# NEIGHBORHOOD STRESS EFFECTS on CHANGES in ADOLESCENT MENTAL HEALTH

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**Extended Abstract**

**Introduction**

The role of neighborhood effects on health and other behavioral outcomes (e.g. drug use or crime) has been a focus of social demography/ecology and sociological work arguably from the beginnings of modern sociological practice (e.g. Wirth) and has witnessed a resurgence and focused effort of work since the later 1980's based on the theoretical arguments, empirical observations, and methodological advances of the discipline (e.g. Coleman 1988; Wilson 1987; among others). This paper will investigate the influence of neighborhood context on growth and changes in emotional distress among youth. The majority of research on adolescent mental health has generally not emphasized the role of contextual factors such as neighborhood disadvantage or disorder conditions (see Wilson 1996 or Massey 1996). While such contextual conditions have been linked to general health for adults and children, specific links to mental health are under-explored (e.g. Ross and Mirkowsky, 2001; Robert, 1998; Elliott et al., 1996). Moreover, no study to date uses longitudinal data to explore the changes in adolescent emotional distress,

The goal of this study is to explore the role of neighborhood characteristics, especially the effects of community disadvantage and instability, on changes or growth in emotional distress. We will investigate if neighborhood variables influence the change in emotional distress (increase depressed affect, anxiety, hopelessness) and suicide risk behaviors net of effects of individual and family factors. We will examine if neighborhood variables moderate protective effects of personal and social resources, and risk effects of prior risk effects on changes in emotional distress. Specifying the link between aggregate-level social/economic context variables and individual-level variables will lead to a more comprehensive understanding of how the environment impacts adolescent mental health.

Neighborhood influences on individual behavior reflect an ecological approach to social phenomenon. The mechanisms behind contextual analysis include contagion theories, collective socialization, competition theories, general stress, and relative deprivation (Jenks & Meyer, 1990). Mechanisms specific to general health have emphasized how context may generate stressors, exposure to negative conditions (e.g. victimization), limit physical activity, and can even create physiological reactions (such as hypertension) through chronic exposure (see Ross and Mirowsky, 2001). In addition to these direct effects, neighborhood context can operate to moderate or influence the effects of individual risk and protective factors. For example, highly disadvantage or unstable contexts may interact to dampen effects of direct family/parental efforts to exert control/monitoring over children or instability may lead to greater influence of peers.

Neighborhood characteristics – physical, structural and social – are related to mental health outcomes (Wandersman and Nation, 1998). Studies that focus on adult mental health outcomes find that neighborhood economic disadvantage influences major depression and substance abuse (Silver, Mulvey and Swanson, 2002) and mental illness (Goldsmith, Holzer and Manderscheid,

1998). Neighborhood poverty has been associated with poorer quality home physical environment and less maternal warmth (Klebanov, Kato, Brooks-Gunn, & Duncan, 1994) which may indirectly impact adolescent behavior and mental health. Multiple measures of neighborhood low socioeconomic status have been associated with adolescent mental health. Aneshensel and Sucoff (1996) found that neighborhood conditions, specifically low socioeconomic status and racial/ethnic segregation influence adolescent mental health (depression, anxiety, oppositional defiant disorder, and conduct disorder) by shaping perceptions of the neighborhoods and perceptions of one's neighborhood as dangerous then impacts the mental health of adolescents. In predicting hopelessness among adolescent suicide attempters, Perez, Spirito, and Boergers (2002) found that adolescents who lived in neighborhoods with weak social networks reported higher levels of hopelessness, even after controlling for SES and depression. Interestingly, McLeod and Edwards (1995) finds that the effects of residential poverty, urbanization and racial/ethnic composition play a role in mental health, but may interact with status characteristics of the individual.

Stress is a central component to both the sociological models and sociomedical models for the social etiology of mental health (Aneshensel et al., 1991). Social environmental factors can be thought of as chronic stressors that can affect mental health directly or act to diminish the effects of protective factors. Certain conditions, such as neighborhood economic disadvantage and residential instability, influence the type and level of stress exposure and available resources for coping. Following Masey (1996) and Wilson (1996) disadvantage and instability are important neighborhood conditions; they also represent a theme across neighborhoods studies. Urban disadvantaged neighborhood may be highly stressful to residents including children (Attar et al., 1994). Poverty (Schulz et al., 2000) and social disorganization (Latkin and Curry, 2003) are may be especially harmful to mental health. Overall, we approach the study with a general frame that suggests key features of neighborhood context may act as direct stressors (directly or via exposure) that may have an influence on changes in the mental health of adolescents.

**Methods**

Data for this paper are from adolescents in the Seattle metropolitan area from 1998 to 2003 and maps Census data to the addresses of the adolescent's home address. The Reconnecting Youth (RY) prevention research project is a random sample of high school youth (aged 14 – 19) stratified on school performance; low performers were over-sampled. The dataset includes mental health/distress outcome variables and measures of personal and social resources, as well as basic family and parental background information (e.g. household composition, parent education/occupation).

Sixteen high schools in the Seattle and surrounding school districts participated in health/drug use interventions and/or surveys over the period.[1] All participating youth were assented and parents provided consent in accordance with approved UW IRB protocols. Youth were

[1] The analyses use data from three separate RY study sources conducted between 1998 and 2003: "Preventing Drug Abuse: Parents and Youths with Schools." (NIDA), "Reconnecting Youth: Replication of an Indicated Prevention Program in Multicultural Settings" (Department of Education-DoE) and "Assessing Suicide Risk among Adolescents" (CDC). The first two studies included the implementation of a comprehensive substance use indicated prevention program that targets high school aged youth at risk of school dropout. The sampling and recruitment process and sampling frame were consistent across all three studies.

surveyed at baseline (T1-prior to random assignment), at 5 months and at 10 months. The total sample was 1,185 respondents in the combined dataset.

At the neighborhood level, data are compiled from the 2000 U.S. Census and matched to individual records, following from existing research on neighborhood analysis (Billy & Moore 1992; Crane 1991; Ku et al. 1993). All census tracts that contain fewer than five individuals from the sample are aggregated with contiguous census tracts. After completing the matching and aggregation process, there are 113 census tracts in the contextual level dataset from the city of Seattle and the surrounding areas.

Building on previous work, this analysis assesses the influence of neighborhood context on growth or changes in adolescent drug use behaviors by using a rich individual-level data set. The inclusion of detailed data at the individual level is uncharacteristic of most research in this area. In addition, the extensive dataset on high-risk youth (at risk of academic failure) and comparable non-risk youth is noteworthy. The over sampling of high-risk youth is a strength of the individual-level data set; this stratification should produce variation potential distress given school dropout/poor performance has been related to a variety of negative outcomes including mental health problems. This type of data will enable us to more accurately identify if and how neighborhood conditions influence changes in mental health behaviors.

**Measures**

All outcomes and individual level independent variables come from the Reconnecting Youth High School Questionnaire (HSQ), a detailed self-report questionnaire capturing a range of youth behaviors including substance use, peer and family relations, and school behaviors. The HSQ is designed to use a minimal number of indicators to capture a broad range of risk and protective factors associated with a set of diverse risk behaviors.

*Outcomes*. Measures of mental health and distress are scales derived from known scales (e.g. CES-D depression scale) or single indicators of presence or absence of occurrences (e.g. made a suicide attempt in the past year). Separate scales of depression, anxiety, hopelessness, and suicide risk behaviors (attempts, threats, and ideation) are created; in addition we use a clinical screen that captures a general presence/absence of suicide risk that has shown clinical validation with in-depth follow-up interviews. The depression scale is based on six questions about depressed affect derived directly from the CES-D. The anxiety scale consists of four items about feeling anxious. The hopelessness scale includes three responses about life satisfaction and despondency. The suicide risk behaviors scale contains five measures based on suicidal thoughts and feelings. The scales have reliabilities between .80 and .89 across different surveys.

*Explanatory Variables*. We specify the individual-level model in great detail in order to minimize the possibility that unexplained variance is due to omitted individual characteristics. We include measures of psychosocial risk and protective factors including concurrent substance use, peer group characteristics, demographic characteristics, mobility, family structure, and parent's educational attainment and occupation.

There are four measures designed to capture the psychosocial risk and protective factors: *personal control*, *family support*, *deviant peer bonding*, and *conventional peer bonding*. *Personal*

*control* reflects a mean score based on five items tapping into personal agency and coping abilities. *Family support* is based on the extent of help provided by immediate family members comprised of four items. *Deviant peer bonding* captures the amount of close friends involved in six different delinquent behaviors. *Conventional peer bonding* includes the amount of close friends engaged in five types of constructive, law-abiding activities.

Ethnicity (white, African American, Asian, and other) along with the respondent's age and sex are included. Prior mobility based on the number of prior middle and high schools attended prior to the baseline survey. *F*amily structure, representing living with both natural parents, reconstituted households, single parent and other, will be included. Finally, the *parent's educational attainment* and parent's occupation based on the youth's report is included.

*Neighborhood Explanatory Variables*. Measures of neighborhood characteristics are designed primarily to represent economic disadvantage and instability in the neighborhoods as represented by the census tract unit. We have basic measures from the US Census: poverty and income measures, unemployment, residential stability, female-headed households, racial/ethnic composition and segregation, and have local Seattle crime rates record by tract. We will use separate indicators as well as creating a composite measure to represent *Neighborhood Disadvantage* based on a scale constructed by Sampson and collaborators. (1997). This index is composed of a mean of four indicators of economic disadvantage at the census tract level: percentages of residents below the federal poverty level, households headed by a female, residents receiving public assistance, and residents aged 16 years or older that are unemployed (Cronbach's Alpha = 0.82). .

**Statistical Approach**

The analysis focuses on the influence of the surrounding neighborhood context for individual's changes in mental health. Multilevel techniques (hierarchical linear models-HLM) will be used to assess the impact of context on changes in emotional distress. A hierarchical model explicitly incorporates variables at the individual-level and at the aggregate-level and accounts for the clustering of individuals in aggregate unit. HLM allows key parameters of interest at the individual level to vary across local contexts and our interest is to see if this variation is systematically associated with neighborhood factors (Raudenbush & Bryk, 2002; Snijders & Bosker, 1999). For reasons outlined, we expect neighborhood factors such as poverty and income measures, unemployment, residential stability, female-headed households, racial/ethnic composition and segregation, and crime rates to influence: 1) change in emotional distress directly and 2) to act as moderators affecting risk and protective factors (i.e. context interacts with key individual stressors and individual resources). We propose a multi-level growth model of this process. We have four measured time points of individual emotional distress. We are interested in the effect of the local context on the growth in emotional distress.

**Discussion**

In work looking at emotional distress among adolescents at one time point (baseline), we have found both direct effects of neighborhood disadvantage on emotional distress and moderating effects of both neighborhood instability and disadvantage on effects of parental support/family functioning and peer behaviors. We are interested in what extent we find similar effects as we move to look at changes in the emotional distress response of adolescents.