NUR 4110

Urban Health Nursing

Section 8543

Professor Kevin McGirr, RN, MS, MPH

Sprawl: A Legitimate Public Health Issue

By Anthony F. Robertson, RN

**Introduction**

The concept of urbanization can be defined in many different ways. In a broad sense, urbanization generally involves the process by which rural or suburban areas becomes more industrialized, or more incorporated into an urban format or design. Galea & Vlahov (2005) have determined that, “Urbanization is one of the most important demographic shifts world- wide during the past century and represents a substantial change from how most of the world’s population has lived for the past several thousand years” (Galea & Vlahov, 2005). Historically in the United States, the shift of cities from rural to more urbanized designs started to become prominent in the 20th century, most notably from the 1950’s on forward. As the population grew during the 1950’s, commonly referred to as the “baby-boomer” generation, by the time that the 1970’s came around, people eventually began to shift from city dwelling to living outside of cities. This shift prompted city planners and urban developers to develop suburbs into more urbanized areas. The trend of urbanization has continued to be prominent across America even today, and it is expected to continue in the near future, in response to the growth of the population. While urbanization has been generally regarded as a positive change, it hasn’t come without drawbacks, as many question the short and long-term effects it has on the physical environment and public health.

As people in the United States began to migrate from cities into areas of low density and developers began to urbanize these areas, a phenomenon known as sprawl became prominent in many newly developed areas in the United States. Sprawl is commonly characterized by scattered, unplanned development, commercial strip development, an increase in commuting time and distances, and an increase of low-density development in suburban areas with a concurrent decrease in high-density populations in the inner cities (Pohanka & Fitzgerald, 2004). Residents of these sprawling communities have felt some of the negative effects of this form of urbanization, as the built environment has been found to have a negative impact on everything ranging from the quality of air and water supply, to health issues such as obesity and cardiovascular disease, to name a few. Conversely, sprawl has also been a contributor to keeping those of lower socioeconomic status confined to inner city living, which has been associated with undesirable outcomes for those living in poverty. The negative impact of sprawl places the well being of residents living in rapidly developing communities at risk for compromise. It is for this reason that sprawl has emerged as a major and significant public health issue both domestically and internationally, that requires intervention from stakeholders in terms of policy formation and advocacy to help minimize the harmful effects of sprawl.

**Racial and Health Disparities**

The expansion of cities into rural and suburban areas affects not only those who opt to live in the newly developed and urbanized community, but it also has an impact on those who already live in the urban inner city. In a general sense of the word, it has more commonly been those who belong to the middle to upper socioeconomic class that aimed to move away from urban inner cities in order to purchase homes in areas of low-density. People in the middle to upper class were motivated by the idea of less traffic, less smog, big backyards, and spacious homes accommodate their families. Urban developers followed suit by creating the very thing people were seeking, and before you know it, there was an increased migration of families from the inner city to the outer communities. For the most part, those who remained in the inner city were those on the lower socioeconomic scale; those were the individuals and families who had no options but to stay put. Urban designers began putting more of their efforts into designing the sprawling communities than modifying or fixing the inner city neighborhoods that needed renovations. And because those on the lower socioeconomic scale are largely black or African Americans, sprawling communities thus created racial and health disparities for inner city African Americans.

Sprawl communities have been known to divide inner city communities by essentially separating middle to upper income class family from those of lower socioeconomic status. In their book entitled, “The Spirit Level: Why Greater Equality Makes Our Societies Stronger,” Wilkinson & Pickett (2009) by means of research and conducting studies found that violent cities and communities are strongly correlated a large degree of inequality between those cities or communities (Wilkinson & Pickett, 2009). African Americans become concentrated in the inner city that has since been abandoned for the most part, since the priority is developing the sprawl community. Subsequently, property values go down as well as rent, making it advantageous for African Americans to stay within inner city limits. Food is likely of lower quality where African Americans live than in sprawling communities, where food is typically of a better quality; for example, there is much easier access to fast food restaurants in the inner city, but it is the opposite in sprawl neighborhoods. Other disparities that affect inner city African-Americans as a result of sprawl community development and inner city neglect include disparities in the quality of education, access to quality health care, risk for alcohol and drug use, and predisposition to physical and mental health complications. Disparity even exists in relation to job access; with development being shifted to the sprawl communities, inner city residents on the lower socioeconomic scale are unable to gain access to those outer city areas to gain employment.

The effects of sprawl also create health disparities for those who actually move out of the inner city. Common manifestations of sprawl environments include urban designs that are of low-density zoning, characterized by few properties on large areas of land, and single-use zoning, characterized by separation of businesses from residential areas. Both sprawl characteristics lead to automobile dependence, where cars are a necessity in order to move around. This places whoever cannot drive, and those who do not have access to vehicles, at health risks in the event of emergencies; thus, sprawl neighborhoods potentially create a health disparity for vulnerable populations that include the elderly, children, and those with alterations in mental and physical health.

**Challenges & Barriers**

Urbanization and sprawl creates many challenges and barriers regarding the well being of the public. One of the challenges that arose as a side effect of sprawl is the compromise of the physical environment. Sprawling neighborhoods are commonly poorly designed, typically characterized by pedestrian unfriendly streets, poor public transportation, and zoning that divides residential areas from offices, shops and restaurants (Pohanka & Fitzgerald, 2004). Due to the poor construction of these sprawling areas, people are commonly dependent on automobile use in these areas, which largely contributes to air pollution as a direct result of automobile dependency. Large volumes of traffic can lead to a significant release of carbon dioxide and ground-level ozone, a major air pollutant linked to the patterns and volumes of traffic stimulated by sprawl development that can predispose individuals to respiratory complications (Barnes et. al, 2001). Water supply is also affected as a result of sprawl. The replacement of natural soil with cemented streets and highways reduce the amount of water saturated in the earth during precipitation. Storm water composed of various harmful products of the built environment is subsequently carried into storm drains during periods of rain, thus polluting nearby bodies of water; this is a form of water pollution called urban runoff.

Sprawling neighborhoods also affects the physical health of the population. Dependence on automobiles, low housing density, and greater distances to commercial areas have led to a decrease in walking, bicycling, and physical activity (Pohanka & Fitzgerald, 2004). This, along with poor urban design that makes it hard for pedestrians to walk has made strongly linked sprawl to obesity. Research has shown that, overall, residents of sprawling cities drive more, and weigh more (Bloomberg & Aggarwala, 2008). Obesity is particularly concerning, because it is strongly associated with diabetes and cardiovascular disease. Researchers Garden and Jalaludin (2008) conducted a research of the effects of urban sprawl on weight gain in the city of Sydney, Australia (Garden & Jalaludin, 2008). The objective of the study was to see the relationship of sprawl and the probability of an individual a) becoming obese, b) becoming overweight, c) having inadequate routine physical activity, d) walking within the last week, by use of a cross-sectional multi-level study design. The results of their study showed significant positive associations between sprawl in low-density areas of Sydney and all four evaluation criteria, strengthening the posed theory that urban sprawl is strongly associated with obesity (Garden & Jalaludin, 2008).

Sprawl has also been closely linked higher incidences of traffic accidents and pedestrian related car accidents. Many sprawling environments lack sidewalks to facilitate pedestrians the ability to walk in the community safely. Sprawl is also commonly associated with increased response times of emergency services, such as emergency medical systems and fire department members, likely secondary to traffic buildup. A recent study by Towbridge (2009) sought to examine the association between sprawling environments and increased EMS response time; his results revealed that Urban sprawl was found to be significantly associated with increased EMS response time and a higher probability of delayed ambulance arrival following motor-vehicle crashes in the U.S. (Towbridge, 2009).

Sprawl also carries some challenges that extend beyond the local environment. Increased traffic and automobile dependence contribute to increased levels of carbon dioxide emission burning, as well as oil. The combination of these two have been known to contribute to the greenhouse gas effect, and global warming. Global warming has been linked to several of the earth’s weather changes, and has been linked to natural disasters, including hurricanes. On a global scale, the potential effect of sprawl on global warming poses a challenge to the worthiness of urbanizing suburbs and rural areas.

**Model Programs**

***The Smart Growth Movement***

Smart growth can be defined as a policy framework that promotes an urban development pattern characterized by high population density, walkable and bikeable neighborhoods, preserved green spaces, mixed-use development, available mass transit, and limited road construction (Resnik, 2010). The smart growth movement promotes urbanization of outer-city communities, while simultaneously advocating for reduction of the harmful effects of urban sprawl. Advocacy groups that promote smart growth believe in the diversity of housing options, making it possible for families of any income group to have the opportunity to live in communities outside of urban city areas, which can help urban residents of lower socioeconomic status. Smart growth also advocates for accessible transportation for residents between home, workplaces and between neighborhoods, thus combating auto-dependence. Walking and exercise areas are also promoted. Also included in smart growth policy is the promotion of laws and regulations that can help to control land use and development (Resnik, 2010), as well as clean air policy advocacy.

In the 1970’s, smart growth was first implemented in the city of Portland, Oregon. Since then, it has been implemented in several cities across America. While it has many supporters, many developers and residents oppose the smart growth. Some residents believe that opening neighborhoods to urban residents can cause neighborhood disruption, increased crime, and decreased personal property with the requirement of sidewalk addition to neighborhoods (Resnik, 2010). In a nutshell, residents who are against smart growth feel as though its policy and advocacy promote the same urban inner city environment they escaped from earlier by moving outside of the city.

***Greenbelts***

A greenbelt refers to a physical area of open space–farmland, forest, or other green space–that surrounds a city or metropolitan area and is intended to be a permanent barrier to urban expansion (Bengham & Yeo-Chang, 2004). Greenbelts are highly restrictive, and because of that, greenbelts are not used in the United States; however, they have been used throughout Europe and Asia. Greenbelts may provide three broad categories of benefits: (1) amenity value related to scenic beauty, recreational opportunities, and bequest/heritage value; (2) fiscal savings due to increased efficiency in the provision of public services and infrastructure associated with more compact develop- ment; and perhaps most significantly (3) a wide range of ecosystem services such as air purification, habitat and bio- diversity protection, flood control, and water supply and quality (Bengham & Yeo-Chang, 2004). Negative effects of greenbelt policy include higher land and housing prices in the urban area surrounded by the greenbelt, additional costs incurred by commuters who live beyond the greenbelt and work in Seoul, and increased congestion and related quality of life impacts (Bengham & Yeo-Chang, 2006).

**Who are the stakeholders?**

Many stakeholders are involved with regard to the dilemma of urban growth and sprawl. In the broadest sense, all members of humanity can regarded as stakeholders, because issues of deforestation, air quality compromise, water pollution, environmental exposure to carbon dioxide and fossil fuel burning through automobile emissions affects everyone all over the world. Furthermore, urbanization is occurring in cities all over the world. With that said, cities and environments both international and domestically, are potentially susceptible to the harmful effects of sprawl if policies are not in place to help remedy those effects.

From a narrower perspective, stakeholders that are involved with the sprawl phenomenon include urban city dwellers, those who migrated to sprawl cities, homeowners of inner city, rural and suburban communities, business owners (rural, suburban and urban), disparity groups such as African-Americans, those of low socioeconomic status, and those without access to automobiles. Urban developers, politicians, administrators, city planners, government officials, legislators, health care providers and advocacy groups are also considered to be stakeholders with regards to sprawl. Lastly, various organizations are immensely involved with sprawl and the policies surrounding the matter, such as the World Health Organization and the Environmental Protection Agency, to name a few.

**Policy Recommendations**

In order to combat sprawl, the first sensible thing that needs to be considered is which areas should and should not be urbanized. The decision to or not to urbanize a rural or suburban area needs to be carefully assessed by all stakeholders involved, using a stringent risk-to-benefit analysis of the situation. One problem is that stakeholder power is not equally distributed by default; the disenfranchised inner city resident certainly would not have as much influential power as the legislator. While this is true, policies need to be put in place that allow all stakeholders to have a voice in determining if urban growth to a particular area is worth the potential risks. The worthiness or necessity of urbanizing a said area should be determined by analyzing variables that include the population density of the adjacent inner city, the amount of green space available outside of that urban area, amount of natural resources in the urban area, and whether or not it is financially feasible to build a community in that area that is accessible to all. Stakeholders could debate their various points in a controlled environment, and a voting process can follow so that all stakeholders’ ideas are adequately voiced and represented. Resnik (2010) referred to this process as deliberate democracy (Resnik, 2010).

Although it is somewhat restrictive, I am a supporter of greenbelt policy models. There should be a minimum of green space that should be completely inaccessible to dwellers or developers. However, instead of surrounding cities city completely with large greenbelts of land, the size of the land should vary, so that cities are not confined without possible room for growth, as leeway has to be made to consider bounded reality.

Smart growth policies have been shown to be effective in reducing sprawl while promoting public health, so I certainly endorse that model to target the negative effects of sprawl. However, policies should be active that places a cap on the amount of residents that can live in an area based on the density of the land being developed. The population density should correlate to the density of the land in such a way that development of the area does not allow too much space between neighbors or have neighbors living too tightly packed together. Single and low-density zoning must be prohibited. Transportation should be accessible to both those in the outer neighborhoods as well as inner city areas. Policies need to mandate the presence of sidewalks throughout urbanized areas, along with open walking spaces such as parks. Public health workers must reach out to the community to teach residents the importance of mobility and exercise, while informing the population of the harmful effects of automobile emission associated pollution.

To curb the harmful effects of air pollution secondary to traffic, car pool regulation policies should be instilled to be implemented during identified window periods of time when traffic is noted to be the highest in a given environmental area. Cheaper gas prices should be given to those who drive environmental-friendly vehicles.

**Summary**

All around the world, cities are rapidly growing and expanding outward to suburban and rural areas to accommodate the population. Urbanization presents many benefits to various stakeholders; urban growth is advantageous to inner city residents who the desire to migrate to more quiet and spacious areas to raise their families, while developers benefit financially from the influx of inner city dwellers moving to the outer city. These benefits are not without risks, as we examined that the welfare of the population’s health, urban, suburban or rural, can be greatly affected by the side effects of urban sprawl. While it is very easy for all to see their own situations and represent their needs and wants, we all must acknowledge the fact that we are more than just individuals; in the larger context, we each represent a significant fiber of society’s design. Special consideration needs to be made to acknowledge that some things that may enhance one’s life may cause detrimental effects to another’s well being. Sprawling environments effect can potentially affect residents who live in them adversely, as well as those who live outside of them; increasing sprawling environments can also affect global change. Stakeholders must collaborate to find the best interventions that benefit all involved, policy and advocacy is of paramount importance in reducing the harmful risks associated with urbanization and urban sprawl.

References

Bengston, D. M., & Yeo-Chang, Y. (2004). Seoul’s Greenbelt: An Experiment in Urban

Containment. *Policies for Managing Urban Growth And Landscape Change: A Key To Conservation,* 1. Access on December 14th, 2012 at http://nrs.fs.fed.us/pubs/gtr/gtr\_nc265.pdf

Bengston, D. M., & Yeo-Chang, Y. (2006). Urban Containment Policies and the Protection of

Natural Areas: The Case of Seoul's Greenbelt*. Ecology and Society: A Journal of Integrative Science for Resilience and Sustainability,* *11*(1).

Bloomberg, M., & Aggarwala, R. (2008). Think locally, act globally: how curbing global

warming emissions can improve local public health. *American Journal Of Preventive Medicine, 35*(5), 414-423.

Galea, S., & Vlahov, D. (2005). Urban Health: Evidence, Challenges, and Directions. *Annual*

*Review of Public Health, 26,* 341-365

Garden, F., & Jalaludin, B. (2009). Impact of Urban Sprawl on Overweight, Obesity, and

Physical Activity in Sydney, Australia. *Journal Of Urban Health, 86*(1), 19-30.

Katirai, M. (2011). Sprawl and fire department response times across the United States. *Journal*

*Of Emergency Management, 9(*3), 61-80.

Pohanka, M., & Fitzgerald, S. (2004). Urban sprawl and you: how sprawl adversely affects

worker health. AAOHN Journal, 52(6), 242-246.

Resnik, D. (2010). Urban sprawl, smart growth, and deliberative democracy. *American Journal*

*Of Public Health, 100*(10), 1852-1856. doi:10.2105/AJPH.2009.182501

Trowbridge, M., Gurka, M., & O'Connor, R. (2009). Urban sprawl and delayed ambulance

arrival in the U.S. *American Journal Of Preventive Medicine, 37*(5), 428-432. doi:10.1016/j.amepre.2009.06.016

Anthony: This may be one of the best papers that I have read. You clearly are in possession of a lot more intelligence than your subdued class voice mght suggest. You have completed a very articulate and well-crafted paper. Your paper reminds me that I did not spend enough time in class outlining, as you so well did, the impact and dynamics of urban sprawl. EXCELLENT job!

Score: 30/30