Urban neighborhoods, chronic stress, gender and depression

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Abstract

Using multilevel analysis we find that residents of “stressed” neighborhoods have higher levels of depression than residents of less “stressed” neighborhoods. Data for individuals are from two cycles of the Canadian Community Health Survey, a national probability sample of 56,428 adults living in 25 Census Metropolitan Areas in Canada, with linked information about the respondents’ census tracts. Depression is measured with the Center for Epidemiologic Studies-Depression Scale Short Form and is based on a cutoff of 4+ symptoms. Factor analysis of census tract characteristics identified two measures of neighborhood chronic stress—residential mobility and material deprivation—and two measures of population structure—ethnic diversity and dependency. After adjustment for individual-level gender, age, education, marital and visible minority status and neighborhood-level ethnic diversity and dependency, a significant contextual effect of neighborhood chronic stress survives. As such, the daily stress of living in a neighborhood where residential mobility and material deprivation prevail is associated with depression. Since gender frames access to personal and social resources, we explored the possibility that women might be more reactive to chronic stressors manifested in higher risk of depression. However, we did not find random variation in depression by gender across neighborhoods.

Keywords: Canada; Depression; Gender; Neighborhood; Chronic stress

Introduction

The idea that features of the social environment in which we live are important determinants of healthy lives is not new. In one of the earliest studies on environment and mental health, Faris and Dunham (1939) showed that psychiatric admissions in Chicago varied by location within the city with higher rates for those living in the inner-city core than in outlying areas. The ecological approach to the study of health was largely supplanted by
individualistic approaches, but more recently the hybrid approach of multilevel modeling has become more popular. Historical and modern writings advocate for population-level studies of health, reasoning that while risk factors originate in individuals (compositional effects), many of these risks propagate and become reinforced within social contexts (contextual effects), especially risks associated with health and health-related behavior. Durkheim (1951) studied the social causes of suicide and found regularities in suicide rates among specific population groups. He argued that social integration and regulation, characteristics of the social environment rather than the individual, contributed to the suicide rate in a particular group thus producing differences from the rate in other groups. According to Dunn, Frohlich, Ross, Curtis, and Sammartin (2005) social facts may provide details on the uniqueness of specific places and particularly those stressors that influence, enhance and undermine the health of the population. They argue that it is imperative to examine these underlying phenomena to inform a global discussion of population health. Geoffrey Rose (1985) argued that groups of individuals function as a collectivity and these groups are affected by the average functioning of the group. Multilevel modeling allows researchers to simultaneously study individual and contextual effects and to ask questions about the relationship between neighborhood and personal health.

The nature of chronic stress in context

So what is it about the social environment that might lead to deterioration in the health of individuals? One issue, often identified, is chronic stressors in the local residential environment. In the social science literature contextual features such as crowding (Gillis, 1979a; Gillis, Richard, & Hagan, 1986), density, (Gillis, 1974, 1979b; Gillis & Hagan, 1982; Regoeczi, 2002; Sampson, 1983) and housing (Dunn, 2002; Dunn & Hayes, 2000; Gillis, 1977) have been examined as sources of chronic stress and have been found to be associated with health and well-being and health-related behaviors (Glazier et al., 2004; Hyndman, Holman, & Jamrozik, 1997; Katz, Zemeneuk, & Hofer, 2000).

Wheaton (1999) defines stressors (chronic, life event and daily hassles) as “conditions of threat, demands, or structural constraints that, by their very occurrence or existence, call into question the operating integrity of the organism” (Wheaton, 1999, p. 177). Chronic stress is insidious, with a slow and imperceptible onset and an open-ended recurring character; this form of stress is especially important since it can arise from contextual features. Chronic stressors in the local residential environment (ecological) are difficult to avoid (e.g., uncontrollable) and represent ongoing stress that is a part of daily living. Ecological chronic stressors are different from role-related stressors since they originate at a level above the individual and his or her interaction with role partners and peers (Serido, Almeida, & Wethington, 2004; Wheaton, 1999). This form of stress can include reduced or lack of access to opportunity or to the necessary means to achieve ends as well as structural reduction in available alternatives or choices (Wheaton, 1999).

Research suggests that these chronic sources of stress or “quotidian” stressors (Pearlin & Skalkidou, 1995; Wheaton, 1999) more strongly affect well-being than the less frequent, but more major class of stressors known as life events which tend to be more transient in nature. Recent research on material deprivation, socioeconomic disadvantage, neighborhood disorder and instability points to the negative impact of chronic stressors on health (Aneshensel & Sucoff, 1996; Boardman, 2004; Boardman, Finch, Ellison, Williams, & Jackson, 2001; Dunn & Hayes, 2000; Feldman & Steptoe, 2004; Linsky, 1969; Ross & Mirowsky, 2001). The ecology of chronic stress is an important area of sociological inquiry (Hill, Ross, & Angel, 2005). The strain created by the chronic nature of neighborhood stressors will not only have an impact on individual health, but can lead to the deterioration of the capacity of the population within a neighborhood to resist the pathological effects of ambient stress.

A growing body of research examines the relationship between urban stressors and health outcomes with only a handful of these studies focusing on the life stress paradigm. Boardman and colleagues (2001) found that socio-economically disadvantaged neighborhoods had a significant impact on the likelihood of adult drug use net of individual factors like socioeconomic status (SES) and socio-demographic characteristics (Boardman et al., 2001). Their results show that the effect of neighborhood disadvantage is most pronounced among poorer residents. Elliott (2000), using a composite measure of neighborhood socioeconomic status found that social support was protective of
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