

Adam Steadland
Connie Everett
Heather Rud
Psychology of Health and Illness
4 December 2007
Prof. Toussaint

Barrier Mapping in Elkader, Iowa

Purpose:

The purpose of the experiment was to determine the location and types of physical barriers that inhibit the residents of Elkader, Iowa, from traversing easily. This was done through barrier mapping. A barrier map was made by taking photographs, recording of the location of physical barriers, and entering the data into a program called Google Maps (Figure 6).

Introduction:

The prevalence of obesity in the United States has skyrocketed over the past twenty years, and today approximately 60 percent of people in many states are overweight or obese (Lecture Notes, 10/25). One factor that may be contributing to the skyrocketing obesity rates is poor arrangement and upkeep of communities. Communities are not set up so that people can incorporate exercise into their daily routines, and today many people do not have the finances or time to obtain and use a gym membership. A study at the University of British Columbia found that “the way we live, particularly how our communities are designed, has a serious impact on our health... Just a 5 percent increase in the walkability of a neighborhood was associated with a quarter point drop in body mass index (BMI), a 32 percent increase in reported walking, and a 4.7 percent increase in total moderate and vigorous activity measured through hip worn activity monitors...” (New Evidence, 2006). This evidence supports the idea of barrier mapping. Barrier

mapping involves walking through a community, identifying problems, and recording and taking pictures of the barriers. Before one jumps into a barrier mapping project, one must know what to look for. There are several factors that contribute to healthy communities. Healthy communities are well connected, have a mix of land uses, are aesthetically pleasing, and are safe. They should have descent sidewalks, roads, crosswalks, and lights, and commercial areas should be surrounded by residential areas so that the commercial areas can be easily reached. Parks and play areas are also valuable assets. The landscape should be blanked with well-maintain trees and shrubs, and the liter should be kept to a minimum. Speed limits should be reasonable, and signs should be visible so that people do not have to fear for their children's or their own lives (Addressing Issues, 2001). Some common problems that pedestrians have include poor sidewalks, problems gaining access to sidewalks for those with disabilities, speeding traffic, dangerous areas, and a lack of important places to go (Why Walk, 2007). When these problems are addressed, the number of people walking as a form of transportation increases. There are several benefits to walking. First, the health of the environment may be improved. "According to the Department of Transportation, 25 percent of all trips are less than a mile, but 75 percent of those trips are made by car" (Addressing Issues, 2001), and "[A]ccording to the EPA, transportation is responsible for nearly 80 percent of carbon monoxide and 55 percent of nitrogen oxide emissions in the U.S." (Why Walk, 2007).

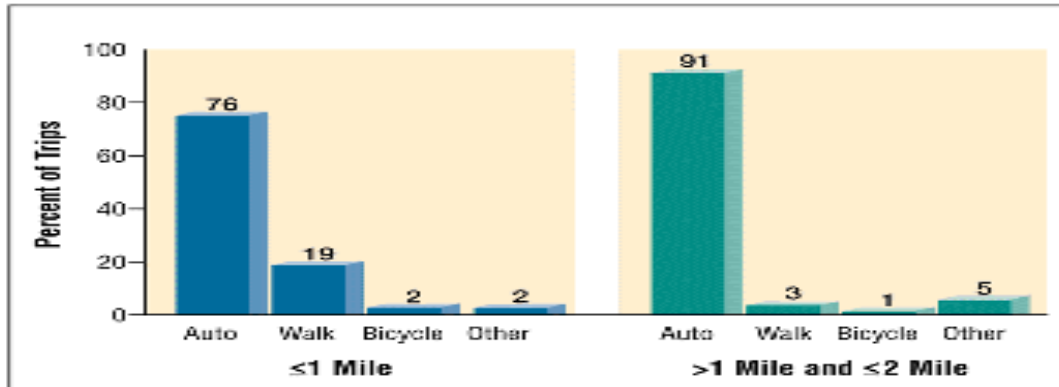


FIGURE 1. Trips made by different modes of transportation. Relatively few of the short trips are made on foot or bicycle, so opportunities to increase physical activity are lost.

From P. Schimek, unpublished data from the 1995 Nationwide Personal Transportation Survey

(Killingsworth and Schmid, 2001)

Obviously, much pollution may be avoided by addressing the walkability problems in the community. The health of individuals may also be improved by walking. Obesity rates may be decreased, and as more and more people start walking, outsiders may start to view the community as a good place to live. This may bring in business, increased opportunities for employment, and greater social interaction. Improving towns may also help those who are at a social or financial disadvantage. Creating walkable communities gives the youth and the poor people of the community a way to get around. People can also benefit financially from walking. “The cost of operating a sedan for one year is approximately \$7,834,” and the money that people save by walking can be spent on other things. Furthermore, traffic congestion may be reduced. “Many streets and highways carry more traffic than they were designed to handle, resulting in gridlock, wasted time and energy, pollution, and driver frustration...” Increasing walkability would relieve these problems (Why Walk, 2007). As one can see, barrier mapping may be a valuable tool that can be utilized to address community problems that are detrimental to people’s social, physical, and financial health.

Procedure:

Initially, a group was formed that consisted of six members, and the group was divided into two groups, each consisting of three members. The first group, consisting of Adam, Connie, and Heather, attended the September 13, 2007, Northeast Iowa Food and Fitness Initiative County Planning Team meeting in Clayton County, while the second group, consisting of Dave, Molly, and Paul, attended the October 2007 meeting. When Adam, Connie, and Heather attended their meeting, they found that most of the towns in Clayton County had a need for barrier mapping. Many of the communities expressed problems with sidewalks, traffic, and safety. After discussing this finding with the second group, the entire group decided to help out with the barrier mapping in Elkader. Dave, Molly, and Paul started the barrier mapping when they attended their meeting, while Connie and Heather drove down to Elkader at a later date to finish their work. Once the data collection was complete, Adam and Connie put the barriers on Google Maps so that the residents of the community could view them.

Results:

The town of Elkader, Iowa, had several positive attributes. It was well-organized with the commercial area in the center and the residential areas surrounding it. There was a good mix of land uses, and the residents had important places to go which were within walking distance. There was a sheltered picnic area and a grill by a river along Main Street where a family could enjoy an afternoon, and there were many businesses and shops that people could visit.



Figure 2. The picnic area on Main Street.

The town also had descent landscaping. There were several trees and bushes and many things to look at while walking around. There were benches, trash cans, drinking fountains, and phones available for use by those walking on Main Street, and all of these things would be important for pedestrians who were looking for a place to rest, discard their wastes, quench their thirst, or contact someone. There were also visible signs around the school that indicated that the speed limit was 15 mph. This would create a safe environment for school kids and warn drivers of their presence. Elkader had many positive attributes that other towns could aspire to obtain.



Figure 3. The signs around the school.

Despite the many positive aspect of Elkader, it was also found that the town had several physical barriers. These barriers most likely impacted the health of the community in a negative way.

The community had non-existent, cracked, narrow, and uneven sidewalks; curbs that dropped off into the street; objects hidden in the grass that caused stumbling; construction zones; overgrown shrubbery; and old, grungy-looking buildings. Many of these things were barriers to walking, rollerblading, and biking for people of all ages. The poor condition of the sidewalks and curbs probably prevented kids from using forms of transportation other than cars and busses to get to school, and families with children may have trouble walking together or pushing a stroller around town unless they wanted to walk in a single-file line and lift the stroller every time they crossed the street.



Figure 4. An extremely cracked sidewalk and a poorly kept curb.

Many of the streets connecting Main and 1st Street did not have sidewalks at all, and people were seen walking in the street due to the lack of sidewalks. This may be dangerous because those driving motor vehicles are not always careful. Cell phones, music, and others in the vehicle often distract drivers from what should be their main focus. Another problem found was that the play areas for children were not very accessible. The playground was down an extremely steep

hill, and the basketball courts were fenced off. This would not promote the social and physical health of the children of the community.



Figure 5. The playground and basketball courts.

The town could address many of these problems. The problems may be fixed through construction and policy changes, and the town may experience better health as a result of their efforts.

Discussion:

It is apparent that the town of Elkader, Iowa, has many physical barriers that may be altered in order to improve the health of the town. Elkader had some of the aspects that contribute to healthy community, but it also needed some work on connectivity, aesthetics, and safety. Barrier mapping may be the first step in improving the health of the residents, but the barriers need to be addressed by the town and policy changes need to be enacted in order to maintain the changes. The town also needs to address psychological and institutional barriers that prevent people from walking, educate people as to the benefits of walking, and inform law enforcement officers of the changes so that they can keep people safe and in line. The experiment was difficult in that the town was unfamiliar to the group. Only the residents of Elkader, Iowa, may be able to identify

and address their problems; therefore, the people of the town need to take the initiative to improve their health.

References

(2001). *Addressing Issues: Health and Community Design*. Retrieved November 28, 2007, from

Project for Public Spaces site:

http://www.pps.org/issue_papers/Health_and_community_design.htm

(2007). *Google Maps*. Retrieved December 1, 2007, from Google site:

http://maps.google.com/maps?hl=en&rlz=1T4ADBF_enUS238US238&q=Barrier+map+of+Elkader,+Iowa&um=1&ie=UTF-8&sa=N&tab=wl

Killingsworth, Richard E. and Thomas L. Schmid. (2001). *Community Design and*

Transportation Policies [Electronic Version]. The Physician and Sportsmedicine, 29.

Retrieved December 1, 2007, from

http://www.physsportsmed.com/issues/2001/02_01/killingsworth.htm

(2006). *New evidence further links community design and health, says Heart and Stroke*

Foundation. Retrieved November 28, 2007, from CNW Group site:

<http://www.newswire.ca/en/releases/archive/March2006/02/c3256.html>

Sanderson, Catherine A. (2004). Health Psychology. New Jersey: John Wiley and Sons, Inc.

(2007). *Why Walk*. Retrieved November 28, 2007, from Pedestrian and Bicycle Information

Center Site: <http://www.walkinginfo.org/>