

**OVERWEIGHT AND OBESITY IN ALEGHENY COUNTY: DESIGNING AN  
INTERVENTION FOR THE COMMUNITY WITH THE COMMUNITY**

by

Katharine Rose Fitzgerald

BA, University of New Mexico, 1998

MID, University of Pittsburgh, 2005

Submitted to the Graduate Faculty of  
Graduate School of Public Health in partial fulfillment  
of the requirements for the degree of  
Master of Public Health

University of Pittsburgh

2006

UNIVERSITY OF PITTSBURGH

Graduate School of Public Health

This thesis was presented

By

Katharine Rose Fitzgerald

It was defended on

April 6, 2006

and approved by

Carol McAllister, PhD, Associate Professor, Behavioral and Community Health Sciences,

Graduate School of Public Health, University of Pittsburgh

Rachel Hess, M.D., Assistant Professor, Department of Medicine, University of Pittsburgh

Ellen Olshansky, PhD, Chair, School of Nursing, University of Pittsburgh

Martha Ann Terry, PhD, Thesis Advisor, Senior Research Associate, Behavioral and  
Community Health Sciences, Graduate School of Public Health, University of Pittsburgh

# **OVERWEIGHT AND OBESITY IN ALLEGHENY COUNTY: DESIGNING AN INTERVENTION FOR THE COMMUNITY WITH THE COMMUNITY**

Katharine R. Fitzgerald, MPH

University of Pittsburgh, 2006

This project was designed as an assessment of the overweight and obesity resources available in the City of Pittsburgh and the two boroughs of Braddock and Wilksburg. This project also designs a participatory action research intervention to address the specific needs and barriers of the region in regard to healthy lifestyles. This project was designed to address three objectives of HealthyPeople 2010: 1) to increase the proportion of adults who are at a healthy weight, 2) to increase the proportion of adults who exercise for at least 30 minutes daily and 3) to increase worksite accessible nutrition and weight management counseling.

## Methodology

Two assessments of the region, a physical activity resource assessment and assessment of health and wellness opportunities offered by the regions top ten employers were facilitated. The physical activity resource assessment surveyed five parks in the region for walkability, barriers and incentives for community use. In conjunction with the assessment a participatory action research intervention with 13 collaborative partners was designed. The next stage assessments include focus groups and surveys.

## Results

The five parks were found to offer a refuge from urban life within the city limits. Amenities in regard to public toilets, park information, parking and exercise information such as mile markers were often lacking. Eight of ten region employers offer health and wellness programs. The scope of services varied, as did employee utilization of such services.

## Conclusions

Allegheny County offers excellent venues for outdoor recreation. Unfortunately the public does not access these facilities. Employers in the region offer health and wellness programs but without substantial incentives, employees may abstain from participation. Determining the specific barriers to healthier lifestyle choices through participatory action research methodology is a first step to improving the overall public health in the region.

## TABLE OF CONTENTS

<b>PREFACE.....</b>	<b>VIII</b>
<b>1.0 INTRODUCTION.....</b>	<b>1</b>
<b>1.1 PARTICIPATORY ACTION RESEARCH (PAR) .....</b>	<b>2</b>
<b>1.2 BARRIERS TO PAR.....</b>	<b>5</b>
<b>1.2.1 How participatory action research works .....</b>	<b>6</b>
<b>2.0 BACKGROUND: OBESITY AND OVERWEIGHT .....</b>	<b>9</b>
<b>2.1 INFLUENCES ON WEIGHT AND BEHAVIOR: SEDENTARY BEHAVIOR .....</b>	<b>12</b>
<b>2.2 INFLUENCES ON WEIGHT AND BEHAVIOR: DIET .....</b>	<b>13</b>
<b>2.2.1 Barriers to a healthy diet.....</b>	<b>14</b>
<b>2.2.2 Exercise: how much are we getting? .....</b>	<b>15</b>
<b>2.2.3 Barriers to physical activity .....</b>	<b>17</b>
<b>2.2.3.1 Active and Walkable Community .....</b>	<b>21</b>
<b>3.0 ALLEGHENY COUNTY .....</b>	<b>25</b>
<b>3.1 FOCUS GROUPS DIABETES PATIENT PORTAL: METHODOLOGY .</b>	<b>29</b>
<b>3.1.1 Focus group discussions .....</b>	<b>31</b>
<b>3.1.2 Barriers to exercise .....</b>	<b>32</b>
<b>3.2 ALLEGHENY COUNTY HEALTH DEPARTMENT .....</b>	<b>33</b>
<b>4.0 DESIGN OF PARTICIPATORY ACTION RESEARCH FOR ALLEGHENY COUNTY .....</b>	<b>36</b>
<b>4.1 SPECIAL POPULATIONS .....</b>	<b>38</b>
<b>4.2 THREE TARGETED COMMUNITIES IN ALLEGHENY COUNTY.....</b>	<b>39</b>
<b>4.3 ASSESSMENT COMPONENTS .....</b>	<b>46</b>
<b>4.3.1 Top 10 employer assessment .....</b>	<b>46</b>

4.3.2	Physical activity resource assessment in Allegheny County .....	48
4.3.3	Discussion.....	52
4.3.4	Planned assessments .....	53
4.3.5	Limitations of project design .....	55
4.4	DISCUSSION.....	56
5.0	CONCLUSION.....	58
APPENDIX A .....		59
APPENDIX B .....		59
APPENDIX C .....		60
APPENDIX D.....		62
APPENDIX E .....		64
APPENDIX F .....		65
BIBLIOGRAPHY .....		67

## LIST OF TABLES

Table 1	Rates of Diagnosis Hypertension and Type 2 Diabetes.....	10
Table 2	Nationwide and Pennsylvania Fruit and Vegetable Consumption.....	13
Table 3	U.S. Physical Activity Statistics.....	16
Table 4	Self-Reported Barriers to Exercise, Type 2 African Americans.....	19
Table 5	Pedestrian and Bicycle Fatalities, Nationwide/Pennsylvania.....	22
Table 6	Pedestrian and Bicyclist Injury Rate, Nationwide.....	22
Table 7	Number of Offenses Reported Pittsburgh.....	26
Table 8	BRFFS Pittsburgh.....	27
Table 9	Allegheny County Motor Vehicle Pedestrian Hospitalizations.....	28
Table 10	Age Adjusted Disease Rate Allegheny County.....	34
Table 11	Three Targeted Communities in Allegheny County.....	40
Table 12	Top Ten Employers in Allegheny County.....	47
Table 13	Five Trails Assessed in Pittsburgh.....	53

## **.LIST OF FIGURES**

Figure 1	Ghost Bike .....	27
Figure 2	Frick Park .....	49
Figure 3	Highland Park.....	49
Figure 4	Washington’s Landing.....	50
Figure 5	Heritage Trail.....	51
Figure 6	Southside Trail.....	52

## **PREFACE**

I would not be here was it not for three remarkable women:

Dr. Ellen Olshansky, for making qualitative research accessible to me and the greater university community. Your enthusiasm and warmth for what you do are the highest compliment to your profession and the greatest gift to your colleagues.

Dr. Rachel Hess has challenged me in many ways allowing me to accomplish more than I ever thought I was capable of doing.

Dr. Martha Terry has given me immeasurable support through two advanced degrees. Her patience and her insight have provided me with the focus and strength to accomplish my goals. It was in Dr. Terry's focus group class that I first realized my love of qualitative research.



## 1.0 INTRODUCTION

This thesis is a design of a community collaborative framed participatory action research project based in the city of Pittsburgh and the boroughs of Wilkinsburg and Braddock. My motivation for designing this intervention was culled from my experiences facilitating focus groups with patients with diabetes for the Diabetes Patient Portal Project and from my interactions with patients at the General Internal Medicine Clinic, Oakland. The focus group participants predominantly shared a sense of emotional distress from their diagnosis with Type 2 diabetes; unfortunately, the participants often failed to acknowledge how their own choices impact their health. Obese and overweight patients in the clinic offered a greater insight into the impacts of lifestyle choices: I have witnessed more than one patient in the past 18 months seeking treatment for conditions associated with uncontrolled diabetes; some of these patients have lost limbs as a result of their lifestyles.

Through this thesis and participatory action research design I hope to gain an opportunity to educate, empower and alter the potentially horrific consequences of over-consumption and inactivity. The goal of the project is to reduce the incidence and prevalence of obesity and overweight in the region by encouraging healthier lifestyle choices. Participatory action research is the most effective vehicle for this intervention as it offers the greatest opportunity for including the individual needs and strengths of the community; participatory action research also offers the greatest opportunity to engage residents in influencing their environment. The

participatory action component seeks first to understand the individualized barriers to healthy diets and physical activity. This thesis next details specific intervention components. These components are designed with the intention of collaborating with identified community partners; collaborators will inform and serve as the implementation arms of the project.

The participants and patients that I have encountered over the last 18 months have demonstrated the necessity of multi-faceted interventions. Mental health, physical health, and community health are all related and must all be given the same attention and dedication by health workers and policy makers. By treating the symptoms in all three domains and by practicing preventive health care and wellness on individual and community levels, our region will set the foundation for true health opportunity for all generations.

## **1.1 PARTICIPATORY ACTION RESEARCH (PAR)**

Participatory community research or participatory action research (PAR) is an approach to community intervention that includes all stakeholders. The stakeholders participate as full collaborative partners and share in ownership of the design and goals of the project (Israel, Schulz, Parker, and Becker, 1998; Kelly 2005). Israel, Schulz, Parker, and Becker, (1998) have divided the components specific to *community health research* into eight essential elements:

1. The community possesses its own identity
2. The community research should build on existing community resources
3. Collaborative partnerships should be integrated into all phases of the project
4. Project should aspire to benefit all stakeholders
5. Participants and stakeholders should be educated and empowered through the process
6. The process should include ongoing assessment and evaluation of process and results
7. The health research encompasses ecological and physical well-being
8. All partners receive results and conclusions of the research. (p. 178-180).

PAR research is a movement away from traditional research as the ultimate goal moves beyond “knowledge produced for understanding” and instead seeks “knowledge produced for individual community change and empowerment”. PAR also differs from traditional research theory in that rather than seeking to prove a hypothesis from the onset, theory “is generated from the collaboration with the stakeholders” (Kelly, 2005).

Community health research can require extensive emotional, financial and time commitments for stakeholders. In return for these investments from the stakeholders, PAR offers the opportunity to gather data specific to the target community; this allows for a more comprehensive intervention design that will ultimately benefit the stakeholders (Torres, 1998). This information then offers stakeholders the power and opportunity to understand and use the strengths and barriers within the existing infrastructure and networks. These data may thus be used to enhance the quality of life and opportunity for all residents and create new opportunities within the established community structures. In this manner, PAR groups may conduct needs assessments for a small organization or in a wider context such as community.

According to Kemmis and McTaggart (2000), the three distinguishing characteristics of PAR are: “shared ownership of research projects, community based analyses of social problems and an orientation towards community action” (p. 568). Therefore, while designing a PAR project, researchers must be mindful that a result of shared ownership is that community objectives may differ from research objectives. Understanding this, researchers must reveal their intentions from the beginning; although consensus on goals may not be reached, continuous communication will allow collaborating participants the opportunity to withdraw or to redefine

their roles in the project and allow participants to meet at least some of their goals. Examples of the diverse range of successful participatory action research projects facilitated in the past have included clinician empowerment (White and Verhoef, 2005), childhood sexual assault survivors' empowerment and educational material (Teram, Schachter and Stalker, 2005), and intimate partner violence education and prevention in rural communities (Frasier, 2004).

Philosophies of participatory action research are based in part on the writings of Paulo Freire (1970) in "Pedagogy of the Oppressed". Freire wrote,

That no pedagogy which is truly liberating can remain distant from the oppressed by treating them as unfortunates and by presenting for their emulation from among the oppressors. The oppressed must be their own example in their struggle for redemption.

For Freire, it is not enough to define a model and encourage communities or peoples to engage it for change. It is not enough to educate policy makers to enable choices that broaden opportunity for a community. It must be those who are served, those who are oppressed or those who are most deeply embedded within the community, who must define, design and implement change.

Participatory action research aspires to create community change with the ideas and passion of all members of the community. It is a method of equalizing the existing power structure and allowing voice to the often unheard. According to Reason and Bradbury (2001) PAR must include all affected by the agenda at hand; all participants should also be able to understand the information that is being discussed, truly allowing PAR the opportunity to educate.

PAR should also encourage a state of reflection in the group to allow for group problem solving, information gathering and sharing as well as group decision-making. It is this stage of

PAR that manifests itself as a “scholarly work”; it allows the community and researchers the opportunity to define what they have learned and to prioritize the next step (Kelly, 2005). Participant reflection is a key component to self-awareness and awareness of the surrounding community. Through awareness, participants also achieve the ultimate goal of PAR: participants become students, learning not only the tools of PAR but also new insights into their own community and about themselves.

## **1.2 BARRIERS TO PAR**

Specific barriers to successful facilitation of a community health projects include 1) limited funding potential, 2) unrealistic expectations of the researcher, 3) the time commitment associated with PAR for both participants and researchers and 4) maintaining group momentum throughout the process. Overcoming these barriers is discussed below.

Funding issues for PAR projects may be hindered by the untraditional nature of the project. Additionally, Kelly (2005) states “PAR projects are too local to be attractive to government agencies for funding purposes” (p. 68). Researchers should note that to garner funding for a PAR project, the goals and the process must be clear and articulate; the project must essentially be sold to funders. Program planners seeking funds should design programs that are replicable to increase the value of the project in the eyes of funding agencies.

Existing literature serves as a framework but what truly defines the PAR purpose are the tentative relationships and boundaries established from the group dialogue process. The researcher may be troubled through the PAR process as the topics of investigation shift due to

externalities, participants' needs or a shift in the group goals. As the participants gain a new understanding of their reality they may choose to redefine the purpose of the project altogether. This is an undeniable cost of education and reflection one of the goals of PAR; as participants grow in the PAR process so shift the preliminary goals and hypothesis by the participants (Kemmis and McTaggart, 2000). Thus, PAR exists in state of transition, or "dialectic of shifting understanding" (Kelly 2005). Understanding this change and growth from the beginning will allow researchers to accept the seemingly undefined parameters of community research as an asset and not a barrier.

Group momentum is a huge component of the action research process. Time and energy of participants are not reimbursed. A typical project in the planning stage according to Kelly (2005) can take up to 6-12 months. One recommendation to overcome the overwhelming time commitment is to break the project into smaller achievable stages; completing the short-term goals can allow participants and collaborators a sense of accomplishment while keeping the project on task.

### **1.2.1 How participatory action research works**

A particular strength of participatory action research is its use of community networks while defining community strengths and weaknesses. Allowing the existing community relationships to self-reflect in the PAR process will strengthen the established networks and foster growth (Heaney and Israel, 2002). Additionally, using existing networks allows for natural leaders within the community to emerge as key informants who will enrich the scope of the network and aid in defining other potential stakeholders (Minkler and Wallerstein, 2002).

Existing leaders imbedded in the community structure lend credibility to the research process and facilitate the establishment of community ties between research staff and the stakeholders.

Whitmore and McKee (2005) promoted teamwork and equality in their participatory action groups with high-risk youth by giving every participant a turn at facilitation and leadership. The participants gained valuable skills and esteem by assuming different roles with the project. Ownership in the project outcomes was further heightened by allowing the teen participants to design the methods and questions in an organizational assessment.

Although not every project lends itself to allowing high risk youth design assessment criteria, the untraditional nature of PAR is an asset for planning purposes; the project can be designed for any goal with stakeholder involvement. Whatever the project design, the participatory action components follow a specific protocol. Kelly (2005) divides the protocol into three stages: 1) *the planning stage* 2) *the action steps* and 3) *the review cycle*. In the *planning stage* the initial assessment of the community occurs. Additionally, in this stage, community partners or collaborators are identified. These relationships must be planned with care as they offer both a mechanism to establish trust with the target population and they may be a resource by sharing their own expertise, knowledge and goods (Kelly, 2005). The *acting stage* is when the heart of participatory action change occurs. Kelly (2005) is careful to state that the goals achieved in this stage are “agreed upon goals developed from working with the community” (p 70). In this stage, participation by stakeholders is at its peak as community members define the project, implement the intervention and interpret the impact of their actions as the intervention occurs. Kelly (2005) stresses the importance of reflecting as ongoing throughout the action stage. This allows participants/collaborators to understand the changes in their community as the changes occur and as the participants act as catalysts for change.

Although the third stage, *the review cycle* is listed as the last, it is fully integrated into the acting stage and begins once collaborative relationships are established. This stage allows the participants to analyze the data that they collect in their own paradigm of understanding. This is another empowering component of participatory action research. This self-analysis of the data reduces researcher bias and strengthens community self-understanding allowing a heightened insight into community operations.



## **2.0 BACKGROUND: OBESITY AND OVERWEIGHT**

Obesity is a crisis in the United States. According to the National Center for Health Statistics (2004), the rate of overweight adults rose nationwide from 56% to 65% from the initial measurement period 1988-94 to the second measurement period of 1999-2002. As the incidence of overweight increases, so does the rate of obesity; the rate of obesity, defined as having a body mass index (BMI) above 30, has climbed from 23% to 30% in adults during the same time period (NCHS, 2004).

The scope of the impact of increasing rates of overweight and obesity includes economic consequences, quality of life issues and increased risk for development of disease and obesity and overweight-related conditions. RAND (2002) estimates that obesity has more serious health consequences than smoking, heavy drinking, poverty or other chronic diseases. According to the CDC, overweight and obesity contribute to the development of chronic diseases such as hypertension, Type 2 diabetes, coronary heart disease, stroke and gall bladder disease (<http://www.cdc.gov/nccdphp/dnpa/obesity/index.htm>).

As forecasted, the rates of diagnosis of Type 2 diabetes have increased a dramatic 26% from 878,000 cases diagnosed in 1997 to 1,104,000 cases in 2000; the rates of diagnosis increased another 23% from 2000 to 2004 (CDC.gov. see Table 1). This is a 54% increase in the seven year span from 1997 to 2004 in new cases diagnosed. Common complications from diabetes include amputation, vision loss and organ failure. Another obesity and overweight

related illness, hypertension, has also increased. Hypertension rose 7.8% in the span from 1988-1994 periods to the 1999-2002 periods (CDC.gov).

**Table 1: Rates of Diagnosis Hypertension and Type 2 Diabetes**

	<b>Year Point 1</b>	<b>Year Point 2</b>	<b>Year Point 3</b>
<b>Hypertension % adults</b> Source: CDC.gov	41.7% 1988-1994		49.5% 1999-2002
<b>Type 2 Diabetes cases diagnosed</b> (Adults 18-79)	878,000 (1997)	1,104,000 (2000)	1,356,000 (2004)
Source: CDC.gov			

Increases in disability and disease associated with obesity and overweight affect multiple sectors of society. Economic impacts of increased chronic diseases are a burden for both individuals and families; costs associated with overweight and obesity burden incomes for individual both with and without health insurance. According to the American Diabetes Association (ADA), health care costs for patients with diabetes were \$13,243 in 2002, compared to an average of \$2,560 for patients without diabetes (<http://www.diabetes.org/diabetes-statistics/cost-of-diabetes-in-us.jsp>). Cardiovascular disease cost estimates for 2006 are \$403 billion; these costs are also influenced by the rates of obesity and diabetes (American Heart Association, 2006). Chronic diseases associated with overweight and obesity impact more than health expenditures. Chronic disease related illnesses might encourage early retirement and reduced wages for families not just individuals (World Health Organization, 2002).

Social impacts of chronic diseases affect quality of life, personal earnings potential and lifespan. Haomiao and Lubetkin's (2005) study of obesity and health related quality of life, patients who were obese measured lower quality of life scores than patients with healthier body mass indices. Health related quality of measures eight concepts by including the following

criteria: “physical functioning, role limitations due to physical health problems, bodily pain, general pain, vitality, social functioning, role limitations due to emotional health and mental health” (p157). The results further indicate that a much lower quality of life emerges as the degree of obesity increased. A study of both overweight and obese patients by Kortt and Clarke (2005) used a generic health related quality of life survey, with over 12,000 non-institutionalized respondents. Kortt and Clarke found that an obese 40 year old could expect 7.2 fewer quality of life adjusted years than a person of non-obese status could.

Prevention strategies for overweight and obesity include increases in physical activity and a reduction in calories consumed per day. Colditz (1999) estimates that conditions that result from physical inactivity account for 2.4% of U.S. health care expenditures. These estimates are based on 1995 databases of hospital expenditures for conditions associated with lack of activity including diabetes, depression, hypertension and gall bladder disease.

Costs associated with increased BMI include loss of productivity and increased absenteeism on the job (WHO, 2002). According to the Chenoweth (2005) study in California, “presenteeism”, or working but in an unhealthy state, is just as detrimental in the work place. Chenoweth estimates that the total costs of physical inactivity, overweight and obesity in the state of California in year 2000 dollars is \$21,678,256,511, including medical care, workers compensation and lost productivity.

There is no single cause for overweight and obesity. To provide both appropriate community support and adequate public health resources, it is useful to use an ecological framework to examine both the physical environment and the individual experience. It is essential that the complexities that contribute to overweight and obesity be explored. It is also

essential that the framework for understanding these conditions be relevant and sensitive to the individual, the community and the local culture.

## **2.1 INFLUENCES ON WEIGHT AND BEHAVIOR: SEDENTARY BEHAVIOR**

To begin to understand the multiple influences on health behavior and obesity it is important to understand what contributes to sedentary behavior. Specific barriers to exercise exist at community, individual, emotional and physical levels. It is important that researchers and policy makers understand these barriers in order to make appropriate recommendations for their communities. Individual barriers to achieving more active lifestyles may be associated with disease and gender, such as urinary incontinence, rates of depression (Jones, 2003) or fear of crime (Bengoechea, 2005). Obligations prioritized above physical activity also diminish the likelihood of exercising; Andajani-Sutjahjo's (2004) study of 1200 women aged 18-32 found that "motivation, time and cost" were the most significant barriers to physical activity.

The International City Management Association (ICMA) (2005) guide for local governments details specific barriers for healthy living; specifically acknowledged is the lifestyle of community residents. Residents who work long hours may not have access to healthful foods and nor the time to prepare them for themselves. Further, community dwellers may have less interest in accessing parks and walking trails if they hold multiple jobs or work shifts that make outdoor exercise impossible during safe daylight hours. For this reason, it is essential that community health and activity interventions be marketed appropriately and inclusively.

## 2.2 INFLUENCES ON WEIGHT AND BEHAVIOR: DIET

The recommendations by the Centers for Disease Control and Prevention (CDC) and Health and Human Services call for the increased consumption of fruit and vegetables. The CDC (2005) recommends two to four servings of fruit and three to five servings of vegetables daily based on a 2200-calorie diet or “5 a day”. CDC statistics from 1996 to 2003 demonstrate that less than 25% of the population consumes the goal of “5 a day” (see Table 2). Literature suggests that eating a variety of fruits and vegetables daily is inversely related to the development of certain types of cancer (Jansen, 2004). Increasing fruit and vegetable intake is often a recommendation for weight loss and maintenance of a healthy weight

**Table 2: Nationwide and Pennsylvania Fruit and Vegetable Consumption**

	Never Consume or less than 1 < day		1 to 2 servings per day		3 or 4 times per day		5 + times per day	
	Nationwide	PA	Nationwide	PA	Nationwide	PA	Nationwide	PA
1996	2.9	3.1	31.7	32	40.9	40.3	24.5	24.5
1998	3	3.6	32.5	29.8	40.4	40.9	24.7	25.8
2000	3.5	2.6	33.2	33.2	39.4	40.6	23.6	23.6
2002*	4.1	4.3	35.4	33.9	37	35.8	23.	26
2003*	4.3	3.8	35.4	35.5	37	35.5	23.1*	25.2
Source CDC.gov : <a href="http://apps.nccd.cdc.gov/5ADaySurveillance/displayV.asp">http://apps.nccd.cdc.gov/5ADaySurveillance/displayV.asp</a>								
*National data from 2002 and 2003 included Puerto Rico and the Virgin Islands for the first time								

Dietary patterns in Pennsylvania indicate that residents are slightly more likely than the national average to consume the recommended fruit and vegetable “5 a day” (CDC.gov). (Table 6) These results should be interpreted with caution, as the national statistics began to include Puerto Rico and the Virgin Islands the same years that the national statistics began to worsen in comparison to Pennsylvania.

### **2.2.1 Barriers to a healthy diet**

To gain a better understanding of what motivates the dietary consumption patterns of the general population, health policy makers must start with understanding the barriers to healthy eating (see Appendix A). Andajani-Sutjahjo's 2005 study of women found that barriers to healthier diets were associated with a lack of time to prepare food and concerns that healthy food would be more expensive. In a qualitative study (Paisley, & Skrzyzpczyk, 2005) of women's "perceived pros and cons of vegetable consumption", participants cited fears of pesticide and bacterial exposure as a reason to avoid consumption. Other barriers to consumption of fruits and vegetables were perishability, a limited choice or selection of produce, storage of the produce and the worry that fruit would make the participants bloated. Participants in the study also cited a fear of social reproach for dietary choices; for example, for some women the consumption of salad led peers to assume that they were on a diet and drew unwanted attention (Paisley, & Skrzyzpczyk, 2005). Consumers may choose not to purchase fruits and vegetables because of a lack of understanding about the amount of food in a serving; Reed (2004) postulates that Americans may not understand that purchasing a pound of peaches for \$.97 will equal four and a half servings, not just one. This indicates a great need for education on portion sizes and healthful choices in individual communities.

Taste preference is also a barrier to eating fruits and vegetables (Molaison, 2005). Researchers attempted to overcome believed dislike of certain foods in the Sisters in Health Project (Devine, 2005). The project sought to educate and encourage low-income adults about food choices and the benefits of eating "*5 a Day*". The results found that the study's facilitated

education groups provided enough social support, even at the onset, is that the new social ties helped to encourage appropriate health behavior (Devine, 2005). This is encouraging for policy makers as it means that interventions based on social networks could begin as soon as the networks are initiated.

If adults are not eating fruits and vegetables they are consuming plenty else. According to the *Dietary Guidelines for Americans in 2005* (2005), a sedentary adult female between the ages of 31 and 50 should consume no more than 1800 calories a day; males of the same age and activity level should consume no more than 2200 calories per day (2005). The adjusted dietary intakes measurements gathered by National Health and Nutrition Surveys (MMWR, 2004) indicate that the mean calorie consumption rate for men has risen from 2784 in 1971 to 2884 in 2000. The calorie consumption for women aged 20-39 has risen from 1652 in 1971 to 2028 in 2000 (MMWR, 2004). These increases are occurring as calorie-burning activity is decreasing, thus contributing to the rise in overweight and obesity increases.

### **2.2.2 Exercise: how much are we getting?**

One of the objectives of Healthy People 2010 is to increase the number of adults who are moderately physically active for 30 or more minutes a day at least five times a week (<http://www.healthypeople.gov/>). Previous outlets for physical activity have been replaced by modern technology. Washing machines, dishwasher, vacuums, and cars all replace calorie burning activities. Daily choices may further decrease activity such as taking the elevator rather than walking the steps or driving a car rather than walking.

**Table 3: U.S. Physical Activity Statistics**

<b>Recommended activity level</b>	<b>% in 2001</b>	<b>% in 2003</b>
Black female	31.4	32.2
White female	46	47.8
Black male	40.3	41.8
White male	50.6	50.7
<b>Inactive</b>		
Black female	28.4	27.3
White female	13.2	12.5
Black male	20.8	21.1
White male	13	11.6
Source: CDC		

Statistics from the CDC (2001, 2003) show that white men are the most likely to achieve the recommended levels of physical activity with 50% meeting targets (see Table 3). According to the CDC, African Americans are much less likely to achieve the recommended physical activity level with 32% of African American women and 42% of African American men reaching the targeted levels. It is promising to note, however, that slight improvement in physical activity level achievement was made from 2001 to 2003 (CDC).

Unplanned physical activity can include daily chores or walking for transportation. In order to meet the Surgeon General’s recommendation these activities should be sustained for 30 minutes five days a week. Participating in daily routines does have some calorie burning merit. The American Council for Fitness and Nutrition (ACFN) has guidelines for the calories burned benefit of typical daily activities done for 30 minutes:

- vacuuming 30 minutes burns 100 calories
- sweeping for 15 minutes burns 50 calories
- mowing the lawn for 30 minutes burns 150 calories
- gardening for 30 to 45 minutes burns 150 calories

Source: (www.acfn.org)



### 2.2.3 Barriers to physical activity

The ecological framework serves as the paradigm for investigating barriers to physical activity and poor nutrition. Sallies and Owen (2002) define the ecological perspective in public health as “an approach to understanding the health behavior by focusing on the nature of people’s transactions with their physical and socio-cultural surroundings”. The framework requires an assessment of surrounding community, including local culture, strengths and deficiencies.

Following the guidelines of the ecological framework, assessing the community through such techniques as PAR should be the first step to understanding the physical activity barriers. Communities can hinder physical health and well-being on many levels. Literature suggests that the physical environment may be a barrier to physical activity (Torres, 1998; ICMA, 2005). Communities in suburban neighborhoods present barriers to physical activity. Designed for convenience for vehicles, the suburbs discourage pedestrian activity (Obesity, 2000). Research indicates that simply living in the suburbs is associated with a higher incidence of overweight and obesity (Lopez, 2004).

So the question is: why won’t people exercise? Frank (2004) looked at the built environment’s effect on obesity rates and found that inhabitants of neighborhoods characterized by mixed land use, that is land mixed both residential and commercial activity, have a 5% lower incidence of obesity. Frank further found that it is not just access to variety within the neighborhood that fosters activity but also the *opportunity* for physical activity that such

neighborhoods foster. Opportunities in mixed land use neighborhoods offer residents the option to walk to a destination rather than drive. Land mix also indicates *diversity* in neighborhood eateries, groceries and parks, all offering greater access to choice and healthy lifestyles (Frank, 2004). For example, living in such a neighborhood, a resident may choose to walk to the pharmacy, if the pharmacy is accessible. Without mixed use options, residents are forced to become more dependent on vehicular transportation.

One barrier to physical activity could lie in the definition of physical activity. The Northern Sydney Health Promotion Project found that in Sydney, Australia, the community residents of culturally and linguistically diverse backgrounds were 32% less likely to participate in vigorous activity (Krolik, P., 2002). In focus groups of Italian, Greek and Serbian community participants differentiated physical activity from exercise. Exercise was defined as “something good for you to keep you fit that is something extra” while physical activity was “something that you normally do” (Krolik, 2002). Another study of immigrant populations (Lawton, Ahmad, Hanna, Douglas, Hallowell, 2005) found that participants with limited English ability cited specific fears of outdoor exercise; they felt more vulnerable in public spaces because of lack of ability “to call for help if they fell”. Taking into account all the barriers in community, interventions for increased physical activity should be encouraged through promoting exercise that complements everyday tasks in a way that is linguistically inclusive for all residents.

Fear of crime can prevent the pursuit of outdoor physical activity. Exposure to negative environmental conditions such as pollution, sun damage, and traffic can also reduce physical activity options for community residents. According to a study of physical activity resources in urban neighborhoods, those with similar access to physical activity venues, such as walking trails or parks, show a marked decrease in usage if the environment is less attractive

(Lee, 2005). Litter, broken glass, dog droppings, and graffiti tagging all contributed to the negative perceptions associated with the environment, which leads to decreased physical activity (Lee, 2005). At the same time, the police presence meant to prevent crime in neighborhoods may also deter law-abiding residents from being out in public. The level of trust that police established within the community may foster or hinder community collaboration for safe walking trails and parks (ICMA, 2005).

A study of 650 city dwelling African Americans with Type 2 diabetes (Wanko, et al., 2004) explores the levels of activity in their community. For all respondents, walking and gardening were the preferred choices of physical activity. Half the study respondents noted that they had barriers to exercise; these barriers included pain, lack of will power and poor health. Most surprising to the researchers was that the environment ranked low on the list of perceived barriers; when stratified by age, however, the physical environment, such as proximity to workout venue/park or criminal activity in the region, ranked with greater importance (Wanko, et al., 2004) (see Table 4). It is crucial that policy makers design community interventions that integrate convenience and location of physical activity venues. However, campaigns that promote conveniently located parks for physical activity may be misdirected if younger residents are not using the facilities due to a lack of time.

**Table 4: Self reported barriers to exercise in African American urban respondents with Type 2 diabetes**

<b>Barriers</b>	<b>&lt; 35 years of age</b>	<b>&gt;65 years of age</b>
	Time	Pain
	Lack of willpower	Health issues
	No one to exercise with	Lack of will power
	Location/ “no place close	Exercise knowledge
	Exercise knowledge	Location/“No place close”
Source: “Exercise preferences and barriers in African Americans,” Wanko, N et al., 2004)		

Attitudes in some patients contribute to reduced or a lack of physical activity. Attitude includes the influences of “age, sex, ethnicity, personality, socio-economics and knowledge” (Glanz, Rimer and Lewis, 2002). Lawton (2006) found that participants expected that they would fall ill as they aged and therefore accepted deteriorating health. Rather than trying to improve worsening health with lifestyle changes such as increased physical activity, participants felt that there was little that they could do to improve their conditions; their health was in God’s hands.

Medical conditions such as asthma or diabetes can also be barriers to physical activity. A qualitative interview based study (Mancuso et al., 2006) with asthma patients found that 60% of respondents felt that asthma limited their daily activities; 60% percent also listed medical conditions as their greatest barrier to physical activity. Forty-five percent of the participants felt that extreme weather was a barrier to physical activity (Mancuso et al. 2006).

One recommendation to improve the activity level in communities as with dietary habits is to target social networks (Task Force on Community Preventive Services, 2002). Social networks include relationships established in the workplace. Many employers include health intervention programs as a component of employee resources; however, Prodaniuk’s (2004) assessment of existing programs concludes that at an individual level, such interventions are not as successful. Prodaniuk (2004) suggests that changing the physical environment should include

encouraging use of the stairs rather than allowing employees to be elevator dependent. Strategies like this may greatly affect the culture within the workplace and thus foster individual health improvements.

It is important to note, however, that social and cultural networks can also be barriers to exercise. In a study of Pakistani and Indian immigrants in Australia (Lawton, Ahmad, Hanna, Douglas, Hallowell, 2005), fears of gossip, obligation to family, and specific duties assigned by gender roles became barriers to exercise. Women in the study expressed great distress over exercising in public venues thus exposing themselves to community scrutiny. Interventions that incorporate cultural norms such as modesty, family duties and expectations, and cultural health beliefs will have the greatest impact. Interventions can target individualized community health while reinforcing a global ideal for all ethnicities.

### **2.2.3.1 Active and Walkable Community**

Community support of exercise must begin at the policy level and also be inclusive of individual needs. In a walkability study of low income New Jersey residents (Greenberg and Renne, 2005) participants noted that the most important criteria for walkable neighborhoods were that “streets were easy to cross”, individuals “feel safe from crime” and “that the walk is pleasant”. Lee et al. (2005) state, “Merely building a park in a poor area is not enough to foster increased activity levels” (p. 8). Community leaders must ensure that public spaces are adequately maintained, supervised and nurtured to improve the quality of community opportunities.

Policy support to foster walkability should begin in the form of traffic safety provisions such as traffic stops and yield signs for pedestrians (Greenberg and Renne, 2005). Next, officials may portray an endorsement of a healthy environment by promoting bicycles as public transit.

The Task Force on Community Preventive Services (2002) recommends changing transportation policies to reduce dependence on mechanical transportation thus increasing physical activity; this recommendation should result in greater reliance upon physical activity and not other means of motor vehicle transportation.

Current mortality statistics indicate that existing policies must be strengthened to protect pedestrians and bicyclists. Pedestrian/vehicle and bicycle/vehicle accident statistics nationwide demonstrate that fatalities are decreasing; however, the death rate is still substantial (U.S. Department of Transportation, 2002). In 2002, 5470 pedestrians and bicyclists were killed in vehicular accidents (U.S. Department of Transportation, 2002) (see Table 5).

**Table 5: Pedestrian and Bicycle Fatalities Due to Vehicular Accident, Nationwide, Pennsylvania**

<b>YEAR</b>	<b>Pedestrian Fatalities Nationwide</b>	<b>Pedestrian Fatalities Pennsylvania</b>	<b>Bicyclist Fatalities Nationwide</b>	<b>Bicyclist Fatalities Pennsylvania</b>
1999	4545	144	615	14
2000	4598	120	572	8
2001	4822	162	585	9
2002	5041	183	550	21
2003	4951	185	572	18
Source:	CDC <a href="http://webappa.cdc.gov/cgi-bin/broker.exe">http://webappa.cdc.gov/cgi-bin/broker.exe</a>			

Data from a 1997 Department of Transportation report reveal that 51% of pedestrian/vehicular accidents occur while the pedestrian is on the sidewalk. This is important for health officials and policy planners to keep in mind as they formulate community health interventions to reduce the substantial injury rates caused by pedestrian/motor vehicle and bicyclist/motor vehicle collisions every year (see Table 6). Public safety and pedestrian responsibility for their own well-being must be communicated along with educational interventions for drivers. Policy makers can effectively foster pedestrian and bicyclist safety with the installation of speed bumps and by maintaining sidewalks (Greenberg and Renne, 2005).

**Table 6: National Pedestrian and Bicyclist Injury Rate per 100,000**

	<b>Pedestrian</b>	<b>Bicyclist</b>
2001	176189	519424
2002	174235	505233
2003	175949	492900
2004	175136	490864
Source: <a href="http://webappa.cdc.gov/cgi-bin/broker.exe">http://webappa.cdc.gov/cgi-bin/broker.exe</a>		

*National Center for Bicycling and Walking* fitness advocate Mark Fenton (2005) outlines specific measures that communities can take to become a walkable community. Fenton advocates refocusing the community agenda away from combating obesity; instead Fenton focuses on promoting health-inducing environments and offering an opportunity for positive rather than negative reinforcements. Further, rather than promoting exercise, policy makers and health officials should concentrate on changes in routines enabling residents to increase opportunities for activity in daily interactions, such as walking to the bank rather than driving if possible. Most importantly, Fenton (2005) believes that activity should be marketed as the preferred alternative; for example, campuses with limited parking can promote use of walking trails as an opportunity to enjoy a natural setting and gain exercise, thus reducing automobile congestion.

Along with safety, proximity is important when planning recreational centers. Greenberg and Renne (2005) state “the more convenient a location, the more likely neighborhood resident are to utilize it for exercise” (p. 90). Having the opportunity to walk to locales other than recreational centers offers residents even more physical activity options. Rohrer (2004) found that convenience of walking to a location is directly related to residents meeting physical activity recommendations.

Walkable communities offer more than possibility for physical activity. As a “public good” Leyden (2003) has linked the incidence of walkability in a community to increased levels

of social capital; he found that walkable communities offer more opportunities to participate and more venues to access. Leyden defines social capital as “social networks and interactions that inspire trust and reciprocity among citizens” (p. 1546) In his study of 750 households in Galway, Ireland, Leyden found that neighborhoods that offered the most places to walk to had the highest levels of social capital. Leyden also found that “the higher the neighborhood walkability rating assigned by respondents, the more likely [the respondents] were to participate politically and to have faith or trust in others” (pgs. 1548-9).

Walkable communities also have a positive environmental impact. A publication (Litman, 2003) by the Victoria, Canada, Transport Policy Institute found that fostering walkability reduces negative transportation externalities, which includes car emissions, traffic congestion, and the potential for automobile accidents, noise, and land use impact. The benefits to community members who walk included health improvements and reduced automobile associated costs (Litman, 2003).



### **3.0 ALLEGHENY COUNTY**

Pennsylvania ranks 25th out of 50 in the United Health Foundations Healthiest State ranking (2005). According to the survey, the greatest health risk factors for the state included the smoking (22.7% population), obesity (24.2%) and the number of limited activity days (2.2 out of the previous 30 days) (2005). The CDC's report "Burden of the States" (2004) ranks Pennsylvania as having higher incidences of death from diseases of the heart and diabetes than the national average.

Allegheny County is located in Western Pennsylvania. According to the US Census, Allegheny County has a population of 1,281,666 residents with a median age of 39.6 (2000). Gender distribution is 47.4% male. Seventy-five percent of the population is Caucasian and 12.1% is African American. Twenty-eight percent of the population holds a bachelor's degree as compared to national statistics of 24.4%; in Allegheny County 13.7% have not graduated from high school. Eleven percent of the population in Allegheny County lives below the poverty level. Current trends in violent crime in Pittsburgh indicate that crime is declining in the region (U.S. Department of Justice) (see Table 7).

**Table 7: Number of Offenses Reported Pittsburgh (U.S. Department of Justice)**

	<b>Violent Crime</b>	<b>Forcible Rape</b>	<b>Murder and non-negligent manslaughter</b>	<b>Aggravated Assault</b>
1996	2850	206	47	1032
1998	3156	194	36	1348
2000	3267	128	37*	1517
2002	3794	148	47*	1983
2004	3739	99	46	1992

\*2003 Murder rate was 67, 2001 Murder Rate was 55 Source:  
<http://149.101.22.141/dataonline/Search/Crime/Local/RunCrimeJurisbyJuris.cfm>

As noted above, some problems associated with being overweight or obese include higher risk for cardiovascular disease (CVD) and diabetes. In the state of Pennsylvania, the rate of hospitalization rose 8.6% between 2000 to 2004, this rate is associated with the effect of increased diagnosis of CVD and diabetes (Pennsylvania Health Care Containment Council). This increase is most significant for young adults, who exhibited a 26% increase in hospitalizations in those aged 20 to 39 (Pennsylvania Health Care Containment Council). This age group represents the most economically productive sector of the population. The economic impact related to diseases associated with overweight and obesity includes absenteeism, increased health care costs and the aforementioned increase in hospitalizations. In the City of Pittsburgh, crude death rate from diabetes from the year 2000 was 33.6 per 100,000 population. This represents an increase from the 1990 census when the crude death rate stood at 28.7 per 100,000 (Census.gov).

The Allegheny County Health Department 2002 Survey found that 59% of adults in the county self-reported body mass indices (BMIs) that could be considered overweight (ACHD, 2002). The Center for Disease Control's (CDC) Behavioral Risk Factor Surveillance System (BRFSS) shows variance in the physical activity levels of adults surveyed in Pittsburgh over a three-year period (<http://www.cdc.gov/brfss/pubs/index.htm>). (Table 8) The results indicate an increase, from 21.6% in 2000 to 24.4% in 2002, in adults who have participated in *no* leisure time physical activity in the past month (CDC BRFSS 2000, 2001, 2002). The BRFSS

survey defines leisure-time activity as time away from work that includes “exercises such as running, calisthenics, golf, gardening or walking” (<http://www.cdc.gov/brfss/pubs/index.htm>).

**Table 8** **BRFSS Pittsburgh**

	“No Leisure time Physical activity %”	Physical Activity Prevalence Statistics % achieving recommended activity level
2000	21.6%	31.3%
2001	27.4%	46.8%
2002	24.4%	
<a href="http://www.cdc.gov/brfss/pubs/index.htm">http://www.cdc.gov/brfss/pubs/index.htm</a>		

As previously noted, the 1991 National Health Interview Survey placed walking for exercise, yard work or stretching as three most commonly self-reported types of physical activities for adults (Surgeon General, 1996).

To understand the barriers to physical activity in Allegheny County it is helpful to use the ecological model (Glanz, Rimer and Lewis, 2002). To incorporate the multiple variables that influence behavioral choices of the residents, the analysis must also include the weather patterns of the region. Allegheny County averages 153 rainy days a year with only a 45% chance of sunshine per annum (weatherbase.com). The average number of days below 32 degrees is 120 (weatherbase.com). Bearing temperatures and precipitation in mind, the weather may exist as a barrier to residents who walk outdoors and garden for exercise.



**Figure 1** **Ghost Bike**

In 2001, vehicles struck 36 bicyclists and 173 pedestrians in Allegheny County (Pennsylvania Department of Health, County Profiles) (see Table 9). The pedestrian number of being struck by motor vehicle has remained consistently above 150 since 1994 (Pennsylvania

Department of Health, County Profiles). To call attention to the plight of bicyclists in Pittsburgh, in 2004 the Ghost Bike program was established. The bike

advocacy program displays white bicycles with signs marking locales where cyclists had been struck by a car (Silver, 2004). Avoiding the issue of pedestrian and bicyclist safety is an expensive choice for Allegheny County; Pittsburgh City Council recently agreed to a \$465,000 settlement to the family of a woman killed in a crosswalk (Lord, 2006). The funds will be drawn from both last year's and this year's budgets.

**Table 9: Allegheny County Motor Vehicle Pedestrian Bicycle Hospitalizations**

	<b>Pedestrian Struck</b>	<b>Bicyclists Struck</b>
1994	197	47
1995	242	45
1996	216	111
1997	200	35
1998	167	29
1999	170	26
2000	172	28
2001	173	36
<b>Source:</b> Pennsylvania Department of Health, Injury Annual Report		

To improve the opportunities for Allegheny County residents to reduce the risk of overweight and obesity, an assessment of the venues for activity and weight loss has been designed. A preliminary query of barriers and opportunities to weight loss in Pittsburgh is based on qualitative transcripts from the Diabetes Patient Portal Project through the Center for Research on Health Care and the University of Pittsburgh General Internal Medicine Oakland clinic. Secondary data from the Allegheny County Health Department Strategic Plan are also included.

### **3.1 FOCUS GROUPS DIABETES PATIENT PORTAL: METHODOLOGY**

Ten focus groups and small group discussions in the Diabetes Patient Portal (DPP) project (McTigue et al., 2006; Hess et al., 2006) were facilitated over an 18-month period from 2004-2006 with University of Pittsburgh Medical Center (UPMC) patients with Type 1 and Type 2 diabetes. There were 39 total participants with two participants attending both pre and post session; the focus groups were conducted by this author. The groups' question protocol was focused on a computerized portal system's impact on both doctor-patient communication and diabetes management. The computerized portal system, UPMC HealthTrak, allows doctor patient communication via email, health tracking tools such a steps walked per day, and health maintenance tools such as appointment reminders and scheduling. Funded under the Department of Defense, the DPP project aims to expand the portal systems utility, maximizing positive impacts for both patients and physicians. The original question protocol did not specifically address rate of physical activity, however, exercise as a component of weight loss emerged in most discussions.

Recruitment for the groups was difficult. The pre-portal focus groups facilitated at the onset of HealthTrak program, recruited by word of mouth, referral from diabetes health educators and through signs in the three target clinics, including General Internal Medicine Oakland, Family Health Center and Shadyside Family Health. Post-portal groups, or groups facilitated after the expansion of HealthTrak to five clinical sites, recruited participants from emails to all UPMC HealthTrak users. Language in the email excluded users without diabetes. All users were included in the list serve "blind" to preserve the anonymity of patients' medical conditions. Despite our best efforts, two groups had only two participants and three groups had three participants. The groups maintained a focus group format and the same questions were

used. The participants, however, were allowed more time to explore issues and to maintain conversations.

The five post-portal groups were open only to UPMC HealthTrak users and were recruited via email. Despite active retention strategies, two groups had only two participants. These groups were facilitated with the same semi-structured questions but more time was allowed for answers. This approach mirrored a qualitative interview technique rather than a focus group format.

Focus groups were analyzed using grounded theory analysis to determine the major themes presented by the participants. Triangulation of themes was established through meetings of a core group of investigators. In previous articles, the group discussed the issues of identity associated with diabetes diagnosis, fears associated with having diabetes, and a loss of control (Hess et al., 2006).

The focus groups were reanalyzed to look specifically at the framework of how do exercise and activity and dietary changes influence how you feel. The topic did not come up in every group but when it did, it often involved barriers to exercise. Barriers included other medical conditions, safety in the environment, safety in controlling diabetes after working out and attitude. Themes related to changes to diet included a sense of resentment towards their own status as a diabetic and feelings of loss.

Coding of the emerging themes began with the first interviews and continued in an iterative fashion. The research team employed the constant comparative method throughout the research process to examine themes as they emerged (Silverman, 2000). The constant comparative method allows a continual reframing of the paradigm as new data are incorporated into the researcher's understanding of the situation.

### 3.1.1 Focus group discussions

*Sometimes I find myself getting very resentful when, as you say, socially you're with friends or something and you see them piling in the deserts. You know, I'm thinking how is it they can eat like that and not suffer the way I would if I did it. But eh, you get over it. (January 18, 2006)*

Discussing weight loss was a natural evolution of the conversation. Gaining weight was attributed to family history, medical conditions such as schizophrenia or polycystic ovary syndrome and lack of willpower. In the conversations, the participants drew no direct correlation between lack of exercise and weight gain. All conversations that centered on weight loss were also associated with change in diet and food cravings. Participants talked of visiting health educators, dieticians, doctors, and specialists such as endocrinologists. Participants sought information about diabetes through their own literature searches, Internet research or even joining research studies to gain more information about diabetes.

*What I find though is that diabetes, like I say, it changes my entire lifestyle and you have to actually change your lifestyle. It takes, it takes focus and concentration and discipline every day of your life, several hours of every day of your life in order to be in control of it.*

*(Male, Type 2 Diabetes)(January 18, 2006)*

The theme of diet management emerged in the focus group discussions with participants expressing a sense of loss and inequity. Participants talked of giving up foods that they loved; participants who did not change their diets talked of concealing consumption of less healthy foods from their physicians. When one participant was asked about diet management, she replied “my friends, well, if they’re gonna have cake, why do I have to deprive myself? I am not going to deprive myself!” Participants conceded, however, that they did feel healthier when

they paid attention to their diet. One participant stated, “it seems to me when I was doing what I think I was supposed to be doing, like eating smaller quantities....things were healthier for me.”

### 3.1.2 Barriers to exercise

*I got a treadmill. It is still sitting there collecting dust (Female, Type 1 diabetes) (September 15, 2005)*

*If you are out of control, then you don't exercise. Then you generate some very very serious problems. (Male, Type 2 diabetes)(January 12, 2006)*

Barriers to exercise included mental health issues, anti-psychotic medication, changes in diet affecting energy levels, refusal to exercise, boredom with exercise routines and other medical conditions. Fears associated with exercise included a perceived vulnerability to crime by walking alone at night, particularly walking after dark during daylight savings time. Another concern presented by a participant was a sense of isolation and vulnerability in disease management; she feared that exercise would cause her to have low blood sugar and thus to slip into unconsciousness while she was alone at night. Another participant said that she exercised for a while and lost weight but was uncomfortable with the attention that she received once she did lose weight: “You know, like in stores, men would come up to me. I don't need this crap. I am more comfortable being fat” (female participant, September 2005).

*If you take psychiatric medication it affects exercise.*

*Diabetes makes you tired. (Female, type 2 diabetes)(November, 2004)*

*I found out if I force myself to do some exercise even with the thyroid, I feel I have more energy. I have to, you know, really make myself do it. (Female, type 2 diabetes)(November, 2004)*



All participants who discussed exercising discussed walking. Only one participant discussed running; this participant had self-reported controlled Type 1 diabetes. Using the focus groups as a mechanism to find exercise partners came up in several groups. Several participants suggested the establishment of group walking with other participants or offered to show other participants new trails.

It is important to note that although nearly all participants talked about walking as exercise, there was no quantification of distance, intensity of the workout or the amount of time that they spent walking. Data from the 2000 BRFSS indicates the while 44.2% of the population identifies themselves as having walked for exercise at any given time in the past month, only 10.1% walk five times per week for 30 minute intervals (CDC BRFSS 2000). Data from the 2000 Census indicates that 4.1% of the population of Pittsburgh commutes to work by walking on a regular basis (<http://factfinder.census.gov>).

### **3.2 ALLEGHENY COUNTY HEALTH DEPARTMENT**

The Allegheny County Health Department Strategic Plan was facilitated in 2002 with the intent of defining the goals and objectives for the County and the County Health Department. Quantitative and qualitative data sources, including disease rates, were gathered from the state and local health department, census data and other community agencies. Additionally, focus groups were conducted with 20 community organizations with a total of 238 participants (ACHD Strategic Plan, 2003).

The Allegheny County Health Department Strategic Plan reveals troubling statistics on the health of African Americans in Allegheny County (2003). Lower life

expectancy (69.4 years, African American males: 75.1 years, Caucasian males) and higher incidences of diabetes, coronary heart disease and stroke deaths in the African American community clearly indicate structural issues in both health services and health communication for this population (see Table 10). Disparities in death statistics related to diabetes, coronary heart disease and stroke suggest that overweight and obesity also disproportionately afflict the African American community. Allegheny County must be mindful of health disparity issues and build within any community program intervention the tools to affect all the residents.

**Table 10: Age Adjusted Disease Rate for Allegheny County**

Disease death rate	1995		1996		1997		1998		1999	
	Black	White	Black	White	Black	White	Black	White	Black	White
<b>Diabetes</b>	36.2	22	48.2	23.5	56.9	21.9	42.3	22.4	45.6	22.4
<b>Coronary Heart Disease</b>	265.4	232.4	245.4	229.8	246.5	215.5	241.4	217.3	252.6	207.4
<b>Stroke</b>	78.5	56.8	80.2	57.6	56.9	52	50.6	49.5	59.8	52.1
			Source: ACHD 2003 Strategic Plan							

Focus group participants ranked overweight and obesity eighth out of 11 in importance in the community themes component of the strategic plan (ACHD, 2003). Also ranked as important was criminal activity and violent crime in Pittsburgh. As mentioned previously, even “perception of danger” can be enough to change behavior and limit activities (Public Health Reports, 2000).

Health care and health insurance costs are excluded from the strategic plan but concern is apparent through analysis of the focus groups. The focus groups revealed a primary concern of the participants was “access to care”. The working poor, those who have lost insurance benefits, those who are underinsured, or those who have reduced opportunities for gaining health insurance such as illegal immigrants, face unique burdens concerning access to care. It is important to maintain and promote continuity of care in these at risk populations. Additionally, the increases in chronic diseases including diabetes necessitate dialogue with

providers and health care users to create networks and safety nets in the advent of loss of insurance or underinsurance. Community education and training to navigate health care systems should also be established to address these issues related to health care and health care costs.

#### **4.0 DESIGN OF PARTICIPATORY ACTION RESEARCH FOR ALLEGHENY COUNTY**

Some interventions to circumvent the spread of overweight and obesity have already been established on a state level. For example, the Pennsylvania Department of Health has begun projects with public and private schools in a school age overweight intervention ([www.health.state.pa.us](http://www.health.state.pa.us)). The project has redefined the methods for collecting and storing height, weight and BMI data for kindergartners through fourth graders statewide. Along with screening materials, schools are trained on how to notify parents or guardians of a positive overweight or obesity diagnosis.

This paper proposes the design for a health assessment and intervention project for two boroughs in Allegheny County (Braddock and Wilkinsburg) and the City of Pittsburgh. A community health needs assessment and participatory action research project (PAR) is proposed for the city of Pittsburgh and the boroughs of Wilkinsburg and Braddock. Community wide assessments that include smaller boroughs will diversify the results while representing neighborhoods that are often disproportionately disadvantaged in health treatment. By including the individual borough needs, the overall recommendation of the PAR project will provide data that offers a true representation of the strengths and weaknesses of Allegheny County.

As demonstrated earlier, obesity and overweight costs are an increasing burden on local, state and federal health agencies. Previously listed barriers to physical activity were age dependent: the elderly were more likely to cite the physical environment as a barrier and those

under age 35 more likely to cite lack of time as a barrier to activity. By understanding not only age specific limitations, but also attitudes towards accessing care and weight loss opportunities, community planners can begin the process of increasing opportunities for neighborhood health. Overcoming barriers will require multi-tiered campaigns on the part of policy makers and health officials.

The intervention will offer the opportunity to residents to alter their diets in an innovative manner. Literature suggests that lack of knowledge about appropriate portion sizes and healthy eating habits, and time limitations can negatively affect dietary choices (Andajani-Sutjahjo, 2005; Reed, 2004). Collaborating with community food-distribution centers, dieticians and chefs, the project will offer a community-cooking center that will attempt to overcome many of the perceived and actual barriers to healthy eating. Modeled after the “Dream Kitchen” franchise that is popular in other regions of the country, the centers offer residents who access them the convenience of food preparation at minimal cost in a communal setting (Severson and Moskin, 2006). The ingredients are available as is cookware and nutritional and cooking experts (Dream Kitchen, 2006). The centers have been established as both a household convenience and an opportunity to socialize with family and friends (Severson and Moskin, 2006). By using this communal meal-planning concept for a dietary intervention, this intervention will offer community residents hands-on training on creating and maintaining healthier diets. This intervention will incorporate components of the social cognitive theory. As defined by Baranowski, Perry and Parcel (2002), the social cognitive theory “depicts behavior as dynamic, aspects of the individual and the environment influence one another simultaneously” (p. 168). This component of the intervention will allow dieticians and staff to model appropriate portion sizes and healthier choices; peer participating in the communal kitchen will reinforce the lifestyle

changes as they incorporate changes into their own diets. Community participation including the presence of key collaborators will reinforce community sponsorship.

#### **4.1 SPECIAL POPULATIONS**

This community design intervention is mindful of other conditions that can interfere with outdoor physical activity levels. Asthma is one such condition. The EPA promotes limited outdoor activity on high pollution days for people with asthma. One recommendation is to spend less time on physical activity, for example, “jog for twenty minutes instead of thirty” (epa.gov, epa-452-f-04-002). The EPA goes further to say outdoor-exercise in pollution will likely exacerbate other allergies for a few days after exposure (epa.gov, epa-452-f-04-002). This significantly limits the recommended outdoor and indoor physical activity capacity for asthmatics significantly. Efforts to increase physical activity in this population needs to incorporate strategies to reduce exposure to allergens and encourage indoor exercise options on low air quality days

An Allegheny County Health Department 2002 report found that 9% of adults in the county had previously been diagnosed with asthma; 75% self-reported that they still suffer from the disease (ACHD, 2002). In 2000, chronic obstructive pulmonary disease, which includes asthma, was the fourth leading cause of death in the county (ACHD, 2002). The EPA lists two primary air pollutants as asthma triggers: ozone and particle pollution ([http://www.epa.gov/airnow/health-prof/Asthma\\_Flyer\\_Final.pdf](http://www.epa.gov/airnow/health-prof/Asthma_Flyer_Final.pdf)). The “June 2005 Air Quality Quarterly Report in Allegheny County” indicates that air quality levels exceeded the eight-hour maximum of ozone in three monitored sites (Maranche, 2005). The reports also found that

particle matter pollution exceeded recommended levels in six out of twelve monitored sites. As community leaders plan for physical activity venues, provisions can be made to integrate the complex needs of the community, such as the needs of citizens with asthma, into the framework of the design. Simply offering information on the best times to exercise outdoors or warning of hazardous air quality days may be enough for this population. Community leaders should understand that the inquiry into the needs of this specialized population should be offered to other specialized populations, such as citizens with diabetes, cardiovascular disease, and citizens who are physically or mentally impaired.

#### **4.2 THREE TARGETED COMMUNITIES IN ALLEGHENY COUNTY**

Data from Allegheny County Health Department Strategic Plan indicated that African Americans in Allegheny County are disproportionately affected by diabetes, coronary heart disease and stroke. The City of Pittsburgh, the borough of Wilkinsburg and the borough of Braddock were all chosen for an assessment of overweight and obesity resources. These populations were chosen for their diversity in size, racial makeup and percentage of population with low-income status (see Table 11). The targeted communities included in the proposed PAR design include boroughs that have a greater number of African American residents and significantly higher poverty rates (City of Pittsburgh 20.4% below poverty level, Braddock 35% below poverty level and Wilkinsburg 18.75 below poverty level) (US Census, 2000).

The framework for the community intervention is based on the “Active Living by Design” community model as developed by the Robert Wood Johnson Foundation and the University of North Carolina School of Public Health (<http://www.activelivingbydesign.org>).

This community model was developed with the mission that “active living is a way of life that integrates physical activity into daily routines” (<http://www.activelivingbydesign.org>).

**Table 11: Three Targeted Communities in Allegheny County**

	Pittsburgh	Braddock	Wilkinsburg
Total Population	334,563	2912	19,196
% of population with less than HSDegree	40,982 (18.7%)	403 (22.1%)	2,155 (16.3%)
Gender (male/female)	159,119 Male 175,444 Female	1332 Male 1580 Female	8,439 Male 10,757 Female
<b>Race</b>			
White	226,258	877	5615
Black	90,750	1937	12,768
Other	17,555	98	813
% below poverty level	63,866 (20.4%)	998 (35%)	3531 (18.7%)
<b>Cause of Death 2000</b>	1334 (31%)	12 (26%)	62 (28%) (221 total all causes)
Heart Disease	(4202 total all causes)	(46 total all causes)	
Diabetes	129 (3%) (4202 total all causes)	1(2%) (46 total all causes)	10 (5%) (221 total all causes)
Homicide and legal intervention	33 (.7%) (4202 total all causes)	1(2%) (46 total all causes)	3 (1%) (221 total all causes)
			Source: 2000 US Census

As recommended for the Active Living by Design “preparation stage”, the project begins by identifying community collaborators and establishing a preliminary community needs assessment. Thirteen potential community collaborators have been identified for this project.

Potential Community Collaborators include:

1. Allegheny County Parks and Recreation Service
2. Allegheny County Health Department
3. Pittsburgh Port Authority
4. Community grocery stores
5. Farmers’ markets
6. Local sports team affiliation
7. Planned Parenthood
8. Center for Minority Health, University of Pittsburgh
9. County and borough police
10. Culinary Arts Institute
11. Soulpitt website
12. Hosanna House
13. Top local employers UPMC, University of Pittsburgh



Each collaborator listed fills a specific role in the community and the way that it interacts with residents. Integrating as many of these collaborators as possible into the PAR project will offer a richer multi-dimensional opportunity to effect positive change in the community. Collaboration achieves four of the University of North Carolina's components of the planning stage of Active Living by Design community model (see Appendix B):

1. Develop and maintain a coalition, partnership, and advisory board to promote active living.
2. Conduct neighborhood assessments to identify barriers and opportunities to active living
3. Identify and evaluate existing local policies that affect active living
4. Identify and generate funding for project

<http://www.activelivingbydesign.org/index.php?id=303>

Using collaborators as partners, this intervention will engage all entities in PAR promotion. Collaborators may serve in an assessment capacity or an advisory capacity such as on a board. Using the collaborators' existing "community capital" and expertise will facilitate in the identification of existing community barriers, strengths and possible viable funding sources. Collaborators also serve as key informants, identifying potential participants for further community assessments.

### ***Allegheny County Parks and Recreation Service***

Allegheny County Parks and Recreation Service is an important structural collaborator in promoting free and safe physical activity opportunities. Including the Parks and Recreation Service may also provide the community with a secondary "public good" by addressing issues specific to the parks department. Examples of such issues include litter control and bike safety campaigns; parallel healthy lifestyle and park advocacy campaigns could be integrated into interventions to maximize community impact. Integrating Parks and Recreation into the PAR design serves to employ two of the University of North Carolina's "Active Living by Design" components (see Appendix B):

- ❖ Create interest groups to promote active living environments
- ❖ Create a friends of the trails groups to protect and maintain trails  
(<http://www.activelivingbydesign.org/index.php?id=303>)

By encouraging community members to participate in the improvement of their community parks will foster a greater sense of ownership in their neighborhoods.

### ***Allegheny County Health Department and Port Authority***

Two important community resources are the local health department and the Port Authority. Inclusion of the Allegheny County Health Department not only allows a respected community health institution to give credibility to the project but also to serves as a resource in expertise and community knowledge of its agencies' existing health projects. The Port Authority of Pittsburgh is an important ally in the PAR venture as it serves as a transportation source to and from recreation locations and a venue for advertising health initiatives.

### ***Community Grocery Stores and Farmers Markets***

Community grocery stores are an important component in marketing healthy lifestyles; they offer the opportunity to transfer specific skills to residents such as food preparation tips, food safety tips and healthy eating tips. Further, the groceries' centralized location and existing function in citizens' day-to-day life encourages their use as a meeting ground for group interventions. For example, targeted "student consumer" shopping workshops could be held to teach residents how to understand portion sizes and to read and understand food labels. Farmers markets offer the same opportunity and could serve to educate participant consumers on more choices that are organic. The inclusion of farmers markets also promotes the economic benefits of fruits and vegetables purchased directly from the local growers.

### ***Sports Teams***

Collaboration of sports teams will allow for role model endorsements of healthier lifestyles. For example, sponsoring a local run with a celebrity of the week, ideally an athlete, encourages civic pride and helps residents understand how a commitment to exercise will enrich their own life. Further, allowing community members access to athletes may allow the idea of being fit to feel a more attainable goal. Residents will begin to understand the amount of training and dedication that fitness involves. This could serve to model improvements in their own fitness level.

### ***Planned Parenthood***

Planned Parenthood has been included as a collaborator because of its important role in preserving the health of women. Healthy lifestyle and weight maintenance are an important part of pregnancy; maintaining healthy lifestyle choices beyond the sphere of fertility and pregnancy is crucial for healthy adulthood. With Planned Parenthood serving as an arm of the health intervention, young adults and low-income adults who access the clinic as a main source of health care will have an opportunity to receive the same health messages and intervention opportunities that are disseminated in other medical settings. By reinforcing the message in a family planning setting, health officials have the opportunity to impact family-lifestyle choices as well as individual health choices. Inclusion in the overweight and obesity intervention is a benefit to Planned Parenthood beyond improving the health of its consumers. By collaborating in the project, Planned Parenthood is able to expand its true identity health services agency thus moving beyond politicized issues.

### ***Center for Minority Health***

The Center for Minority Health at the University of Pittsburgh offers existing networks. The Center also serves as a community resource with expertise on the issues of interest to the

target communities of Braddock and Wilkinsburg; 66% of the residents of both Braddock and Wilkinsburg are African American. The Center for Minority Health is an advocate for minority health and community issues in Allegheny County; the agency is a trusted community resource that would be a great asset to the PAR collaboration team.

### ***County and Borough Police***

The police play an important role in preserving the safety of residents in outdoor venues. However, in the target neighborhoods, police and resident community relationships may be strained. For this reason, in the assessment focus groups, residents should be queried to determine the community comfort level with police officers. The police will remain collaborators but their level of community involvement will be adjusted according to the results of the focus groups. Possible community strengthening roles for police officers would include bicycle safety workshops and bicycle maintenance in more socio-economically challenged areas.

### ***Culinary Arts Institute***

The Culinary Arts Institute (CAI) is an important community ally in the food-preparation centers. Using the staff and students at CAI as a resource, the community food-preparation center can dispense healthy food preparation habits to the participant population. The staff and chefs offer the opportunity to design diverse and easy nutritious menus that appeal to the participants' tastes. The CAI will also be paired with local farmers markets to educate participants on how to take advantage of fresh local produce options. This will also serve to positively impact the local economy and the vitality of local farmers as the participants are introduced to new food items and food preparation ideas.

### ***The Soul Pitt***

The Souldpitt website serves the African American community in Pittsburgh as a resource for social events, community resources, networking, and message boards (<http://www.thesouldpitt.com/resources.html>). It is a trusted community resource and is an innovative means of reaching the African American population. A collaborating partner, Souldpitt offers the PAR project the opportunity to disseminate health messages and educate the population.

### ***Hosanna House***

Hosanna House is a Wilkesburg based community service organization. Established in 1989 Hosanna House serves over 27,000 clients a year (<http://www.hosannahouse.org>). The organization's long presence in the Borough of Wilkesburg and its scope of commitment including workforce development, child development and healthcare makes it an ideal collaborating partner. Hosanna House offers both a wealth of community knowledge and 27,000 potential stakeholders to be included in the PAR intervention

### ***Top local employers***

Top local employers offer the opportunity to implement healthy living strategies that may be reinforced by peers/co-workers. Employers are invested in community health to maintain a productive workforce. Fostering a healthier work environment such as promoting stairs over elevators may encourage community members to continue the new, health- positive behaviors off worksite. Employers are important collaborators as they offer fiscal, physical and human capital resources as well as important business networks.

### 4.3 ASSESSMENT COMPONENTS

Two assessments have been started:

1. Top 10 Employer Assessment
2. The Physical Activity Resource Assessment (Lee et al., 2005)

In addition to these two assessments, others are planned.

#### 4.3.1 Top 10 employer assessment

In this PAR project, employers in the Western Pennsylvania region serve as *both* collaborating partners and assessed stakeholders. As a component of this participatory action research plan, ten area employers were queried on benefits and services offered to employees. Business commitment to human resources such as wellness programs helps to prevent economic and human capital losses (Peregrin, 2005). As discussed previously by Chenoweth (2005), overweight and obesity and related health effects increase costs in the form of worker's compensation, loss of productivity and sick time.

An internet and telephone assessment of the top ten employers in the region found that eight out of ten had health and wellness programs; two other organizations might very well have programs but information was not accessible on company website and the employers did not respond to research queries (see Table 12). Several employers just initiated the programs within the past year. Health and wellness services varied but included flu shots, blood pressure screenings, and gym membership discounts. While an assessment of the different levels of support offered in the wellness programs was not assessed, for the purposes of this paper the presence of a wellness program is counted as employer support for healthy workforce initiatives. The employer may further broaden the wellness campaign's impact by encouraging healthy

habits in employees outside of work; employers may foster healthier families of employees and healthier neighborhoods as habits transfer to the broader social network

**Table 12: Top 10 Employers Allegheny County**

	<b>Employer</b>	<b>Health and Wellness Program?</b>	<b>Minutes for lunch</b>
1	United States Government	Dept. Dependent	Dept. Dependent
2	University of Pittsburgh	Yes	1 hour
3	UPMC Presbyterian	Yes	Dependent on job class
4	Allegheny County Human Resources	Yes (as of 3/25/06 on ACHD website)	Data not explicit on website
5	Giant Eagle Inc <a href="http://www.gianteagle.com/main/home.jsp">http://www.gianteagle.com/main/home.jsp</a>	Yes, Established 9/05	Corporate employees 30-60 minutes Union employees (ex. bakers) union dependent
6	Pittsburgh School District Board of Education <a href="http://www.pps.k12.pa.us/contact.asp">http://www.pps.k12.pa.us/contact.asp</a>	Data not explicit on website	Data not explicit on website
7	Mellon Bank	Yes	
8	PNC Bank <a href="http://www.pnc.com/">http://www.pnc.com/</a>	Yes	Data not explicit on website
9	Pennsylvania State Government <a href="http://www.state.pa.us/">http://www.state.pa.us/</a>	Data not explicit on website	Dependent on job class
10	Allegheny General Hospital <a href="http://www.wpahs.org/agh/">http://www.wpahs.org/agh/</a>	Yes	Dependent on job class and locale; staff may pool breaks and 30 minute lunch to equal an hour

The amount of time that employers offer employees for lunch was also included in the assessment. Employers that offer an hour for lunch to employees, allow them a greater opportunity to achieve physical activity during the workday and still have time for a meal. Interpretation of the lunchtime policies of the employers that were assessed was complicated by an unforeseen element: unions. Often, such benefits as breaks and mealtimes are negotiated by the unions and are beyond the business owners' control. In future assessments, the policies of the local unions should be included to gather a better understanding of what existing strengths and barriers are available to employees.

### 4.3.2 Physical activity resource assessment in Allegheny County

The *physical activity resource assessment* (PARA) was designed by Lee et al. (2005) in a study of Kansas City, Kansas, and Kansas City, Missouri. The assessment offers a methodology to appraise neighborhoods. Lee et al. began with a phone book search of available physical activity resources in the neighborhoods. Businesses were called to establish legitimacy; then, windshield surveys were conducted to confirm results. Features included the “type, quantity, features, amenities, and quality of all publicly accessible physical activity resources in urban neighborhoods available to public housing residents” (p 2). Assessment criteria from the Lee et al. study included amenities and incivilities, which Lee defines as among other things: graffiti, litter, lack of grass, dog refuse, and auditory annoyances ([www.hhp.uh.edu/undo/instru/PARA](http://www.hhp.uh.edu/undo/instru/PARA)).

Following Lee et al., for the purposes of this paper a search of weight loss centers in the target communities was conducted. An initial assessment of existing weight loss resources yielded limited results. The search term “weight loss” resulted in 555 listings in Allegheny County. A search for weight loss centers in Braddock and Wilkinsburg by zip code listed only three business; all were located in the Wilkinsburg zip code 15221. Two of them were Curves Gyms for women (<http://yellowpages.superpages.com>).

Site visits to five City of Pittsburgh parks were conducted over a month long period (see Table 14). The parks included 1) Frick Park, 2) Highland Park, 3) Washington’s Landing, 4) the Riverfront Trail and 5) the Southside trail. The park assessment did not follow the entire protocol as developed by Lee et al., (2005) as they were only being assessed for walkability. Trail information and other communication available to trail users such as trail markers, mileage



and announcement of amenities available were also included in the assessment. The following sections present the results.

**1) Frick Park. Date accessed: Sunday, March 5, 2006, 3:00 pm**

**Amenities available:** benches, public toilets, trashcans. This trail was the most accessible (size, span, busses) by pedestrians, public transit, bikers and dogs.

**Amenities lacking:** off street parking

**Incivilities present:** dog refuse, unleashed dogs, graffiti, litter.

The park covers 600 acres that include trails for hiking and bicycling (Pittsburgh Parks



**Figure 2 Frick Park**

Conservancy, n.d.). One welcome new features included in the park renovations is the Nine Mile Run Watershed, a new trail that lengthens the park. Of greatest concern in Frick Park is the number of unleashed dogs. Although there is a separate play area for dogs, many owners let their animals run unleashed. During this assessment,

many unleashed dogs were noted; the dogs fought with one another and ran on protected, fragile green areas.

**2) Highland Park/Reservoir. Date accessed: Saturday, March 18, 2006, 4:00 pm**

**Amenities available:** public toilets, parking, trashcans, playground equipment, paved trails



**Figure 3 Highland Park**

Specific areas around the reservoir prohibited dogs. Equipment was available for physical activity (sit-up stations). Streetlights were posted

around the reservoir, shrubs were contained for safety.

**Incivilities present:** minimal litter. No park communication.

Highland Park was the most accessible and cleanest park accessed. The park offers hiking, playground equipment, cycling track and a summer sport swimming pool (Pittsburgh Parks Conservancy, n.d.). The only deterrent for athletic use is the lack of communication about the park's amenities. A specific feature of the park is the reservoir around which patrons can walk laps. Unfortunately the length of three quarters of a mile is not posted for runners and walkers to track.

### 3) Washington's Landing. Date accessed: March 4, 2006

**Amenities available:** bike racks, water fountains, benches, trashcans, and (at main entrance) parking.

**Incivilities present:** graffiti, no public toilets, access difficult due to road construction.

The trail was very isolated. There was one other user the entire hour the trail was assessed. Several areas had overgrown shrubs that could pose or provide the perception of a safety risk for criminal activity (see Appendix C for photo). The trail offers many unique amenities including overlooks onto the Allegheny River. Several historical markers were on the trail but not athletic communications such as mile markers.



**Figure 4** Washington's Landing

**4) Northshore/Heritage Trail. Date accessed: Saturday, March 18, 2006, 1pm**

**Amenities available:** trashcans, public art, boat docking, fishing piers.

**Amenities lacking:** parking, restrooms, signs detailing mileage-length of the trails. *Friends of the Rivers* does list parking venues and a restroom on the website. These amenities are not advertised on the trail. One public toilet on a 37-mile trail is inadequate.

**Incivilities present:** graffiti, litter, strong smell of urine on trail. Homeless populations have sought shelter under the overpasses and bridges (see Appendix C for photo). Two encampments were visible in three miles.



**Figure 5 Heritage Trail**

available on the trail. Several memorials are integrated in to the walk including the Vietnam Veterans, the Korean War and a Peace Memorial that includes art that interprets the experience of the bombing of Hiroshima. The trail also runs next to several housing, apartment and condominium complexes. Several corporations such as Del Monte and Confluence have office buildings that directly on the trail. The building designers have integrated the exits and walkways to encourage pedestrian trail access and use.

**5) Southside Trail. Date accessed: Sunday, March 19, 2006, 11:00 a.m.**

**Amenities available:** park benches, trashcans

**Amenities lacking:** no public toilets, no communication system, no lights, no police

surveillance, no public parking, no signs indicating the length of the trail or trail name.



**Figure 6 Southside Trail**

was worrisome was a strong odor that was present when the trail was assessed. Pictures indicate that the trail runs along a raw sewage line which may have contributed to the odor (see Appendix C for a photo).

The trail runs along the Monongahela River. This can seem worrisome as you travel further away from your point of origin. There is graffiti present on the trail but it was unobtrusive and almost welcome among the abandoned buildings and old bridges. What

### **4.3.3 Discussion**

Allegheny County offers excellent recreational facilities. The five trails that were assessed are diverse in scenery and offer repose from the urban life. (Table 13) In terms of walkability and athletic use, the main criticism of every trail is the lack of information presented to users. Mile markers and maps with legends detailing different exercise routes would be helpful additions in conjunction with a health promotion campaign. The lack of public toilet is also a great deterrent, particularly for those who may be incontinent. For any athlete, access to water and toilets is essential. To make these parks truly user friendly, investment should be made to increase amenities and communications. More expansive assessments including park use statistics should be gathered to determine the best locations for the installation of public facilities.

**Table 13: Five Trails Assessed in Pittsburgh**

	<b>Frick Park</b>	<b>North shore /Heritage Trail</b>	<b>Highland Park</b>	<b>South Side Trail</b>	<b>Washington's Landing</b>
<b>Parking</b>	On street	Vacant lot; one pay lot is advertised.	Free lot and street	Vacant plot, on street, pay	Lot
<b>Access</b>	Multiple trails lead into park center	Multiple access points along riverfront	Multiple access points	Multiple access points	Limited: construction
<b>Public Toilets</b>	Freestanding facility in park center	None	Portable toilets	None	None
<b>Signs/ Trail markers</b>	Trail names	Information about trail history, no mileage, toilets,	None	None	None
<b>Trash cans</b>	Multiple	Multiple	Multiple	Some	Some
<b>Litter</b>	Present	Water waste (bags, refuse along banks, the trail was clean)	minimal	Water waste (bags, refuse along banks, the trail was clean)	Water waste (bags, refuse along banks, the trail was clean)
<b>Graffiti</b>	Present	Present	None present	Present	Present
<b>Animal Control</b>	Separate dog park available but many animals unleashed	No animals present	No animals present	No animals present	No animals present
<b>Number of users when assessed</b>	Very populated	10; bicyclists and walkers	25-30	7; bicyclists and walkers	2 walkers

#### 4.3.4 Planned assessments

##### *Planned Assessments*

The following assessments have been planned for the next stage of the project.

1. Community Survey
2. Focus Groups
  - a. Community members

- b. Employers
- 3. Leyden's Walkability Index

#### Preliminary Survey

Using the collaborators as a distribution resource, a preliminary survey will be dispersed to targeted neighborhoods. The survey includes basic questions about access to exercise and physical activity in the daily life of respondents (see Appendix D for the preliminary survey). The scope of topics includes activity on the job, in the neighborhood and at home. Respondents will also be queried as to the financial investment that they are willing to output to achieve physical activity levels.

#### Focus Groups

Focus groups have been designed to gather preliminary community issues of the stakeholder populations (see Appendix E for Stakeholder Focus Groups Questions) Initial participants will include members of the three targeted communities of Pittsburgh, Braddock and Wilkinsburg and regional employers. Twelve neighborhood groups will be facilitated with target enrollment including three focus groups each for each individual neighborhood and three groups including mixed neighborhoods; the goal of conducting the groups in this manner will be to capture neighborhood-specific strengths and barriers. The mixed neighborhood focus groups offer the opportunity to capture regional concerns. Also, one concern of participants is that their anonymity may be compromised; offering participants the opportunity to participate not among their peers may capture unsuspected issues.

Focus groups facilitated with employers will focus on management barriers to incorporating healthy lifestyles in the work place (see Appendix F for Employer Focus Group Questions). These focus groups will serve to gather information regarding employer attitudes

and commitment to health and wellness programs. The groups could potentially establish collaborative opportunities for participation in PAR and also with other employers.

#### Leyden's walkability index

Leyden's walkability index will be used to measure the degree of mobility and access that participants' neighborhoods offer (see Appendix G for Leyden's Walkability Index). In Leyden's (2003) study of neighborhoods in Galway, Ireland, survey respondents "ranked the degree to which their neighborhoods were pedestrian orientated and mixed land use" (p. 1547). Responses generated a variable that Leyden calls "neighborhood walkability" (2003). Rohrer, Pierce and Denison (2004) later used the survey with revisions to the questions to reflect American culture. The survey will be distributed in three targeted Allegheny County neighborhoods, Braddock, Pittsburgh and Wilkinsburg; survey participants will be recruited through the PAR collaborators. Two additional questions will be added to gather social factors associated with barriers to healthy lifestyle: Are you able to walk to a friend's house/residence? Are you able to walk to a family member's house/residence? Gathering the social supports that are already accessible will help to determine the degree of support that the participants have in the neighborhood.

#### **4.3.5 Limitations of project design**

Employer assessments were made with available information gathered in a limited time; to fully understand the commitment of the employers, a longer term assessment including interviews with staff and managers would be appropriate. Further, looking at use rates of existing employer services would gather valuable information on the necessary incentives that might be needed for a full scale community intervention. Park assessments were made on a

limited basis; each park was visited once during a weekend for 30 minutes to an hour. To understand park usability, the study should be expanded to determine the number of users on weekdays including lunch hours, and during different seasons and weather conditions. Further, having multiple researchers assess the facilities would provide a more robust interpretation of the amenities.

#### **4.4 DISCUSSION**

In the interview assessment process, it was revealed that employee sponsorship of a health and wellness program is not sufficient to ensure employee utilization of the services. In future assessments, measurement of employer commitment to employee health would also include whether or not incentives were offered for employee participation in the programs. Financial expenditure outputs to ensure employee participation in health initiatives indicates a deeper level of investment in human capital to benefit all stakeholders.

Any assessment of parks services in Allegheny County should be mindful that the recent mayoral election may impact county contributions to park services. Recent reorganization and budget cuts has caused the move of the county parks services department, which had been established as separate division in 2003 (Bucsko, 2003).; Parks and Recreation services, formerly an independent entity it is now housed under the city Public Works Department (Pittsburgh's Mayors Office, 2006). The parks and recreation department had already experienced a continually decreasing budget under a very supportive administration (City of Pittsburgh, 2003; City of Pittsburgh, 2004) it may suffer further from continued regional fiscal realignments. It is therefore imperative that parks advocacy be a component of the collaborative PAR agenda.



Citizens who use the parks should be encouraged to call attention to the services that are needed. Health planners who are dependent on the parks as a venue for physical activity in the community must be encouraged to publicize the relationship between physical environment and physical environment opportunities and the health of the community.

Overweight and obesity are an established costly financial and health burden on individuals, families, communities and employers. Establishing a long term commitment to community health improvements in the form of policy such as improving park services, may ease the burden. The first step in easing that burden is a better understanding of the community itself through the PAR process.

## 5.0 CONCLUSION

Improvements in community health are a worthy investment for all stakeholders. By integrating as many of the collaborating partners into an action plan mode of operation as quickly as possible, Pittsburgh, Braddock, Wilkinsburg and other surrounding boroughs have the greatest opportunity to make positive impacts on both their health and their neighborhoods. The goal of the project is to reduce the incidence and prevalence of obesity and overweight in the region by encouraging healthier lifestyle choices. Reaching these goals could simultaneously positively impact the regions parks, the regions employer/ employee relations, and the opportunities and resources available in low income neighborhoods.

The PAR collaborative team is a foundation for long term lifestyle opportunities. A more expansive needs assessment, as designed in this paper is the next step for understanding the barriers to healthy lifestyles. The participatory action component will facilitate the greatest opportunity for meeting the specific needs of Allegheny County. Within this framework, Allegheny County now has an opportunity to undermine the increased incidence of overweight and obesity and foster life long health.

## APPENDIX A

### A.1 BARRIERS TO FRUIT AND VEGETABLE CONSUMPTION

#### Participants self reported barriers to “5 a Day”

	Studied Population	Study
Availability	Women	Paisley, 2005
Cost	Women -	Andajani-Sutjahho, 2005 Guthrie, 2004
Knowledge	-	Reed, 2004
Perception of fruit	Women	Paisley, 2005
Perishability	Women	Paisley, 2005
Pesticides/Bacteria	Women	Paisley, 2005
Preparation (inconvenience)	*	*
Preparation (time)	Women	Andajani-Sutjahho, 2005
Selection	Women	Paisley, 2005
Social approval/stigma	Women	Paisley, 2005
Storage	Women	Paisley, 2005
Taste	African American Adolescents	Molaison, 2005

## APPENDIX B

### Pittsburgh Park and Trail photos



Homeless settle in along the trail.

Emergency communication is available along the trail.





**SEWER DRAINAGE ON SOUTHSIDE TRAIL**

## APPENDIX C

### PROPOSED SURVEY

#### Proposed survey

1. How many minutes of exercise do you get per week? \_\_\_\_\_
2. What kinds of exercise do you participate in? \_\_\_\_\_
3. Is exercise routine different on the weekends than it is during the week? \_\_\_\_\_  
  
If yes, how?  
\_\_\_\_\_
4. What kinds of equipment do you use to exercise (ex, pedometer, bike, rackets)?  
  
\_\_\_\_\_
5. Do you own equipment or do use equipment at a gym/facility? \_\_\_\_\_
6. Do you prefer to exercise with a partner or alone? \_\_\_\_\_
7. What are some of the things that you prevent you from exercising? \_\_\_\_\_
8. Are you able to do other tasks or activities while exercising? (Ex. Run errands, walk home, watch TV.) \_\_\_\_\_
9. How much money do you spend each month for physical activity (for ex. Gym membership)? \_\_\_\_\_

10. Are you able to exercise during your lunch \_\_\_\_\_  
If no, why not? \_\_\_\_\_

11. During your workday, are you able to walk around and stretch? \_\_\_\_\_

12. How much time of your workday do you spend at your desk? \_\_\_\_\_

13. What would make it easier to exercise? \_\_\_\_\_

14. What is your zip code? \_\_\_\_\_

15. What is your weight? \_\_\_\_\_

16. What is your height? \_\_\_\_\_

Do you think that your weight is healthy? \_\_\_\_\_

## **APPENDIX D**

### **Potential focus group questions for community stakeholders: residents**

1. Tell me about some of the ways that you exercise
  - a. How often
  - b. How long
2. What are some the things that you prevent you from exercising?
3. Are there specific things in your neighborhood that make it easier or difficult to exercise?
4. Tell me about your neighborhood
  - a. Are kids able to be active?
  - b. Are the elderly able to be active?
  - c. Are people with disabilities able to be active?
5. Is there anything that you are concerned about in regard to outdoor physical activity in you community?
6. What kind of physical activity do you do in your daily life?
7. What could you do to make is possible to for you to be more active



## **APPENDIX E**

### **Potential Focus Group Questions for Community Stakeholders: Employers**

1. Tell me about your experiences with health and wellness programs
2. What sort of health initiatives does your company participate in now?
3. What are some of the things that have been successful in the past? What has worked?
4. What things haven't been successful? Why not?
5. What are your feelings about community collaborations?
6. What are the biggest barriers to making your workplace healthier?

## **APPENDIX F**

### **Leyden's Scale of Walkability (modified by Rohrer, Pierce and Denison)**

“A lot of people are very dependent on a car these days to get where they want to go. If you or another family member wanted to which of the following could you walk to without too much trouble? Check\* all that you could walk to without too much trouble.

1. Local corner shop
2. A church
3. A park
4. A local school
5. A community center or recreation center
6. A day care center\*
7. A drug store\*
8. A bar or pub\*
9. The place that I work
10. None of the above. It is really hard to go anywhere without a car.

\*indicates that the language was changed by Rohrer, Pierce and Denison to reflect US culture (2004).

#### **Proposed new questions for Allegheny County assessment**

11. Are you able to walk to a friend's house/residence?
12. Are you able to walk to a family member's house/residence?

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