

Notice of Motion by Councillor A. Yousef

Whereas the City of Maple Ridge recognizes the negative impact of open drug use in municipal parks and public spaces and the effects on the safety of our community, specifically families, youth, and children;

Therefore be it resolved that the City of Maple Ridge enact a prohibition of illicit drug use in all city parks and outdoor public gathering spaces.

Highlights from Academic Research

*Conventional wisdom suggests that neighborhood residence has important implications for individual health and development generally and for substance use specifically. Despite a relative dearth of empirical research, sociological and criminological theory provide a strong foundation for exploring neighborhood influences on residents' behavioral and mental health. Much of this theory focuses on the implications of living in poor neighborhoods. For instance, social disorganization theory (Shaw & McKay, 1969)--an extremely influential theory that examines relations between neighborhoods and crime--suggests that neighborhood-level characteristics like low socioeconomic status (SES), ethnic heterogeneity, and residential mobility disrupt social organization and lead to crime and delinquency.
<https://psycnet.apa.org/record/2009-19890-022>

*the social science on “neighborhood effects” as an independent force in shaping poor outcomes, specifically mental illness and criminal behavior, before discussing the implications of that research for understanding the relationship between neighborhoods, race and class. Neighborhood effects research has proliferated in recent years with extensive attention again being focused on the social context of family and individual development and life course. Moreover, recent work has suggested the need to consider the developmental effects of neighborhoods that persist across life-span. This paper will focus specifically on mental illness and criminal behavior as outcomes for understanding neighborhood effects, but will also consider what the structural causes of individual behavior and functioning mean for clinical assessment, especially forensic assessment.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4169988/>

*Only 10% of the children had experienced no adversity, while more than 20% had experienced 5 or more types of childhood adversity. At age 12, 37% of the children sampled had some health complaint. Exposure to 5 or more adversities, particularly exposure in the second 6 years of life, was significantly associated with increased risks of any health complaint (odds ratio [OR] 2.24, 95% confidence interval [95% CI] 1.02–4.96), an illness requiring a doctor (OR 3.69, 95% CI 1.02–15.1), and caregivers' reports of child's somatic complaints (OR 3.37, 95% CI 1.14–10.0). There was no association between adverse exposures and self-rated poor health or self-rated somatic complaints.
<https://www.sciencedirect.com/science/article/abs/pii/S1876285908002635>

Background

<https://www.castanet.net/news/Salmon-Arm/422683/Mayor-of-Sicamous-says-drug-use-by-law-to-stay-despite-IH-call-to-wait-and-see?fbclid=IwAR3QGu4NiciWJ-VwOdyRZaugGPymireRy-hLRe1g2XRCu5Tllejpkt4MUK>

https://www.cbc.ca/news/canada/british-columbia/kelowna-drug-decriminalization-exemption-1.6781765?fbclid=IwAR1triXDhHxxJLBeH_7KTDcCUVotatjj61pLzYjj2nNUWYXEHkkruG8xnIE






Kamloops and Campbell River have set in motion new bylaws that will prohibit drug use at parks, beaches and playgrounds in the same way as smoking and consuming alcohol.

https://www.theorca.ca/commentary/rob-shaw-how-the-provinces-drug-decriminalization-program-is-meeting-opposition-in-bc-municipalities-6889430?fbclid=IwAR1VxltRBq-uKhovi82qvNI_2ptDHJLEDwPfWOZa0x3MNBSE8GPobYlyilc

https://www.vancouverisawesome.com/bc-news/campbell-river-tries-again-to-ban-public-drug-consumption-6893509?%3Futm_source=twitter&utm_medium=organic&utm_campaign=snd&fbclid=IwAR0ZWvTLyr9S2Yd2f7uUZoniZFxZBJYqqi53j2GjMttoPO9gUhe75ysuQKQ

https://www.timescolonist.com/local-news/campbell-river-scraps-bylaw-changes-to-ban-drug-consumption-on-public-property-6610913?fbclid=IwAR07WI0DILDVS3mxRfjAKeSO2_xsTPALyTOacbQJgAHZVeCHZddnVpBDscs

Neighborhood influences on substance use etiology: Is where you live important?

 EXPORT  Add To My List   

Cited by 16 (</search/citedBy/2009-19890-022>)

Chapter Database: APA PsycInfo

[Gardner, Margo \(/search/results?term=Gardner.%20Margo&latSearchType=a\)](/search/results?term=Gardner.%20Margo&latSearchType=a) [Barajas, R. Gabriela \(/search/results?term=Barajas.%20R.%20Gabriela&latSearchType=a\)](/search/results?term=Barajas.%20R.%20Gabriela&latSearchType=a) [Brooks-Gunn, Jeanne \(/search/results?term=Brooks-Gunn.%20Jeanne&latSearchType=a\)](/search/results?term=Brooks-Gunn.%20Jeanne&latSearchType=a)

Citation

Gardner, M., Barajas, R. G., & Brooks-Gunn, J. (2010). Neighborhood influences on substance use etiology: Is where you live important? In L. Scheier (Ed.), *Handbook of drug use etiology: Theory, methods, and empirical findings* (pp. 423–441). American Psychological Association.

Abstract

Conventional wisdom suggests that neighborhood residence has important implications for individual health and development generally and for substance use specifically. Despite a relative dearth of empirical research, sociological and criminological theory provide a strong foundation for exploring neighborhood influences on residents' behavioral and mental health. Much of this theory focuses on the implications of living in poor neighborhoods. For instance, social disorganization theory (Shaw & McKay, 1969)—an extremely influential theory that examines relations between neighborhoods and crime—suggests that neighborhood-level characteristics like low socioeconomic status (SES), ethnic heterogeneity, and residential mobility disrupt social organization and lead to crime and delinquency. Newer theories, which seek to explain relations between neighborhood residence and a variety of individual-level outcomes (see Jencks & Mayer, 1990, and Leventhal & Brooks-Gunn, 2000, for reviews), build on the underlying assumption of social disorganization theory—namely, that structural features of neighborhoods (e.g., SES, ethnic diversity, and mobility) influence individuals' behavior through their impact on neighborhood-level social processes. Little is known about the social processes that link neighborhood structure and substance use outcomes. Relevant extant research is limited in scope and has focused primarily on the direct, unmediated influence of neighborhood SES. Findings on the influence of neighborhoods are mixed. Some studies have suggested that residents in lower SES neighborhoods are at greater risk of substance use and substance use problems than are residents in higher SES neighborhoods (Boardman, Finch, Ellison, Williams, & Jackson, 2001; Carpiano, 2007; Chaix, Merlo, Subramanian, Lynch, & Chauvin, 2005; Datta et al, 2006; Finch, Kolody, & Vega, 1999; Kleinschmidt, Hills, & Elliott, 1995; Saxe et al, 2001; Steptoe & Feldman, 2001; Stimpson, Ju, Raji, & Eschbach, 2007). Other studies have indicated that the opposite is true (Chuang, Ennett, Bauman, & Foshee, 2005; Fauth, Leventhal, & Brooks-Gunn, 2007; Galea, Ahern, Tracy, Rudenstine, & Vlahov, 2007; Galea, Ahern, Tracy, & Vlahov, 2007; Pollack, Cubbin, Ahn, & Winkleby, 2005). Borrowing heavily from the theoretical traditions just described (Jencks & Mayer, 1990; Leventhal & Brooks-Gunn, 2000; Shaw & McKay, 1969), we provide a framework for understanding how neighborhood-level processes might explain these mixed findings. Our review is divided into three parts. First, we discuss different approaches to measuring the influence of neighborhood residence. Second, we review the empirical literature describing links between neighborhood SES—the most frequently researched dimension of neighborhood structure—and substance use outcomes among adolescents and adults. Finally, we discuss the processes through which neighborhood SES might influence adolescent and adult substance use outcomes. (PsycInfo Database Record (c) 2023 APA, all rights reserved)

© 2023 American Psychological Association.

750 First Street NE, Washington, DC 20002-4242



(<https://fasthttp://www.apa.org/psycnet/record/2009-19890-022>)

Published in final edited form as:

J Politics Law. 2013 September 1; 6(3): 1–16. doi:10.5539/jpl.v6n3p1.

Neighborhood Effects, Mental Illness and Criminal Behavior: A Review

David Freedman¹ and George W. Woods²

¹Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY, USA

²Morehouse University School of Medicine, Atlanta, GA, USA

Abstract

This paper briefly reviews the social science on “neighborhood effects” as an independent force in shaping poor outcomes, specifically mental illness and criminal behavior, before discussing the implications of that research for understanding the relationship between neighborhoods, race and class. Neighborhood effects research has proliferated in recent years with extensive attention again being focused on the social context of family and individual development and life course. Moreover, recent work has suggested the need to consider the developmental effects of neighborhoods that persist across life-span. This paper will focus specifically on mental illness and criminal behavior as outcomes for understanding neighborhood effects, but will also consider what the structural causes of individual behavior and functioning mean for clinical assessment, especially forensic assessment.

Keywords

death penalty; neighborhood effects; race; poverty; criminal behavior; mental illness

1. Introduction

Neighborhood effects research, using an expansive array of data and analyses, has made significant strides in the last twenty-five years (Raudenbush & Sampson, 1999). The relationship between neighborhoods and poor mental and physical health, although studied for decades (Faris, 1939, Reprinted 1965), now more clearly and strongly links neighborhoods to mortality, heart disease, cancer, low birth weight, infant mortality, childhood illnesses, asthma, depression, anxiety, smoking, diet and nutrition, hypertension, heart disease, suicide, accidental injuries, lead exposure, and numerous other illnesses (Roux & Mair, 2010; Morenoff & Lynch, 2004). Research on the association of family and neighborhood characteristics with delinquency and crime also began more than seventy-five

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).

Correspondence: David Freedman, Department of Epidemiology, Mailman School of Public Health, Columbia University, 722 W. 168th Street, 7th Floor, New York, New York 10032, USA. Tel: 1-212-543-5629. df2379@columbia.edu.

years ago, reaching conclusions about the fundamental role of family life and neighborhood in behavioral problems that have been confirmed over the decades since (Glueck & Glueck, 1950; Healy & Bronner, 1936; Sampson & Laub, 1993; Shaw & McKay, 1969). Nevertheless, serious research issues remain concerning both how to measure neighborhood effects and how to interpret results that suggest associations (Roux, 2008; Oakes, 2004).

Recently, Sampson (2008) articulated an important conceptual framework for understanding the mechanisms by which neighborhoods effect individuals (Sampson, 2008). This framework argues for a dual import to neighborhoods: first, as the situational context of family and individual life - which has long been how neighborhoods are viewed (Bronfenbrenner, 1977); but second, as influencing the developmental and enduring early life course that shapes long-term development, behavior and health throughout the life of the individual regardless of subsequent neighborhood stability or individual mobility (Sampson, 2008). In considering outcomes such as mental illness and criminal behavior, this dual framework suggests important possibilities for understanding and preventing illness and crime, and therefore, is also important for clinical and forensic neuropsychiatric practice.

In this paper, we first briefly review some of the research related to neighborhoods and mental health in adults and children. We next focus more specifically on the research related to psychosis, child abuse and witnessing violence, neurotoxicant exposure and finally criminal behavior. As discussed throughout these sections, issues of race/ethnicity and poverty are interwoven into the research findings, but we also address more directly race and class and neighborhoods in considering the pathways and mechanisms by which neighborhoods may be associated with these outcomes.

2. Mental Illness and Neighborhoods

Historically, mental illness has been seen as a condition of the individual alone. Individuals, rather than families or communities, are diagnosed with mental illnesses, except in certain rare disorders, like shared delusional disorder, where several individuals, or even a community may suffer shared psychiatric symptoms. Certainly, few would disagree that mental illness is embodied in the individual. As a result, mental illness is susceptible to the individualistic fallacy which assumes that individual-level outcomes should be attributed solely to individual characteristics or traits (Silver, 2000). However, families and neighborhoods have clear associations with, and in some instances appear to be causally related to, mental illnesses. Current research finds independent, statistically significant effects when examining neighborhoods and mental illness. As Oakes writes: "It would be shocking to learn that [social] contexts did not somehow impact health. The question is about magnitude, mechanism, and mutability" (Oakes, 2004) at p.1929. The effect sizes are often small, leading to debate as to the significance of association. Yet, the question for people interested in identification, prevention, and treatment of mental illness and shifting the career course of offenders, as well as those interested in understanding the neurodevelopment and life course, is not to parse the exact contribution of one risk factor while holding all else constant, but rather to understand the interaction and mediation of associated risks that act together, both the direct and indirect effects of neighborhoods, to shape the life experiences of those who become and are mentally ill (Hafeman, 2008).

Further, while neighborhoods are the collection of individuals, suggesting that aggregated individual data might explain the neighborhood, they are also more than the sum of the individual parts. Neighborhoods have quantifiable characteristics above and beyond the aggregated individual level. For instance, vacancy rates in residential areas are a measure of the neighborhood characteristics, not the individuals who do or do not live in the area. Similarly, a neighborhood which is densely poor, may in fact have some individuals who are exceptionally wealthy. To simply use mean or median income as a measure of the neighborhood may misrepresent the lived experience of those in the neighborhood, thereby missing or mischaracterizing the effect of social context on that lived experience. Additionally, the rate of change over time of a neighborhood may be quite different than the duration of residence of any set of individuals in that area, reflecting qualities other than the aggregated sum of residents at any given point in time. Finally, neighborhoods may change by virtue of policy (changes in zoning, increased infrastructure investment to improve walkability, or the lifting of restrictive covenants) or by virtue of adjacent neighborhood changes (increased public transportation or expansion of services in the adjacent neighborhood), influences which have no individual level corresponding characteristic.

Neighborhoods, then, are more than an aggregate of individual level characteristics, but that does not sufficiently define what constitutes “neighborhood” or what should be measured to capture its characteristics. Most simply, neighborhood are the utilized space in the daily functioning of people and families, the place where people live and move to work or play or school, to shop, to interact with other people. Yet, such a simply definition would mean that every person has his or her own “neighborhood,” making the concept incoherent and quantitatively useless. Some researchers have used statistically available geographic boundaries (such as census tracts) or the aggregation of individual characteristics (the place where most people have a high socio-economic status). Some have proposed thorough approaches to defining neighborhoods for research purposes (Aronson, Wallis, O'Campo, & Schafer, 2007; Azrael et al., 2009; L. Weiss, Ompad, Galea, & Vlahov, 2007), but few studies utilize such careful and time intensive approaches. While our review is bounded by the definitions used by the researchers who conducted the studies, the conceptual approach to neighborhoods is predicated on the idea that neighborhoods are defined by physical space, shared social norms and expectations, social networks, and institutional structures.

Structural and distal causes of functioning and behavior affect groups and populations. Clinical and forensic practice often becomes over-focused on the individual, losing out on important influences and risks that increase the rates and risks for mental illness, as well as the possibilities of intervention and prevention. Thus, when we examine individuals and seek to understand why this person got this disease at this time, we are often unable to examine and understand the mechanisms by which an illness is distributed within a population (Rose, 1985). By understanding the role of neighborhoods and communities in mental illness, we are able to compare not just individuals to other individuals, but social contexts in which those individuals developed and lived and became ill.

2.1 Adults

Truong and Ma (2006) reviewed the literature on adult mental health and neighborhoods (Truong & Ma, 2006). They found 27/29 studies reported statistically significant neighborhood effect on mental health for adults. The studies used differing measures of neighborhood and outcomes, making comparisons difficult across the group of studies, but in general, the evidence supported the finding that neighborhoods have an independent effect on the incidence of mental illness, specifically: symptoms of depression, psychological distress, anxiety and psychosis. The studies fell into three groupings regarding the proposed mechanisms of these effects: structural characteristics of the neighborhoods (i.e., socio-demographic make-up), neighborhood disorder (i.e., perceived safety and social and/or physical “uncivility”), and environmental stressors (i.e., stressors and resources).

The United States Office of Housing and Urban Development (HUD) sought to directly test whether concentrated poverty caused worse mental health, employment, and school outcomes by conducting an experiment which randomized people into types of housing options. The Moving to Opportunity (MTO) project randomized a sample of people living in neighborhoods of concentrated poverty in five major cities, into three groups: the first group, a control group who continued to be eligible for public housing; the second group was referred to as the Section 8 group, received a Section 8 housing voucher without geographic restriction; and the third group, the experimental group, was given a Section 8 housing voucher that restricted the density of poverty in the census tract to which they were permitted to move (Kling, Liebman, & Katz, 2007). Although much debate about how to interpret the results, and whether the experimental design was adequate to find results given how few people opted to move or moved into neighborhoods that offered better opportunity (Aliprantis & Richter, 2012), has followed the MTO project, a few clear findings emerge. Adult mental health, for those who moved out of concentrated poverty (a small portion of the experimental group), improved significantly and those improvements have persisted over time (Kling et al., 2007).

Other studies have found similar, more robust, relationships between adult mental well-being and neighborhood effects. For instance, a ten-year longitudinal study of British civil servants examined neighborhood deprivation and social fragmentation, independent of individual socio-economic status, and found each associated with poorer mental functioning. The differences over time widened between those in more-compared-to-less fragmented neighborhoods as well as those in more-compared-to-less deprived neighborhoods, indicating a cumulative negative effect of deprivation and fragmentation (Stafford, Gimeno, & Marmot, 2008).

2.2 Children and Adolescents

As with adults, children's mental health and behavioral problems are also associated with neighborhood effects, most typically concentrated disadvantage (Caughy, Nettles, & O'Campo, 2008; Xue, Leventhal, Brooks-Gunn, & Earls, 2005). Children living in poverty were more likely than non-poor children to have a psychiatric disorder (Costello, Compton, Keeler, & Angold, 2003); psychological distress is higher among those who live in high poverty neighborhoods (Schulz et al., 2000); and those living in poverty have substantially

worse physical health (Aber, Bennett, Conley, & Li, 1997). Poverty's consequences continue to effect children as they develop, with lowered education attainment, heightened risk of accidents, increased school drop-out, decreased IQ, increased risk for child maltreatment and neglect and increased behavior problems (Baydar, Brooks-Gunn, & Furstenberg, 1993; Duncan, Brooks-Gunn, & Klebanov, 1994; Furstenberg, Brooks-Gunn, & Morgan, 1987). When children moved from poverty to wealth in a natural experiment, after four years of affluence, psychiatric symptoms of previously poor children declined to match those children who had never been poor. This effect was strongest in the area of behavioral symptoms, e.g. conduct and oppositional disorder (Costello et al., 2003).

However, the evidence that changing neighborhoods improves child mental health is not always observed. For instance, children in the MTO had different outcomes of moving to less densely poor neighborhoods depending on gender and victimization, with girls' mental health improving but boys from vulnerable families experiencing a worsening mental health (Osypuk, Schmidt, et al., 2012; Osypuk, Tchetgen, et al., 2012). These findings suggest that neighborhoods in and of themselves are not the answer to mental health problems, but support the notion that they must be considered as influential variables when assessing risk and causation, and considered as part of the mechanism of both good and poor mental health outcomes.

Similar research explains that child problem behaviors may be explained, at least in part by measures of concentrated disadvantage. While controlling for individual family economic factors, the research indicates that neighborhood economic disadvantage has a significant impact on maladaptive behaviors. Thus, a child whose family's economic status is above the poverty line, but who lives in a neighborhood of concentrated disadvantage, is at heightened risk for behavior problems. Living in a disadvantaged neighborhood is an independent risk for behavior problems for children over time. This appears most significant during the transition from childhood to adolescence (Kalff et al., 2001; Schneiders et al., 2003).

Studies of twins raised apart found that variability in intelligence among children is related to the socioeconomic status of the family in which the twin was raised: for those raised in poverty, their poverty accounted for 60% of the variance in IQ scores while genes accounted for nearly none of the variance; for those raised in affluence, the results showed the opposite, with genes accounting for about 60% of variance (Turkheimer, Haley, Waldron, D'Onofrio, & Gottesman, 2003).

Other studies have found pre-frontal cortex deficits, manifested as executive dysfunction, related to socio-economic status (SES), although most of them have relied on global measures of SES and not sought to differentiate the influence of more closely defined neighborhood factors from SES. Nevertheless, impairments have been noted in cognitive flexibility, language performance and working memory associated with low SES (Kishiyama, Boyce, Jimenez, Perry, & Knight, 2009). Conversely, collective efficacy may underlie resilience in some children and may lower the incidence of mental illness (Xue et al., 2005).

3. Psychosis and Neighborhood

While depression and anxiety in relation to chaotic and fear-inducing neighborhood conditions makes a kind of simple conceptual sense (Cutrona, Wallace, & Wesner, 2006), the relationship between neighborhoods and psychosis is less intuitive. Nevertheless, many studies have now found strong associations between psychosis and neighborhood effects. A recent review found an increased incidence of schizophrenia across many countries, although primarily in Europe, for migrants (Cantor-Graae, 2007). A meta-analysis of 50 studies examining first and second generation migrants found a relative risk of 2.9 schizophrenia, with second generation immigrants having an RR of 4.5 and immigrants of color having an RR of 4.8 (Cantor-Graae & Selten, 2005).

Another review, which specifically examined urbanicity and neighborhood effects, found that both are associated with psychosis but that methodological problems in the reviewed studies undermine the ability to reach conclusions regarding neighborhood effects. Of the 44 studies reviewed, urbanicity was found to increase the risk of psychosis between two- and four-fold; and, despite methodological problems, many of the individual neighborhood effects studies found significant associations but were unable to reach broader conclusions (March et al., 2008).

Some of the current hypotheses regarding why the rates of psychosis are higher for some migrants include discrimination and social isolation. That is, that the social experience of migration, especially for migrants of color moving into countries which are predominantly white, contributes to the vulnerability and onset of psychosis. For instance, a study of psychosis in The Hague found the experience of racial/ethnic discrimination raised the incidence of psychosis, with high discrimination experiences leading to 4 incidence rate ratios compared to 1.2 incidence rate ratios for very low discrimination exposure. Neighborhood measures included rates of long-term unemployment, income, poor quality of housing, and level of education. This study suggests that the perception of discrimination may contribute to increased risk for psychosis (Veling et al., 2007). Similarly, in a prospective study of the incidence of psychosis, immigrants living in neighborhoods where their own ethnic group comprised only a small percent of the population had higher incidence, suggesting that social isolation and the experience of exclusion may also play a role in the development of psychosis (Veling et al., 2008).

Moreover, a case-control study of first episode psychosis found that cases were more socially disadvantaged and isolated than controls. Six domains were included for assessing disadvantage and isolation: education, employment, living arrangements, housing, relationships and social networks. As the number of indicated risk factors rose, the incidence of psychosis rose as well. The initial risk for psychosis was generally similar for White British and Black Caribbean immigrants, but Black Caribbean immigrants had higher exposure to the indicated risk factors (Morgan et al., 2008).

One hypothesis, which needs further research, suggests that the higher rates of psychosis and the higher rates of child abuse that are associated with neighborhood effects may be related to each other. A recent study found a dose-response relationship in a prospective study

between childhood trauma and the risk of psychosis, with an odds ratio for child abuse predicting psychosis of 7.3 percent (Janssen et al., 2004). Others have reported this association as well (Larkin & Morrison, 2006).

4. Childhood Physical /Sexual Abuse, Witnessing Violence and Neighborhoods

The long-term mental health consequences of childhood physical and sexual abuse and witnessing violence are well-established (Follette, Polusny, Bechtle, & Naugle, 1996; Herman, 1997; Kaplan et al., 1998; Malinoskyrummell & Hansen, 1993; Martinez & Richters, 1993; Maughan & Cicchetti, 2002; Roberts, O'Connor, Dunn, Golding, & Team, 2004; Van der Kolk, McFarlane, & Weisæth, 1996). Parental abuse of children has historically been viewed solely as a failure of parenting; not an unreasonable view, but one that may be too narrow when seeking to understand and prevent such abuse (Molnar, Buka, Brennan, Holton, & Earls, 2003). More recently, researchers have found considerable agreement across a range of studies that neighborhood disadvantage is also associated with child maltreatment. That is, neighborhoods have a significant effect on the incidence of childhood physical and sexual abuse even when controlling for individual and family differences (Coulton, Crampton, Irwin, Spilsbury, & Korbin, 2007). Abuse has been associated with economic and family resources, residential instability and geographic proximity to neighborhoods of concentrated disadvantage (Coulton, Korbin, Su, & Chow, 1995). Concentrated disadvantage and community violence significantly predicted parent to child aggression (Molnar et al., 2003). The measure of the concentrated disadvantage of the neighborhood typically refers to the percentage of residents below the poverty line, the percentage on family assistance, the percentage of female headed households, the percentage of unemployed, the percentage of children under 18, and the percentage of African Americans (Coulton, Korbin, & Su, 1999; Coulton et al., 1995; Molnar et al., 2003).

The statistical findings of the effect of neighborhoods on the incidence of abuse is significant but small because family factors interact with neighborhood factors. The interaction makes sense, because although the family is the actual mechanism of the maltreatment, neighborhood-level factors such as economic and family resources, residential instability, household make-up, and geographic proximity to concentrated poverty areas are all associated with the occurrence of maltreatment. Thus, while this research indicates that neighborhoods do not primarily *cause* child maltreatment, neighborhood factors are part of the understanding of how and when and why child maltreatment occurs. Neighborhoods with the highest maltreatment rates were those with high combinations of poverty, unemployment, racial segregation, abandoned housing, population loss, lack of child care, few elderly residents, and which border other neighborhoods with high density poverty. These structural factors explain a significant part of the statistical variance in maltreatment across neighborhoods (Coulton et al., 1995).

Moreover, witnessing community violence has been shown to be associated with both behavioral and psychological problems in youth. The individual effects of exposure to community violence (depression, withdrawal, dissociative coping, aggression, substance abuse, stress, post-traumatic stress disorder and other physiological deficits) are significant

(Buka, Stichick, Birdthistle, & Earls, 2001; Salzinger, Feldman, Stockhammer, & Hood, 2002). Witnessing community violence is related to child maltreatment and poor outcomes as both the “severity of neglect and victimization by violence in the community are significant predictors of children's functioning” (p. 246) (Lynch & Cicchetti, 1998). The neighborhood can create increased risk for both exposure to violence and for physical and sexual abuse within the family (Garbarino & Sherman, 1980).

A community survey found that where there were lower than expected rates of child abuse there was higher reported satisfaction with neighborhoods (Garbarino & Sherman, 1980). They suggested that neighborhood, and community member perception of the neighborhood, was an important factor in child maltreatment. Similarly, a neighborhood with a high degree of collective efficacy may in fact provide a protective effect against child abuse. Meaning, where the neighborhood has strong social cohesion, that cohesion may provide a protection for children against the violence of a parent (Silk, Sessa, Morris, Steinberg, & Avenevoli, 2004). Neighborhoods have been associated with resiliency as well, meaning, neighborhood advantage may assist abused children in more quickly overcoming and coping with the abuse (DuMont, Widom, & Czaja, 2007).

5. Neurotoxicant Exposures

Exposure to neurotoxicants, in particular pesticides, metals and solvents, is also a pervasive neighborhood-level problem that has significant effects on developmental course (Landrigan et al., 1999). For instance, exposure to DDT *in utero* has been found to cause significant neuro-developmental delays (Eskenazi et al., 2006). Similarly, childhood exposures to pesticides and flame retardants have been associated with persistent neuro-developmental delays (Eskenazi, Bradman, & Castorina, 1999; Eskenazi et al., 2013). The neighborhood level issues result from the unequal distribution of environmental hazards such that they disproportionately expose some people more than others (Cole & Foster, 2001). The effect of lead, for instance, has clearly been shown to be unequally distributed by both race and class, as well as being related to a host of negative health and mental health outcomes (Hu, Shih, Rothenberg, & Schwartz, 2007). The likelihood and extent of exposure to neurotoxicants is dependent, at least in part, on neighborhood factors such as segregation and density of poverty and public policy related to the zoning of hazards and housing; these factors in turn shape the developmental course of those who live in neighborhoods with high levels of neurotoxic agents (Bullard, Johnson, & Torres, 2000).

Researchers have sometimes viewed neurotoxicant exposure as a confound of poverty. This appears to be an inaccurate inference, however, and may lead to a false attribution of effects (Bellinger, 2008). Instead, Bellinger has argued that lead exposure is an effect modification with potential direct influence on dose-response relationships, and therefore on health outcomes (Bellinger, 2000). Therefore, rather than “controlling” for context when assessing the effect of neurotoxicant exposure on health and behavior, this research suggests a more careful consideration of the effect modification of neighborhood level effects when considering the outcomes of exposure.

Both high exposures (including poisoning) and chronic, low-level exposures are associated with a host of negative health and mental health effects. A wealth of research indicates that chronic pesticide exposure is associated with decreased cognitive, psychomotor and psychiatric functioning (Kamel & Hoppin, 2004). These changes can persist throughout the life time of the exposed person and can be dramatic (Ecobichon & Joy, 1994; Feldman, 1999).

For children, from *in utero* to adolescence, the human body is less able to physiologically eliminate pesticides compared to adults. The absorption in children is more than 70% compared to absorption in adults of 30% of many chemical agents. In addition, because the central nervous system is developing during the course of adolescence and vulnerable to toxic mutation, exposure prior to and during adolescence alters the development and functioning of the brain to a greater degree (Rice & Barone, 2000).

Perhaps more than any other agent, the neurocognitive effects of lead have been studied extensively. Declines in IQ scores have been demonstrated over many years (Canfield, Henderson, et al., 2003; Lanphear et al., 2005); reduction in brain volume, specifically in frontal gray matter and the anterior cingulate cortex, has more recently been shown (Cecil et al., 2008); behavioral problems, including arrests, as well as neuropsychological impairments such as spatial attention, executive functioning, attention, working memory and learning (Canfield, Kreher, Cornwell, & Henderson, 2003; Surkan et al., 2007; Wright et al., 2008). Lead exposure has also been associated with depression, anxiety, irritability and anger (Shih, Hu, Weisskopf, & Schwartz, 2007).

In adults, the cumulative exposure to lead is associated with increased neurocognitive decline. The most significant association between bone-lead level and cognitive decline was found in total cognitive score, spatial ability, learning and memory, and in executive functioning over time compared to controls (Khalil et al., 2009). The consequences of cumulative life-time lead exposure are exacerbated by neighborhood level psychosocial hazards. The combination resulted in diminished cognitive functioning in executive function and language areas for adults. The lead exposure-cognitive impairment demonstrated dose-response characteristics and has a plausible biological mechanism (Glass et al., 2009).

Pesticides have also been shown to significantly increase the risk for mental illness based on both chronic exposure and poisoning. While pesticide poisoning increased the risk of depression by an odds ratio of 2.57%, chronic exposure increased the odds ratio by 1.54 percent (Beseler et al., 2008). Pesticides (primarily organophosphates and organochlorines) are also associated with a host of symptoms that may be short- or long-term in duration: irritability, depression, anxiety, mood lability, agitation, memory impairment, confusion, hallucinations, academic deficits, hyperactivity, poor concentration, paranoia, dissociation and somatic complaints (Brown, 2002).

Finally, environmental deprivation may have a potentiating effect on neurotoxicant exposure deficits. Put more positively, environmental enrichment can serve as a tool to assist exposed children in being resilient. Heightened stress (such as exposure to violence or negative neighborhood factors) and heightened maternal stress also appear to negatively interact with

neurotoxic exposure (Cory-Slechta, Virgolini, Thiruchelvam, Weston, & Bauter, 2004; Weiss & Bellinger, 2006). In this way, a mechanism by which neurotoxic exposure and the other neighborhood level factors discussed can be understood to relate to worsened mental health outcomes.

6. Criminal Behavior

As discussed above, immigration studies first found a “race” effect for psychosis, but later research suggests that the perception of discrimination and migration status itself, as well as neighborhood effects, may be the more important mechanisms in understanding the observed findings. This is not to argue for a more limited view of the importance of race and class, but rather for a more precise measurement -- and as a result of so doing, to shift the individual-level markers of race and class back to the structural-level of their operation and effect and to understand for what they stand as proxies (Manly, 2006; Manly & Echemendia, 2007).

No area of research more so than studies of criminal behavior has been confounded by issues of race and class. Having reviewed some of the neighborhood effects literature on mental health, the question arises as to how neighborhood effects may relate to criminal behavior. Are the same factors observed in the health and mental health research found in the research on criminal behavior?

Recently, the role of race and class in the perception of neighborhood disorder has attracted attention, with some research suggesting that the racial and class make-up of a neighborhood shapes people's perceptions of disorder more than trash, graffiti or broken windows (Franzini, Caughy, Nettles, & O'Campo, 2008). This research runs directly counter to the “broken window” theory of crime, first posited in 1982 (Wilson & Kelling, 2011), which suggested that public disorder of any sort leads to criminal behavior (Kelling & Coles, 1996). This theory argues that the unrepaired window leads to the breakdown of community social control, and therefore increased crime. The idea that race and class perceptions, rather than disorder, effect residents' view of neighborhoods undermines the proposition that disorder is causative of violence.

However, when the question of race and crime are analyzed directly, the results indicate that neighborhood disadvantage rather than race explains significantly more variation in crime rates. Individual differences (family poverty status, IQ, and impulsivity) accounted for about 6% of variance between white and African-American crime, whereas neighborhood disadvantage (including racial segregation) explained 60% of the difference (Sampson, Morenoff, & Raudenbush, 2005). Further, variation between neighborhoods is more significant to understanding crime than race, meaning that crime rates for whites and African-Americans are almost identical when controlling for neighborhood level differences (Peterson, Krivo, & Hagan, 2006). These findings echo those of McNulty and Bellair who reported that differences between neighborhoods, rather than people, explained criminal youth violence (McNulty & Bellair, 2003).

In fact, in an analysis of Chicago neighborhoods and homicide, researchers found that spatial proximity to violence, collective efficacy and measures of affluence/resource

inequality were the most significant predictors of variations in homicide rates (Morenoff, Sampson, & Raudenbush, 2001). This research challenges the view that minor disorder leads to major crime, finding instead that low collective efficacy neighborhoods tend to be higher in both disorder and criminal activity (Sampson & Raudenbush, 1999; Sampson, Raudenbush, & Earls, 1997a). Most interestingly, this research has shown that where collective efficacy is high, that is, where neighbors have shared expectations and the neighborhood has a strong sense of cohesion, even where poverty is concentrated, crime is low; and in a analysis of homicides, the findings are even stronger that the combination of collective efficacy and measures of inequality are exceptionally strong predictors of homicides (Morenoff et al., 2001).

Relatedly, research has shown that impulsive boys were at greater risk for juvenile offending if they lived in densely poor neighborhoods compared to impulsive boys who lived in better neighborhoods (Lynam et al., 2000). As suggested by this research, the interaction between individual factors, such as mental illness, and neighborhood effects, such as dense poverty or collective efficacy, suggests that context is critical to understanding behavior and outcomes of concern such as criminal offending.

7. Neighborhood Effects Mechanisms and Implications

The research reviewed here on crime and mental illness suggests that neighborhood effects must be considered if the determinants of behavior and functioning are to be understood. Neighborhoods are defined by physical space, shared social norms and expectations, social networks, and institutional structures, and neighborhoods do appear to play a role in the mechanism by which some people develop mental illnesses, and behavioral and functional impairments. Sampson (2008) argues for understanding neighborhood effects mechanisms on individual behavior in two ways: first, in the situational context of life-course in a place; and second, in the developmental and enduring effects that neighborhoods exercise on early life course that may persist throughout the life of the individual regardless of neighborhood stability or individual mobility (Sampson, 2008). Certainly the known long-term effects of childhood exposure to violence, childhood exposure to neurotoxicants and the onset and course of many serious mental illnesses, support the notion of studying neighborhood effects in this way. That the effects long outlast changed circumstances supports the concept of examining both context and developmental course.

The literature on neighborhood effects would appear to point to collective efficacy and concentrated disadvantage as the ways in which individuals are shaped by neighborhoods. Collective efficacy, which refers to the level of mutual trust and cohesion among residents and their willingness to work toward the common good is related to the structural characteristics of the neighborhood. Collective efficacy includes a shared willingness and capacity for people in a neighborhood to intervene informally (exercise informal social control) in neighborhood activities to promote social good. Research has shown that where collective efficacy is high, that is, where neighbors have shared expectations and the neighborhood has a strong sense of cohesion, even where poverty is concentrated, crime is low (Sampson et al., 1997a).

Alternatively, in neighborhoods in which collective efficacy is low, residents may feel isolated and have little belief in the neighborhood's capacity to improve negative situations, such as drug dealing or crime. In such neighborhoods residents are less willing to enforce conventional behaviors or provide control for inappropriate activities that occur (Earls & Carlson, 2001; Sampson, Morenoff, & Earls, 1999).

Neighborhood effects research has found that concentrated disadvantage and residential instability explain 70% of neighborhood variation in how willing people are to help their neighbors, intervene on their behalf or protect other people's children (Sampson, Raudenbush, & Earls, 1997b).

A recent summary of neighborhood research finds that

[T]he evidence is solid on the ecological differentiation of American cities along socio-economic and racial lines, which in turn corresponds to the spatial differentiation of neighborhoods by multiple child, adolescent, and adult behaviors. These conditions are interrelated and appear to vary in systematic and theoretically meaningful ways with hypothesized social mechanisms such as informal social control, trust, institutional resources and routines, peer-group delinquency, and perceived disorder. An important take-away of our assessment is that these and other neighborhood-level mechanisms can be measured reliably with survey, observational, and archival approaches.

(p. 473) (Sampson, Morenoff, & Gannon-Rowley, 2002).

Neighborhood processes can and should be treated as ecological or collective phenomena rather than as individual-level perceptions or traits. Collective efficacy is a measure of informal social control and mutual dependence, where people believe that members of their community will assist them when they are in need. Nevertheless, collective efficacy has an independent effect on both contextual and life-course development of mental illness and criminal behavior. This effect is significant enough that it should not be overlooked or studied by proxy measures.

Similarly, concentrated disadvantage, rather than vague notions of socioeconomic status or other proxy markers, have demonstrated robust impact on the context and life-course of individuals as indicated when looking at mental illness and criminal behavior as outcomes. Although often studied through proxy measures that fail to adequately address how and why concentrated disadvantage operates, significant findings point to concentrated disadvantage having life-course effects (Sampson, 2008).

Perhaps equally significant in this research are the questions that are raised about how we understand race and class. Both have been used variously as proxy measures to the detriment of more nuanced understandings. Each needs to be deconstructed if we are to explore the actual mechanisms of a host of behavioral, psychological and health outcomes.

The evidence that the proxy measures of race and class have clear health and behavior consequences is not undermined by seeking a better understanding of what is meant when those categories are used to group people. Residential segregation is the clearest means by

which these structural factors shape people's lives by defining their access to, and the quality of, medical and social services, employment, education, food, mobility, environmental hazards and a host of disadvantage (Acevedo-Garcia, Osypuk, McArdle, & Williams, 2008).

Racial segregation in housing not only affects individuals but also acts as a social and neighborhood structural barrier. A study of urban Atlanta found substantial race-based discrimination in housing and work, including a spatial mismatch (poor people who need entry level jobs are unable to live in proximity to those jobs) and housing segregation (inability to move based on race), which resulted in a concentration of poor people into densely poor areas (Sjoquist, 2000). These neighborhood factors shape the lives of people by narrowing their options and teaching mean lessons about what it means to be poor or a person of color (W. J. Wilson, 1996). Nationally, African Americans among all racial groups are most physically segregated from jobs (Stoll & Raphael, 2002). In terms of mental health care, in 2001, the Surgeon General of the United States issued a report finding serious disparities in mental health care and treatment for people of color. The report found that people of color are less likely than whites to receive services and more likely to receive poor quality services when they do (Health and Human Services, 2001). In addition, perceptions of discrimination are associated with poorer mental and physical health (Williams, Neighbors, & Jackson, 2003).

Further, consideration of neighborhood disadvantage accounts for some of the race/ethnic and socioeconomic position differences in health, particularly in hypertension. When controlling for neighborhood effects, a significant amount of the statistical difference in the incidence of hypertension that appears based on racial/ethnic status goes away (Morenoff et al., 2007).

When looking at violence in patients recently discharged from a psychiatric hospital, researchers found that, after controlling for individual factors (such as age, diagnosis, prior arrests), the concentrated disadvantage of the neighborhood into which the patient was discharged was predictive of future violence. That is, the risk that a patient discharged from locked facility would engage in future violence increased 2.7 times if the person was discharged into a neighborhood of concentrated disadvantage compared to a less disadvantaged one (Silver, 2000; Silver, Mulvey, & Monahan, 1999). But they also found that “the significant association between African-American racial status and violence was completely eliminated when neighborhood disadvantage was controlled” (p. 405) (Silver, 2001).

In a study of stereotype threat, researchers found that simply asking African-Americans to record their race before a test significantly lowered test performance compared to whites and compared to African-American controls (Steele & Aronson, 1995). Whatever else this research says, it provides some insight into how structural barriers to equality, perhaps ones that are not context-driven but which shaped the developmental and experiential life-course of the test subjects, act on individuals. Simply examining how these subjects scored on tests would lead to false conclusions and useless intervention strategies. Similarly, research that relies on race and class as proxies about crime, violence or mental illness are missing critical information which might re-shape the understanding of cause and course of behavior and

illness. Instead, neighborhood effects, in their specific mechanisms of action, can assist in deconstructing those proxy measures such that a more accurate and meaningful understanding can be sought.

How we understand race and class effects should be broadened to look at both the context effect of discrimination, isolation and perception, as well as the long-term effect on mental health and criminal behavior. When Sampson argued for this dual understanding, it was in order that the research begin to take into account both mechanisms (Sampson, 2008). Neighborhood effects have both a contextual consequence as well as a long-term developmental consequence, and the outcomes discussed here also demonstrate evidence of such influences. Yet, we often ignore the developmental and course aspects of both, which means we are missing important prevention and intervention evidence as well as misconstruing the results of the data. How we understand neighborhood effects, both collective efficacy and concentrated disadvantage, should also be helping us understand the context and life course of individual behavior and illness.

This should also affect how forensic assessment is conducted. Competent forensic neurobehavioral assessment requires a thorough multigenerational social history, along with the integration of information obtained from multiple sources, across a number of disciplinary approaches, each of which assess different aspects of behavior and functioning (Woods, Freedman, & Greenspan, 2012). It is no longer adequate to consider the individual out of context or to seek to explain behavior and functioning without regard to the causal effects of structural forces. Forensic assessment, in our view, must include an assessment of those structural forces to be meaningful and valid.

This means that popular forensic views about individuals characteristics and actions will need to be replaced with scientifically reliable and valid evidence of the dynamic forces which shape the life course. Behavior and functioning will need to be assessed from the viewpoint of the causal forces that shape an individual from place in which they are born, to the cultural and ethnic biases they have faced, to the opportunities available or denied. Competent forensic assessment should consider the ways in which neighborhood effects, as one example of the structural forces demonstrated to affect behavior and functioning in mental illness and crime, alter the life trajectory of the individual.

Acknowledgments

Preparation of this manuscript was supported in part by NIMH Training Grant 5T32MH-13043-40 (DF).

References

- Aber JL, Bennett NG, Conley DC, Li JL. The effects of poverty on child health and development. *Annual Review of Public Health*. 1997; 18:463–483. <http://dx.doi.org/10.1146/annurev.publhealth.18.1.463>.
- Acevedo-Garcia D, Osypuk TL, McArdle N, Williams DR. Toward a policy-relevant analysis of geographic and racial/ethnic disparities in child health. *Health Aff (Millwood)*. 2008; 27(2):321–333. <http://dx.doi.org/10.1077/hlthaff.27.2.321>. [PubMed: 18332486]

- Aliprantis, D.; Richter, FGC. Marginal neighborhood effects from Moving to Opportunity: Working Paper 12-08R. Reserve Bank of Cleveland; 2012. Retrieved from www.clevelandfed.org/research/workpaper/2012/wp1208r.pdf Federal
- Aronson RE, Wallis AB, O'Campo PJ, Schafer P. Neighborhood mapping and evaluation: a methodology for participatory community health initiatives. *Maternal and Child Health Journal*. 2007; 11(4):373–383. <http://dx.doi.org/10.1007/s10995-007-0184-5>. [PubMed: 17295067]
- Azrael D, Johnson RM, Molnar BE, Vrinotis M, Dunn EC, Duncan DT, Hemenway D. Creating a Youth Violence Data System for Boston, Massachusetts. *Australian and New Zealand Journal of Criminology*. 2009; 42(3):406–421.
- Baydar N, Brooks-Gunn J, Furstenberg FF. Early Warning Signs of Functional Illiteracy - Predictors in Childhood and Adolescence. *Child Dev*. 1993; 64(3):815–829. <http://dx.doi.org/10.1111/j.1467-8624.1993.tb02945.x>. [PubMed: 8339697]
- Bellinger DC. Effect modification in epidemiologic studies of low-level neurotoxicant exposures and health outcomes. *Neurotoxicol Teratol*. 2000; 22(1):133–140. [http://dx.doi.org/10.1016/S0892-0362\(99\)00053-7](http://dx.doi.org/10.1016/S0892-0362(99)00053-7). [PubMed: 10642122]
- Bellinger DC. Lead neurotoxicity and socioeconomic status: Conceptual and analytical issues. *Neurotoxicology*. 2008; 29(5):828–832. <http://dx.doi.org/10.1016/j.neuro.2008.04.005>. [PubMed: 18501967]
- Beseler CL, Stallones L, Hoppin JA, Alavanja MCR, Blair A, Keefe T, Kamel F. Depression and Pesticide Exposures among Private Pesticide Applicators Enrolled in the Agricultural Health Study. *Environ Health Perspect*. 2008; 116(12):1713–1719. <http://dx.doi.org/10.1289/ehp.11091>. [PubMed: 19079725]
- Bronfenbrenner U. Toward an Experimental Ecology of Human-Development. *American Psychologist*. 1977; 32(7):513–531. <http://dx.doi.org/10.1037/0003-066x.32.7.513>.
- Brown, JS. Environmental and chemical toxins and psychiatric illness. 1st. Washington, DC: American Psychiatric Pub; 2002.
- Buka SL, Stichick TL, Birdthistle I, Earls FJ. Youth exposure to violence: Prevalence, risks, and consequences. *American Journal of Orthopsychiatry*. 2001; 71(3):298–310. <http://dx.doi.org/10.1037/0002-9432.71.3.298>. [PubMed: 11495332]
- Bullard, RD.; Johnson, GS.; Torres, AO. *Sprawl city: Race, politics, and planning in Atlanta*. Washington, D.C: Island Press; 2000.
- Canfield RL, Henderson CR, Cory-Slechta DA, Cox C, Jusko TA, Lanphear BP. Intellectual impairment in children with blood lead concentrations below 10 µg per deciliter. *New England Journal of Medicine*. 2003; 348(16):1517–1526. <http://dx.doi.org/10.1056/NEJMoa022848>. [PubMed: 12700371]
- Canfield RL, Kreher DA, Cornwell C, Henderson CR. Low-level lead exposure, executive functioning, and learning in early childhood. *Child Neuropsychology*. 2003; 9(1):35–53. <http://dx.doi.org/10.1076/chin.9.1.35.14496>. [PubMed: 12815521]
- Cantor-Graae E. The contribution of social factors to the development of schizophrenia: A review of recent findings. *Canadian Journal of Psychiatry-Revue Canadienne De Psychiatrie*. 2007; 52(5): 277–286. [PubMed: 17542378]
- Cantor-Graae E, Selten JP. Schizophrenia and migration: A meta-analysis and review. *American Journal of Psychiatry*. 2005; 162(1):12–24. <http://dx.doi.org/10.1176/appi.ajp.162.1.12>. [PubMed: 15625195]
- Caughy MOB, Nettles SM, O'Campo PJ. The effect of residential neighborhood on child behavior problems in first grade. *American Journal of Community Psychology*. 2008; 42(1-2):39–50. <http://dx.doi.org/10.1007/s10464-008-9185-9>. [PubMed: 18607720]
- Cecil KM, Brubaker CJ, Adler CM, Dietrich KN, Altaye M, Egelhoff JC, Lanphear BP. Decreased brain volume in adults with childhood lead exposure. *Plos Medicine*. 2008; 5(5):741–750. <http://dx.doi.org/10.1371/journal.pmed.0050112>.
- Cole, LW.; Foster, SR. *From the ground up: environmental racism and the rise of the environmental justice movement*. New York: New York University Press; 2001.

- Cory-Slechta DA, Virgolini MB, Thiruchelvam M, Weston DD, Bauter MR. Maternal stress modulates the effects of developmental lead exposure. *Environ Health Perspect.* 2004; 112(6): 717–730. <http://dx.doi.org/10.1289/ehp.6481>. [PubMed: 15121516]
- Costello EJ, Compton SN, Keeler G, Angold A. Relationships between poverty and psychopathology - A natural experiment. *Jama-Journal of the American Medical Association.* 2003; 290(15):2023–2029. <http://dx.doi.org/10.1001/jama.290.15.2023>.
- Coulton CJ, Crampton DS, Irwin M, Spilsbury JC, Korbin JE. How neighborhoods influence child maltreatment: A review of the literature and alternative pathways. *Child Abuse Negl.* 2007; 31(11-12):1117–1142. <http://dx.doi.org/10.1016/j.chiabu.2007.03.023>. [PubMed: 18023868]
- Coulton CJ, Korbin JE, Su M. Neighborhoods and child maltreatment: A multi-level study. *Child Abuse Negl.* 1999; 23(11):1019–1040. [http://dx.doi.org/10.1016/s0145-2134\(99\)00076-9](http://dx.doi.org/10.1016/s0145-2134(99)00076-9). [PubMed: 10604060]
- Coulton CJ, Korbin JE, Su M, Chow J. Community-Level Factors and Child Maltreatment Rates. *Child Dev.* 1995; 66(5):1262–1276. <http://dx.doi.org/10.1111/j.1467-8624.1995.tb00934.x>. [PubMed: 7555215]
- Cutrona CE, Wallace G, Wesner KA. Neighborhood characteristics and depression - An examination of stress processes. *Current Directions in Psychological Science.* 2006; 15(4):188–192. <http://dx.doi.org/10.1111/j.1467-8721.2006.00433.x>. [PubMed: 18185846]
- Diez Roux AV. Next steps in understanding the multilevel determinants of health. *Journal of Epidemiology and Community Health.* 2008; 62(11):957–959. <http://dx.doi.org/10.1136/jech.2007.064311>. [PubMed: 18854498]
- Diez Roux AV, Mair C. Neighborhoods and health. *Ann N Y Acad Sci.* 2010; 1186(1):125–145. <http://dx.doi.org/10.1111/j.1749-6632.2009.05333.x>. [PubMed: 20201871]
- DuMont KA, Widom CS, Czaja SJ. Predictors of resilience in abused and neglected children grown-up: The role of individual and neighborhood characteristics. *Child Abuse Negl.* 2007; 31(3):255–274. <http://dx.doi.org/10.1016/j.chiabu.2005.11.015>. [PubMed: 17386940]
- Duncan GJ, Brooks-Gunn J, Klebanov PK. Economic Deprivation and Early-Childhood Development. *Child Dev.* 1994; 65(2):296–318. <http://dx.doi.org/10.1111/j.1467-8624.1994.tb00752.x>. [PubMed: 7516849]
- Earls F, Carlson M. The social ecology of child health and well-being. *Annual Review of Public Health.* 2001; 22:143–166. <http://dx.doi.org/10.1146/annurev.publhealth.22.1.143>.
- Ecobichon, DJ.; Joy, RM. Pesticides and neurological diseases. 2nd. Boca Raton: CRC Press; 1994.
- Eskenazi B, Bradman A, Castorina R. Exposures of children to organophosphate pesticides and their potential adverse health effects. *Environ Health Perspect.* 1999; 107:409–419. [PubMed: 10346990]
- Eskenazi B, Chevrier J, Rauch SA, Kogut K, Harley KG, Johnson C, Bradman A. In utero and childhood polybrominated diphenyl ether (PBDE) exposures and neurodevelopment in the CHAMACOS study. *Environ Health Perspect.* 2013; 121(2):257–262. <http://dx.doi.org/10.1289/ehp.1205597>. [PubMed: 23154064]
- Eskenazi B, Marks AR, Bradman A, Fenster L, Johnson C, Barr DB, Jewell NP. In utero exposure to dichlorodiphenyltrichloroethane (DDT) and dichlorodiphenyldichloroethylene (DDE) and neurodevelopment among young Mexican American children. *Pediatrics.* 2006; 118(1):233–241. <http://dx.doi.org/10.1542/peds.2005-3117>. [PubMed: 16818570]
- Faris, RaHD. Mental disorders in urban areas. Chicago: University of Chicago Press; 1939. Reprinted 1965
- Feldman, RG. Occupational and environmental neurotoxicology. Philadelphia: Lippincott-Raven; 1999.
- Follette VM, Polusny MA, Bechtle AE, Naugle AE. Cumulative trauma: The impact of child sexual abuse, adult sexual assault, and spouse abuse. *J Trauma Stress.* 1996; 9(1):25–35. <http://dx.doi.org/10.1007/bf02116831>. [PubMed: 8750449]
- Franzini L, Caughy MOB, Nettles SM, O'Campo P. Perceptions of disorder: Contributions of neighborhood characteristics to subjective perceptions of disorder. *Journal of Environmental Psychology.* 2008; 28(1):83–93. <http://dx.doi.org/10.1016/j.jenvp.2007.08.003>.

- Furstenberg FF, Brooks-Gunn J, Morgan SP. Adolescent Mothers and Their Children In Later Life. *Family Planning Perspectives*. 1987; 19(4):142–151. <http://dx.doi.org/10.2307/2135159>. [PubMed: 3678480]
- Garbarino J, Sherman D. High-Risk Neighborhoods and High-Risk Families - The Human-Ecology Of Child Maltreatment. *Child Dev*. 1980; 51(1):188–198. <http://dx.doi.org/10.1111/j.1467-8624.1980.tb02525.x>. [PubMed: 7363733]
- Glass TA, Bandeen-Roche K, McAtee M, Bolla K, Todd AC, Schwartz BS. Neighborhood Psychosocial Hazards and of the Association Cumulative Lead Dose With Cognitive Function in Older Adults. *American Journal of Epidemiology*. 2009; 169(6):683–692. <http://dx.doi.org/10.1093/aje/kwn390>. [PubMed: 19155330]
- Glueck, S.; Glueck, ET. *Unraveling juvenile delinquency*. New York: Commonwealth Fund; 1950.
- Hafeman DM. A sufficient cause based approach to the assessment of mediation. *European Journal of Epidemiology*. 2008; 23(11):711–721. <http://dx.doi.org/10.1007/s10654-008-9286-7>. [PubMed: 18798000]
- Healy, W.; Bronner, AF. *New light on delinquency and its treatment; results of a research conducted for the Institute of human relations*. New Haven: Pub for the Institute of human relations by Yale university press; 1936.
- Herman, JL. *Trauma and recovery*. Rev. New York: BasicBooks; 1997.
- Hu H, Shih R, Rothenberg S, Schwartz BS. The epidemiology of lead toxicity in adults: Measuring dose and consideration of other methodologic issues. *Environ Health Perspect*. 2007; 115(3):455–462. <http://dx.doi.org/10.1289/ehp.9783>. [PubMed: 17431499]
- Janssen I, Krabbendam L, Bak M, Hanssen M, Vollebergh W, de Graaf R, van Os J. Childhood abuse as a risk factor for psychotic experiences. *Acta Psychiatrica Scandinavica*. 2004; 109(1):38–45. <http://dx.doi.org/10.1046/j.0001-690X.2003.00217.x>. [PubMed: 14674957]
- Kalff AC, Kroes M, Vles JSH, Hendriksen JGM, Feron FJM, Steyaert J, van Os J. Neighbourhood level and individual level SES effects on child problem behaviour: a multilevel analysis. *Journal of Epidemiology and Community Health*. 2001; 55(4):246–250. <http://dx.doi.org/10.1136/jech.55.4.246>. [PubMed: 11238579]
- Kamel F, Hoppin JA. Association of pesticide exposure with neurologic dysfunction and disease. *Environ Health Perspect*. 2004; 112(9):950–958. <http://dx.doi.org/10.1289/ehp.7135>. [PubMed: 15198914]
- Kaplan SJ, Pelcovitz D, Salzinger S, Weiner M, Mandel FS, Lesser ML, Labruna VE. Adolescent physical abuse: Risk for adolescent psychiatric disorders. *American Journal of Psychiatry*. 1998; 155(7):954–959. [PubMed: 9659863]
- Kelling, GL.; Coles, CM. *Fixing broken windows: restoring order and reducing crime in our communities*. New York: Martin Kessler Books; 1996.
- Khalil N, Morrow LA, Needleman H, Talbott EO, Wilson JW, Cauley JA. Association of Cumulative Lead and Neurocognitive Function in an Occupational Cohort. *Neuropsychology*. 2009; 23(1):10–19. <http://dx.doi.org/10.1037/a0013757>. [PubMed: 19210029]
- Kishiyama MM, Boyce WT, Jimenez AM, Perry LM, Knight RT. Socioeconomic Disparities Affect Prefrontal Function in Children. *Journal of Cognitive Neuroscience*. 2009; 21(6):1106–1115. <http://dx.doi.org/10.1162/jocn.2009.21101>. [PubMed: 18752394]
- Kling JR, Liebman JB, Katz LF. Experimental analysis of neighborhood effects. *Econometrica*. 2007; 75(1):83–119. <http://dx.doi.org/10.1111/j.1468-0262.2007.00733.x>.
- Landrigan PJ, Claudio L, Markowitz SB, Berkowitz GS, Brenner BL, Romero H, Wolff MS. Pesticides and inner-city children: Exposures, risks, and prevention. *Environ Health Perspect*. 1999; 107:431–437. [PubMed: 10346991]
- Lanphear BP, Hornung R, Khoury J, Yolton K, Baghurstl P, Bellinger DC, Roberts R. Low-level environmental lead exposure and children's intellectual function: An international pooled analysis. *Environ Health Perspect*. 2005; 113(7):894–899. <http://dx.doi.org/10.1289/ehp.7688>. [PubMed: 16002379]
- Larkin, W.; Morrison, AP. *Trauma and psychosis: new directions for theory and therapy*. London, New York: Routledge; 2006.

- Lynam DR, Caspi A, Moffitt TE, Wikstrom POH, Loeber R, Novak S. The interaction between impulsivity and neighborhood context on offending: The effects of impulsivity are stronger in poorer neighborhoods. *J Abnorm Psychol.* 2000; 109(4):563–574. <http://dx.doi.org/10.1037//0021-843x.109.4.563>. [PubMed: 11195980]
- Lynch M, Cicchetti D. An ecological-transactional analysis of children and contexts: The longitudinal interplay among child maltreatment, community violence, and children's symptomatology. *Development and Psychopathology.* 1998; 10(2):235–257. <http://dx.doi.org/10.1017/s095457949800159x>. [PubMed: 9635223]
- Malinoskyrummell R, Hansen DJ. Long-Term Consequences of Childhood Physical Abuse. *Psychol Bull.* 1993; 114(1):68–79. <http://dx.doi.org/10.1037//0033-2909.114.1.68>. [PubMed: 8346329]
- Manly JJ. Deconstructing race and ethnicity - Implications for measurement of health outcomes. *Medical Care.* 2006; 44(11):S10–S16. <http://dx.doi.org/10.1097/01.mlr.0000245427.22788.be>. [PubMed: 17060816]
- Manly JJ, Echemendia RJ. Race-specific norms: Using the model of hypertension to understand issues of race, culture, and education in neuropsychology. *Archives of Clinical Neuropsychology.* 2007; 22(3):319–325. <http://dx.doi.org/10.1016/j.acn.2007.01.006>. [PubMed: 17350797]
- March D, Hatch SL, Morgan C, Kirkbride JB, Bresnahan M, Fearon P, Susser E. Psychosis and Place. *Epidemiologic Reviews.* 2008; 30(1):84–100. <http://dx.doi.org/10.1093/epirev/mxn006>. [PubMed: 18669521]
- Martinez P, Richters JE. The nimh community violence project Childrens distress symptoms associated with violence exposure. *Psychiatry-Interpersonal and Biological Processes.* 1993; 56(1):22–35.
- Maughan A, Cicchetti D. Impact of child maltreatment and interadult violence on children's emotion regulation abilities and socioemotional adjustment. *Child Dev.* 2002; 73(5):1525–1542. <http://dx.doi.org/10.1111/1467-8624.00488>. [PubMed: 12361317]
- McNulty TL, Bellair PE. Explaining racial and ethnic differences in serious adolescent violent behavior. *Criminology.* 2003; 41(3):709–748. <http://dx.doi.org/10.1111/j.1745-9125.2003.tb01002.x>.
- Molnar BE, Buka SL, Brennan RT, Holton JK, Earls F. A multilevel study of neighborhoods and parent-to-child physical aggression: results from the project on human development in Chicago neighborhoods. *Child maltreatment.* 2003; 8(2):84–97. <http://dx.doi.org/10.1177/1077559502250822>. [PubMed: 12735711]
- Morenoff JD, House JS, Hansen BB, Williams DR, Kaplan GA, Hunte HE. Understanding social disparities in hypertension prevalence, awareness, treatment, and control: The role of neighborhood context. *Social Science & Medicine.* 2007; 65(9):1853–1866. <http://dx.doi.org/10.1016/j.socscimed.2007.05.038>. [PubMed: 17640788]
- Morenoff, JD.; Lynch, JW. What makes a place healthy? Neighborhood influences on racial/ethnic disparities in health over life course. Washington, DC: The National Academies Press; 2004.
- Morenoff JD, Sampson RJ, Raudenbush SW. Neighborhood inequality, collective efficacy, and the spatial dynamics of urban violence. *Criminology.* 2001; 39(3):517–559. <http://dx.doi.org/10.1111/j.1745-9125.2001.tb00932.x>.
- Morgan C, Kirkbride J, Hutchinson G, Craig T, Morgan K, Dazzan P, Fearon P. Cumulative social disadvantage, ethnicity and first-episode psychosis: A case-control study. *Psychological Medicine.* 2008; 38(12):1701–1715. <http://dx.doi.org/10.1017/s0033291708004534>. [PubMed: 19000327]
- Oakes JM. The (mis)estimation of neighborhood effects: causal inference for a practicable social epidemiology. *Social Science & Medicine.* 2004; 58(10):1929–1952. <http://dx.doi.org/10.1016/j.socscimed.2003.08.004>. [PubMed: 15020009]
- Osyuk TL, Schmidt NM, Bates LM, Tcheten-Tcheten EJ, Earls FJ, Glymour MM. Gender and Crime Victimization Modify Neighborhood Effects on Adolescent Mental Health. *Pediatrics.* 2012; 130(3):472–481. <http://dx.doi.org/10.1542/peds.2011-2535>. [PubMed: 22908105]
- Osyuk TL, Tcheten EJT, Acevedo-Garcia D, Earls FJ, Lincoln A, Schmidt NM, Glymour MM. Differential Mental Health Effects of Neighborhood Relocation Among Youth in Vulnerable Families Results From a Randomized Trial. *Archives of General Psychiatry.* 2012; 69(12):1284–1294. <http://dx.doi.org/10.1001/archgenpsychiatry.2012.449>. [PubMed: 23045214]

- Peterson, RD.; Krivo, LJ.; Hagan, J. The many colors of crime: inequalities of race, ethnicity, and crime in America. New York: New York University Press; 2006.
- Raudenbush SW, Sampson RJ. Ecometrics: Toward a Science of Assessing Ecological Settings, With Application to the Systematic Social Observation of Neighborhoods. *Sociological Methodology*. 1999; 29(1):1–41. <http://dx.doi.org/10.1111/0081-1750.00059>.
- Rice D, Barone S. Critical periods of vulnerability for the developing nervous system: Evidence from humans and animal models. *Environ Health Perspect*. 2000; 108:511–533. <http://dx.doi.org/10.2307/3454543>. [PubMed: 10852851]
- Roberts R, O'Connor T, Dunn J, Golding J, Team AS. The effects of child sexual abuse in later family life; mental health, parenting and adjustment of offspring. *Child Abuse Negl*. 2004; 28(5):525–545. <http://dx.doi.org/10.1016/j.chiabu.2003.07.006>. [PubMed: 15159068]
- Rose G. Sick Individuals and Sick Populations. *International Journal of Epidemiology*. 1985; 14(1): 32–38. <http://dx.doi.org/10.1093/ije/14.1.32>. [PubMed: 3872850]
- Salzinger S, Feldman RS, Stockhammer T, Hood J. An ecological framework for understanding risk for exposure to community violence and the effects of exposure on children and adolescents. *Aggression and Violent Behavior*. 2002; 7(5):423–451. [http://dx.doi.org/10.1016/S1359-1789\(01\)00078-7](http://dx.doi.org/10.1016/S1359-1789(01)00078-7).
- Sampson RJ. Moving to inequality: Neighborhood effects and experiments meet social structure. *American Journal of Sociology*. 2008; 114(1):189–231. <http://dx.doi.org/10.1086/589843>.
- Sampson, RJ.; Laub, JH. Crime in the making: Pathways and turning points through life. Cambridge, Mass: Harvard University Press; 1993.
- Sampson RJ, Morenoff JD, Earls F. Beyond social capital: Spatial dynamics of collective efficacy for children. *American Sociological Review*. 1999; 64(5):633–660. <http://dx.doi.org/10.2307/2657367>.
- Sampson RJ, Morenoff JD, Gannon-Rowley T. Assessing “neighborhood effects”: Social processes and new directions in research. *Annual Review of Sociology*. 2002; 28:443–478. <http://dx.doi.org/10.1146/annurev.soc.28.110601.141114>.
- Sampson RJ, Morenoff JD, Raudenbush S. Social anatomy of racial and ethnic disparities in violence. *Am J Public Health*. 2005; 95(2):224–232. <http://dx.doi.org/10.2105/AJPH.2004.037705>. [PubMed: 15671454]
- Sampson RJ, Raudenbush SW. Systematic social observation of public spaces: A new look at disorder in urban neighborhoods. *American Journal of Sociology*. 1999; 105(3):603–651. <http://dx.doi.org/10.1086/210356>.
- Sampson RJ, Raudenbush SW, Earls F. Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*. 1997a; 277(5328):918–924. [PubMed: 9252316]
- Sampson RJ, Raudenbush SW, Earls F. Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*. 1997b; 277(5328):918–924. <http://dx.doi.org/10.1126/science.277.5328.918>. [PubMed: 9252316]
- Schneiders J, Drukker M, van der Ende J, Verhulst FC, van Os J, Nicolson NA. Neighbourhood socioeconomic disadvantage and behavioural problems from late childhood into early adolescence. *Journal of Epidemiology and Community Health*. 2003; 57(9):699–703. <http://dx.doi.org/10.1136/jech.57.9.699>. [PubMed: 12933776]
- Schulz A, Williams D, Israel B, Becker A, Parker E, James SA, Jackson J. Unfair treatment, neighborhood effects, and mental health in the Detroit metropolitan area. *Journal of Health and Social Behavior*. 2000; 41(3):314–332. <http://dx.doi.org/10.2307/2676323>. [PubMed: 11011507]
- Health and Human Service. Mental Health Culture, Race, and Ethnicity: A Supplement to Mental Health. A Report of the Surgeon General; Rockville (MD): 2001. Mental Health: Culture, Race, and Ethnicity: A Supplement to Mental Health A Report of the Surgeon General.
- Shaw, CR.; McKay, HD. Juvenile delinquency and urban areas; a study of rates of delinquency in relation to differential characteristics of local communities in American cities. Rev. Chicago: University of Chicago Press; 1969.
- Shih RA, Hu H, Weisskopf MG, Schwartz BS. Cumulative lead dose and cognitive function in adults: A review of studies that measured both blood lead and bone lead. *Environ Health Perspect*. 2007; 115(3):483–492. <http://dx.doi.org/10.1289/ehp.9786>. [PubMed: 17431502]

- Silk JS, Sessa FM, Morris AS, Steinberg L, Avenevoli S. Neighborhood cohesion as a buffer against hostile maternal parenting. *Journal of Family Psychology*. 2004; 18(1):135–146. <http://dx.doi.org/10.1037/0893-3200.18.1.135>. [PubMed: 14992616]
- Silver E. Race, neighborhood disadvantage, and violence among persons with mental disorders: The importance of contextual measurement. *Law and Human Behavior*. 2000; 24(4):449–456. <http://dx.doi.org/10.1023/a:1005544330132>. [PubMed: 10974802]
- Silver E. Guest editorial: Neighborhood social disorganization as a cofactor in violence among people with mental disorders. *International Journal of Offender Therapy and Comparative Criminology*. 2001; 45(4):403–406. <http://dx.doi.org/10.1177/0306624x01454001>.
- Silver E, Mulvey EP, Monahan J. Assessing violence risk among discharged psychiatric patients: toward an ecological approach. *Law Hum Behav*. 1999; 23(2):237–255. [PubMed: 10333758]
- Sjoquist, DL. *The Atlanta paradox*. New York: Russell Sage Foundation; 2000.
- Stafford M, Gimeno D, Marmot MG. Neighbourhood characteristics and trajectories of health functioning: a multilevel prospective analysis. *European Journal of Public Health*. 2008; 18(6): 604–610. <http://dx.doi.org/10.1093/eurpub/ckn091>. [PubMed: 18948365]
- Steele CM, Aronson J. Stereotype Threat and The Intellectual Test-Performance of African-Americans. *J Pers Soc Psychol*. 1995; 69(5):797–811. <http://dx.doi.org/10.1037/0022-3514.69.5.797>. [PubMed: 7473032]
- Stoll, M.; Raphael, S. *Modest progress: The narrowing mismatch between Blacks and jobs in the 1990s*. Washington, DC: The Brookings Institute; 2002.
- Surkan PJ, Zhang A, Trachtenberg F, Daniel DB, McKinlay S, Bellinger DC. Neuropsychological function in children with blood lead levels < 10 µg/dL. *Neurotoxicology*. 2007; 28(6):1170–1177. <http://dx.doi.org/10.1016/j.neuro.2007.07.007>. [PubMed: 17868887]
- Truong KD, Ma S. A systematic review of relations between neighborhoods and mental health. *Journal of Mental Health Policy and Economics*. 2006; 9(3):137–154. [PubMed: 17031019]
- Turkheimer E, Haley A, Waldron M, D'Onofrio B, Gottesman II. Socioeconomic status modifies heritability of IQ in young children. *Psychol Sci*. 2003; 14(6):623–628. <http://dx.doi.org/10.1046/j.0956-7976.2003.psci.1475.x>. [PubMed: 14629696]
- Van der Kolk, BA.; McFarlane, AC.; Weisæth, L. *Traumatic stress: the effects of overwhelming experience on mind, body, and society*. New York: Guilford Press; 1996.
- Veling W, Selten JP, Susser E, Laan W, Mackenbach JP, Hoek HW. Discrimination and the incidence of psychotic disorders among ethnic minorities in The Netherlands. *International Journal of Epidemiology*. 2007; 36(4):761–768. <http://dx.doi.org/10.1093/ije/dym085>. [PubMed: 17517810]
- Veling W, Susser E, van Os J, Mackenbach JP, Selten JP, Hoek HW. Ethnic density of Neighborhoods and incidence of psychotic disorders among immigrants. *American Journal of Psychiatry*. 2008; 165(1):66–73. [PubMed: 18086750]
- Weiss B, Bellinger DC. Social ecology of children's vulnerability to environmental pollutants. *Environ Health Perspect*. 2006; 114(10):1479–1485. <http://dx.doi.org/10.1289/ehp.9101>. [PubMed: 17035129]
- Weiss L, Ompad D, Galea S, Vlahov D. Defining neighborhood boundaries for urban health research. *American Journal of Preventive Medicine*. 2007; 32(6):S154–S159. <http://dx.doi.org/10.1016/j.amepre.2007.02.034>. [PubMed: 17543706]
- Williams DR, Neighbors HW, Jackson JS. Racial/ethnic discrimination and health: Findings from community studies. *Am J Public Health*. 2003; 93(2):200–208. <http://dx.doi.org/10.2105/ajph.93.2.200>. [PubMed: 12554570]
- Wilson JQ, Kelling GL. “Broken Windows” *Atlantic Monthly* 1982. 2011
- Wilson, WJ. *When work disappears: the world of the new urban poor*. 1st. New York: Knopf: Distributed by Random House Inc.; 1996.
- Woods GW, Freedman D, Greenspan S. Neurobehavioral assessment in forensic practice. *International Journal of Law and Psychiatry*. 2012; 35(5-6):432–439. <http://dx.doi.org/10.1016/j.ijlp.2012.09.014>. [PubMed: 23059206]
- Wright JP, Dietrich KN, Ris MD, Hornung RW, Wessel SD, Lanphear BP, Rae MN. Association of prenatal and childhood blood lead concentrations with criminal arrests in early adulthood. *Plos Medicine*. 2008; 5(5):732–740. <http://dx.doi.org/10.1371/journal.pmed.0050101>.

Xue YG, Leventhal T, Brooks-Gunn J, Earls FJ. Neighborhood residence and mental health problems of 5-to 11-year-olds. *Archives of General Psychiatry*. 2005; 62(5):554–563. <http://dx.doi.org/10.1001/archpsyc.62.5.554>. [PubMed: 15867109]






Academic Pediatrics

Volume 9, Issue 3, May–June 2009, Pages 150–156

Child Mental Health

Adverse Childhood Exposures and Reported Child Health at Age 12

Emalee G. Flaherty MD  , Richard Thompson PhD, Alan J. Litrownik PhD, Adam J. Zolotor MD, MPH,
Howard Dubowitz MD, MS, Desmond K. Runyan MD, DrPH, Diana J. English PhD, Mark D. Everson PhD

[Show more](#)  Share  Cite<https://doi.org/10.1016/j.acap.2008.11.003> [Get rights and content](#) 

Objective

The relationship between adverse childhood exposures and poor health, illness, and somatic complaints at age 12 was examined.

Methods

LONGSCAN (Consortium for Longitudinal Studies of Child Abuse and Neglect) tracks a group of children with variable risk for maltreatment. Of the participating child-caregiver dyads, 805 completed an interview when the child was age 4 or age 6, as well as interviews at age 8 and 12. The relationships between 8 categories of childhood adversity (psychological maltreatment, physical abuse, sexual abuse, child neglect, caregiver's substance/alcohol use, caregiver's depressive symptoms, caregiver's being treated violently, and criminal behavior in the household) and child health at age 12 were analyzed. The impact of adversity in the first 6 years of life and adversity in the second 6 years of life on child health were compared.

Results

Only 10% of the children had experienced no adversity, while more than 20% had experienced 5 or more types of childhood adversity. At age 12, 37% of the children sampled had some health complaint. Exposure to 5 or more adversities, particularly exposure in the second 6 years of life, was significantly associated with increased risks of any health complaint (odds ratio [OR] 2.24, 95% confidence interval [95% CI] 1.02–4.96), an illness requiring a doctor (OR 3.69, 95% CI 1.02–15.1), and caregivers' reports of child's somatic complaints (OR 3.37, 95% CI 1.14–10.0). There was no association between adverse exposures and self-rated poor health or self-rated somatic complaints.

Conclusions

A comprehensive assessment of children's health should include a careful history of their past exposure to adverse conditions and maltreatment. Interventions aimed at reducing these exposures may result in better child health.

Section snippets

Participants and Study Design

Data used in these analyses were collected by the Consortium for Longitudinal Studies of Child Abuse and Neglect (LONGSCAN). LONGSCAN is a consortium of a coordinating center and 5 study sites investigating prospectively the antecedents and consequences of child maltreatment.¹¹ The study sites represent different geographical regions and populations with different levels of risk for maltreatment. The Southwest site includes children removed from their homes by Child Protective Services (CPS)...

Adverse Childhood Exposures

The prevalence, type, and timing of adverse childhood exposures are listed in Table 2. Only 10% of the children in the sample had experienced no adversities. More children tended to experience each type of maltreatment during the first 6 years of life than in the second 6 years. The children also appeared more likely to experience 5 or more adversities during the first 6 years of life than in the second 6 years (Figure)....

Child Health

More than one-third of the children (37%) had a health complaint including...

Discussion

The children and/or caregivers in this study reported higher rates of poor health and somatic complaints than have been found in other nationally representative samples or samples of disadvantaged children.^{27, 28} The participants reported that 37% of the children had some health complaint, including almost 14% of the children having their health rated as poor and approximately 17% as having somatic complaints. We speculate that the high rates may be explained by the high proportion of children...

Acknowledgments

This research was sponsored by grants from the Office of Child Abuse and Neglect to the Consortium of Longitudinal Studies on Child Abuse and Neglect (LONGSCAN). The authors are grateful to the LONGSCAN Coordinating Center at the University of North Carolina–Chapel Hill for administrative and data management support....

References (33)

S.R. Dube *et al.*

[Adverse childhood experiences and personal alcohol abuse as an adult](#)

Addict Behav (2002)

R.D. Coddington

[The significance of life events as etiologic factors in the diseases of children. II. A study of a normal population](#)

J Psychosom Res (1972)

D.J. English *et al.*

[The dimensions of maltreatment: introduction](#)

Child Abuse Negl (2005)

J.M. Hussey *et al.*

[Defining maltreatment according to substantiation: distinction without a difference?](#)

Child Abuse Negl (2005)

D.J. English *et al.*

[Maltreatment's wake: the relationship of maltreatment dimensions to child outcomes](#)

Child Abuse Negl (2005)

D.K. Runyan *et al.*

[Longscan: a consortium for longitudinal studies of maltreatment and the life course of children](#)

Aggression Violent Behav (1998)

D.J. English *et al.*

[Defining maltreatment chronicity: are there differences in child outcomes?](#)

Child Abuse Negl (2005)

L.-A. McNutt *et al.*

[Cumulative abuse experiences, physical health and health behaviors](#)

Ann Epidemiol (2002)

E.A. Walker *et al.*

[Adult health status of women with histories of childhood abuse and neglect](#)

Am J Med (1999)

S.R. Dube *et al.*

[The impact of adverse childhood experiences on health problems: evidence from four birth cohorts dating back to 1900](#)

Prev Med (2003)

[View more references](#)

Cited by (147)

Childhood adversity associated with poorer health: Evidence from the U.S. National Survey of Children's Health

2022, Child Abuse and Neglect

Citation Excerpt :

...This contrasted with prior literature indicating that older age groups (e.g., age 14) with more recent experiences reported more health problems and somatic complaints (e.g., headaches and stomach problems), compared to younger age groups (e.g., ages 4–6 and 8–12; Flaherty et al., 2013). Further, another study examining age-specific differences in ACEs and health among high-risk samples found worse outcomes for children who experience more ACEs in the first 6 years of life compared to middle childhood (Flaherty et al., 2009). While a dose-response relationship did not occur in earlier ages (4 to 6), from the first 6 years to age 12, there did appear to be a dose-response relationship....

[Show abstract](#)

Toxic stress, epigenetics and child development

2022, Jornal de Pediatria

[Show abstract](#)

Early adverse childhood experiences and exclusionary discipline in high school

2022, Social Science Research

Citation Excerpt :

...In particular, findings from multiple studies suggest that adversity very early in life may lead to stress-related changes in brain development and structure that predispose children to depression and other mental health problems later on in adolescence and adulthood (Anderson and Teicher, 2008; De Bellis, 2011). Additional research suggests that children who have experienced a high ACE score (four or more ACEs) early in childhood have significantly worse outcomes later in life compared to children who experience fewer ACEs (Dierkhising et al., 2019; Flaherty et al., 2009; Thompson et al., 2015). Scholars have more recently utilized the ACEs model to understand behavioral problems in elementary and middle school children (Blodgett and Lanigan, 2018; Burke et al., 2011; Crouch et al., 2019; Forster et al., 2020; Jimenez et al., 2016; Lansford et al., 2002; Loomis, 2020; Ramirez et al., 2012; Ray et al., 2020)....

[Show abstract](#)

Cumulative adverse childhood experiences and children's health

2020, Children and Youth Services Review

Citation Excerpt :

...They also preclude an investigation of the causal mechanisms linking cumulative ACE exposure and children's health, as all variables are measured contemporaneously and it is not possible to disentangle the timing of ACE exposure,

potential mechanisms, and onset of health conditions. Taken together, these analyses provide new evidence about the accumulation of adversities in childhood, complementing existing research by using a nationally representative sample of children and examining an array of specific indicators of health to extend prior research that is based on non-random samples or examines global or summary measures of children's health (Balistreri, 2015; Balistreri & Alvira-Hammond, 2016; Bethell et al., 2014; Flaherty et al., 2006, 2009, 2013; McCrae et al., 2019; though see Kan et al., 2020; Kerker et al., 2015); by examining children at specific ages, which both minimizes confounding by potential exposure and allows for a consideration of variation by age; and by showing how ACEs are equally associated with children's health across race/ethnicity and gender. Given that ACEs are disproportionately experienced among already vulnerable children, such as children of color and children in poverty, these analyses suggest that ACEs may exacerbate existing inequalities in children's health (Mehta, Lee, & Yitalo, 2013; Sacks & Murphey, 2018)....

[Show abstract](#) ✓

Early life adversity, inflammation, and immune function: An initial test of adaptive response models of immunological programming

2022, Development and Psychopathology

Exposure to potentially traumatic events and PTSD symptomatology in Norwegian 11–13-year-olds: results from the Bergen Child Study

2023, Child and Adolescent Psychiatry and Mental Health



[View all citing articles on Scopus](#)

Recommended articles (6)

Research article

Childhood poly-victimization and children's health: A nationally representative study

Child Abuse & Neglect, Volume 91, 2019, pp. 88-94

[Show abstract](#) ✓

Research article

Developmental psychoneuroendocrine and psychoneuroimmune pathways from childhood adversity to disease

Neuroscience & Biobehavioral Reviews, Volume 80, 2017, pp. 166-184

[Show abstract](#) ✓

Research article

Adverse childhood experiences and association with health, mental health, and risky behavior in the kingdom of Saudi Arabia

Child Abuse & Neglect, Volume 60, 2016, pp. 10-17

[Show abstract](#) ✓

Research article

Adverse childhood experiences are associated with adult sleep disorders: a systematic review

Sleep Medicine, Volume 16, Issue 3, 2015, pp. 320-330

[Show abstract](#) ✓

Research article

Associations of adverse childhood experiences with depression and alcohol abuse among Korean college students

Child Abuse & Neglect, Volume 67, 2017, pp. 338-348

[Show abstract](#) ✓

Research article

Trajectories of childhood adversity and mortality in early adulthood: a population-based cohort study

The Lancet, Volume 396, Issue 10249, 2020, pp. 489-497

[Show abstract](#) ✓

[View full text](#)

Copyright © 2009 Academic Pediatric Association. Published by Elsevier Inc. All rights reserved.



Copyright © 2023 Elsevier B.V. or its licensors or contributors.
ScienceDirect® is a registered trademark of Elsevier B.V.

RELX™

SICAMOUS WON'T BACK DOWN**Mayor of Sicamous says drug use bylaw to stay despite IH call to 'wait and see'**

Jon Manchester - Apr 22, 2023 / 4:00 am | Story: 422683



Photo: District of Sicamous

The mayor of Sicamous says there won't be any backtracking on a bylaw banning open drug use in district parks.

The municipality was one of the first in B.C. to pass such a bylaw following decriminalization by the province of personal amounts of street drugs.

Mayor Colleen Anderson says the bylaw was passed by council last week and will stay in place, despite a plea from Interior Health for communities to take a wait-and-see approach before enacting laws that could undermine the intent of the change.

IH has called for a "six-month observation period" to monitor the effects of decriminalization on public consumption.

Its April 14 letter was sent to every municipality in the IH region and signed by six medical health officers.

But Anderson says the latest figures show decriminalization isn't working, with nearly 600 drug deaths in B.C. during the first three months of the year.

"It's not getting any better," she said Friday. "Three months into this project, and things are looking worse than they were three months ago."

While Kelowna is pushing for decriminalization rules to ban drug use in playgrounds, Sicamous' bylaw is specific to parks.

"Our beach park, we have 100 kids there every day during summer, more than the playground," Anderson said.

"Parks are for families."

She said children witnessing someone shooting heroin would be "traumatizing."

Anderson says council has consulted with IH, but won't be backing down.

"Waiting six months, that's well into our summer," she said.

"Our hearts go out to these people, but we have no services for them in Sicamous. ...It isn't a big problem in Sicamous, and we don't want it to be one."

The mayor said the local RCMP have told her they haven't pursued small possession charges "for years."

"It was a non-issue ... it feels like a bit of social engineering is going on."

Anderson says Sicamous bylaw staff won't be ticketing anyone and will focus on education.

"The reason we were elected was the safety and well-being of our community. I don't think this train can be stopped."

B.C. launched the three-year pilot on Jan. 30. It allows adults to freely possess less than 2.5 grams of street drugs including heroin, meth and cocaine.

Penticton has also started the process of bringing in a bylaw to ban drug use in parks.

More Salmon Arm News

British Columbia

Kelowna wants its municipal parks exempted from B.C.'s drug decriminalization project

Mayor Tom Dyas says he has received 'positive reaction' in response to the city's request

[Winston Szeto](#) · CBC News · Posted: Mar 21, 2023 1:59 PM PDT | Last Updated: March 21



Kelowna Mayor Tom Dyas, right, with B.C. Attorney General Niki Sharma and Public Safety Minister Mike Farnworth inside the provincial legislature building in early March. Dyas said he has requested an exemption from the province's decriminalization rules being applied to Kelowna parks. (Tom Dyas/Twitter)

[comments](#)

The mayor of Kelowna, B.C., says the city is lobbying the province to exclude parks from drug decriminalization rules that took effect this year.

Tom Dyas said last Thursday that his municipality had asked the B.C. government to make an exception for the Central Okanagan city that would allow it to prohibit illicit drugs being used in municipal parks.

The request comes amid a federally approved three-year pilot decriminalizing the personal possession of up to 2.5 grams of cocaine (crack and powder), methamphetamine, MDMA and opioids (including heroin, fentanyl and morphine).

Dyas said he has received a "positive reaction" to his request from provincial officials.

"I know that they'll go back, and they will look at it and come back to us," he told host Chris Walker on CBC's *Daybreak South*.

"We would be in favour, as a city, to have parks and playgrounds also incorporated into excluded areas."

- [What you need to know about the decriminalization of possessing illicit drugs in B.C.](#)

Other B.C. municipalities make similar attempts

Other B.C. municipalities have attempted to pass bylaws to outlaw drug consumption in public spaces.

The city council in Campbell River on Vancouver Island dropped its plan [to pass such a bylaw](#) in late February after a motion in favour of it was made a month ago. According to a [local news report](#), council voted to abandon the plan after receiving a letter of opposition from the Island Health authority and facing a legal challenge from the Vancouver-based Pivot Legal Society.

- [Vancouver Island municipality to ban drug use in public spaces as decriminalization takes effect](#)

Sicamous in B.C.'s Shuswap region [is still considering](#) whether to adopt a similar bylaw.

Mayor Colleen Anderson says as elected officials, she and her councillors bear a duty to protect local residents from illicit drug use in public parks.

"In parks where, you know, for the summer, there are probably more children. We're very concerned about the impact on our youth.

"[If] someone does OD [overdose] in front of a child ... it's traumatic," she said on CBC's *Daybreak South*.

Kelowna's Dyas said he's concerned decriminalization in B.C. may create an influx of drug users from other provinces to parks in Kelowna during the summer.

Dr. Carol Fenton, the medical health officer for Interior Health, disagrees — she argues that decriminalization hasn't resulted in increased substance use in other countries like Portugal, and Kelowna's proposed policy would perpetuate the stigma against drug users.

"There are objective harms from policies like this," she said on *Daybreak South*. "There isn't a problem already. So we need to be really careful."



Daybreak South 11:10

Dr. Carol Fenton is a Medical Health Officer with the Interior Health Authority, she responds to Kelowna Mayor Tom Dyas, who is lobbying the province to

Dr. Carol Fenton is a Medical Health Officer with the Interior Health Authority, she responds to Kelowna Mayor Tom Dyas, who is lobbying the province to exclude parks from BC's new drug decriminalization rules.

With files from Daybreak South and Akshay Kulkarni

[CBC's Journalistic Standards and Practices](#) | [About CBC News](#)

[Corrections and clarifications](#) | [Submit a news tip](#) | [Report error](#) ▼

Popular Now in British Columbia

- 1 **Flooding situation likely to get worse in B.C. Interior, province says**
- 2 **Proposed changes to UBC student union sexual violence policy draw student outrage, national criticism**
- 3 **Highway closures across B.C. Interior due to flooding, mudslides**
- 4 **Agree to 40% rent hike or we may sell your homes, landlord tells Surrey, B.C., renters**
- 5 **Surrey, B.C., hockey parents question why coach was suspended after standing up to alleged racism**

RECOMMENDED FOR YOU

?



Ed Sheeran's hit song Thinking Out Loud didn't copy Let's Get It On, finds jury

News - Entertainment



Proud Boys leader, members convicted of seditious conspiracy in U.S. Capitol attack

News - World



Girl, 8, killed in hit and run outside Burlington, Ont., school

Aura Carreño Rosas

News - Canada - Hamilton



Ottawa assessing blowback from expelling Chinese diplomat accused of targeting Chong's family: Joly

Catharine Tunney

News - Politics



Canada Revenue Agency, union reach deal to end strike

News - Canada - Ottawa

©2023 CBC/Radio-Canada. All rights reserved.

Visitez [Radio-Canada.ca](https://radio-canada.ca)



Rob Shaw: How the province's drug decriminalization program is meeting opposition in B.C. municipalities

[Rob Shaw](#)

Apr 21, 2023 9:55 AM



As some municipalities push back on the province's drug decriminalization program, BC United leader Kevin Falcon calls the program "reckless." | Submitted

[Listen to this article](#)

00:06:53

(Editor's Note: The final paragraph in this column has been changed from an earlier version to clarify the province's approach to municipalities.)

Two major B.C. municipalities are set to ban open drug use in public places, a move that sparked a heated debate at the legislature this week about whether the province's new decriminalization program is worsening disorder on city streets.

Kamloops and Campbell River have set in motion new bylaws that will prohibit drug use at parks, beaches and playgrounds in the same way as smoking and consuming alcohol.

Councillors in Kamloops voted last week to have staff prepare the new bylaw for adoption, while the mayor of Campbell River says his municipality is expected to vote to pass its initiative next week.

"For me personally, I have a six-year-old granddaughter, and I don't think she should have to go to a local farmer's market and watch someone potentially with a needle doing heroin sitting on a bench in our downtown," said mayor Kermit Dahl.

"I think we should be protecting our kids from thinking in some way it is normal or acceptable."

B.C. in late January started a three-year pilot program that decriminalizes personal possession of small amounts of illicit drugs like cocaine, heroin and fentanyl, to try and encourage users to seek help during a worsening toxic drug crisis that has killed almost 12,000 people since 2016.

But B.C. has also been in the grips of a public safety crisis this year, as random attacks, violence, vandalism and street disorder increased in urban centres across the province. Some of that is fuelled by those feeding addictions, which in turn has led to more visible signs of drug use and homelessness.

Whether decriminalization is connected to the rising visible drug use on city streets remains a topic of hot debate at the legislature. But it is clearly causing some municipalities to take more direct action.

"It's like daily, multiple times daily, people are overdosing," said Dahl. "Nothing is changing. None of the stuff that really needs to be addressed is being addressed."

Opposition BC United leader Kevin Falcon seems to sense the public mood shifting away from an acceptance of open drug use, amid fear over worsening public safety.

Falcon this week accused the NDP government of a “reckless” pursuit of decriminalization, by failing to accompany it with enough addictions treatment and police resources.

“While simple activities like having a beer at your local public park or using a plastic straw are tightly regulated, the premier's policy allows completely uncontrolled consumption of lethal drugs like crystal meth, crack cocaine and fentanyl,” Falcon told the legislature Wednesday.

“Neighbourhoods, as a result, are being plagued by discarded drugs and drug paraphernalia, forcing families to worry about their children stumbling upon needles in parks, beaches and playgrounds.”

Falcon said he supports municipalities that want to craft their own bylaws limiting public drug use.

But to do so, both Kamloops and Campbell River have had to face off against opposition by local public health officials, who have argued that banishing drug users from public spaces during a toxic drug crisis will add to the stigma that forces them to use alone and be more susceptible to a fatal overdose.

Campbell River abandoned its first attempt at a public drug use bylaw in February, after refusing to accept a letter or input from an Island Health medical health officer.

At first, municipalities assumed they had to get permission from local health officials, and ultimately the Minister of Health, to enact bylaws related to drug use. But they have recently discovered that if they use a nuisance bylaw instead, then they can ban public drug use without requiring permission from health officials.

Dahl said he's found it frustrating to be accused of furthering stigma against drug users.

“The federal government has said you weren't allowed to use drugs in the airport, or certain other areas, and nobody said anything about stigma,” said Dahl. “But as soon as we say we don't think it should be done in public parks paid for by taxpayers, or where kids would be, then the word stigma comes up.”

Falcon said the government is using the health authorities to pressure municipalities, as it seeks to protect its decriminalization initiative.

The NDP government's response has been to argue that decriminalization is only one part of a larger suite of measures that are an attempt to stem the rising number of overdose deaths.

"In the context of an unrelenting public health emergency that is the toxic drug crisis, we have to do all of the things at the same time," said Mental Health and Addictions Minister Jennifer Whiteside.

"We are morally bound, ethically bound, to ensure that we work to keep people alive, while we can connect them to supports and services."

B.C. chief coroner Lisa Lapointe reported this week almost 600 deaths in the first three months of the year, which Lapointe called "a crisis of incomprehensible scale."

The number of deaths is appalling. Yet at the same time, the public finds itself upset at stories like the one that emerged in Nanaimo this week in which a five-year-old girl found a bag of toxic fentanyl on a school playground, took it home and was about to open it before her mother noticed and stopped her.

Falcon drew a direct line between the Nanaimo girl and government's decriminalization efforts. And nobody from the NDP government was able to counter it effectively this week.

"I just cannot understand why the government cannot just make it clear that province wide, we're going to have a policy that says you do not get to do open drug use in parks, playgrounds and beaches," said Falcon.

It sounds simple. And it passes the political sniff test, in that if you went out on the street and asked random people "do you think drugs should be used in public spaces like parks and beaches?" almost all of them would likely say no.

Perhaps that's why the NDP government is having such difficulty on the issue — as it encourages municipalities to consult public health officials to find more productive solutions. And it's almost assuredly why we haven't heard the end of the issue — both from municipalities themselves, and from the government's political opponents at the legislature.

Rob Shaw has spent more than 15 years covering B.C. politics, now reporting for CHEK News and writing for Glacier Media. He is the co-author of the national bestselling book A Matter of Confidence, host of the weekly podcast Political Capital, and a regular guest on CBC Radio. rob@robshawnews.com

Comments (0)

VANCOUVER IS AWESOME

JOIN OUR NEWSLETTER

Campbell River tries again to ban public drug consumption



[Carla Wilson](#)

Apr 22, 2023 5:55 AM



A woman walks past a person using a glass pipe to smoke drugs in the Downtown Eastside of Vancouver.
THE CANADIAN PRESS/Darryl Dyck

[Listen to this article](#)

00:05:04

As B.C. municipalities struggle with how best to respond to decriminalization of possession of small amounts of illicit drugs, Campbell River is making another attempt to restrict public drug consumption.

This time, the city is relying on a section of the Community Charter that allows councils to make rules around nuisances and disturbances.

It aims to ban consumption in places where it would “negatively interfere with the public’s use and enjoyment of such places,” a staff report said.

The proposal moves away from a previous plan for a city-wide ban, to focus on a more limited geographic area — high-use zones and places frequented by children, families and tourists.

It would prohibit consumption of drugs within 15 metres of playgrounds, sports fields, tennis courts, picnic shelters, water parks, skate parks and covered bus shelters.

The prohibition would also apply to city hall, the community centre, the sportsplex, Spirit Square, the Centennial Building, Robert Ostler Park, the library, Tidemark Theatre, Centennial swimming pool, the museum, the maritime heritage centre and the Discovery fishing pier.

The bylaw would allow RCMP and municipal bylaw officers to ticket offenders.

Council has allocated \$82,000 to hire another bylaw officer to deal with an increased workload.

In February, the province began a three-year pilot project permitting people to carry up to 2.5 grams of controlled substances for personal use.

The same month, Campbell River council scrapped proposed bylaws that would have banned drug consumption on city property after hearing from the local public health officer that the plan would have negative public health impacts.

The city also faced a legal challenge from the advocacy group Pivot Legal Society.

Elle Brovold, Campbell River chief administrative officer, said Friday that community safety and downtown revitalization are priorities for council, which wants to create an environment where people feel safe in publicly owned spaces.

Council has heard from residents, businesses and visitors who say they don’t feel comfortable when people consume drugs in certain public areas, which can at times lead to disruptive behaviours, prompting them to avoid these areas, she said.

Kamloops council similarly voted on April 11 to prohibit the consumption of controlled substances on city facilities, roads, parks and public spaces, although a formal bylaw would need ministerial approval and consultation with public health authorities.

BC United Leader Kevin Falcon said this week that he supports communities like Campbell River, Kamloops, Sicamous and Kelowna that are preparing draft bylaws to ban the use of drugs in public spaces, adding the Health Ministry should get behind them.

Falcon noted that people can't smoke or drink alcohol in playgrounds, beaches and parks, "but don't worry — you can go there and do all the drugs you want openly in front of families and children."

Falcon said the "guardrails" the province said it would put in place for the three-year pilot project — access to drug treatment on demand, for example — are not in place.

(Neither the NDP, nor the Liberal government before them until 2017, has been able to provide free readily accessible residential drug treatment in the province).

Falcon said his party "100 per cent" supports municipalities that want to protect their children and communities by creating bylaws prohibiting open drug use in parks, beaches and playgrounds, for example.

He cited the case of a Nanaimo girl who recently found a bag of fentanyl on a school playground and took it home before her parents seized it.

Both the NDP and Liberals supported the province's application to Health Canada for a decriminalization pilot. Last year, they co-wrote and endorsed an all-party health legislative committee report calling for decriminalization.

Provincial health officer Dr. Bonnie Henry and chief coroner Lisa Lapointe say decriminalization is one tool to reduce the stigma around drug use and to reduce the fear of arrest that drives people to use drugs alone where they can't be helped if they overdose.

Mental Health and Addictions Minister Jennifer Whiteside has said a wide variety of tools and actions are needed to address the crisis.

But Falcon said the province needs to recognize the current course of action is not working — there were almost 600 deaths because of the toxic drug supply in the first three months of this year — and make a "dramatic shift" toward treatment and recovery.

cjwilson@timescolonist.com

charnett@timescolonist.com

>>> To comment on this article, write a letter to the editor: letters@timescolonist.com

Leave a comment

Have a story idea?

Report a mistake

[JOIN OUR NEWSLETTER](#)

Campbell River scraps bylaw changes to ban drug consumption on public property

[Carla Wilson](#)

Feb 25, 2023 5:22 AM



A man prepares heroin he bought on the street to be injected at the Insite safe injection clinic in Vancouver. Campbell River has backed away from plans to prohibit consumption drugs on municipal property. THE CANADIAN PRESS/Darryl Dyck

[Listen to this article](#)

00:01:56

Campbell River council has backed away from imposing an immediate ban on consuming controlled drugs on municipal property.

Recommended reads for you:

- [Addictions minister to discuss drug ban with Campbell River council](#)
- [Washington state to decriminalize drugs unless lawmakers act](#)

On Thursday, councillors voted to abandon plans for final adoption of bylaws enabling the ban. The city had received a Feb. 10 letter from medical health officer Dr. Charmaine Enns, who said the prohibition would have “direct and deleterious public health impacts.”

The city also found itself facing a legal challenge launched this month by Vancouver-based legal advocacy group Pivot Legal Society.

There was little discussion amongst council about its change of direction. Coun. Susan Sinnott made a successful motion that “staff report back on further options to address the consumption of controlled substances in our public spaces.”

Council had initially planned to pass changes to the city’s public nuisance bylaw prohibiting use of drugs on municipal roads, facilities, parks and other public spaces, with violations carrying a penalty of \$200.

The changes, which went to third reading, were prompted by a three-year provincial pilot project that began Feb. 1 allowing people to carry up to 2.5 grams of drugs such as heroin, fentanyl, cocaine and methamphetamine for personal use.

Enns initially outlined her concerns in a Jan. 25 letter but council chose not to receive it prior to passing early readings for bylaw changes. In her Feb. 10 letter, Enns called that a “concerning decision” by council. She pointed out that while council is not obliged to follow her advice, it is required to consider what she has to say, under rules set out in the Public Health Act.

cjwilson@timescolonist.com

>>> To comment on this article, write a letter to the editor: letters@timescolonist.com