

Chapter 2

City Living and Mental Health in History

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Cities have long been the subject of literary and academic interest as a powerful force shaping the health of populations. Writers from several eras in Western European history considered cities as places that were detrimental to health, and in many ways, for much of history, cities were characterized by features that were unquestionably linked to poor health. Percy Bysshe Shelley (1819), an English romantic poet, observed that “Hell is a city much like London.” Indeed, a full collection of the writings that have denounced cities or deplored living conditions in cities would fill several volumes (Marsella, 1995).

It is worth considering why historically so many leading thinkers have considered that cities could be detrimental to health. Most of the early thought about cities and how they might unfavorably influence human health arose from the growing role played by cities in European life over much of the past millennium. As cities grew—particularly as the Industrial Revolution accelerated—population density, marginalized populations, pollution, and crime frequently increased, resulting in health in cities being worse than it was outside of cities in many countries. Literary observers and social commentators, reflecting on these observations, ascribed to city living an etiologic role in shaping health (Dickens, 1850; Durant & Durant, 1967; Durkheim, 1897; Engels, 1887).

In many ways, it was the process of rapid urbanization itself during the eighteenth and nineteenth centuries that prompted developments in public health (Coleman, 1982; Glaab & Brown, 1976). For example, in France during the first half of the nineteenth century, rapidly changing demographics and the economic situation in urban areas contributed to *hygiene publique*, or public health, becoming formally constituted as a science (Coleman, 1982). Louis René Villermé and other *hygienistes* recognized the contribution that inadequate water supplies, overcrowding, and poor housing were making to poor health in France’s burgeoning cities and implemented programs aimed at

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improving urban living conditions. Indeed, the urban environment in many Western cities improved dramatically at the turn of the twentieth century; coincident with this improvement, health of urban populations also improved (Vogele, 1994). In many parts of the world, however, the conditions that were prevalent in Western cities during the eighteenth and nineteenth century remain prevalent today.

Why should cities and city living affect the prevalence of disorders? More particularly, why should cities affect mental health overall and the mental health of minority populations in specific? Before addressing these questions, a couple of cautions are in order.

First, there is no “one way” in which city living may affect mental health. Although for the sake of explication we generally discuss mechanisms and mental health, the mechanisms that potentially explain the relations between urban living and mental disorders frequently depend on the specific type of mental disorder. As we discuss potential mechanisms, we consider “mental health” as one construct but make reference to specific theoretic distinctions and empiric examples that suggest how different factors may be differentially important for diverse mental disorders.

Second, cities are ultimately places. Although cities are not static—in fact the very dynamism of cities is one of their defining features—considering mental health in cities is ultimately the study of how a particular type of place may affect mental health. Explanations for these potential effects then rest primarily on how *characteristics* of places—in this case cities—may be important determinants of mental health.

In this book, we are primarily interested in the determinants of the mental health of minorities. Very little peer-reviewed literature exists that has shown that urban living, or urbanization, is differentially associated with the health of minorities compared to other racial/ethnic groups. It is the intent of this chapter first to highlight *why* city living may be associated with the mental health of minorities; second, to summarize the extant literature about the relation between city living and mental health in general, while drawing attention to the mental health of minorities where applicable; and third, to stimulate discussion about the topic at hand.

Why Would City Living Affect Mental Health?

Several characteristics of cities may be important determinants of mental health, each having multiple implications for urban dwellers in general and potentially for minority groups in particular. Building on the extant literature, we consider here five concepts that may be particularly relevant to mental health: social disorganization/strain, social resources, social contagion, spatial segregation, and the urban physical environment. Although there is overlap between each of these concepts, considering each in turn lends insight into the potential causal relations between urban living and mental health.

Social Disorganization/Strain

One of the primary explanations for the relation between urban living and health that has been posited in different guises in several disciplines can be conceptualized within the rubric of social disorganization/social strain theories. Social disorganization theory was first developed in studies of urban crime by sociologists in Chicago in the 1920s and 1930s. In brief, social order, stability, and integration are conducive to conformity, while disorder is conducive to crime and poor integration into social structures (Shaw & McKay, 1969). More recent theoretical and empirical refinements to social disorganization theory have held that social control is the hallmark of social disorganization theory and affects the likelihood of crime in cities (Sampson & Groves, 1989). A parallel theory, frequently referred to as anomie/strain theory, while arising from a separate disciplinary focus, similarly suggests explanations for the relations between social structure and behavior. Emile Durkheim (1897) used the term “anomie” to refer to the state of a lack of social regulation in modern society as one of the conditions that makes for higher rates of suicide. Drawing on this work, Robert Merton (1938) suggested that anomie is the lack of societal integration that arises from the tension between aspirations of industrialized persons and the means available to them to achieve those aspirations. In the U.S. context in particular, the exposure of persons of all social classes to high aspirations that are practically unachievable produces *strain* or pressure on these groups to take advantage of whatever effective means to income and success they can find, even if these means are illegitimate or illegal. Hence, Merton argued that social strain can be associated with crime.

Contemporary anomie/strain theories, such as general strain theory, expand on the connection between sources of strain, strain-induced negative emotion, and individual criminal behavior. Agnew (1992) suggests that there are other sources of strain in modern living, including confrontation with unpleasant stimuli. In a recent modification of general strain theory, Agnew (2001) more clearly specifies that the types of strain most likely to lead to criminal or delinquent coping are strains that are seen as unjust, high in magnitude, emanating from situations in which social control is undermined, and pressuring the individual into criminal or delinquent associations.

Social disorganization and social strain theories have important implications for mental disorders in cities. A substantial body of research has documented the role of stress in shaping health in general and mental health in particular (Pearlin, Lieberman, Menaghan, & Mullan, 1981). Although most of this work has considered stress processes at the individual level (Noh & Avison, 1996), there is a growing appreciation of the fact that environmental context may itself be an important determinant of health or may shape the impact of other stressors on individual mental health (Elliott, 2000). Urban areas are generally characterized by higher social disorganization, socioeconomic disparities, dense and diverse populations, higher crime rates, and migratory populations posing considerable stress on their residents.

It is worth noting the particular role that minority status may then play in generating substantial social strain in urban areas. Many cities worldwide are highly segregated with multiple historical, logistical, and practical barriers to mixing of social groups. In addition, minority groups often reside in parts of urban environments that are more disadvantaged than non-minority groups. Urban segregation also contributes to the strain faced by minority groups in urban areas. For example, a study assessing the relationships between perceptions of one's neighborhood and depressive symptoms found that perceptions of neighborhood characteristics (vandalism, litter or trash, vacant housing, teenagers loitering, burglary, drug selling, and robbery) predicted depressive symptoms at a 9-month follow-up interview. This suggests that social disorganization and social strain are determinants of depressive symptoms (Latkin & Curry, 2003).

Several studies have shown that social strain is associated with poorer overall mental health (e.g., Amick et al., 1998), depression (Beach, Schulz, Yee, & Jackson, 2000), and substance use (Velleman & Templeton, 2003), though few of these studies have specifically assessed the relations among the urban environment, social strain, and mental health. Urban areas characterized by greater deviant behavior also may have a higher likelihood of traumatic event experiences for their residents (e.g., rape, interpersonal violence), which are consistently linked to poorer mental health, including anxiety and mood disorders (Seedat, Nyamai, Njenga, Vythilingum, & Stein, 2004).

Social Resources

Further refinements on social strain theory in urban areas include an appreciation of the fact that in urban areas persons with different socioeconomic status both may be faced with different stressors and may have disparate access to resources that could help them cope with stressors. This is particularly an issue for minority group members who frequently have substantially lower socioeconomic status than majority group members. (Socioeconomic status and mental health and illness are addressed by Stepleman et al. in Chapter 15 of this volume.) However, the relation between urban stressors and mental disorders is likely buffered by salutary resources (e.g., health care, social services) that are frequently more prevalent in urban compared to non-urban areas. For disadvantaged urban populations, formal local resources can complement or substitute for individual or family resources. Although these resources may be available to urban residents, socioeconomic disparities in cities are linked to differential access to these resources; this suggests that persons at different ends of the socioeconomic spectrum—such as minorities—may have different opportunities to benefit from the resources available in cities. This discrepant exposure to stressors and access to resources has been called the “differential vulnerability” hypothesis, positing that persons with lower socioeconomic status

are both exposed to more stressors and also have fewer resources to help cope with them (Pearlin, 1999). This hypothesis may be particularly important in urban areas characterized by socioeconomic disparities.

Individual social experiences also may be important determinants of mental disorders in cities. For example, limited social support may predispose persons to poorer coping and adverse health (McLeod & Kessler, 1990). In one national forensic autopsy of suicides, it was shown that urban suicides were more likely to be preceded by a recent separation from a partner than were rural suicides (Isometsa et al., 1997). This suggests that social connectedness may play a different role in determining mental disorders in urban versus rural areas. Importantly, there is scant evidence that social connectedness in cities is better or worse than in non-urban areas. It is more likely that the nature of individual connections vary in different contexts, and it is the interrelation between urban social and physical environmental stressors, availability and access to material resources, and psychosocial resources that ultimately would explain any relation between urban living and mental disorders.

Several other forms of social resources have been shown to affect health in cities. Informal social ties are an important feature of city living that affects social support, network, and cohesion (Fullilove, 1998). Social capital effects, including manifestations at the contextual level (e.g., at the level of the whole city or of urban neighborhoods) and the social network level, are thought to offer general economic and social support on an ongoing basis in addition to making specific resources available at times of stress (Kawachi & Berkman, 2001). Social capital is often defined in terms of social organization, and as such, it has been hypothesized that social capital is associated with lower levels of criminal activity through the enforcement of social norms as discussed earlier. However, the relation between social capital and crime is likely reciprocal: while social capital is associated with lower crime rates through the suppression of deviant behavior, high crime rates erode bonds in communities and weaken protective institutions, allowing for further criminal activity (Sampson, 2000). In the context of cities, the greater spatial proximity of one's immediate network may well accentuate the role of networks in shaping health. Social networks have been shown to be importantly associated with a range of health behaviors, including misuse of substances (Kafka & London, 1991). However, there is very little evidence about interracial/ethnic group differences in the relation between informal social resources and mental health in urban areas.

Social Contagion

Other theories that explain how urban living may affect mental disorder emphasize the role of group influence on individual health and behavior. Social learning theory emphasizes the importance of observing and modeling the behaviors and attitudes of others (Bandura, 1986). This is particularly the

case in densely populated areas where there are several persons on whom behavior can be modeled. In diverse urban settings, social learning can both set social norms and set norms for social network behaviors. Similarly, theories of collective socialization emphasize the influence of group membership on the individual (Wilson, 1987; Coleman, 1988). These theories suggest that persons who are in positions of authority or influence in specific areas can affect norms and behavior of others in direct and indirect ways. Institutional socialization theory has been closely linked to the allocation of social resources within city neighborhoods (White, 2001), which in turn has implications for health in cities as discussed above. This issue is particularly relevant to minority groups in contexts of urban racial/ethnic segregation, which exists in many cities worldwide (and in most American cities) (White, 2001).

One of the concepts that is linked to social learning and may have substantial implications for public health is “contagiousness.” Models of biological contagion, particularly in the context of infectious disease, are well established. However, newer theories include the possibility of contagiousness of ideas and social examples. Contagion theory is employed by sociologists as one explanation for crowd behavior. In epidemiology, it is understood that—all things being equal—urban populations, characterized by high population density, are at higher risk of transmission of biological organisms. Also, because concentrated urban populations share common resources (e.g., water) the practices of one group can affect the health of others. These observations may be extended to behavior and to mental disorder. A classic example of this has been referred to as the Werther effect. The Werther effect suggests that media representations of suicide may have some influence on the actions of those exposed to them such that suicide becomes more likely. Several studies have provided both theoretical and empirical reasons to suggest that media representations of suicide could have some influence on a person’s suicidality (Frei et al., 2003); other examples of media representation reinforcing unhealthy behavior include self-mutilation (Favazza, 1998).

In the urban context, the concentrated proximity of both persons and sources of information may be a “crucible” for the exacerbation of this effect (Eaton, 1986). One obvious such example would be the consequences of an urban disaster. A disaster in a densely populated urban area may well have substantial implications for mental health and behavior that would not be the case in a disaster in a less densely populated urban area. One example is the case of the September 11 terrorist attacks. The North Tower of the World Trade Center (WTC) in Manhattan, New York City (NYC), was hit by an American Airlines Boeing 767 passenger plane at 8:45 am on Tuesday, September 11, 2001. NYC residents learned of the crash in near real-time via the internet, all-news channels, or by looking up to see the WTC burning on the morning commute to work. New Yorkers were watching early reports of the first attack when a second plane struck the WTC South Tower. In the hours that followed, two other airplanes crashed elsewhere, the WTC towers collapsed, and thousands of persons were evacuated from lower Manhattan, while others searched

for missing family and friends or assisted in the rescue efforts. In NYC, the days and weeks after September 11 were characterized by a growing awareness of the magnitude of the loss of life and fear of other potential terrorist attacks. Therefore, the attacks on the WTC were experienced by a substantial proportion of New Yorkers in real time, either via witnessing these events firsthand or hearing about them by word of mouth. Subsequent research after the attacks has shown that up to one-fifth of persons interviewed in a representative sample of residents of NYC reported seeing some of the events in person. A substantial proportion of the population *not directly affected by the attacks* reported symptoms consistent with posttraumatic stress disorder related to the September 11 attacks (Galea et al., 2003). Intriguingly, the persons who were not directly affected by the attacks (those who did not see the attacks or lose possessions or relatives) would not be considered “exposed” to the traumatic event by classic DSM-IV criterion A definitions. It can be argued that the urban context in general was instrumental for the contagion of both exposure to the event in NYC and the subsequent development of mental health symptoms. Tying back to the notion of spatial racial/ethnic segregation introduced earlier, the concentration of persons of minority racial/ethnic groups into specific parts of the urban environment can further exacerbate the behavioral contagion discussed here.

The Urban Physical Environment

Urban areas typically feature a heavily built environment, reliance on human-made systems of water and food provision, and reliance on housing that is frequently substandard. It has been argued that the primary feature distinguishing the twentieth century from previous ones and cities from non-urban areas is the degree to which humans have become the primary influence on the physical environment (McNeill, 2000). The urban physical environment interacts with the other domains discussed above to shape health in cities. As cities grow, the ability of the physical environment to affect health can also grow. Highways and streets can destroy green space, influence motor vehicle use and accident rates, increase urban noise, and heighten the daily hassles of urban living. Green space has been associated with overall health and better mental health functioning in several studies (Takano, Nakamura, & Watanabe, 2002). Automobile use of unleaded gasoline can increase lead levels in the environment. In turn, higher lead levels may be teratogenic in utero; prenatal exposure to teratogens has been associated with adult onset of mental illness, an example of environmental toxins contributing to the incidence of psychiatric disorders (Watson, Mednick, Huttunen, & Wang, 1999). Noise exposure in turn may contribute to hearing impairment, psychological distress, and hypertension (Evans, 2003). There is extensive environmental justice literature showing that adverse neighborhood conditions are much more prevalent in minority communities than in other

urban communities, further contributing to poor mental health in these groups (Corburn, 2002; Maantay, 2007).

The urban infrastructure is also part of the physical environment. As the expensive urban infrastructure ages in a period of declining municipal resources, breakdowns may increase. This may not only cause physical health problems related to water, sewage, or disposal of waste but also limit municipalities' ability to adequately provide salutary resources. Ultimately, urban design may also influence crime and violence rates, demonstrating the close interactions between urban physical and social environments (Sampson, Raudenbush, & Earls, 1997). Recent empiric research that has assessed how characteristics of intraurban environments are associated with health has improved our understanding of the relation between the urban physical environment and mental health (Yang, 2000). Once again, differential exposure to adverse urban circumstances in many cities substantially disadvantages minority racial/ethnic groups, making these groups much more likely to be adversely influenced by the potential relation between urban characteristics and mental illness.

Spatial Segregation

Although mentioned throughout the discussion above, it is worth concluding this section with a recognition that much of the particular way in which the urban environment may influence mental health of minorities rests on the spatial segregation of different racial/ethnic and socioeconomic groups in cities. The role of spatial segregation in shaping mental health has long been recognized. In their seminal work of mental disorder in urban areas, Faris and Dunham (1939) described in detail a Chicago that had concentric circles wherein dwelled distinct groups whose social status was relatively unchanged even with migration of populations over time. Spatial segregation can have multiple effects, including the enforcement of homogeneity in resources and social network ties. Considering the role of spatial segregation in conjunction with concepts of social learning, spatial proximity to beneficial role models may be critical for socioeconomically disadvantaged persons to identify avenues to improve their social status. Perhaps more importantly, spatial proximity to persons of higher socioeconomic status could permit the formation of social networks that are critical for obtaining employment and opportunities for social mobility. Spatial heterogeneity also permits persons of higher socioeconomic status to appreciate the issues faced by others and to use their power, money, and prestige to influence the development of better distributed salutary resources.

Conversely, it is worth noting that spatial segregation may serve to minimize social strain by virtue of keeping persons who are different apart from one another. It has been shown in some studies that minorities living in highly segregated areas who only come into contact with other racial/ethnic groups infrequently experience less discrimination than minorities who regularly come

into contact with persons of other racial/ethnic groups (Krieger, 2000). Discrimination in turn has been associated with poor mental health in minority groups (Cochran & Mays, 1994). However, it is important to note that segregation of minority groups into urban or peri-urban slum areas in many developing world countries represents a substantial threat to these populations' physical health and—as increasingly suggested by empiric research—mental health (Blue & Harpham, 1996).

Summary

In summary, several mechanisms exist that may explain how cities affect mental health, with different mechanisms being differentially important for different types of mental disorders and for different racial/ethnic groups. Indeed, a “big picture” perspective on the relation between characteristics of city living and mental health would suggest that any such relations are undoubtedly complicated. While specific features of cities may affect certain conditions adversely, other features may offer protection. Interrelationships between features of the urban environment (e.g., between spatial segregation and potential social strain) complicates attempts at generalization. However, in the context of concern with the mental health of racial/ethnic minorities, it is clear that the spatial segregation of racial/ethnic groups in many ways sets the stage for minority groups to be exposed to more concentrated disadvantage and more adverse social conditions than majority groups. As such, minority groups are more susceptible to the potential adverse health consequences of city living.

The empiric work that has explicitly assessed how urban living affects mental disorder has only begun to “scratch the surface” of the topic; there is very little research that has explicitly considered the interaction between city living and racial/ethnic minority group status. In the following section, we summarize the key research in the area in three distinct eras, drawing on seminal work that has established a link between city living and mental health and highlighting how this work may be extended to help us consider the role of city living in shaping the mental health of racial/ethnic minority populations.

The Evidence

Pre-1980: Before DSM-III

The past century has seen a flourishing of empiricism in health research, and in hand, a number of epidemiologic studies have sought to understand the potential relations between urban living and mental disorders. Empiric work produced conflicting results at the beginning of the twentieth century. For example, in a U.S. study, White (1902) found mental disorders to be higher in

urban areas, while in a study of four regions of Scotland, Sutherland (1901) found higher rates of insanity in rural areas. Sorokin and Zimmerman (1929) reviewed data from a number of sources and concluded that psychiatric morbidity was higher in urban areas in the United States overall. These early studies were limited by a number of methodologic difficulties, primarily the use of crude definitions of outcomes and issues of sampling. Still, they acknowledged and established that place of residence and characteristics of the urban (and rural) environments may play a role in shaping individual mental health. In landmark research that laid the groundwork for much of the thinking behind the relation between urban living and mental health, Faris and Dunham (1939) conducted an ecological study in Chicago neighborhoods and found a high degree of association between different types of psychoses and certain conditions of communities. As we shall discuss further in subsequent sections, although recent work suggests that the association between urban living and psychotic disorders is likely complex, in many ways Faris and Dunham's work presaged thinking about characteristics of urban neighborhoods that may be associated with mental health.

During this period, a seminal study, the Midtown Manhattan (1962) study, provided a basis for comparison between urban and rural areas and had a marked influence on subsequent research (Srole et al., 1962). The fundamental postulate of this study was that *sociocultural conditions have measurable consequences reflected in mental health differences*. It built explicitly on some of the earlier theoretical work that suggested that sociocultural features of urban living (such as disorganization) may shape mental health. This study was a cross-sectional, in-person survey study, sampling residents (including hospitalized or institutionalized persons) of midtown Manhattan between 20 and 59 years old ($n = 1,660$). Among the principal findings from this study, it was shown that there was a particularly high prevalence of mental pathology among single men; additionally, low parental and adult socioeconomic status was associated with a greater likelihood of psychological impairment. The authors suggested that economic factors, potentially linked through pathways of discrimination, shape psychological factors that may affect adult mental health. Subsequently, other work compared the prevalence of psychiatric disorders in less urban areas to data obtained in the Midtown Manhattan study using comparable assessment methods. Using records from Minnesota, Laird (1973) estimated that the prevalence of severe psychiatric disorders in rural areas of Minnesota was one tenth of that reported by the Midtown Manhattan Study. In contrast, in a comparison of psychiatric morbidity from the Stirling County Study (a study of the prevalence of psychiatric morbidity in rural Nova Scotia, Canada), Srole (1977) concluded that the prevalence of psychiatric disorders was lower in Midtown Manhattan than it was in rural Nova Scotia.

Some of the most interesting research in this era that considered potential relations between urban living and mental disorders studied psychiatric disorders in children. In a small study of 175, 5- to 6-year-old pre-school children, Kalstrup (1977) did not find differences in the prevalence of psychiatric

disorders between children recruited from the urban municipality of Århus and the rural municipality of Samsø in Århus County, Denmark. This study was limited by a relatively small sample size and by crude assessment of psychiatric disorders. In contrast, a contemporaneous study of adolescents that used personal psychiatric interviews, questionnaires, and school information to assess total psychiatric disorder among 483 adolescents in Norway found that the prevalence of psychiatric disorders was 16.9% in Oslo compared to 7.9% in a rural area in South-East Norway (1977).

In the mid-1970s, an influential series of studies, collectively referred to as the Isle of Wight Studies, rigorously and systematically assessed psychiatric disorders in 9- to 11-year-old children and provided some of the most compelling data relevant to questions of interest here (Rutter, Tizard, Yule, Graham, & Whitmore, 1976). In a comparison between 10-year-olds in the Isle of Wight and 10-year-olds attending school in an inner-city London district, it was shown that the prevalence of psychiatric disorder was twice as high in London as it was in the Isle of Wight. This discrepancy was more pronounced in girls (26.2% vs. 10.8% comparing London to the Isle of Wight) than it was in boys (18.3% vs. 13.0%) (Rutter, Cox, Tupling, Berger, & Yule, 1975). Reading retardation was nearly three times higher in London than in Isle of Wight children (9.9% vs. 3.9% respectively) (Berger, Yule, & Rutter, 1975). These studies were notable in their efforts to take into account the possible confounding effects of migration and social selection and in considering the principal reasons that might explain these differences in prevalence. The authors suggested that the higher proportion of children with psychiatric disorders in London was linked to a relatively higher proportion of family discord and social disadvantage in London than in the Isle of Wight (Rutter, Yule, et al., 1975). In some ways, these observations foreshadow more recent studies, some of which are discussed in the next section, that have begun to consider how characteristics of urban neighborhoods contribute to intraurban and interurban differences in the incidence and prevalence of both adult and child psychiatric disorders (Ford, Goodman, & Meltzer, 2004).

Clearly very little work during this era formally considered the specific role of urban living in influencing the health of different racial/ethnic groups. However, this early work was invaluable in establishing the framework for our understanding of the relation between city living and mental health. The principal epidemiologic work in the area during most of the twentieth century was summarized in a review by Dohrenwend and Dohrenwend (1974) that considered the best empiric evidence in an attempt to determine whether there was evidence that urban settings were associated with a greater prevalence of psychiatric disorders than rural settings. Limiting their observations to nine epidemiologic studies that reported prevalence of adult psychiatric disorders in both urban and rural sites conducted from 1942 to 1969 (in multiple cities including Tokyo, Japan, Reykjavik, Iceland, and Abeokuta, Nigeria), the authors suggested that a consistent pattern emerged from these disparate studies and stated that “there appears to be a tendency for total rates of psychiatric disorders to be higher in urban than in rural areas.” A substantial

portion of the difference in the urban-rural prevalence of mental disorders was influenced by higher prevalences of neurosis and personality disorders in urban communities. However, the authors noted that many of the studies they reviewed were limited by substantial methodologic difficulties, making comparisons across studies challenging. The Dohrenwends' conclusions have been challenged by authors who note that the samples that were the subject of this review were small and that the urban-rural differences reported were themselves also small (Fischer, 1976). In addition, a number of the "urban" areas in the studies reviewed by the Dohrenwends were atypically small urban communities and not usefully representative of modern urban areas.

1980s and 1990s: Community Prevalence Studies

The past two decades have witnessed a dramatic systematization of the study of psychiatric epidemiology in general, and more than a dozen community surveys have been published that have described the urban versus rural epidemiology of different mental disorders. In the United States, the Epidemiologic Catchment Area (ECA) project, a multi-stage probability sample of U.S. residents using in-person interviews, was the first community survey to assess psychiatric disorders using standardized instruments based on the DSM-III. Analysis using ECA data has specifically assessed urban-rural differences in the prevalence of psychiatric disorders in the United States, finding a twofold higher prevalence of major depression in persons living in urban areas vs. rural areas but no difference between small metropolitan areas and rural areas (Blazer, George, & Landerman, 1985). The prevalence of drug abuse/dependence was also higher in large metropolitan areas assessed in the ECA. The question of urban-rural differences was reconsidered using data from the National Comorbidity Survey (NCS), a community survey carried out in five sites across the United States. Using similar large and small metropolitan and rural area definitions as the ECA did, two NCS analyses found no difference in the prevalence of major depressive episodes, affective disorders, substance use disorders, antisocial personality disorder, or psychological disorders overall between persons living in different size metropolitan or rural areas (Blazer, Kessler, McGonagle, & Swartz, 1994; Kessler et al., 1994). A Canadian study using similar methodology also failed to find an urban-rural difference for a range of psychiatric disorders (Parikh, Wasylenki, Goering, & Wong, 1996). It is worth noting that all of these studies used lay administration of structured instruments, leaving open the possibility of non-differential misclassification.

In Europe, population-based surveys (two U.K. and one Dutch) have assessed the prevalence of mental disorders and examined urban-rural differences. In the first of these studies, the U.K. Health and Lifestyle Survey, an association was found between urban residence and the prevalence of psychiatric

morbidity. This study used interviewers' subjective assessment of respondents' homes to determine urban versus rural living (Lewis & Booth, 1994). Subsequently, the Household Survey of National Morbidity of Great Britain, a multi-stage community sample using in-person interviews, also used interviewer ratings to determine urban versus rural residence and found that urban residents had a higher prevalence of alcohol and drug dependence and psychiatric morbidity in general (Paykel, Abbott, Jenkins, Brugha, & Meltzer, 2000). The Netherlands Mental Health Survey and Incidence Study (NEMESIS), a multi-stage, stratified, random study in the Netherlands, documented a higher likelihood of mood, substance use, and psychotic disorders in urban versus rural residents (Bijl, van Zessen, Ravelli, de Rijk, & Langendoen, 1998). The same study did not find urban-rural differences in anxiety disorders (Bijl, Ravelli, & van Zessen, 1998). Other European studies that have specifically focused on the relation between urban living and schizophrenia are discussed later in this chapter.

Four studies have assessed urban-rural differences using population-based surveys in Asian countries. The first of these was a multi-stage random sampling of households using in-person interviews (administered as part of the Clinical Interview Schedule) in Taiwan (Cheng, 1989). This study found no significant differences in the prevalence of total psychological morbidity, anxiety states, or depression between the urban and rural areas; additionally, no differences were observed in symptom profiles between the areas. A contemporaneous larger multi-stage random community sample, using in-person interviews based on the DSM-III, assessed persons in metropolitan Taipei, small towns, and rural villages in Taiwan (Hwu, Yeh, & Chang, 1989). In contrast to the Cheng et al. findings, this study found that the small town samples had a higher lifetime prevalence of eight disorders including major depressive disorders, dysthymic disorder, panic disorder, generalized anxiety disorder, alcohol abuse/dependence, and drug dependence. A comparative study, carried out in Korea, found a higher lifetime prevalence of many psychiatric disorders in less urban areas compared to Seoul, including alcohol abuse/dependence, agoraphobia, panic disorder, and cognitive impairment (Lee et al., 1990). This study found a higher prevalence of antisocial personality disorder in Seoul versus the rest of the country and no differences in schizophreniform disorders or affective disorders (including depression). A smaller study of persons over age 65 in Korea also failed to find urban-rural differences in depression (Kim, Shin, Yoon, & Stewart, 2002). One study in New Zealand that used a cross-sectional random community mail survey found no rural-urban differences in measures of psychiatric morbidity (Romans-Clarkson, Walton, Herbison, & Mullen, 1990).

In sum, the studies in the past 20 years that have documented urban-rural comparisons in the prevalence of psychiatric disorders do not suggest that there is a consistent urban-rural difference in mental morbidity in general or for specific mental disorders, with the possible exceptions of psychosis and child behavior disorders. These findings are consistent across different countries and different racial/ethnic groups, though none of these studies specifically assessed

whether there were urban-rural differences between racial/ethnic minorities living in these two environments. The published data does hint that certain morbidities, particularly alcohol abuse/dependence, may be more likely in rural versus urban areas, although the inconsistency in the assessment of alcohol abuse/dependence across these studies suggests the need for further work to clarify this suggestion. It is important to note that none of these community surveys have been carried out in developing world countries.

Twenty-First Century: Studies that Consider Characteristics of Urban Areas and Mental Health

While the advent of community prevalence studies over the past 20 years provided rich opportunity for urban-rural comparisons, most of the relevant studies in the period were not predicated on the earlier theoretical work that, as summarized earlier, suggested specific mechanisms through which urban living may be associated with mental health. As such, these studies ultimately have limited usefulness in determining whether urban living is a determinant of mental health, what the features of urban living that may affect mental health are, and the mechanisms through which urban areas may affect the health of the residents within them. It is not surprising that different urban-rural comparisons have provided conflicting evidence about the relative burden of mental health in urban and non-urban areas. Changing conditions within cities over time and differences in living conditions (e.g., qualities of the built environment, exposure to environmental toxins) between cities suggest that these studies at best provide a snapshot of how the mass of urban living conditions at one point in time may be affecting population mental health.

More recently, several studies have assessed how particular characteristics of urban living are associated with mental disorders in individuals. This group of studies typically focused on spatial groupings of individuals (often conceived as “neighborhoods”, although several studies assessed the contribution of administrative groupings that are not necessarily meaningful to residents as neighborhoods) and considered the role of one’s community of residence within an urban area in shaping individual mental health. These studies come full circle, applying new empiric methods to earlier theories that describe how city living may affect health. The growing use of multilevel modeling techniques in epidemiology has made studies like these both more common and more methodologically robust, providing insight into how features of both the urban physical and social environment may influence health. However, most of the literature in the area has focused on physical health, with few published studies that consider mental health outcomes.

A systematic review of neighborhood characteristics and health outcomes, summarizing the literature before June 1998, only identified one study (out of twenty-five reviewed) that considered mental disorders (Pickett & Pearl, 2001). The study, which used a random sample of adult residents in Amsterdam, failed

to observe a relation between living in socioeconomically disadvantaged urban neighborhoods and mental disorders (Reijneveld, 1998). In contrast, some more recent studies have observed a relation between disadvantaged neighborhoods and mental disorders in general. A study discussed earlier showed that neighborhood social disorganization was associated with depressive symptoms (Latkin & Curry, 2003). Another study looking at the association between features of the urban-built environment and mental health assessed the relation between the quality of one's living environment and the likelihood of depression using a cross-sectional survey (Weich et al., 2002). The study found that persons living in poor quality physical environments were more likely to report symptoms consistent with depression after accounting for individual characteristics. Other work has shown that living in more deprived neighborhoods is associated with a higher incidence of non-psychotic disorders (Driessen, Gunther, & Van Os, 1998). A recent study corroborating these observations made use of a randomized controlled trial in New York City in which families were moved from public housing in high poverty neighborhoods to private housing in non-poor neighborhoods (Leventhal & Brooks-Gunn, 2003). This experimental study showed that both parents and children who were moved to the better housing and better neighborhoods reported fewer psychological distress symptoms than did control families who were not moved (although the difference in mental health was noted in boys but not in girls).

Tremendous growth in work that has considered neighborhood influences on health has occurred in the past decade. A more recent review that summarized studies between January 1990 and August 2007 and considered urban neighborhood influences on depression found 24 studies with populations ranging from 200 to 56,428 adult subjects concerned with this issue (Mair, Diez Roux, & Galea, *In press*). Some of the studies restricted their populations to specific racial/ethnic groups or age categories, while others included a wide range of demographic characteristics. Of the 24 studies, only 7 studies specifically focused on the mental health of minorities, with 6 restricting their study population to African Americans (Fitzpatrick, Piko, Wright, & LaGory, 2005; Caughy, O'Campo, & Muntaner, 2003; Simons et al., 2002; Schulz et al., 2006; Cutrona, Russell, Hessling, Brown, & Murry, 2000; Cutrona et al., 2005) and one study examining Mexican Americans (Ostir, Eschbach, Markides, & Goodwin, 2003). The remaining studies enrolled a mixture of racial/ethnic groups, typically using random sampling of their study populations, although several sampled equal numbers of African Americans and whites (Henderson et al., 2005; Schieman & Meersman, 2004).

The small number of studies that compared different race/ethnic groups found some evidence of heterogeneity of neighborhood effects by race/ethnicity (Aneshensel & Sucoff, 1996; Ostir et al., 2003; Weich, Lewis, & Jenkins, 2001). In a Baltimore study, community cohesion was associated with less depression amongst whites but was not associated with depression amongst African Americans (Gary, Stark, & Laveist, 2007). One study found Mexican Americans had better mental health in areas with high concentrations of Mexican Americans,

whereas another study found that African Americans had worse mental health in areas with higher concentrations of African Americans (Ostir et al., 2003; Henderson et al. 2005).

Thus, while a relatively nascent area of research, multilevel analyses assessing relations between characteristics of urban environments and individual mental health promise to advance our understanding of the question well beyond the insights possible from the comparative descriptive studies of the 1980s and 1990s. However, the implications of such multilevel analyses may be difficult to generalize to other cities or urban areas more broadly. For example, the observation in one study that the quality of residences in London is associated with the likelihood of depression among urban residents may not necessarily be relevant in another urban context where the social environment plays an equally important role in shaping individual mental health. This example reflects both the complexity of the factors that may shape mental health in cities and the limitations of extant methods in fully assessing how urban living conditions may affect health.

A Research Agenda—What Are the Features of Urban Living that Affect Mental Health of Minorities?

In 1991, the World Health Organization identified mental illness as one of the diseases that deserved special attention in light of trends (including urbanization) that could have an impact on mental health (Harpham & Blue, 1995). However, mental health continues to be an underfunded area of research given its importance in the global burden of disease and given that significant questions concerning the impact of trends such as urbanicity and urbanization on mental health remain unanswered. The growing realization of persistent, and in some cases expanding racial/ethnic disparities in mental health, and the recent resurgence of interest in urban health (Vlahov & Galea, 2003) provide an opportunity to frame and consider questions concerning mental health and urbanicity.

We suggest that there are three primary areas of research that urgently need exploration as we seek to improve our understanding of the relation between cities and health in general and the role of urbanicity and urbanization in shaping the mental health of minorities in particular.

First, as we hope the discussion here has shown, both the theoretical considerations that explain why cities may affect mental health and the conflicting evidence on the relation between city living and mental health suggest that research needs to move beyond thinking about cities as a whole and start considering specific features of cities that may contribute to poor mental health or improve mental health. In particular, much more research is needed that specifically focuses on the mental health of minority populations and how urban living contributes to the mental health of these groups. The cross-sectional surveys that highlighted the potential differences in the prevalence of mental health problems between urban and rural areas unfortunately raise more questions

than they answer. It is likely that the primary reason for the conflicting results documented by these surveys is the complexity of urban factors that may affect mental health. Prevalence studies cannot differentiate between the determinants of incidence of psychiatric disorders and the determinants of prevalence of these disorders, which may include factors that affect disease duration and severity that may be different from those associated with disease onset. Also, it is difficult to adequately control for factors such as selective migration or socioeconomic factors that may introduce bias or unmeasured confounding, particularly in cross-sectional surveys (Neff, 1983).

Although there is growing evidence of the role that characteristics of neighborhoods may play in determining physical health, relatively little of this work has concentrated on mental health and even less on the mental health of minorities. Recent work, discussed above, has provided early experimental evidence that living in poor neighborhoods is associated with psychological distress, anxiety/depressive symptoms, and dependency (Leventhal & Brooks-Gunn, 2003), suggesting avenues for future research and intervention. Better study designs, particularly the use of longitudinal or experimental studies, will obviate some of the concerns about most of the extant research. More importantly, it will be helpful to appreciate that a diverse set of risk factors determine mental health and that the complexity of urban circumstance and urban living frequently results in these factors manifesting differently in different contexts. This points to the importance of future research focused on understanding specific characteristics of urban living that shape mental health and how these characteristics interrelate.

Second, while assessing the urban determinants of mental health—in particular the role of urban living in shaping minority mental health—is an important first step, elucidating the mechanisms through which risk factors are associated with mental health is equally important and particularly germane to the development of effective interventions. As discussed in this chapter, a diverse set of mechanisms including stress processes, the availability of resources, varying degrees of social connectedness, and exposure to infectious agents and environmental toxins may explain how characteristics of cities affect urban health. Clearer elucidation of the pathways between urban determinants and mental health involving empiric tests to determine which mechanisms may be more important in particular contexts can guide interventions and the development of city policies that promote health. For example, if the relation between the urban-built environment and depression (Weich et al., 2002) is mediated by how the built environment facilitates (or discourages) social ties, different solutions are indicated than if the relation between the built environment and mental health is mediated by stress processes. If the former pathway is correct, one could easily conceive of efforts to promote social connectedness as a way of minimizing depression in lieu of ambitious and expensive renovation of dilapidated built environments. However, if the latter pathway is correct, successful interventions must improve the quality of the built environment itself in order to plausibly affect depression in the urban context.

It is likely, of course, that multiple mechanisms are responsible for the relations between different urban characteristics and mental health and that observed epidemiologic relations are mediated through multiple etiologic pathways. In addition, different mechanisms may be important for the etiology of different racial/ethnic groups. Improved understanding of associations, effect modifiers, and mediators can provide insight into how mental health interventions in cities can best be designed and tailored to maximize effectiveness. As a corollary to this direction, future work that considers how the urban environment jointly affects poor physical and mental health may provide insight into the role of the urban context in shaping overall population disability and function.

Third, as the pace of urbanization in less wealthy countries far exceeds urbanization in wealthier countries, consideration of the urban determinants of mental health in different countries acquires increasing importance. Although mental health in developing countries has historically received less attention than other causes of morbidity, particularly communicable disease, mental health is an increasingly important issue in developing countries. For example, for women in less wealthy countries, neuropsychiatric diseases account for the second largest burden of disease after cardiovascular disease among all non-communicable diseases (Harpham & Blue, 1995). However, most of the research in the area has been conducted in wealthier countries, to the detriment of our understanding of how urban living in other contexts may shape mental health. A research agenda for urban mental health must include work that identifies the unique urban determinants of mental health in different national contexts and how urbanization, a process that is much more prevalent in developing countries than it is in developed countries, is itself a determinant of mental health. It is likely that differences in baseline vulnerability, social resources, the physical environment, social connectedness, and conceptions of health and illness all may contribute to differences in the role that cities play in shaping mental health in different parts of the world. Research in developing countries and comparative multisite research can help elucidate these differences and direct creative solutions to improving population mental health.

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