

2008

A Social Ecological Approach of Community Efforts to Promote Physical Activity and Weight Management

Elizabeth Richards

Purdue University, erichards@purdue.edu

Mary E. Riner

Laura P. Sands

Purdue University, lsands@purdue.edu

Follow this and additional works at: <http://docs.lib.purdue.edu/nursingpubs>



Part of the [Nursing Commons](#)

Recommended Citation

Richards, Elizabeth; Riner, Mary E.; and Sands, Laura P., "A Social Ecological Approach of Community Efforts to Promote Physical Activity and Weight Management" (2008). *School of Nursing Faculty Publications*. Paper 3.
<http://dx.doi.org/10.1080/07370010802421145>

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.

RUNNING HEAD: Community Efforts to Promote Physical Activity and Weight

A Social Ecological Approach of Community Efforts
to Promote Physical Activity and Weight Management

Elizabeth (Libby) Richards, MSN, RN, CHES

Clinical Assistant Professor

Purdue University School of Nursing

502 N. University Street

West Lafayette, IN 47907

(765) 496-9463

Fax: (765) 494-6339

erichards@purdue.edu

Mary E. Riner, DNS, RN

Associate Professor

Director World Health Organization Collaborating Center in Healthy Cities

Indiana University School of Nursing

Laura Prouty Sands, PhD

Professor

Purdue University School of Nursing

Abstract: Obesity and physical inactivity are major public health problems in the United States. Campus-Community partnerships have the potential to address the community health and quality of life issues at the local level. The purposes of this study were: 1) to identify groups who are at risk for being overweight and physically inactive; 2) to identify a relationship between broad social ecological layers and weight and exercise levels; and 3) to identify community features that are associated with weight and exercise levels. Interventions for physical activity and weight reduction should consider the social ecological framework including environmental and social influences.

Key words: Social ecological model; physical activity; weight; community assessment; community interventions; obesity

Introduction

The World Health Organization (WHO) in 1978 provided leadership in promoting the community as the unit of change for improving the health of the people. Extending this work in 1987, the Ottawa Charter identified the five key components of community health promotion as: building healthy public policy, creating supporting environments, strengthening community action, developing personal skills, and reorienting health services to include health promotion (WHO, 1986).

Building community capacity is a strategy for achieving community health improvement. A key aspect of building community capacity is that it involves interaction of human capital, organizational resources, and social capital that exist within a given community that can be leveraged to solve collective problems and improve or maintain the wellbeing of the community (Chaskin, Brown, Venhatesh & Vidal, 2001). Capacity building is defined by Lebonte & Laverack (2001, p. 114) as the “increase in community groups’ abilities to define, assess, analyze and act on health” (or any other concerns of importance to their members).

This study was designed by a local healthy city committee and was part of a comprehensive community assessment of health and quality of life specifically focused on building community capacity to improve health, social services, and housing. The larger study was conducted through a campus-community partnership and provided an opportunity for undergraduate and graduate nursing students to engage in field work. The healthy city steering committee was composed of representatives from a hospital, community housing development agency, a social services center, and a university in a midwestern city. The study focused on the collection of diverse data, analysis of the data

in collaboration with the community, community planning based on key assets and needs, and implementation of interventions. The study presented here developed out of initial identification of community concern about obesity and physical activity among residents.

Background

Obesity and physical inactivity are major health threats in today's society. An estimated 66% of U.S. adults aged 20 years and older are either overweight or obese (CDC, 2007). Obesity is associated with an increased risk of cardiovascular disease, diabetes, hypertension, and other chronic illnesses. The Centers for Disease Control and Prevention (CDC) estimated obesity-attributable healthcare costs at \$75 billion, of which about half was publicly financed (Finkelstein, Febelkorn, & Wang, 2004).

Only 31% of U.S. adults age 18 and older engage in any regular leisure-time physical activity (AHA, 2007). Physical inactivity is a major contributor to obesity-related health problems and requires multi-component efforts to help reduce the epidemic of overweight and obesity. There are several perceived personal, organizational, and community environment barriers to physical activity.

Accordingly, the aims of this study were: 1) to identify groups who are at risk for being overweight and physically inactive 2) to identify a relationship between broad social ecological layers and weight and exercise levels and 3) to identify community features that are associated with weight and exercise levels. Specifically, individual, organizational, and environmental social ecological layers were examined. The purpose of this research was to inform the development of community based intervention programs that could be implemented by a neighborhood development association. The study aims were to develop social ecology recommendations for community interventions

related to reducing weight and increasing physical activity based on specific population characteristics. Interventions suggested for the studied community may be suitable for similar communities throughout the country.

An ecological framework guided this study in which multiple levels of nested structures (Bronfenbrenner, 1977) including: individual, interpersonal, organizational, community environment and policy factors are posited to influence a health problem. These levels of influence provide areas of focus for community based health promotion interventions. Current social ecological frameworks acknowledge multiple levels of influence on the adoption and maintenance of physical activity rather than the traditional sole focus on intrapersonal factors (Fleury & Lee, 2006). This study identifies individual, organizational, and community environment influences on being overweight or obese and the adoption of physical activity.

Individual Factors

Physical inactivity is higher among women, the elderly, minorities, and those with a low socioeconomic status (CDC, 2006). Several studies have shown that those with fewer years of education are less physically active than those with higher levels of education (Ainsworth et al, 2003; Clark, 1995). Research on the relationships between behavioral risk factors and socioeconomic status has found direct relationships between risk-reducing behaviors and level of income, education, and occupational status (Johnson et al, 1995; McElroy, 2002).

Women frequently indicate that lack of time due to the numerous roles of women contributes to not partaking in physical activity (Speck & Harrell, 2003). Urban women

have reported lack of time, lack of energy, being too tired, and lack of social support as barriers to physical activity (Wilcox et al, 2000).

In a community of primarily low-income minority residents, we assessed whether personal factors such as age, gender, and ethnicity are associated with a physician recommending that the individual lose weight. We also assessed whether these personal factors were associated with the frequency with which a person exercised.

Organizational Factors

Organizational influences on health behavior include formal and informal organizations as well as social institutions (McLeroy et al, 1988). People spend a majority of their lives in organizational settings including educational and occupational settings and these settings can have a strong impact on health related behaviors. Settings that discourage physical activity and/or poor nutrition choices could also be associated with increased risk for becoming overweight or obese. Organizational and institutional interventions have the ability to reach large numbers of people and span numerous levels of influence. For example, development and programming at a community center fitness facility allows youth to engage in basketball and volleyball leagues, parents to join aerobics and yoga classes, infants and toddlers to be cared for onsite, and families to socialize on a regular basis during family oriented events.

Research indicates that those who are not physically active at work are also inactive at home (Statistics Canada, 2003). McLeroy and colleagues (1988) state, “Organizational characteristics such as the use of incentives, management and supervisor support,...changes in benefits, and changes in the structure of work may all be used to support behavioral changes” (pg. 360). For example, worksite interventions that include

group competitions have had positive influences on increasing physical activity as they promote cohesiveness (McLeroy et al, 1988; Green et al, 2007).

This study assessed whether the need to lose weight and physical activity levels were associated with broad occupational categories. Health promotion interventions that utilize organizational influences need to consider how organizational characteristics can be used to support behavior change aimed towards increasing health promoting behaviors.

Community Environment Factors

Environmental influences on health behavior include relationships between community organizations, institutions, neighborhoods, and community networks. These relationships can serve as positive change agents for health promotion. Integrating resources for physical activity, physical features of the community and/or the presence of programs that support activity may influence behavior change (Fleury & Lee, 2006).

Community environmental factors including traffic, sidewalks, and aesthetics can influence levels of physical activity. Safe neighborhoods, which include a mixture of houses, commercial, retail, and recreation destinations, often are associated with higher levels of physical activity (Booth et al, 2005). Furthermore, higher prevalence of retail, grocery, residential, and businesses within walking distance is also associated with physical activity by way of running errands, shopping, and dining (Sisson, 2005).

Safety is a major environmental influence on engaging in physical activity. Perceptions of safety related to traffic, crime and other environmental factors are associated with levels of physical activity (Hooker et al, 2005). Residents who feel safe outside are more likely to participate in regular outdoor physical activity. Safety of the

sidewalks is also related to levels of physical activity. For example, well-maintained, continuous, well lit sidewalks can be more inviting for pedestrian traffic. In addition Duncan & Mummery (2004) found that aesthetics and location of recreational facilities are important influences in physical activity. A study by Gordon-Larsen, Nelson, Page, and Popkin (2006) revealed that the presence of recreational facilities in a community is associated with increased hours of physical activity and decreased weight.

This study assessed whether environment factors such as the perceived level of crime prevention, quality of sidewalks and availability of park and recreation facilities were associated with weight counseling and levels of physical activity.

Methods

Design

The community health assessment involved multiple community partners including a community development corporation. This development corporation encompassed many key partners including a large local hospital which provided financial support for data collection and leadership. The community multiservice center provided resources for data collection including meeting space and survey mailing. Nursing students from a local state university were involved in data collection. The Bachelor's of Science in Nursing (BSN) students collected data on various aspects of the community. The Master's of Science in Nursing (MSN) students were involved in data collection and analysis. Their focus was on compiling data from multiple sources into meaningful narrative summaries and visual displays for easy community use.

This cross-sectional, descriptive study utilized data collected for a community health assessment that was conducted during the fall of 2005. This study focused on

parts of the assessment that included self-reports of behaviors and resources associated with physical activity and weight.

Community Description

The surveyed community is comprised of 20 census tracts and covers approximately 10,000 acres. According to 2000 Census data, the community has approximately 95,883 residents with a median age of 35. Household income ranged from \$34,054-\$75,843 with a median of \$48,079. The residents are 56% Caucasian, 36% African American, 6% Hispanic, and 3% Asian.

This community is one of the most diverse and environmentally unique urban areas in the state. There is a watershed that is approximately 20 square miles. The creek, its banks, and the immediately adjacent area are an important natural system that contributes to recreation and water quality. In 1965, local residents created a community council. In 1975, this council created a fifty-acre park and in 1996, 22 acres were added to this park. That same year, the community was named “Neighborhood of the Year” by Neighborhoods USA for its environmental support. The goal of this council is to ensure quality of life in the community (LINCC, 2008).

This community also has an active community development corporation and multi-service center. Despite these achievements this community has also struggled with economic disparities and crime. Both the community council and the development corporation are actively working to improve the quality of life in this area.

Sample and Response Rate

Surveys were mailed to all residents in two purposively sampled census tracts by the community development corporation. Surveys were also available at the local multi-

service center. A total of 3,956 surveys were mailed and 293 were returned. Of these 293, 106 surveys were completed at the multi-service center and 187 were returned by mail. Due to sample size limitations, this study focused on Caucasians and African Americans (n=165). The generalizability of the findings may be limited by the low response rate. However, despite the low response rate we were able to obtain important data from a low-income inner city community which has high rates of physical inactivity and obesity. IRB approval was obtained through the University's Research & Sponsored Programs department.

Instrument

The survey instrument was modified from a previously used survey of the sponsoring institution and the content validity of the original instrument was determined to be adequate. The researchers provided consultation to the community who ultimately developed the final research tool. Several of the survey questions were modified from the Behavioral Risk Factor Surveillance System. Other questions were developed based on the need for certain assessment data such as housing, healthcare, environment, and social services. The survey instrument was assessed for face validity by the investigators and determined to be adequate. This survey was based on self-report which was the most appropriate data collection technique as it enabled a larger and broader sample to be reached. The survey consisted of 42 questions with likert-type response formats, short answer questions, and yes/no questions. This study focused on the questions related to weight counseling and physical activity and how these variables related to individual, organizational, and community environment factors.

Results

Demographics

Eighty percent of respondents were female. Fifty-six percent of the sample were African American and 44% were Caucasian. Forty percent of the sample was between 18-34, 34% was between 35-54, and 26% was 55 and over (Table 1). A majority of respondents had a lower socioeconomic status with 39% reporting a household income of less than \$20,000. Furthermore, 14% were Medicaid recipients and 18% were uninsured.

[Insert Table 1 Here]

Weight and Physical Activity

Of those surveyed, 27% reported they were told by their doctor to lose weight. When asked, “How often do you get physical exercise?” 35% responded several times a week or more, 15% responded weekly, and 50% answered never or rarely.

Table 2 describes the associations between being told by a physician to lose weight and personal, organizational, and community environment characteristics. Within the past year, 64% of the African Americans and 36% of the Caucasians reported a healthcare professional had advised them to lose weight. In stratified analysis, statistically significant differences were found among those who were > 34 years old; 63% of African Americans reported being advised to lose weight compared to 38% of Caucasians [p=0.022].

Table 3 shows the associations between personal, organizational, and community environment factors and exercise frequency. Sixty-three percent of African Americans reported exercising never or rarely compared to 38% of Caucasians. Stratified analysis

revealed that among Caucasians and African Americans who were 35-54, 65% reported never or rarely exercising whereas those 55 and older only 35% reported this.

Furthermore, only 43% of Caucasians and African Americans with an age of 35-54 reported exercising at least several times per week compared to 57% of those 55 and older [$p=0.018$]. Females (83%) were more likely to report never or rarely exercising compared to males (17%).

In the study community, the physical environment may also be associated with levels of physical activity. The less a respondent exercised, the more likely they were to respond that their community needed new parks ($p= 0.007$). Of those who never or rarely exercised, 73% felt the community needed new parks compared to 64% of those who exercised weekly and 54% of those who exercised more than weekly. In subgroup analysis, 71% of respondents reported their community needed more parks and recreation facilities and also reported that a healthcare provider had told them to lose weight compared to 29% who did not think there needed to be more parks and recreation facilities. Similarly, it was found that 67% of respondents who reported the need for sidewalks improvement also reported that a healthcare provider had told them to lose weight compared to only 33% who thought the sidewalks were fine.

[Insert Table 2 and 3 Here]

Discussion

This study identified individual, organizational, and community environment risks for being overweight and inactive. These findings inform community interventions based on an ecological framework which can be used in conjunction with the community

assessment data to develop recommendations for evidence-based community health interventions to increase physical activity.

According to our results, regardless of race, those age 35-54 were the least physically active. Of those ages 35-54, 65% reported never or rarely exercising whereas those 55 and older only 35% reported this. These findings contradict what has been found in the 2006 Behavioral Risk factor Surveillance System (BRFSS) data and the National Health Interview Survey (NHIS) (CDC, 2006; Adams & Schoenborn, 2006). BRFSS (2006) shows that those who are 55 and older are more likely to be physically inactive than their younger counterparts. In addition, the National Health Interview Survey (NHIS) showed that the percentage of adults who engaged in regular physical activity declined steadily with age (Adams & Schoenborn, 2006). Our findings may differ from this due to the lower socioeconomic status of this community. The socioeconomic status of those surveyed may contribute to several barriers to physical activity such as time constraints, lack of access, and competing roles which include that of parent, employee, and caregiver.

In addition, a racial difference was seen in terms of previous weight counseling. Within the past year, 64% of the African Americans and 36% of the Caucasians reported a healthcare professional had advised them to lose weight. These findings correlate with BRFSS data which shows that Caucasians are more likely to be overweight whereas African Americans are more likely to be obese (CDC, 2006). Accordingly, the NHIS (2006) reports that African Americans are more likely to be overweight and obese when compared to Caucasians. In the studied community, socioeconomic status most likely played a large role in the disparities seen in inactivity and weight (Peterson et al, 2007).

Lastly, we found that young African Americans were most likely to be counseled to lose weight and least likely to exercise. Once again, these findings contradict the BRFSS and NHIS in terms of physical activity. These sources show that age is directly associated in physical activity. As a person ages, they are less likely to participate in physical activity (CDC, 2006). Furthermore, BRFSS and NHIS show weight increasing with age.

Our findings may differ from national results due to the demographics of those surveyed. Our sample was a convenience sample of high risk individuals. In 2007, BRFSS respondents were 78.7% Caucasian and 4.5% African American where our respondents were 44% Caucasian and 56% African American. Furthermore, BRFSS respondents' reported income was considerably higher than our respondents and unemployment rates were also significantly different between our community and BRFSS data (39% and 26% respectively). These issues could lead to a possible lack of accessible means of physical activity and other barriers such as time constraints. It is important to compare our findings with national findings such as the BRFSS and the NHIS to show the disparities found in this community and others like it.

Individual Factors

It was determined that young African Americans were at greatest risk for being counseled to lose weight and being physically inactive. Proposed community based interventions should be accessible to young African Americans and specifically tailored to engage this population. Furthermore, a behavioral intervention that occurs through building, strengthening, and maintaining social networks which establish supportive relationships for behavior change may be effective in promoting physical activity in a

community such as the one described in this study (Kahn & Heath, 2001). Such interventions could include walking groups, buddy systems, exercise contracts and exercise groups. This is a suitable intervention to implement in the studied community because it has a very active and involved multi-service center that could be used to create and sustain social networks.

The use of lay health advisors (LHA) has been shown to be an effective strategy to promote health behaviors. A LHA is a trusted community member whose advice is sought for health related issues (Marin, Burhansstipanov, & Connell, 1995). The involvement of lay health advisors in the design, implementation and evaluation of health promoting interventions can help ensure that programs address issues of importance to the community and promote sustainable, community-wide change (Marin, Burhansstipanov, & Connell, 1995). African American LHAs have been used successfully in health promotion programs with the African American population in health promotion interventions for breast cancer, chronic kidney disease, and diabetes (Wilson et al, 2008; Carlson et al, 2006; Madigan, 2007). There is a lack of research regarding the use of LHAs and physical activity interventions. Given that greater than half of the respondents were African Americans, such an intervention would be appropriate to the studied community and other similar communities.

Organizational Factors

Half of the studied population reported exercising never or rarely. Since greater than 60% of the respondents indicated they are employed, worksite interventions would reach a majority of participants. The CDC's Task Force on Community Preventive Services (2007) has published systematic reviews with recommendations for community

interventions to increase physical activity related to informational, behavioral and social, and environmental and policy approaches. One approach to encouraging activity is informational approaches which focus on motivating and enabling people to change behavior and to maintain that change over time. Inexpensive environmental prompts can have an impact on physical activity behaviors. For example, several studies have shown that small signs near stairways and escalators are effective in increasing use of stairs instead of escalators or elevators by an average of 54% (Adams et al, 2006). This intervention would be appropriate for the studied community because implementation costs are low and it can be easily implemented at places of employment to target the at-risk age group of 35-54.

This CDC Task Force also found that worksite interventions which combine nutrition and physical activity are effective in reducing weight the short term (CDC, 2005). Nearly two-thirds of those surveyed were currently employed suggesting that worksite interventions could affect the vast majority of respondents. Worksite interventions could include providing showers and/or changing rooms at work to encourage employees to walk, run, bike to work or work-out before work or during their lunch time.

Community Environment Factors

Those who exercised the least were most likely to report that new parks were needed. Community environment factors are important to this community. Nearly 80% of residents surveyed indicated the need for sidewalk improvement and more parks or recreational facilities. Evidence that environment can affect exercise patterns is revealed in the finding that 66% of those who indicated a need for new sidewalks also reported

never or rarely exercising. Safety is also a concern for this population as greater than 80% of respondents reported the need for increased crime prevention. Research has shown that perceived neighborhood safety is associated with physical activity levels (Bennett, et al, 2007; Harrison, 2007). A recommended environmental intervention for communities such as the one assessed in this study involve the creation or enhancement of areas to be used for physical activity along with informational approaches (CDC, 2007). An ecological approach would involve community support for improving safety of neighborhoods, availability of well-maintained sidewalks, and improving access to parks and recreational facilities. Interventions should include targeting at risk individuals and environmental improvements needed to encourage physical activity.

Limitations and Recommendations

This study did not have access to body mass index (BMI) data; therefore, we were unable to determine the validity of the physician's recommendations for respondents to lose weight as an indicator of being overweight. It is possible that our estimates of the prevalence of being overweight or obese were conservative because some healthcare providers may have been too busy to provide weight counseling during clinic visits. Furthermore, community members' perspectives on proposed interventions should be obtained in follow up efforts to determine if they are acceptable and feasible.

Conclusions

This study provides data about a community with a low socioeconomic status. Typically residents of low-income communities are less likely to implement their own interventions such as joining a gym due to cost restraints. Therefore, it is necessary to determine which broad environmental interventions are needed that could be feasibly

implemented in this community. This study revealed that surveying the needs and behaviors of a community could inform the development of social ecological interventions for weight reduction and physical activity promotion tailored to the specific needs of the community.

Community interventions have the potential to increase participation in physical activity and decrease weight. Research has shown that multilevel interventions that meet the needs of a specific population and address individual, organizational, and environmental factors are more likely to be successful than those that only focus on individual factors (Fleury & Lee, 2006). It is imperative to determine the groups and environmental factors that cause individuals to be vulnerable to physical inactivity so that programs and public policy can be targeted to the most in need.

References

- Adams, M., Hovell, M., Irvin, V., Sallis, J., Coleman, K., & Liles, S. (2006). Promoting stair use by modeling: An experimental application of the behavioral ecological model. *American Journal of Health Promotion, 21*(2), 101-109.
- Adams, P. & Schoenborn C. (2006). Health behaviors of adults: United States, 2002–04. National Center for Health Statistics. *Vital Health Stat 10*(230). 2006.
- Ainsworth, B., Wilcox, S., Thompson, W., Richter, D., & Henderson, K. A. (2003). Personal, social, and physical environmental correlates of physical activity in African American women in South Carolina. *American Journal of Preventive Medicine, 25*(Suppl), S23–S29.
- American Heart Association. 2007. Physical inactivity. Retrieved September 30, 2007 from <http://www.jamielangle.com/Physicalinactivity.pdf>.
- Bennett, G., McNeill, L., Wolin, K., Duncan, D., Puleo, E., & Emmons, K. (2007). Safe to walk? Neighborhood safety and physical activity among public housing residents. *PLOS Medicine, 4*(10), 1599-1606.
- Booth, K., Pinkston, M., & Poston, C. (2005). Obesity and the built environment. *American Dietetic Association, 105*(5), S110-S117.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 5*13-531.
- Carlson, B., Meal, D., Magwood, G., Jenkins, C., King, M., & Hossler, C. (2006). A community-based participatory health information needs assessment to help eliminate diabetes information disparities. *Health Promotion Practice, 3*(supp), 213S-22S.

- Centers for Disease Control and Prevention. (2002). Recommendations to increase physical activity in communities. *American Journal of Preventive Medicine*, 22(4S), 67-72.
- Centers for Disease Control and Prevention. (2006). Behavioral risk factor surveillance system.
- Centers for Disease Control and Prevention. (2007). Guide to community preventative services: Physical activity. Retrieved July 7, 2007 from <http://www.thecommunityguide.org/pa>.
- Centers for Disease Control and Prevention. (2005). Guide to community preventative services: Worksite programs combining nutrition and physical activity are recommended to control overweight or obesity. Retrieved June 7, 2006 from www.thecommunityguide.org/obese/obese-int-worksite.pdf
- Centers for Disease Control and Prevention. (2007). National Health and Nutrition Examination Survey. Retrieved September 7, 2007 from http://www.cdc.gov/nchs/products/pubs/pubd/hestats/overweight/overwght_adult_03.htm.
- Chaskin, R.J., Brown, P., Venhatesh, S., & Vidal, A. (2001). *Building Community Capacity*. New York, NY: Aldine de Gruyter, 1-268.
- Clark, D. O. (1995). Racial and educational differences in physical activity among older adults. *Gerontologist*, 35, 472-480.
- Duncan, M. & Mummery, K. (2004). Psychosocial and environmental factors associated with physical activity among city dwellers in regional Queensland. *Preventative Medicine*, 40, 363-372.

- Finkelstein, E., Fiebelkorn, I., & Wang, G. (2004). State-level estimates of annual medical expenditures attributable to obesity. *Obesity Research, 12*, 18-24.
- Fleury, J. & Lee, S. (2006). The social ecological model and physical activity in African American women. *American Journal of Community Psychology, 37*(1/2), 129-140.
- Gordon-Larsen, P., Nelson, M., Page, P., & Popkin, B. (2006). Inequality in the built environments underlies key health disparities in physical activity and obesity. *Pediatrics, 117*(2) 417-424.
- Green, B. Cheadle, A., Pellegrini, A., & Harris, J. (2007). Active for life: A work-based physical activity program. *Preventing Chronic Disease: Public Health Research, Practice, and Policy, 4*(3), 1-7.
- Harrison R., Gemmell, I., & Heller, R. (2007). The population effect of crime and neighbourhood on physical activity: an analysis of 15,461 adults. *Journal of Epidemiology and Community Health, 61*, 34–39.
- Hooker, S., Wilson, D., Griffin, S., & Ainsworth, B. (2005). Perceptions of environmental supports for physical activity in African American and White adults in a rural county in South Carolina. *Preventing Chronic Disease: Public Health Research, Practice, and Policy, 2*(4), 1-10.
- Johnson, K., Anderson, N., Bastida, E., Kramer, B., Williams, D., & Wong, M. (1995). Macrosocial and environmental influences on minority health. *Health Psychology, 14*, 601–612.

- Kahn, E. & Heath G. (2001). Increasing physical activity: A report on recommendations of the Task Force on Community Preventive Services. *Morbidity and Mortality Weekly Report* 50(RR18), 1-16.
- Labonte, R & Laverack, J. (2001). Capacity building in health promotion, Part 1: for whom? And for what purpose? *Critical Public Health*, 11(20), 111-127.
- Let's Improve the Neighborhoods of Crooked Creek. (2008). Retrieved March 8, 2008 from <http://www.crookedcreekneighborhoods.org>.
- Madigan, M., Smith-Wheelock, L. & Krein, S. (2007). Healthy hair starts with a healthy body: hair stylists as lay health advisors to prevent chronic kidney disease. *Preventing Chronic Disease*, 4(3), A64.
- Marin, G., Burhansstipanov, L., & Connell, C. M. (1995). A research agenda for health education among underserved populations. *Health Education Quarterly*, 22, 346-363.
- McElroy, M. (2002). Resistance to exercise: A social analysis of inactivity. Champaign, Ill: Human Kinetics.
- McLeroy, K., Bibeau, D., Steckler, A. & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly*. 15(4); 351-377.
- Peterson, K., Dubowitz, T., Stoddard, A. Troped, T. Sorensen, G. & Emmons K. (2007). Social context of physical activity and weight status in working-class populations. *Journal of Physical Activity and Health*, 4, 381-396.
- Sisson, S. (2005). Taking it to the streets: Physical activity and the built environment: Part one. *ACSM's Health & Fitness Journal*, 9(6), 8-11.

- Speck, B. & Harrell, J. (2003). Maintaining regular physical activity in women: Evidence to date. *Journal of Cardiovascular Nursing*, 18(4) 282-291.
- Statistics Canada. (2003). Canadian Community Health Survey. Retrieved March 31, 2008 from <http://www.cchalw-ccsvat.ca>.
- Wilcox, S., Castro, C., King, A., Housemann, R., & Brownson, R. (2000). Determinants of leisure time physical activity in rural compared with urban older and ethnically diverse women in the United States. *Journal of Epidemiology and Community Health*, 54, 667-672.
- Wilson, T., Fraser-White, M., Feldman, J., Homel, P., Wright, S., King, G., Coll, B., Banks, S., Davis-King, D., Price, M., & Browne, R. (2008). Hair salon stylists as breast cancer prevention lay health advisors for African American and Afro-Caribbean women. *Journal of Healthcare for the Poor and Underserved*. 19(1), 216-226.
- World Health Organization (1978). Declaration of Alma Ata. Retried 10/11/07 at www.euro.who.int/aboutwho/policy/20010827_1.
- World Health Organization. (1986). Ottawa Charter for Health Promotion. Retrieved 10/11/07 at www.uero.who.int/aboutwho/policy/20010827_2.

Table 1. Overall Assessment Responses (n = 165)

Question	% of all Respondents
What is your age?	
18-34	40%
35-54	34%
55+	26%
What is your gender?	
Male	20%
Female	80%
What is your ethnic background?	
Caucasian	44%
African-American	56%
What is your household income?	
< \$20,000	39%
\$20,000 - \$45,000	32%
> \$45,000	30%
What type of health insurance do you have?	
Employer Paid	68%
Medicaid	14%
Uninsured	18%
In the past year, has a healthcare provider advised you to lose weight?	
Yes	27%
No	73%

How often do you exercise?

Never or rarely	50%
Weekly	15%
Several times a week	35%

What best describes the type of job you have?

Laborer	7%
Professional	54%
Unemployed	39%

Your community needs to improve sidewalks.

Agree	79%
No or neutral	21%

Your community needs to improve parks and recreation facilities.

Agree	78%
No or neutral	22%

Your community needs to improve crime prevention.

Agree	84%
No or neutral	16%

Table 2. Bivariate Analysis of Factors Associated with Weight Counseling (n = 165)

	HCP Told to Lose Weight		P-value
	YES	NO	
Personal			
Age			0.137
35-54	65%	52%	
55+	35%	48%	
Gender			
Male	20%	20%	0.943
Female	80%	80%	
Race			
Caucasian	36%	47%	0.113
African-American	64%	53%	
Organizational			
Occupation			0.321
Laborer	6%	6%	
Professional	65%	50%	
Unemployed	29%	39%	
Environment			
Need more parks			0.334
Yes	71%	64%	
No or neutral	29%	36%	

Need new sidewalks			0.942
Yes	67%	67%	
No or neutral	33%	33%	

Need more crime prevention			0.583
Yes	76%	73%	
No or neutral	24%	27%	

Table 3. Bivariate Analysis of Factors Associated with Exercising (n = 165)

	Frequency of Exercise			P-value
	Never/Rarely	Weekly	Several times a week	
Personal				
Age				0.018
35-54	65%	65%	43%	
55+	35%	35%	57%	
Gender				0.404
Male	17%	26%	23%	
Female	83%	74%	77%	
Race				0.019
Caucasian	38%	43%	53%	
African-American	63%	58%	47%	
Organizational				
Occupation				0.416
Laborer	4%	11%	6%	
Professional	55%	60%	60%	
Unemployed	41%	29%	34%	
Environment				
Need more parks				0.007
Yes	73%	64%	54%	
No or neutral	28%	36%	46%	

Need new sidewalks				0.770
Yes	66%	61%	67%	
No or neutral	34%	40%	33%	
<hr/>				
Need more crime prevention				0.954
Yes	74%	72%	73%	
No or neutral	26%	28%	28%	
