure of level of community social disorganization

How much do you agree with these statements about the following organizations within the neighborhood where you grew up?

The neighborhood in which I grew up had enough schools for everyone who wanted to attend.

□ Strongly agree □ Agree □ Disagree □ Strongly disagree □ Very strongly disagree
0 1 2 3 4

The neighborhood in which I grew up had enough churches for everyone who wanted to attend.

□ Strongly agree □ Agree □ Disagree □ Strongly disagree □ Very strongly disagree
0 1 2 3 4

The neighborhood in which I grew up had a police station and fire department that quickly responded to the needs of the community.

□ Strongly agree □ Agree □ Disagree □ Strongly disagree □ Very strongly disagree
0 1 2 3 4

The neighborhood in which I grew up had other organizations (such as a community center, clinic, or hospital) that adequately served members of the community.

□ Strongly agree □ Agree □ Disagree □ Strongly disagree □ Very strongly disagree
0 1 2 3 4

Appendix B: WHO-CIDI Conduct Disorder Survey

CONDUCT DISORDER (CD)

*CD1. (RB, PG 47) The next questions are about things adults don't like children to do. We want to know if these are things you did during your childhood or teenage years.

(IF NEC: As a child or teenager,…)	YES (1)	NO (2)	DK (8)	RF (9)
*CD1a. As a child or teenager, did you often tell lies to trick people into giving you things or doing what you wanted them to do? (KEY PHRASE: telling lies to trick people)	1 **GO TO *CD1c**	5	8	9
*CD1b. …did you often get out of doing things you were supposed to do by fooling people or lying to them? (KEY PHRASE: getting out of doing things by fooling people or lying)	1	5	8	9
***CD1c**. … did you often stay out much later at night than your parents wanted? (KEY PHRASE: staying out later than your parents wanted)	1	5	8	9
*CD1d. … did you often skip school without permission? (KEY PHRASE: skipping school)	1	5	8	9
*CD1e. … did you ever shoplift or steal something worth at least $10? (KEY PHRASE: shoplifting)	1	5	8	9
*CD1f. … did you ever steal money or other things from your parents or the other people you lived with? (KEY PHRASE: stealing from people you lived with)	1	5	8	9
*CD1g. … did you ever break into someone's locked car, or a locked home or building? (KEY PHRASE: breaking into a car, home, or building)	1	5	8	9
*CD1h. … did you ever set a fire to try to cause serious damage? (KEY PHRASE: setting a fire to try to cause damage)	1	5	8	9
*CD1i. (Other than by setting fires,) …did you ever deliberately damage someone's property by doing something like breaking windows, slashing tires, vandalizing, or writing	1	5	8	9

graffiti on buildings? (KEY PHRASE: damaging property)				
*CD1j. … did you ever run away from home and stay away for at least four days? (KEY PHRASE: running away from home)	1 **GO TO *CD2**	5	8	9
*CD1k. … did you run away from home overnight more than once? (KEY PHRASE: running away from home)	1	5	8	9

***CD2.** INTERVIEWER QUERY (SEE ***CD1a-*CD1k**):

HOW MANY RESPONSES CODED '1' DOES R HAVE?

_____NUMBER

***CD3.** INTERVIEWER CHECKPOINT: (SEE ***CD2**)

ONE OR MORE RESPONSES CODED '1' 1
ALL OTHERS.....2 **GO TO *CD16a**

***CD7**. You answered "yes" to (NUMBER OF RESPONSES CODED '1' IN ***CD2**) of the questions I just asked about childhood behaviors. Think of the <u>very first</u> time in your life you engaged in (that type of behavior/ either of those behaviors/ any of those behaviors]. Can you remember your exact age?

YES.....1
NO .....5 **GO TO *CD7c**
DON'T KNOW.....8 **GO TO *CD7c**
REFUSED.....9 **GO TO *CD7c**

***CD7b**. (IF NEC: How old were you?)

_____ YEARS OLD **GO TO *CD9**

DON'T KNOW..... 998
REFUSED 999 .....

***CD7c**. About how old were you the first time [you engaged in (that type of behavior/ either of those behaviors/ any of those behaviors)]?

IF "All my life" OR "As long as I can remember," PROBE: Was it before you first started school?

IF NOT "YES", PROBE: Was it before you were a teenager?

_____ YEARS OLD

BEFORE STARTED SCHOOL..... 6
BEFORE TEENAGER..... 12
NOT BEFORE TEENAGER 13
DON'T KNOW..... 998
REFUSED..... 999

***CD9.** Did you engage in (that type of behavior/ either of those behaviors/ any of those behaviors) during the past 12 months?

YES..... 1 **GO TO *CD10**
NO 5
DON'T KNOW..... 8
REFUSED..... 9

*CD9a**.** How old were you the last time you engaged in (that type of behavior/ either of those behaviors/ any of those behaviors)?

_____ YEARS OLD

DON'T KNOW..... 998
REFUSED..... 999

***CD10.** About how many years altogether [did you engage in (that type of behavior/ either of those behaviors/ any of those behaviors)/ have you engaged in (that type of behavior/ either of those behaviors/ any of those behaviors)]?

_____ NUMBER OF YEARS

DON'T KNOW.....998
REFUSED.....999

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*CD11. How much did (this behavior/ these behaviors) ever interfere with either your school, work, social life, or personal relationships – a little, some, a lot, or extremely?

(IF VOL: "NOT AT ALL")	1	**GO TO *CD16a**
A LITTLE	2	**GO TO *CD16a**
SOME	3	**GO TO *CD16a**
A LOT	4	
EXTREMELY	5	
DON'T KNOW	8	**GO TO *CD16a**
REFUSED	9	**GO TO *CD16a**

CD11a. How often during that time were you unable to carry out daily activities or take care of yourself because of (this behavior/ these behaviors) – often, sometimes, not very often?

OFTEN	1
SOMETIMES	2
NOT VERY OFTEN	3
NEVER	4
DON'T KNOW	8
REFUSED	9

GO TO *CD16a

***CD16**. (RB, PG 48) (Look at page 48 in your booklet.) The next questions are about things adults don't like children to do. We want to know if these are things you did during your childhood or teenage years. Did you have a period as a child or teenager when you often "bullied," threatened, or frightened people, including smaller or younger children?

YES	1	**GO TO *CD16b**
NO	5	**GO TO *CD16b**
DON'T KNOW	8	**GO TO *CD16b**
REFUSED	9	**GO TO *CD16b**

***CD16a.** (RB, PG 48) (Look at page 48 in your booklet.) Here is another set of questions about things adults don't like children to do. These questions all involve aggressive behavior. Again, we only want to know if these are things you did during your childhood or teenage years. Did you have a period as a child or teenager when you often "bullied," threatened, or frightened people, including smaller or younger children?

YES	1
NO	5
DON'T KNOW	8
REFUSED	9

(IF NEC: As a child or teenager, …)	**YES (1)**	**NO (5)**	**DK (8)**	**RF (9)**

***CD16b.** …did you often get involved in physical fights?	1	5	8	9
*CD16c. …did you ever use a weapon on another person, like a baseball bat, glass bottle, knife, gun, or brick?	1	5	8	9
*CD16d. … were you ever physically cruel to an animal and hurt it on purpose? (IF NEC: This does not include hunting or getting rid of pests like rodents or insects.)	1	5	8	9
*CD16e. …were you ever physically cruel to a person and hurt them on purpose?	1	5	8	9
*CD16f. …did you ever force someone to give you something like money, jewelry, or clothing by threatening them or causing them injury?	1 **GO TO *CD16 h**	5	8	9
*CD16g. …did you ever steal someone's purse, wallet, luggage, package or bag by grabbing it from them? (IF NEC: This does not include stealing from someone who wasn't aware of the theft, such as stealing a piece of luggage when the owner wasn't watching.)	1	5	8	9
***CD16h**. …did you ever make anyone do something sexual by either forcing, intimidating, or threatening them?	1	5	8	9

*CD17.1. INTERVIEWER CHECKPOINT: (SEE ***CD16b-h**)

ONE OR MORE RESPONSES CODED '1' 1
ALL OTHERS.....2 **GO TO *CD24**

***CD18**. You answered "yes" to (NUMBER OF "YES" RESPONSES IN ***CD16-*CD16h**) type(s) of aggressive behavior in your childhood and teenage years. Think of the very first time in your life when you engaged in (that type of aggressive behavior/ either of those aggressive behaviors / any of those aggressive behaviors). Can you remember your exact age?

YES.....1
NO .....5 **GO TO *CD18c**
DON'T KNOW.....8 **GO TO *CD18c**
REFUSED.....9 **GO TO *CD18c**

***CD18b**. (IF NEC: How old were you?)

_____ YEARS OLD **GO TO *CD20**

DON'T KNOW..... 998
REFUSED 999 .....

***CD18c**. About how old were you the first time [you engaged in (that type of aggressive behavior/ either of those aggressive behaviors/ any of those aggressive behaviors)]?

IF "All my life" OR "As long as I remember," PROBE: Was it before you first started school?

IF NOT "YES", PROBE: Was it before you were a teenager?

_____ YEARS OLD

BEFORE STARTED SCHOOL..... 6
BEFORE TEENAGER..... 12
NOT BEFORE TEENAGER 13
DON'T KNOW..... 998
REFUSED..... 999

***CD20.** Did you engage in (that type of aggressive behavior/ either of those aggressive behaviors/ any of those aggressive behaviors) during the past 12 months?

YES..... 1 **GO TO *CD21**
NO 5
DON'T KNOW 8
REFUSED..... 9

*CD20a**.** How old were you the last time you engaged in (that type of aggressive behavior/ either of those aggressive behaviors/ any of those aggressive behaviors)?

_____ YEARS OLD

DON'T KNOW..... 998
REFUSED..... 999

***CD21.** About how many years altogether [did you engage in (that type of aggressive behavior/ either of those aggressive behaviors/ any of those aggressive behaviors)/ have you engaged in (that type of aggressive behavior/ either of those aggressive behaviors/ any of those aggressive behaviors)]?

_____ NUMBER OF YEARS

DON'T KNOW.....998
REFUSED.....999

---

*CD22. How much did (this behavior/ these behaviors) ever interfere with either your school, work, social life, or personal relationships – a little, some, a lot, or extremely?

(IF VOL: "NOT AT ALL").....1
A LITTLE 2
SOME.....3
A LOT 4
EXTREMELY 5
DON'T KNOW.....8
REFUSED.....9

---

*CD23. INTERVIEWER CHECKPOINT: (SEE ***CD3**)

***CD3** CODED '1' .....1 **GO TO *CD29**
ALL OTHERS .....2 **GO TO *CD31**

***CD24**. INTERVIEWER CHECKPOINT: (SEE ***CD3**)

***CD3** CODED '1' 1
ALL OTHERS .....2 **GO TO *CD40**

*CD26. (INTERVIEWER: SEE ***CD1a-*CD1k**) Before the questions about childhood aggression, I asked you some other questions about your behavior during your childhood and teenage years. You reported (experiences such as) (READ KEY PHRASES FOR UP TO THREE ENDORSED ITEMS IN ***CD1a-*CD1k**). Please think about (that behavior / these behaviors) as I ask the next question.

INTERVIEWER: FOR REST OF SECTION, USE THE WORD "BEHAVIOR."

GO TO *CD32

---

*CD29. (INTERVIEWER: SEE ***CD1a-*CD1k**) Before the questions about childhood aggression, I asked you some other questions about your behavior in your teenage years. You reported (experiences such as) (READ KEY PHRASES FOR UP TO THREE ENDORSED ITEMS IN ***CD1a-*CD1k**). For the next question, please think about (that behavior / these

behaviors) as well as the childhood aggression you reported.

INTERVIEWER: FOR REST OF SECTION, USE THE PHRASE "BEHAVIOR OR AGGRESSION."

GO TO *CD32

***CD31**.....INTERVIEWER: FOR REST OF SECTION, USE THE WORD "AGGRESSION."

GO TO *CD32

***CD32**. As a child or teenager, were you ever suspended or expelled from school as a result of your (behavior/ aggression/ behavior or aggression)?

YES..... 1
NO 5
DON'T KNOW..... 8
REFUSED..... 9

***CD33**. As a child or teenager, were you ever fired from a job because of your (behavior/ aggression/ behavior or aggression)?

YES..... 1
NO 5
[IF VOL.] NOT APPLICABLE 7
DON'T KNOW..... 8
REFUSED..... 9

***CD34**. Did you <u>ever</u> in your life talk to a psychologist, counselor, doctor, or other professional about (that behavior/ your aggression/ your behavior or aggression)? (By other professional we mean spiritual advisors, herbalists, acupuncturists, and other healing professionals.)

YES..... 1
NO ..... 5 **GO TO *CD37**
DON'T KNOW..... 8 **GO TO *CD37**
REFUSED..... 9 **GO TO *CD37**

*CD34a. How old were you the first time [you talked to a professional about your (behavior/ aggression/ behavior or aggression]?

_____ YEARS OLD

.....DON'T KNOW 998
.....REFUSED 999

---

*CD36. Did you receive professional treatment for your (behavior/ aggression/ behavior or aggression) at any time in the past 12 months?

YES..... 1
NO 5
DON'T KNOW..... 8
REFUSED..... 9

***CD37**. As a child or teenager, were you ever in trouble with the police as a result of your (behavior/ aggression/ behavior or aggression)?

YES..... 1
NO ..... 5 **GO TO *CD40**
DON'T KNOW..... 8 **GO TO *CD40**
REFUSED..... 9 **GO TO *CD40**

*CD37a. How old were you the first time [you got into trouble with the police as a result of your (behavior/ aggression/ behavior or aggression)]?

_____ YEARS OLD

DON'T KNOW.....998
REFUSED.....999

***CD38**. Were you ever actually arrested [because of your (behavior/ aggression/ behavior or aggression)]?

YES..... 1
NO ..... 5 **GO TO *CD40**
DON'T KNOW..... 8 **GO TO *CD40**
REFUSED..... 9 **GO TO *CD40**

***CD39**. Were you ever sent to jail, prison, or a juvenile correction facility because of your (behavior/ aggression/ behavior or aggression)?

YES..... 1
NO ..... 5 **GO TO *CD40**
DON'T KNOW..... 8 **GO TO *CD40**
REFUSED..... 9 **GO TO *CD40**

*CD39a. How old were you the first time [you were sent to jail, prison, or a juvenile correction facility for your (behavior/ aggression/ behavior or aggression)]?

_____ YEARS OLD

DON'T KNOW.....998
REFUSED.....999

*CD39b. How long did you stay in any of these facilities altogether?

_____ DURATION NUMBER

CIRCLE UNIT
OF TIME: DAYS....1 WEEKS....2 MONTHS..3 YEARS ..4

DON'T KNOW.....998
.....REFUSED 999

***CD40**. INTERVIEWER CHECKPOINT: (SEE **REFERENCE CARD, SCREENING SECTION**)

FOLLOW SKIP FOR THE FIRST ENDORSED ITEM:

***SC34** IS CHECKED..... 1 **GO TO *SA1, NEXT SECTION**
***SC35** IS CHECKED..... 2 **GO TO *SA11, INTRO 2, PAGE 474**
ALL OTHERS.....3

---

*CD41. INTERVIEWER CHECKPOINT: (SEE **RANDOM ID NUMBER**)
.....
RANDOM ID NUMBER ENDS IN 34-67 .....1 **GO TO *FB1, PAGE 494**
ALL OTHERS.....2 **GO TO *CD42**

***CD42.**.....INTERVIEWER CHECKPOINT:
EXACT TIME NOW: _____ GO TO *IO1, PAGE 500

Appendix C: WHO-CIDI Screening and Socio-Demographics Surveys

WMH-CIDI PAPI INTERVIEW

*IWER NAME _____*IwerID ___ ___ ___ ___
*SampleID ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ -- ___ ___
*DATE DAY___/___MO___/___YR___/___

SCREENING SECTION (SC)

*SC0.4. EXACT TIME NOW: HR___/___MIN___/___

*SC1. The first few questions are for background purposes. How old are you?

INTERVIEWER: RECORD AGE ON **REFERENCE CARD, SCREENING SECTION**.

_____ YEARS OLD

DON'T KNOW 998
REFUSED 999

---

*SC1.1. INTERVIEWER QUERY

R IS A MALE.....1
R IS A FEMALE.....2

---

*SC2. How long have you lived at your current address?

_____ NUMBER

CIRCLE UNIT OF TIME: DAYS...1 WEEKS...2 MONTHS...3 YEARS...4

DON'T KNOW 998
REFUSED 999

---

*SC3. Are you currently married, separated, divorced, widowed or never married?

MARRIED.....1 **CHECK *SC3 ON REFERENCE CARD, THEN GO TO *SC4.1**
SEPARATED.....2
DIVORCED.....3
WIDOWED.....4
NEVER MARRIED.....5
DON'T KNOW.....8
REFUSED.....9

*SC3a. Are you currently living with someone in a marriage-like relationship?

YES.....1 **CHECK *SC3a ON REFERENCE CARD**
NO.....5
DON'T KNOW.....8
REFUSED.....9

*SC4.1. INTERVIEWER CHECKPOINT: UNIT OF MEASUREMENT FOR HEIGHT

IMPERIAL/US..... 1
METRIC .....2 **GO TO *SC4b**

---

*SC4. How tall are you?

_____ (FEET)
_____ (INCHES) **GO TO *SC5.1**

DON'T KNOW.....998
REFUSED.....999

***SC4b.** How tall are you?

_____ (CENTIMETERS)

DON'T KNOW.....998
REFUSED.....999

***SC5.1.** INTERVIEWER CHECKPOINT: UNIT OF MEASUREMENT FOR WEIGHT

IMPERIAL/US..... 1
METRIC 2

---

*SC5. How much do you weigh?

_____ (POUNDS or KILOGRAMS)

DON'T KNOW.....998
REFUSED 999

---

*SC7. Are you a current smoker, ex-smoker, or have you never smoked?

CURRENT 1 **CHECK *SC7 CODED '1' ON REFERENCE CARD**
EX-SMOKER 2 **CHECK *SC7 CODED '2' ON REFERENCE CARD**
NEVER.....3
DON'T KNOW 8
REFUSED 9

*SC8.1 How would you rate your overall physical health -- excellent, very good, good, fair, or poor?

EXCELLENT.....1
VERY GOOD.....2
GOOD.....3
FAIR.....4
POOR.....5
DON'T KNOW 8
REFUSED.....9

---

*SC8.2 How would you rate your overall mental health -- excellent, very good, good, fair, or poor?

EXCELLENT.....1
VERY GOOD.....2
GOOD.....3
FAIR.....4
POOR.....5
DON'T KNOW 8
REFUSED.....9

---

*SC9. Compared to one year ago, would you rate your health in general now as much better than one year ago, somewhat better, somewhat worse, or much worse now than one year ago?

MUCH BETTER NOW 1
SOMEWHAT BETTER NOW.....2
(IF VOL) ABOUT THE SAME 3
SOMEWHAT WORSE NOW.....4
MUCH WORSE NOW 5
DON'T KNOW 8
REFUSED 9

---

*SC19. The next questions are about health problems you may have had at any time in your life. It is important for the research that you think carefully before answering. Are you ready to begin?

INTERVIEWER: R IS REQUIRED TO RESPOND. IF NOT, EXPLAIN RATIONALE AND REPEAT.

ATTEMPT TO RESCHEDULE FOR MORE CONVENIENT TIME IF "YES" RESPONSE CANNOT BE ELICITED

YES 1
NO .....5 **GO TO IO SECTION**
DON'T KNOW .....8 **GO TO IO SECTION**
REFUSED .....9 **GO TO IO SECTION**

INTERVIEWER: READ FOLLOWING QUESTIONS SLOWLY	**YES (1)**	**NO (5)**	**DK (8)**	**RF (9)**
*SC20. Have you ever in your life had an attack of fear or panic when all of a sudden you felt very frightened, anxious, or uneasy?	**1 CHECK *SC20 ON REF CARD THEN GO TO *SC20.1**	5	8	9
*SC20a. Have you ever had an attack when all of a sudden • you became very uncomfortable, • you either became short of breath, dizzy, nauseous, or your heart pounded, • or you thought that you might lose control, die, or go crazy?	1 **CHECK *SC20a ON REF CARD**	5	8	9
***SC20.1.** Have you ever had attacks of anger when all of a sudden you lost control and	1 **CHECK *SC20.1 ON**	5	8	9

broke or smashed something worth more than a few dollars?	**REF CARD**			
*SC20.2. Have you ever had attacks of anger when all of a sudden you lost control and hit or tried to hurt someone?	1 **CHECK *SC20.2 ON REF CARD THEN GO TO *SC21**	5	8	9
*SC20.3. Have you ever had attacks of anger when all of a sudden you lost control and threatened to hit or hurt someone?	1 **CHECK *SC20.3 ON REF CARD**	5	8	9

INTERVIEWER: READ FOLLOWING QUESTIONS SLOWLY	**YES (1)**	**NO (5)**	**DK (8)**	**RF (9)**
***SC21.** Have you ever in your life had a period lasting several days or longer when most of the day you felt sad, empty or depressed?	1 **CHECK *SC21 ON REF CARD**	5	8	9
***SC22.** Have you ever had a period lasting several days or longer when most of the day you were very discouraged about how things were going in your life?	1 **CHECK *SC22 ON REF CARD**	5	8	9
***SC23.** Have you ever had a period lasting several days or longer when you lost interest in most things you usually enjoy like work, hobbies, and personal relationships?	1 **CHECK *SC23 ON REF CARD**	5	8	9
***SC24.** Have you ever had a period lasting four days or longer when you became so happy or excited that you either got into trouble, people worried about you, or a doctor said you were manic?	1 **CHECK *SC24 ON REF CARD**	5	8	9
*SC25. Have you ever had a period lasting four days or longer when most of the time you were very irritable, grumpy, or in a bad mood?	1	5 **GO TO *SC26**	8 **GO TO *SC26**	9 **GO TO *SC26**
*SC25a. Have you ever had a period lasting four days or longer when most of the time you were so irritable that you started arguments, shouted at people, or hit people?	1 **CHECK *SC25a ON REF CARD**	5	8	9
***SC26.** Did you ever have a time in your life when you were a "worrier" – that is, when you worried a lot more about things than other people with the	1 **CHECK *SC26 ON REF**	5	8	9

same problems as you?	**CARD THEN GO TO *SC27**			
*SC26a. Did you ever have a time in your life when you were much more nervous or anxious than most other people with the same problems as you?	1 **CHECK *SC26a ON REF CARD THEN GO TO *SC27**	5	8	9
*SC26b. Did you ever have a period lasting one month or longer when you were anxious and worried most days?	1 **CHECK *SC26b ON REF CARD**	5	8	9

INTERVIEWER: READ FOLLOWING QUESTIONS SLOWLY. FOR EACH 'YES' RESPONSE, CHECK ITEM ON REFERENCE CARD, *SC27-*SC27f.

***SC27.** (RB, PG 1) The next questions are about things that make some people afraid even though they know there is no real danger. Looking at page 1 in your booklet, was there ever a time in your life when you had a strong fear of <u>any</u> of the following things?

	YES (1)	**NO (5)**	**DK (8)**	**RF (9)**
*SC27a. First, bugs, snakes, dogs, or any other animals?	1	5	8	9
*SC27b. Second, <u>still water</u>, like in a <u>swimming pool</u> or a <u>lake</u>, or weather events, like <u>storms</u>, <u>thunder</u>, or <u>lightning</u>?	1	5	8	9
*SC27c. Third, going to the <u>dentist</u> or <u>doctor</u>, getting a <u>shot</u> or <u>injection</u>, seeing <u>blood</u> or <u>injury</u>, or being in a hospital or doctor's office?	1	5	8	9
*SC27d. Fourth, <u>closed spaces</u>, like <u>caves</u>, <u>tunnels</u>, <u>closets</u>, or <u>elevators</u>?	1	5	8	9
*SC27e. Fifth, <u>high places</u> like <u>roofs</u>, <u>balconies</u>, <u>bridges</u>, or <u>staircases</u>?	1	5	8	9
*SC27f. Sixth, fear of <u>flying</u> or of <u>airplanes</u>?	1	5	8	9

*SC28. INTERVIEWER CHECKPOINT (SEE ***SC27a - *SC27f**):

AT LEAST ONE RESPONSE CODED '1'... 1 **CHECK *SC27a - *SC27f ON REFERENCE CARD**

ALL OTHERS..... 5

INTERVIEWER: READ FOLLOWING QUESTIONS SLOWLY.	**YES (1)**	**NO (5)**	**DK (8)**	**RF (9)**
*SC29. (RB, PG 2) Looking at the top of page 2 in your booklet, was there ever a time in your life when you felt very afraid or really, really shy with people, like meeting new people, going to parties, going on a date, or using a public bathroom?	1 **CHECK *SC29 ON REF CARD THEN GO TO *SC30**	5	8	9
*SC29a. Was there ever a time in your life when you felt very afraid or uncomfortable when you had to do something in front of a group of people, like giving a speech or speaking in class?	1 **CHECK *SC29A ON REF CARD**	5	8	9
***SC30.** (RB, PG 2) Looking at the bottom of page 2 in your booklet, was there ever a time in your life when you had a strong fear of either being in crowds, going to public places, traveling alone, or traveling away from home?	1 **CHECK *SC30 ON REF CARD**	5	8	9

*SC31. The next question is about concentration problems that usually start before the age of seven. These problems include not being able to keep your mind on what you were doing, losing interest very quickly in games or work, trouble finishing what you started without being distracted, and not listening when people spoke to you. During your first years at school—say between the ages of 5 and 7 -- was there ever a period lasting six months or longer when you had a lot more trouble with problems of this sort than most children?

YES ..... 1 **CHECK *SC31 ON REFERENCE CARD**
NO 5
DON'T KNOW 8
REFUSED 9

---

*SC32. Some young kids are very restless and fidgety and so impatient that they often interrupt people and have trouble waiting
their turn. Did you ever have a time before the age of seven lasting six months or longer in your childhood when you were like that?

INTERVIEWER: IF ONLY IN THIRD GRADE OR LATER, CODE 'NO'.

YES ..... 1 **CHECK *SC32 ON REFERENCE CARD**
NO 5
DON'T KNOW 8
REFUSED 9

---

*SC33. Did you ever have a period lasting six months or longer during your childhood or adolescence when you frequently did things that got you in trouble with adults such as losing your temper, arguing or talking back to adults, refusing to do what your teachers or parents asked you to do, annoying people on purpose, or being touchy or irritable?

YES ..... 1 **CHECK *SC33 ON REFERENCE CARD, THEN GO TO *SC33.1.....**
NO 5
DON'T KNOW 8
REFUSED 9

---

*SC33.1. Many children and teenagers go through periods when they do things adults don't want them to do, like lying, stealing, or breaking rules. Did you ever go through a period during your childhood or teenage years when you did any of these things?

YES .....1 **CHECK *SC33.1 ON REFERENCE CARD, THEN GO TO *SC34**
NO.....5
DON'T KNOW 8
REFUSED 9

---

*SC33.2. Did you ever go through a period as a child or teenager when you either broke into cars, set fires, or destroyed property on purpose?

YES .....1 **CHECK *SC33.2 ON REFERENCE CARD, THEN GO TO *SC34**
NO.....5
DON'T KNOW 8
REFUSED 9

---

*SC33.3. When you were a child or a teenager, did you ever run away from home, or repeatedly play hooky from school, or often stay out much later at night than you were supposed to?

YES .....1 **CHECK *SC33.3 ON REFERENCE CARD**
NO.....5
DON'T KNOW 8
REFUSED 9

***SC34.** Some children have difficulty with separation from their parents or other family members. Examples include getting very upset when they are away from these people, worrying a lot that something bad will happen to separate these people from them, or wanting to stay home from school or not go other places without them. Did you ever have problems like this for <u>a month or longer</u> during your childhood?

YES .....1 **CHECK *SC34 ON REFERENCE CARD**
NO.....5
DON'T KNOW 8
REFUSED 9

---

*SC35. Some people have difficulties with separation from family members, romantic partners, or close friends. Examples include getting very upset when they are away from this person, worrying a lot that this person might leave them, and being too "clingy" or dependent. Did you ever have a period lasting one month or longer when you had problems like this?

YES .....1 **CHECK *SC35 ON REFERENCE CARD**
NO.....5

DON'T KNOW 8
REFUSED 9

*SC35.1 INTERVIEWER CHECKPOINT

R CAN READ 1
ALL OTHERS..... 2

---

*SC36. INTERVIEWER CHECKPOINT: (SEE **REFERENCE CARD, SCREENING SECTION**) FOLLOW SKIP FOR FIRST ENDORSED ITEM.

***SC21** IS CHECKED	1	**GO TO *D1, PAGE 9**
***SC22** IS CHECKED	2	**GO TO *D2, PAGE 9**
***SC23** IS CHECKED	3	**GO TO *D9, PAGE 10**
***SC24** IS CHECKED	4	**GO TO *M1, PAGE 37**
***SC25a** IS CHECKED	5	**GO TO *M5, PAGE 38**
***SC20** IS CHECKED	7	**GO TO *PD1 INTRO 1, PAGE 54**
***SC20a** IS CHECKED	8	**GO TO *PD1 INTRO 2, PAGE 54**
***SC27 SERIES** IS CHECKED	9	**GO TO *SP1, PAGE 69**
***SC29** OR ***SC29a** IS CHECKED	10	**GO TO *SO1, PAGE 86**
***SC30** IS CHECKED	11	**GO TO *AG1, PAGE 96**
***SC26** IS CHECKED	12	**GO TO *G1 INTRO 1, PAGE 106**
***SC26a** IS CHECKED	13	**GO TO *G1 INTRO 2, PAGE 106**
***SC26b** IS CHECKED	14	**GO TO *G1 INTRO 3, PAGE 106**
***SC20.1** IS CHECKED	15	**GO TO *SC37**
***SC20.2** IS CHECKED	16	**GO TO *IED3 INTRO 4, PAGE 121**
***SC20.3** IS CHECKED	17	**GO TO *IED3 INTRO 5, PAGE 121**
ALL OTHERS	18	**GO TO *SD1, PAGE 130**

*SC37.INTERVIEWER CHECKPOINT: (SEE **REFERENCE CARD, SCREENING SECTION**)

***SC20.2** IS CHECKED	1	**GO TO *IED3 INTRO 1, PAGE 121**
***SC20.3** IS CHECKED	2	**GO TO *IED3 INTRO 2, PAGE 121**
ALL OTHERS	3	**GO TO *IED3 INTRO 3, PAGE 121**

DEMOGRAPHICS (DM)

*DM1. The next questions are about your work history. Please think about the first year you worked for six months or more at a paid job, whether it was full-time or part-time. How old were you at that time? (Your best estimate is fine.)

_____ YEARS OLD

IF VOL: "NEVER WORKED" 997

DON'T KNOW.....998
REFUSED.....999

---

*DM2. What about your current employment situation -- are you working now for pay, self-employed, looking for work, disabled, temporarily laid off, retired, a homemaker, a full-time or part-time student, or something else?

INTERVIEWER: DO NOT READ LIST, CIRCLE ALL THAT APPLY, DO NOT PROBE FOR OTHERS

EMPLOYED 1
SELF-EMPLOYED 2
LOOKING FOR WORK; UNEMPLOYED.....3
TEMPORARILY LAID OFF 4
RETIRED.....5
HOMEMAKER 6
STUDENT 7
MATERNITY LEAVE.....8
ILLNESS/SICK LEAVE 9
DISABLED.....10
OTHER (SPECIFY).....11

_____

_____

DON'T KNOW.....98
REFUSED.....99

---

*DM3. INTERVIEWER CHECKPOINT: (SEE ***DM2**)

***DM2** CODED '9' OR '10' 1
ALL OTHERS .....2 **GO TO *DM4a**

*DM4. Is the (illness/disability) due to a physical disorder, an emotional disorder, or a combination of physical and emotional?

PHYSICAL 1
EMOTIONAL 2
COMBINATION 3
(IF VOL: MATERNITY) 4
OTHER (SPECIFY) 5

_____

DON'T KNOW 8
REFUSED 9

***DM4a.** What is the highest grade of school or year of college you completed?

IF "HIGH SCHOOL GRADUATE": CODE '12' YEARS
IF "COLLEGE GRADUATE": CODE '16' YEARS

NONE 0
ONE 1
TWO 2
THREE 3
FOUR 4
FIVE 5
SIX 6
SEVEN 7
EIGHT 8
NINE 9
TEN 10
ELEVEN 11
TWELVE 12
THIRTEEN 13
FOURTEEN 14
FIFTEEN 15
SIXTEEN 16
SEVENTEEN OR MORE 17
DON'T KNOW 98
REFUSED 99

***DM5**. INTERVIEWER CHECKPOINT (SEE **REFERENCE CARD, SCREENING SECTION**):

***SC3** OR ***SC3a** IS CHECKED 1
ALL OTHERS .....2 **GO TO *DM9**

*DM6. The next questions are about your (spouse/partner). How many years of school has your (spouse/partner)
completed?

INTERVIEWER: IF NEC PROBE: "What is your best estimate?"

_____ YEARS

DON'T KNOW 98
REFUSED 99

---

*DM7. Has your (spouse/partner) ever worked for pay?

YES.....1
NO .....5 **GO TO *DM9**
DON'T KNOW.....8 **GO TO *DM9**
REFUSED.....9 .....**GO TO *DM9**

---

*DM8. What is your (spouse/partner)'s current employment status? Is (he/she) working now for pay, self-employed, looking for work, disabled, temporarily laid off, retired, a homemaker, a full-time or part-time student or something else?

INTERVIEWER: DO NOT READ LIST, CIRCLE ALL THAT APPLY, DO NOT PROBE FOR OTHERS

EMPLOYED.....1
SELF-EMPLOYED 2
LOOKING FOR WORK; UNEMPLOYED.....3
TEMPORARILY LAID OFF 4
RETIRED.....5
HOMEMAKER 6
STUDENT 7
MATERNITY LEAVE.....8
ILLNESS/SICK LEAVE 9
DISABLED.....10
OTHER (SPECIFY).....11

_____

_____

DON'T KNOW.....98

REFUSED.....99

A.	Less than $0 (Loss)	**M.**	$10,000 - $10,999	**Y.**	$30,000 - $34,999
B.	$0 (None)	**N.**	$11,000 - $11,999	**Z.**	$35,000 - $39,999
C.	$1 - $999	**O.**	$12,000 - $12,999	**AA.**	$40,000 - $44,999
D.	$1,000 - $1,999	**P.**	$13,000 - $13,999	**BB.**	$45,000 - $49,999
E.	$2,000 - $2,999	**Q.**	$14,000 - $14,999	**CC.**	$50,000 - $74,999
F.	$3,000 - $3,999	**R.**	$15,000 - $15,999	**DD.**	$75,000 - $99,999
G.	$4,000 - $4,999	**S.**	$16,000 - $16,999	**EE.**	$100,000 - $149,000
H.	$5,000 - $5,999	**T.**	$17,000 - $17,999	**FF.**	$150,000 - $199,999
I.	$6,000 – $6,999	**U.**	$18,000 - $18,999	**GG.**	$200,000 - $299,999
J.	$7,000 - $7,999	**V.**	$19,000 - $19,999	**HH.**	$300,000 - $499,999
K.	$8,000 - $8,999	**W.**	$20,000 - $24,999	**II.**	$500,000 - $999,999
L.	$9,000 - $9,999	**X.**	$25,000 - $29,999	**JJ.**	$1,000,000 or more

***DM9**. INTERVIEWER CHECKPOINT:

R IS ABLE TO READ .....1 **GO TO *DM10 INTRO1**
ALL OTHERS .....2 **GO TO *DM10 INTRO2**

***DM10 INTRO1.** (RB, PG 42) The next questions are about the different sources of income you may have. For each question, please tell me the letter you see on page 43 in your booklet that represents the correct answer. First, which letter best represents <u>your own</u> personal earnings income in the past 12 months, before taxes? Count only wages and other stipends from your own employment, not pensions, investments, or other financial assistance or income. (Your best estimate is fine.) IF VOL "NONE," CODE B AND **GO TO *DM12** _____ LETTER FROM TABLE (R'S PERSONAL EARNINGS INCOME)	***DM10 INTRO2.** (RB, PG 42) The next questions are about the different sources of income you may have. First, what was <u>your own</u> personal earnings income in the past 12 months, before taxes? Count only wages and other stipends from your own employment, not pensions, investments, or other financial assistance or income. (Your best estimate is fine.) FIND ALL FIGURES REPORTED IN THIS SECTION IN THE TABLE AND RECORD THE APPROPRIATE LETTERS. DO NOT RECORD REPORTED CURRENCY VALUES. IF VOL "NONE," CODE B AND **GO TO *DM12** _____ LETTER FROM TABLE (R'S PERSONAL

DON'T KNOW.....8 REFUSED.....9 INTERVIEWER INSTRUCTION: FOR REST OF SECTION, USE THE PHRASE OPTION "WHICH LETTER BEST REPRESENTS."	EARNINGS INCOME) DON'T KNOW .....8 REFUSED.....9 INTERVIEWER INSTRUCTION: FOR REST OF SECTION, USE THE PHRASE OPTION "WHAT WAS."

*DM11. Is that figure before or after taxes?

INTERVIEWER: CODE "ALL OTHERS" IF R REPORTED BEFORE-TAX FIGURE IN ***DM10**

R REPORTED AFTER-TAX FIGURE IN ***DM10** 1

ALL OTHERS2

A.	Less than $0 (Loss)	**M.**	$10,000 - $10,999	**Y.**	$30,000 - $34,999
B.	$0 (None)	**N.**	$11,000 - $11,999	**Z.**	$35,000 - $39,999
C.	$1 - $999	**O.**	$12,000 - $12,999	**AA.**	$40,000 - $44,999
D.	$1,000 - $1,999	**P.**	$13,000 - $13,999	**BB.**	$45,000 - $49,999
E.	$2,000 - $2,999	**Q.**	$14,000 - $14,999	**CC.**	$50,000 - $74,999
F.	$3,000 - $3,999	**R.**	$15,000 - $15,999	**DD.**	$75,000 - $99,999
G.	$4,000 - $4,999	**S.**	$16,000 - $16,999	**EE.**	$100,000 - $149,000
H.	$5,000 - $5,999	**T.**	$17,000 - $17,999	**FF.**	$150,000 - $199,999
I.	$6,000 – $6,999	**U.**	$18,000 - $18,999	**GG.**	$200,000 - $299,999
J.	$7,000 - $7,999	**V.**	$19,000 - $19,999	**HH.**	$300,000 - $499,999
K.	$8,000 - $8,999	**W.**	$20,000 - $24,999	**II.**	$500,000 - $999,999
L.	$9,000 - $9,999	**X.**	$25,000 - $29,999	**JJ.**	$1,000,000 or more

*DM12. INTERVIEWER CHECKPOINT: (SEE **REFERENCE CARD, SCREENING SECTION**)

***SC3** OR ***SC3a** IS CHECKED.....1
ALL OTHERS .....2 **GO TO *DM14.1**

***DM13**. (RB, PG 42: Still using the categories on page 42) (What was/ Which letter best represents) your (spouse's/ partner's) earnings income in the past 12 months, before taxes? Count only wages or other stipends from (his/ her) employment, not pensions, investments, or other income. (Your best estimate is fine.)

IF VOL "NO SPOUSE'S OR PARTNER'S EARNINGS INCOME," CODE B AND SKIP TO ***DM14.1**

_____ LETTER FROM TABLE (SPOUSE'S OR PARTNER'S EARNINGS INCOME)

DON'T KNOW.....8
REFUSED.....9

---

*DM14. Is that figure before or after taxes?

INTERVIEWER: CODE "ALL OTHERS" IF R REPORTED BEFORE-TAX FIGURE IN ***DM13**

R REPORTED AFTER-TAX FIGURE IN ***DM13** 1
ALL OTHERS 2

***DM14.1.** (RB, PG 42: Still using the categories on page 42) (What was/ Which letter best represents) the total personal earnings income of all other family members who lived with you in the past 12 months, before taxes? Count only wages and other stipends from their employment, not pensions, investments, or other income. (Your best estimate is fine.)

IF VOL "NO OTHER HOUSEHOLD FAMILY MEMBERS," CODE B AND SKIP TO ***DM14.3**

_____ LETTER FROM TABLE (OTHER FAMILY MEMBERS' EARNINGS INCOME)

DON'T KNOW.....8
REFUSED.....9

---

*DM14.2. Is that figure before or after taxes?

INTERVIEWER: CODE "ALL OTHERS" IF R REPORTED BEFORE-TAX FIGURE IN ***DM14.1**

R REPORTED AFTER-TAX FIGURE IN ***DM14.1** 1
ALL OTHERS 2

A.	Less than $0 (Loss)	**M.**	$10,000 - $10,999	**Y.**	$30,000 - $34,999
B.	$0 (None)	**N.**	$11,000 - $11,999	**Z.**	$35,000 - $39,999
C.	$1 - $999	**O.**	$12,000 - $12,999	**AA.**	$40,000 - $44,999
D.	$1,000 - $1,999	**P.**	$13,000 - $13,999	**BB.**	$45,000 - $49,999
E.	$2,000 - $2,999	**Q.**	$14,000 - $14,999	**CC.**	$50,000 - $74,999
F.	$3,000 - $3,999	**R.**	$15,000 - $15,999	**DD.**	$75,000 - $99,999
G.	$4,000 - $4,999	**S.**	$16,000 - $16,999	**EE.**	$100,000 - $149,000
H.	$5,000 - $5,999	**T.**	$17,000 - $17,999	**FF.**	$150,000 - $199,999
I.	$6,000 – $6,999	**U.**	$18,000 - $18,999	**GG.**	$200,000 - $299,999
J.	$7,000 - $7,999	**V.**	$19,000 - $19,999	**HH.**	$300,000 - $499,999
K.	$8,000 - $8,999	**W.**	$20,000 - $24,999	**II.**	$500,000 - $999,999
L.	$9,000 - $9,999	**X.**	$25,000 - $29,999	**JJ.**	$1,000,000 or more

*DM14.3. (RB, PG42: Still using the categories on page 42) (What was/ Which letter best represents) your <u>total</u> family household income from Social Security Retirement benefits? (Your best estimate is fine.)

_____ LETTER FROM TABLE (HOUSEHOLD SOCIAL SECURITY RETIREMENT BENEFITS)

DON'T KNOW..... 8
REFUSED..... 9

---

*DM14.4. (RB, PG 42: Still using the categories on page 42) (What was/ Which letter best represents) your total family household income from government assistance programs? Include income such as unemployment benefits, Aid to Families with Dependent Children, General Assistance, SSI or SSDI. (Your best estimate is fine.)

_____ LETTER FROM TABLE (HOUSEHOLD GOVERNMENT ASSISTANCE INCOME)

DON'T KNOW..... 8
REFUSED..... 9

---

*DM14.5. (RB, PG 42: Still using the categories on page 42) (What was/ Which letter best represents) your total family household income from any <u>other</u> sources in the past 12 months -- for example, pensions, investments, child support, or alimony? (Your best estimate is fine.)

_____ LETTER FROM TABLE (OTHER FAMILY INCOME)

DON'T KNOW.....8
REFUSED.....9

A.	Less than $0 (Loss)	**M.**	$10,000 - $10,999	**Y.**	$30,000 - $34,999
B.	$0 (None)	**N.**	$11,000 - $11,999	**Z.**	$35,000 - $39,999
C.	$1 - $999	**O.**	$12,000 - $12,999	**AA.**	$40,000 - $44,999
D.	$1,000 - $1,999	**P.**	$13,000 - $13,999	**BB.**	$45,000 - $49,999
E.	$2,000 - $2,999	**Q.**	$14,000 - $14,999	**CC.**	$50,000 - $74,999
F.	$3,000 - $3,999	**R.**	$15,000 - $15,999	**DD.**	$75,000 - $99,999
G.	$4,000 - $4,999	**S.**	$16,000 - $16,999	**EE.**	$100,000 - $149,000
H.	$5,000 - $5,999	**T.**	$17,000 - $17,999	**FF.**	$150,000 - $199,999
I.	$6,000 – $6,999	**U.**	$18,000 - $18,999	**GG.**	$200,000 - $299,999
J.	$7,000 - $7,999	**V.**	$19,000 - $19,999	**HH.**	$300,000 - $499,999
K.	$8,000 - $8,999	**W.**	$20,000 - $24,999	**II.**	$500,000 - $999,999
L.	$9,000 - $9,999	**X.**	$25,000 - $29,999	**JJ.**	$1,000,000 or more

*DM14.6. Suppose you (and your spouse or partner) cashed in all your checking and savings accounts, stocks and bonds, real estate, sold your home, your vehicles, and all of your valuable possessions. Then suppose you put that money toward paying off all your mortgage and all your other loans, debts, and credit cards. Would you have any money left over after paying your debts or would you still owe money? (Your best estimate is fine.)

WOULD HAVE MONEY LEFT OVER 1
WOULD STILL OWE MONEY 2
DEBTS WOULD JUST ABOUT EQUAL ASSETS .....3 **GO TO DM15**
DON'T KNOW.....8 **GO TO DM15**
REFUSED.....9 **GO TO DM15**

---

*DM14.7. (RB, PG 42: Still using the categories on page 42) How much money (would be left over/would you still owe)? (Your best estimate is fine.)

IF VOL "BREAK EVEN," CODE B.

_____ LETTER FROM TABLE (MONEY LEFT OVER OR OWED)

DON'T KNOW.....8
REFUSED.....9

*DM15. INTERVIEWER CHECKPOINT: (SEE **SC3**)

***SC3** EQUALS '1' .....1 **GO TO *DM17**
ALL OTHERS 2

***DM16**. Have you ever been married?

YES 1
NO.....5 **GO TO *DM22**
DON'T KNOW.....8 **GO TO *DM22**
REFUSED.....9 **GO TO *DM22**

***DM17**. How many times have you been married?

_____ NUMBER

DON'T KNOW.....998
REFUSED.....999

---

*DM18. INTERVIEW CHECKPOINT (SEE ***DM17**)

***DM17** EQUALS '1' .....1 **GO TO *DM20**
ALL OTHERS 2

---

*DM19. How many of your marriages ended in divorce or annulment?

_____ NUMBER

DON'T KNOW.....98
REFUSED.....99

***DM20**. How old were you when you got married (for the first time)?

_____ YEARS OLD

DON'T KNOW.....998
REFUSED.....999

---

*DM21. How long did you date your (first) spouse before you got married?

_____ NUMBER

CIRCLE UNIT OF TIME:.....DAYS .....1 WEEKS ...2 MONTHS 3 YEARS 4

DON'T KNOW.....998
REFUSED.....999

***DM22**. The next questions are about children. How many living biological and non-biological children do you have? Do not include children who are no longer alive.

_____ CHILDREN

NONE.....00 **GO TO *DM23**
DON'T KNOW.....98 **GO TO *DM23**
REFUSED.....99 **GO TO *DM23**

INTERVIEWER INSTRUCTION: **GO TO *DM23** AS SOON AS ALL CHILDREN REPORTED IN ***DM22** ARE ACCOUNTED FOR OR AS SOON AS R VOLUNTEERS THAT ALL CHILDREN ARE 18 OR OLDER.	**RECORD NUMBER**	**NONE (0)**	**DK (98)**	**RF (99)**
***DM22a**. (Is this child/ How many of these children are) under age <u>five</u>?	_____ CHILD(REN)	0	98	99
*DM22b. (Is this child/ How many of these children are) between the ages of <u>five and twelve</u>?	_____ CHILD(REN)	0	98	99
*DM22c. (Is this child/ How many of these children are) between the ages of <u>thirteen and seventeen</u>?	_____ CHILD(REN)	0	98	99

***DM24**. Next I have some general questions about you and your family background. What are the day, month, and year of your birth?

IF R DOES NOT KNOW EXACT DATE, RECORD MONTH AND/OR YEAR. (EX: **<u>98</u>**/<u>11</u>/<u>1967</u>)

_____ / _____/ _____

DAY MONTH YEAR

DON'T KNOW.....998
REFUSED.....999

---

*DM25. Who was the male head of your household for most of your childhood?

INTERVIEWER: IF R SAYS "FATHER", PROBE: Was that your biological father, step-father, adoptive father, or someone else?

INTERVIEWER: IF R SAYS IT CHANGED, PROBE: Who was the male head of your household for most of the time before you turned seventeen?

BIOLOGICAL FATHER.....1
ADOPTIVE FATHER.....2
STEP FATHER (SPOUSE/ PARTNER OF MOTHER).....3
OTHER MALE (SPECIFY).....4

_____

_____

NO MALE IN HOUSEHOLD.....5 **GO TO *DM26**
DON'T KNOW.....8 **GO TO *DM26**
REFUSED.....9 **GO TO *DM26**

*DM25a. How many years of school did (he/ your father) complete?

_____ YEARS

DON'T KNOW 98
REFUSED 99

***DM26.** Who was the female head of your household for most of your childhood?

INTERVIEWER: IF R SAYS "MOTHER", PROBE. : Was that your biological mother, step-mother, adoptive mother, or something else?

INTERVIEWER: IF R SAYS "IT CHANGED", PROBE: Who raised you for most of the time before you turned seventeen?

BIOLOGICAL MOTHER.....1
ADOPTIVE MOTHER.....2
STEP MOTHER (SPOUSE/ PARTNER OF FATHER).....3
OTHER FEMALE (SPECIFY).....4

_____

NO FEMALE IN HOUSEHOLD.....5 **GO TO *DM27**
DON'T KNOW.....8 **GO TO *DM27**
REFUSED.....9 **GO TO *DM27**

*DM26a. How many years of school did (she/ your mother) complete?

_____ YEARS

DON'T KNOW 98
REFUSED 99

Appendix D: Historical/Clinical/Risk Management (HCR-20)

Items in the HCR-20 Risk Assessment Scheme

Sub-Scales	**Items**
Historical Items	
H1	Previous violence
H2	Young age at first violent incident
H3	Relationship instability
H4	Employment problems
H5	Substance use problems
H6	Major mental illness
H7	Psychopathy
H8	Early maladjustment
H9	Personality disorder
H10	Prior supervision failure
Clinical Items	
C1	Lack of insight
C2	Negative attitudes
C3	Active symptoms of major mental illness
C4	Impulsivity
C5	Unresponsiveness to treatment
Risk Management Items	
R1	Plans lack feasibility
R2	Exposure to destabilizers
R3	Lack of personal support
R4	Noncompliance with remediation attempts
R5	Stress

Appendix E: Participants' Informed Consent Form

I will ask you some questions that are part of a research study that is trying to learn more about the connection between poverty and certain behaviors that may get young people in trouble with the law. It should take 45 to 60 minutes to answer the questions in this study. Most of the questions will ask for a yes or no answer from you. However, some of the questions may ask for longer answers about your childhood. If you participate in this study, I will also need to read your file at the probation office to get more information about the reason(s) you were arrested. You will get US$10.00 at the end of the interview as thanks for your time.

I would like to explain a few possible risks. First, some of the questions are about your past experiences or illegal things you did and these questions could possibly be emotionally painful. If this happens during the interview, you can say that you do not want to answer a question. You can tell me that you do not want to do this study right now. You can also stop answering questions at any time without any consequence to you. Your participation is completely voluntary and you are not required to participate in this study as a condition for your parole. The names and number for two places you can call to get help if the interview questions are emotionally painful for you are: Human Relations Communication and Training Services (HRCT) (telephone: 876-979-0873) and The Committee for the Upliftment of the Mentally Ill (CUMI) (telephone: 876-952-8737). Second, there is a risk that someone could find out who answered these questions. To prevent that and protect your privacy, I will store all your answers and information that I get from your file in a locked file cabinet. The form with your answers will never contain your name. I will also ask you these questions in a private location at the parole office so that no one else but me can hear your answers. Third, I will share a summary of all of the answers from everyone I interviewed with the Ministry of Justice in Jamaica. I will also show the results to my professors and I may present them at research meetings or in scientific articles. Including your answers in the study results will not affect your parole status in any way because your name and identifying information will not be included. Finally, I also want you to know of a situation in which I will have to talk with your parole officer about you. This is if you tell me that you are going to harm yourself or someone else. I am required to do this to protect you and others. However, I will only ask you about past experiences.

The information you provide may not have a direct benefit to you, but has some possible benefits to society. Your answers will help psychologists and people working in the legal system learn about how poverty may cause young people to break the law. Your answers may also help to develop programs that may stop young people from getting in trouble with the law.

If you ever have questions about this study or would like a copy of the results, please contact me, David Saunders-Scott, at (734) 576-3233 or dscott11@emich.edu. You may also contact my research advisor, Dr. Stephen Jefferson at (734) 487-0097 or sjeffer2@emich.edu.

This research protocol and informed consent document has been reviewed and approved by the Eastern Michigan University Human Subjects Review Committee for use from May 26, 2009 to May 26, 2010. If you have questions about the approval process, please contact Dr. Deb de Laski-Smith (734) 487-0042, Interim Dean of the Graduate School and Administrative Co-Chair of the UHSRC, human.subjects@emich.edu.

I have read all of the above information about this research study, including the research procedures, possible risks, and the likelihood of any benefit to me or others. The content and meaning of this information have been explained and I understand. All my questions, at this time, have been answered. I hereby consent and do voluntarily offer to follow the study requirements and take part in the study.

PRINT YOUR NAME: _____

Signatures:

_____ _____
Participant Signature Date

_____ _____
Investigator Signature Date