
FACTORS AFFECTING PHYSICAL ACTIVITY AMONG BLACK MEN AND WOMEN

Shirley A. Lockery, School of Social Work, The University of Michigan

Denise Montcalm, School of Social Work, University of Nevada, Reno

INTRODUCTION

In *Healthy People 2000*, physical activity and fitness constitute the number one health promotion objective among the National Health Promotion and Disease Prevention priorities. Physical activity, vital to longevity and disease prevention, promotes mental and social health as well as the overall quality of life. In spite of the recognized benefits of regular physical activity, approximately 60 percent of Americans get little or no exercise (Siegel et al., 1991). The first U.S. Surgeon General's report on "Physical Activity and Health," released in July 1996, consolidated years of research and highlighted the attributes of physical exercise (U.S. Dept. of HHS, 1996). The prevalence of sedentary lifestyles, however, varies by many factors such as gender and ethnicity.

Although earlier studies have examined the role of gender, among other demographic characteristics, in determining the incidence and distribution of physical inactivity as a health risk, adult black American men and women are not consistently addressed in the literature. Further, women's health problems, regardless of race, have historically been given less serious attention than the problems of men (Adams, 1995). A recent action plan for women's health by the Public Health Service (PHS) confirmed the extensive and distinct health needs of women and selected target populations that demand more serious attention and investigation (U.S. PHS, 1991). This acknowledgment came nearly five years after the PHS task force conceded that differences among women probably progress from attributes such as age, race/ethnicity, marital status, urban or rural living, education and income (Women's Health, 1985). Consequently, it has been suggested that "Research and service programs planned to meet women's health needs must be cognizant of these differences" (Women's Health, 1985, p. 85). Ironically, "much of the general research on the problems and needs of women does not consider the important differences in culture and health practices of minority populations" (U.S. PHS, 1991).

By examining the physical activities undertaken by black American women and men, this research seeks to identify factors that may lead to a better understanding of the role played by gender and cultural patterns in predicting involvement in health-related behaviors. Specifically, physical inactivity, as a health risk, and its relation-

ship to selected sociodemographic characteristics, is studied. To augment existing knowledge, data from the first wave of the national Health and Retirement Study are used to compare gender differences within the black American population, ages 51 to 61 years. A clearer understanding of within-group variations in health practices of black males and females will ultimately contribute to the development of culturally competent programs, designed to modify negative health behavior.

Almost 50 percent of all diseases and early deaths are linked to personal health risk behavior such as lack of exercise (Tuck et al., 1988). Fortunately, physical inactivity is among those unhealthy actions that are responsive to individual behavioral interventions. Health practices and behaviors are influenced by cultural beliefs and expectations. Therefore, understanding cultural patterns of personal health behavior is critical to the development of health promotion activities and techniques capable of responding to the unique cultural needs of racial-ethnic populations (Braithwaite & Lythcott, 1989).

Physical Activity Literature Review

With the release of the U.S. Surgeon General's report, definitive data on the beneficial effects of regular physical activity is readily available. It is important to note that while a physical activity does not have to be vigorous to provide health benefits, the more physically active a person is, the greater the health benefit (JAMA, 1996). Although physical exercise alone cannot eliminate every risk factor, regular physical activity can help compensate for many of them.

Regular physical activity over the entire lifespan is an important ingredient for a healthy lifestyle. It has been associated, for example, with the control and prevention of medical conditions, such as coronary heart disease, hypertension, non-insulin dependent diabetes mellitus, osteoporosis, and obesity (Macera et al., 1995). Likewise regular physical activity contributes to weight control, psychological well-being, as well as a reduced risk for hypertension, and bone loss in postmenopausal women (Macera et al., 1995; Paffenbarger et al., 1994). Moreover, physically active individuals live longer than their inactive counterparts (National Center for Health Statistics, 1993).

Generally, physical activity is classified as light to moderate or heavy. From the more traditional health behavior perspective, light to moderate physical activity means the total of all activities sustained for a minimum of 30 minutes on each occasion "5 or more" times weekly (National Center for Health Statistics, 1993). Activities in this category include: walking, swimming, cycling, dancing, gardening or yard work, and other household and work-related activities. The regular performance of light to moderate physical activity is expected to burn calories. Here, the intensity of the

activity is not so important. Instead, the emphasis is on the value of regular physical activity and ultimately, the maintenance of these exercises over the life course. In 1991, less than one-fourth (24%) of the U. S. population was involved in this level of activity five or more times each week (National Center for Health Statistics, 1993).

Vigorous physical activity levels or aerobic-cardiovascular types of exercise are determined by complex formulas based on factors such as age and sex. Physical exercise at this level of intensity is vigorous if “activities are rhythmic, repetitive physical activities that use large muscle groups at 60 percent of the maximum heart rate, 220 beats per minute minus age” (National Center for Health Statistics, 1993). The activity must also be done for at least 20 minutes, 3 or more times every week. The health data for 1991 show that only 14 percent of the population participated in exercise at this level. Moreover, only 13 percent of those individuals with yearly household incomes of less than \$20,000 were engaged in vigorous physical exercise. While this proportion is low, it reflects a 6 percent gain since 1985 (National Center for Health Statistics, 1993). As mentioned previously, the U.S. Surgeon General’s report and other previously published studies suggest that the beneficial health effects from exercising may not require such high levels of physical intensity or frequency (Report to the U.S. Preventive Services Task Force, 1989; Leon et al., 1987; LaPorte et al., 1984; Mangus et al., 1979; Haskell et al., 1985). In fact, exercises such as brisk walking, stair climbing and gardening are now thought to be as useful in improving cardiovascular fitness as the previously defined “vigorous physical exercise” (Leon et al., 1987).

The prevalence of regular physical exercise varies, by age, gender and race. For example, the 1985 Minnesota Heart Survey showed less than half the black men (48.4%) and women (43.9%) acknowledged participating regularly in leisure activities (Sprafka et al., 1988). Research conducted on a black population from predominantly poorer communities found with the exception of walking, women spent little or no time performing general physical or individual leisure activities, or household activities (Ford et al., 1991). Among low socioeconomic male respondents (again predominantly black), much of their non-leisure time physical activity involved walking and household tasks (Ford et al., 1991).

In summary, the review of the literature reveals that middle-age black men and women are at high risk for health problems associated with physical inactivity. This paper utilizes national data in examining the relationship between gender and levels of physical activity among middle-age blacks (51-61 years of age). This age group is especially important since the estimated life expectancy at birth in 1940 for non-whites (majority of whom were black Americans) – the birth year closest to the study respondents – was 51.5 years for men and 54.9 years for women (U.S. Dept. of HHS, 1990).

METHODOLOGY

Sample

Data used in this study were derived from the larger Health and Retirement Study (HRS), a nationally representative sample of 12,654 civilian, non-institutionalized U.S. residents. In addition, to insure the inclusion of selected groups, multistage probability sampling was used to over-sample blacks, Hispanics and residents of the state of Florida at twice their population weights. Eligibility selection for each household consisted of a primary respondent born between January 1, 1931, and December 31, 1941, and his or her spouse, regardless of age. The total sample had an 82 percent response rate. A detailed description of the instrument, the study design, and sampling methodology are provided elsewhere (Juster & Suzman, 1995).

Funded by the National Institute on Aging, and conducted by the University of Michigan's Institute of Social Research (ISR), the first wave of data for this longitudinal study was collected in 1992. All of the HRS data were collected through a detailed, standardized questionnaire filled out by interviewers trained by the Survey Research Center at the University of Michigan's Institute for Social Research. Although the current research focuses only on physical activity and selected sociodemographic variables, the HRS survey covered an extensive array of topics including retirement plans, physical health and functioning, disability, cognition and expectations, family structure, housing and mobility, job (current and past) and work history, income, net worth, pensions, and insurance.

The subsample of the HRS study used here consists of 1,663 interviews in the cross-sectional data on non-Hispanic black respondents 51 to 61 years of age. All other respondents were excluded from this analysis. More than one-half (58.0%) of this subsample are female and 42 percent are male. To achieve generalizability, descriptive statistics used in the present study are based on the analysis of weighted data to provide nationally representative findings. The use of weighted data, however, means that the original number of respondents is ultimately reduced to 851. A complete description of the study sample is presented in Table 1 with weighted percentages of sociodemographic characteristics, retirement status, and self-perceived health by gender.

Measures

Each measure in this analysis is based on self-reports involving closed-ended questions. Physical activity, the dependent variable for this study, is composed of three dimensions: light physical activity, vigorous physical activity, and heavy housework. Respondents are asked, "How often do you participate in **light physical** exer-

Table 1. Selected Characteristics of Study Population

Characteristic	Men		Women	
	Number ¹	Percent ¹	Number	Percent
Age				
51-61 years	699	42.4	964	57.6
Marital Status				
Married/Partner	506	73.0	439	45.8
Divorced/Separated	124	17.3	276	28.8
Widowed	28	3.9	173	17.5
Never Married	41	5.8	76	7.8
Educational Level				
Less than 12 years	312	42.9	407	41.2
High school graduate	218	31.2	301	31.3
Some college - graduate	169	26.0	256	27.5
Household Income - 1991				
Less than \$20,000	221	30.2	395	40.3
\$20,000 - \$39,999	184	25.6	282	29.4
\$40,000 plus	291	43.8	272	28.8
Retirement Status				
Completely retired	116	19.0	143	17.7
Partially retired	43	7.3	57	7.0
Not retired	435	73.7	610	75.3
Self-perceived Health				
Excellent	102	15.3	87	9.2
Very good	144	20.6	204	21.7
Good	217	30.4	317	32.7
Fair	146	21.1	230	23.9
Poor	90	12.5	126	12.5

¹n is the number of unweighted sample cases on which weighted percentages are based; all percentages are weighted.

²Column percentages sum to 100 (percentages may not add to 100 because of rounding) in each category.

cise – such as walking, dancing, gardening, golfing, bowling, etc.?” “How often do you participate in **vigorous physical** exercise or sports – such as aerobics, running, swimming, or bicycling?” and “How often do you do **heavy housework** like scrubbing floors and windows?” All exercise activities are consistently coded so that a high score indicates a higher incidence of the behavior. Originally, each physical activity measure was scored as: 3 or more times a week (5); 1 or 2 times a week (4); 1 to 3 times a month (3); less than once a month (2); or never (1). For this study, however, these variables were recoded as 1 = 3 or more times a week, and 0 = less than 3 times a week. In summary, there are three dichotomized indicators of physical activity – light physical activities, vigorous physical activities, and heavy housework.

Gender, marital status, age, education, income, retirement status, and self-perceived health status constitute the study’s predictor variables. Variable definitions and the specific coding schemes used for analytic purposes are summarized in Table 2.

Analysis

Cross-tabulations were done on all variables to examine the role played by the various independent variables in predicting men versus women’s involvement in light physical activity, vigorous exercise, and heavy housework (see Table 3). The purpose of these cross-tabulations was to explore – using a substantive 5% rule – whether the differences detected between the genders were big enough to warrant further consideration of possible interaction effects. In addition, zero order correlations among all of the variables used in the study were analyzed to rule out multicollinearity. The means and standard deviations for all study variables along with a correlation matrix are presented in Appendix A.

Separate logistic regressions were used in estimating the role played by gender, age, marital status, educational level, household income, retirement status and self-perceived health status to predict involvement in each targeted physical activity (i.e., light, vigorous, and heavy housework). Logistic regressions were used in this analysis because of the categorical nature of the dependent variables (Hanushek and Jackson, 1977). Parameters for the logistic models are estimated by using the maximum-likelihood method, which selects the coefficients that make our observed results most ‘likely.’ These coefficients signify the size and direction of the association identified between an independent variable and an outcome measure. More specifically, the unstandardized logit coefficients presented in Table 4 convey the change in the log odds expected to accompany a unit change in the independent variable, while holding the effects of all other variables in the model constant (Hosmer & Lemeshow, 1989). Since log odds are not easily understood they were converted to odds ratios for interpretive purposes. The odds ratio estimates the change in the odds of the depen-

Table 2. Definition of Variables in Study of Physical Activity Among Black American Adults by Gender (51 - 61 years of age)

Variable	Definition and Coding
Dependent Variables	
Light Physical Activities [walking, dancing, gardening, golfing, and bowling]	1 = 3 or more times each week, 0 = otherwise
Vigorous Physical Activities [exercises or sports, i.e. aerobics, running, swimming, bicycling]	1 = 3 or more times each week, 0 = otherwise
Heavy Housework [scrubbing floors & windows]	1 = 3 or more times each week, 0 = otherwise
Predictor or Explanatory Variables	
Sociodemographic	
Age	R's age on last birthday
Gender	1 = female, 0 = male
Marital Status	
Married	1 = married/partner, 0=otherwise
Divorced/Separated	1 = divorced/separated, 0 = otherwise
Widowed	1 = widowed, 0 = otherwise
Never Married	1 = never married, 0 = otherwise
Education	
Less than High School	1 = Less than high school, 0 = otherwise
High School Graduate	1 = High school graduate, 0 = otherwise
Some College	1 = Some college, 0 = otherwise
Bachelors Degree or more	1 = B.A. or more, 0 = otherwise
Income	
High Income	1 = \$40,000 or more, 0 = otherwise
Medium Income	1 = \$20,000 - \$39,999, 0 = otherwise
Low Income	1 = Less than \$20,000, 0 = otherwise
Health	
Self-perceived Health Status	1 = good-very good-excellent, 0 = fair-poor
Retirement Status	1 = completely/partially retired, 0 = other

Table 3. Predictor Variables by Gender and Physical Activity (3 or more times per week) (n=1,663)^{1,2}

Characteristics	Light		Vigorous		Heavy Housework	
	Men	Women	Men	Women	Men	Women
Total n	(367)	(426)	(88)	(61)	(61)	(120)
Age						
51-61 years	53.8	44.7	13.4	6.5	8.4	12.3
Marital Status						
Married/Partner	53.5	43.5	11.8	7.6	6.7	11.7
Divorced/Separated	55.2	42.1	20.4	5.7	13.2	14.0
Widowed	48.2	50.6	21.4	4.9	19.6	11.3
Never Married	57.1	48.4	7.1	6.5	7.1	11.8
Educational Level						
Less than 12 years	49.1	44.1	8.7	4.0	8.6	16.5
High school grad.	56.7	44.6	15.3	5.5	11.1	9.1
Some college	56.3	45.0	20.2	11.3	4.2	13.5
College graduate	50.8	51.4	9.5	6.5	6.3	7.5
Household Income						
Less than \$20,000	52.3	42.8	10.3	3.8	9.2	15.4
\$20,000 - 39,999	52.7	44.3	12.7	6.9	8.9	11.3
\$40,000 plus	55.4	48.2	16.0	9.4	7.3	8.0
Retirement Status						
Completely retired	44.3	36.1	6.8	3.8	3.8	6.5
Partially retired	62.2	37.1	8.9	6.9	4.4	17.2
Not retired	57.3	48.4	17.5	6.9	11.2	14.5
Self-perceived Health						
Excellent - Good	57.1	50.9	17.1	8.3	8.4	13.9
Fair - Poor	47.3	34.0	6.0	3.4	8.4	9.5

¹ n is the number of unweighted sample cases on which weighted percentages are based; all percentages are weighted.

² Percent represents the percentage of group who engage in the specified exercise.

dent variable occurring with a unit change in the independent variable, while holding constant the effects of all other variables in the model. The relative impact of each independent variable in predicting involvement in the physical activities targeted was determined by comparing the Wald X^2 statistics. All statistical analyses were performed using SPSS version 6.1.

RESULTS

Sociodemographic Characteristics by Physical Activity Level

The analysis began with an examination of the relationships between sociodemographic, retirement, health factors and physical activity by gender as shown in Table 3. Physical activity here again, means those individuals doing light physical exercises, vigorous physical exercises or heavy housework three or more times a week.

Light Physical Activity. Light physical exercise includes activities such as walking, dancing, gardening, golfing and bowling. Looking at the overall light physical activity patterns reported, it appears that, with the exception of those who are widowed, men are more active than women. In that instance, a slightly smaller proportion of men (48.2%) reported participating in regular light physical activities in comparison to widowed women (50.0%). The largest gender difference occurred among those who are partially retired. Nearly two-thirds of these men (62.2%) reported participating in regular light physical exercise in contrast to a third (37.1%) of the women.

Vigorous – Heavy Physical Activity. Vigorous physical activity consists of physical exercises and sports such as aerobics, running, swimming, or bicycling. In every category a larger proportion of men in contrast to women report participating in vigorous physical activities. Looking at the groupings, the highest percentage of activity was reported by men who are widowed (21.4%), with some college education (20.2%), in the highest household income bracket (16.0%), not yet retired (17.5%), and reporting good to excellent health (50.9%). Though considerably less frequent than their male counterparts, the highest levels of vigorous physical activity reported were among women who are married (7.6%), with some college (11.3%), the highest income bracket (9.4%), and partially or not retired (6.9% each category). The greatest difference in reports of vigorous physical activity are observed among men and women in the marital categories of divorced/separated and widowed, with men more likely to participate in vigorous physical exercise in each category (20.4% to 5.7% and 21.4% to 4.9% respectively).

Heavy Housework. Heavy housework includes such tasks as scrubbing floors and

Appendix A. Bivariate Correlations, Means, and Standard Deviations for Predictors and Dependent Variables - Weighted Data (n=1,663)

Variable	1	2	3	4	5	6	7	8	9
1. Female	.01								
2. Age	-.02	.13***							
3. Less than H.S.	.002	-.07	-.57***						
4. H.S. graduate	-.01	-.08*	-.37***	-.30***					
5. Some college	.02	-.04	-.19***	-.15***	-.10**				
6. B.A. or more	-.27***	-.07*	.06	.06	.003	.01			
7. Married/Partner	.13***	-.02	.01	-.05	.01	-.002	-.65***		
8. Divorced/Separated	.21***	.14***	.06	-.04	-.001	-.01	-.42***	-.20***	
9. Widow	.04	-.00	.02	.02	-.02	-.01	-.32***	-.15***	-.10**
10. Never married	.10**	.11***	.29***	-.07*	-.13***	-.12***	-.37***	-.22***	.17***
11. Low income	.04	-.04	.001	.02	-.03	-.01	-.02	.01	-.01
12. Middle income	-.16***	-.07*	-.31***	.05	-.11***	.14***	.37***	-.22	-.16***
13. High income	-.03	-.03	-.25***	.05	.14***	.10**	.14***	-.07*	-.12***
14. Self-perceived health	-.02	.18***	.01	-.02	.01	-.01	-.03	.01	.07*
15. Retirement	-.09**	.01	-.04	.02	.01	.01	.01	-.03	.01
16. Light physical activity	-.12***	-.02	-.10**	.01	.09*	-.01	.02	.02	-.03
17. Heavy physical activity	.06	-.005	.07	-.01	-.02	-.03	-.06	.06	.02
18. Heavy housework									
Mean	.58	55.86	.42	.31	.16	.05	.57	.24	.12
Standard Deviation	.49	3.11	.49	.46	.37	.22	.49	.43	.32

* $p < .05$; ** $p < .01$; *** $p < .001$

Appendix A. (continued)

Variable	10	11	12	13	14	15	16	17	18
1. Female									
2. Age									
3. Less than H.S.									
4. H.S. graduate									
5. Some college									
6. B.A. or more									
7. Married/Partner									
8. Divorced/Separated									
9. Widow									
10. Never married	.12***								
11. Low income	.05	-.47***							
12. Middle income	-.16***	-.55***	-.46***						
13. High income	.004	-.31***	.08*	.24***					
14. Self-perceived health	-.05	.16***	-.09*	-.08*	-.23***				
15. Retirement	.02	-.04	-.01	.05	.14***	.07*			
16. Light physical activity	-.02	-.08*	-.004	.09**	.13***	-.06	.21***		
17. Heavy physical activity	-.005	.06	-.01	-.07	.04	-.06	.07*	.02	
18. Heavy housework									
Mean	.07	.36	.28	.35	.65	.22	.49	.09	.11
Standard Deviation	.25	.48	.45	.48	.48	.41	.50	.29	.31

* $p < .05$; ** $p < .01$; *** $p < .001$

windows three or more times a week. Except for male widowers and male high school graduates, women report a higher incidence of involvement in heavy housework. By educational level women with less than a high school education (16.5%) and those with some college (13.5%) have the highest rates of participation in heavy housework. Regardless of their retirement status or self-perceived health status, women report higher rates of involvement in heavy housework activities than men. Within gender, higher proportions of males who are widowed (19.6%), high school graduates (11.1%), and in the lowest income level (9.2%) are involved in heavy housework activities. Among women, those who are divorced/separated (14.0%), with less than a high school education (16.5%), household income of less than \$20,000 (15.4%), partially retired (17.2%) and in good to excellent health (13.9%) are more involved in heavy housework tasks.

In sum, the exercise that both males and females are most likely to participate in three or more times a week is light physical activity. Proportionately more males than females are involved in vigorous physical activities. A greater percentage of women do heavy housework, whereas a greater percentage of males partake in light and vigorous physical activities.

Multivariate Analysis

Table 4 presents the results of the logistic regression of the study's predictive factors on light physical activity. Among black American adults, ages 51 to 61 years, significant predictors of involvement in light physical activity are gender and health status. Specifically, women are 34 percent less likely (odds ratio = .66) than their male counterparts to engage in light physical activity three or more times a week; and those reporting good to excellent health are 74 percent more likely (odds ratio = 1.74) than those in fair to poor health to do so.

Model I in Table 5 indicates that gender and self-perceived health status are also significant in predicting involvement in vigorous physical activities. Women are about half as likely (57% less likely; odds ratio = .43) to engage in vigorous physical exercise holding all other factors in the model constant. Black adults who consider themselves in good to excellent health are more than twice as likely (i.e., odds ratio = 2.4 or 140% more likely) to participate in vigorous physical activities, as those who rate their health as fair to poor. Variables of interest in Model I that began to approach significance ($p < .10$) include divorced/separated and the completion of some college. Though not statistically significant at $p < .05$ level, these data suggest that, everything else being equal, divorced/separated individuals are 66 percent more likely (odds ratio = 1.66) to engage in vigorous physical activities than married persons. Further, the data suggest that individuals with some college education are nearly 71 percent more likely (odds ratio = 1.71) to take part in vigorous physical exercises on

Table 4. Logistic Regression of Light Physical Activity Among Black Men and Women Age 51-61 Years

Variables ¹	Unstandardized		Odds Ratio	Wald X ²
	Logit Coefficients	S.E. ²		
Constant	-.88	1.32		.44
Female [Male = 0]	-.42	.15	.66*	7.89
Age (by year)	.01	.02	1.01	.26
Marital Status [Married = 1]				
Divorced/Separated = 1	.07	.18	1.07	.15
Widowed = 1	.37	.24	1.45	2.34
Never Married = 1	.22	.29	1.24	.57
Educational Level [Less than 12 years = 1]				
H. S. graduate = 1	.05	.16	1.05	.10
Some college = 1	-.01	.21	.99	.00
College graduate = 1	.03	.34	1.03	.01
Household Income [Less than \$20,000 =1]				
\$20,000 - \$39,999 = 1	-.09	.19	.92	.21
\$40,000 plus = 1	.04	.19	1.04	.04
Retirement Status [Not retired = 0]				
Complete - Partial = 1	-.24	.18	.79	1.72
Self-perceived Health [Fair - Poor = 0]				
Excellent - Good = 1	.55	.16	1.74**	11.95
Model Chi Square	27.23*	df=12		

¹ Variables in brackets are referent categories.

² Standard Error

* $p < .01$. ** $p < .001$

Table 5. Logistic Regression of Vigorous Physical Activity Among Black Men and Women Age 51-61 Years

Variables ¹	Model I			Model II		
	<i>b</i> (<i>S.E.</i>) ²	Odds Ratio	Wald <i>X</i> ²	<i>b</i> (<i>S.E.</i>) ²	Odds Ratio	Wald <i>X</i> ²
Constant	-3.09 (2.28)		1.85	-3.20 (2.29)		1.94
Female [Male = 0]	-.85 (.26)	.43***	10.82	-.57 (.30)	.57 ⁺	3.65
Age (by year)	.00 (.04)	1.00	.00	.00 (.04)	1.00	.00
Marital Status [Married = 1]						
Div./Sep. = 1	.51 (.31)	1.66 ⁺	2.64	.98 (.40)	2.65*	6.07
Widowed = 1	.40 (.46)	1.49	.75	.28 (.46)	1.33	.38
Never Married = 1	-.02 (.57)	.98	.00	-.07 (.58)	.93	.02
Educational Level [< 12 years = 1]						
H. S. graduate = 1	.16 (.29)	1.18	.31	.14 (.29)	1.15	.23
Some college = 1	.54 (.32)	1.72 ⁺	2.79	.54 (.33)	1.72 ⁺	2.80
College graduate = 1	-.27 (.63)	.76	.19	-.31 (.63)	.74	.24
Household Income [< \$20,000 = 1]						
\$20,000 - 39,999 = 1	.17 (.34)	1.19	.26	.22 (.35)	1.24	.39
\$40,000 plus = 1	.46 (.34)	1.59	1.83	.50 (.35)	1.64	2.07
Retirement Status [Not retired = 0]						
Complete-Partial = 1	-.43 (.36)	.65	1.47	-.45 (.36)	.64	1.59
Self-perceived Health [Fair - Poor = 0]						
Excellent - Good = 1	.88 (.33)	2.41**	7.07	.88 (.33)	2.42**	7.07
Interaction						
Divorced * Gender	---	---	---	-1.02 (.58)	.36 ⁺	3.12
Model Chi Square	35.70***	<i>df</i> = 12		38.88***	<i>df</i> = 13	

¹ Variables in brackets are referent categories.

² Standard Error

⁺ *p* < .10. * *p* < .05. ** *p* < .01. *** *p* < .001.

a regular basis than those without a high school education. This is particularly interesting when viewed in the light of the nonlinear relationship suggested by the data regarding education and vigorous physical exercise. It seems that both high school graduates and individuals with some level of college education vigorously exercise on a regular basis more than those who have not finished high school. Completing college, however, seems to diminish the likelihood of regular vigorous physical activity by 24 percent (odds ratio = .76).

Model II in Table 5 includes the same predictors of vigorous physical activity as Model I, with the addition of the only interaction term found to approach significance ($p < .08$), while significantly improving the fit of the model ($p < .001$). Inclusion of the gender by divorced/separated interaction indicates divorce/separation exerts a differential effect on the probability of becoming involved in vigorous physical activity for women. Specifically, women who are not divorced/separated are about half as likely (odds ratio = .57 or 43% less likely) to vigorously exercise on a regular basis as men who are not divorced/separated. Men, however, who are divorced/separated are more than twice as likely (odds ratio = 2.65, 165%) to participate in vigorous physical activities on a regular basis than men who are not divorced/separated. Further, women who are divorced/separated are about half [odds ratio ($.36 * 2.65 * .57$) = .54; or 46% less likely] as likely to exercise vigorously on a regular basis than men who are not divorced/separated. Overall, women who are divorced/separated are 64% less likely (odds ratio = .36) than the other groups (men and women) to engage in vigorous physical activities.

The heavy housework model presented in Table 6 includes the same predictor variables contained in the previous two models. It yielded, however, no significant predictors of involvement in heavy housework. Interestingly though, high household income emerged as a potentially important predictor of heavy housework, with those earning \$40,000 or more a year appearing half as likely (odds ratio = .51 or 49% less likely) to do heavy housework than those with household incomes of less than \$20,000. Health also surfaces as a suggestive ($p < .09$) predictor of regular heavy housework. Black American adults 51-61 years of age who report good to excellent health, are 56 percent more likely (odds ratio = 1.56) to do heavy housework on a regular basis, than those who rate their health as fair to poor.

A second heavy housework model incorporating gender and the variables emerging in the initial model as interesting (i.e., household income – both middle and high, and self-perceived health status), was constructed (See Table 6a). This second model was found to significantly (Model $X^2 = 12.02$; $p < .02$) improve our predictive capacities over the initial model with respect to heavy housework. Individuals with household incomes of \$40,000 or more a year are 53 percent less likely (odds ratio = .47) to engage in heavy housework than their counterparts with incomes less than \$20,000

Table 6. Logistic Regression of Heavy Housework Among Black Men and Women Age 51-61 Years

Variables ¹	Heavy Housework			
	<i>b</i>	<i>S.E.</i> ²	Odds Ratio	Wald <i>X</i> ²
Constant	-1.80	2.12		.72
Female [Male = 0]	-.31	.25	1.36	1.55
Age (by year)	-.01	.04	.99	.03
Marital Status				
[Married = 1]				
Divorced/Separated = 1	.25	.28	1.28	.78
Widowed = 1	.15	.37	1.16	.16
Never Married = 1	-.19	.48	.83	.15
Educational Level				
[Less than 12 years = 1]				
H. S. Graduate = 1	-.16	.26	.85	.36
Some College = 1	-.20	.35	.82	.32
College Graduate = 1	-.47	.64	.63	.54
Household Income				
[Less than \$20,000 = 1]				
\$20,000 - \$39,999 = 1	-.41	.29	.67	2.02
\$40,000 plus = 1	.68*	.32	.51	4.62
Retirement Status				
[Not retired = 0]				
Complete - Partial = 1	-.53	.33	.59	2.61
Self-perceived Health				
[Fair - Poor = 0]				
Excellent - Good = 1	.44 ⁺	.26	1.56	2.81
Model Chi Square	17.28	<i>df</i> = 12	(<i>p</i> < .14)	

¹ Variables in brackets are referent categories.

² Standard Error

⁺*p* < .10. **p* < .05

Table 6a. Modified-Logistic Regression of Heavy Housework Among Black Men and Women Age 51-61 Years

Variables ¹	Heavy Housework			
	<i>b</i>	<i>S.E.</i> ²	Odds Ratio	Wald χ^2
Constant	-2.32	.27		72.25
Female [Male = 0]	.35	.24	1.41	2.13
Household Income [Less than \$20,000 = 1] \$20,000 - \$39,999 = 1 \$40,000 plus = 1				
	-.42	.28	.66	2.30
	-.75*	.29	.47	6.89
Self-perceived Health [Fair - Poor = 0] Excellent - Good = 1				
	.48 ⁺	.26	1.61	3.54
Model Chi Square	12.02	<i>df</i> = 4	(<i>p</i> < .02)	

¹ Variables in brackets are referent categories.

² Standard Error

**p* < .10. ⁺*p* < .01

a year. Self-perceived health status retained a suggestive influence, with those describing their health as good to excellent found 61 percent more likely (odds ratio = 1.61) to undertake heavy household tasks than those reporting fair to poor health.

DISCUSSION

The present findings concerning physical activity are confirmed by earlier studies (Ainsworth et al., 1991; Merritt et al., 1990; Gottlieb & Green, 1997) that have found a large proportion of the black population, both male and female, not engaged in any form of regular (three or more times a week) physical exercise. According to the data derived through crosstabulations, both males and females are most likely to participate, on a regular basis, in light physical exercise. Proportionately, more females than males are involved in heavy housework. In contrast, proportionately more men are involved in both light and vigorous physical activities.

A series of logistic regression analyses were used to examine how various sociodemographic, retirement, and health factors predicted involvement in select physical activities. The first model analyzed factors affecting involvement in light physical exercises, which included activities such as walking, dancing, gardening, golfing and bowling. These data indicate that gender and self-perceived health status are significant predictors of involvement in light physical activity. Women and those individuals reporting fair to poor health are less likely to participate in regular light physical activities.

The analyses of factors predicting involvement in physical activities such as sports, aerobics, running, swimming, or bicycling, utilized two models. In the first model, gender and self-perceived health status were found significant in predicting regular participation in vigorous activities. As with light physical exercise, women are less likely to engage in vigorous physical activities, as are those who describe their health status as fair to poor. While not statistically significant, it is interesting to note that respondents in the divorced/separated category, and those with some college education, are more likely to be involved in vigorous activity. In the second model, which incorporates a gender by divorced/separated interaction term, the effect of marital status on the probability of participating in vigorous activities varied by gender. Among those who are not divorced or separated, women are much less likely than men to participate in vigorous exercise. Divorced or separated men, however, are twice as likely to participate in vigorous activities than men who are married, widowed or never married. Notably, divorced or separated women are the least likely group of men or women to engage in vigorous physical activities on a regular basis.

As reflected in Table 6, the initial model found none of the original variables significant in determining involvement in heavy housework. When the original model was modified to include only those variables that approached significance (i.e., gender, middle and high income, and self-perceived health status), our predictive capacity improved. Income emerged as the major predictor of regular participation in heavy housework by black American adults, with those in the highest household income (\$40,000 or more) category being less likely than those at the lowest income level (less than \$20,000) to undertake these tasks.

Together these analyses provide further evidence of the significant role played by gender, income, self-perceived health status, and divorce/separation in predicting the involvement of black adults in regular physical activity.

CONCLUSION

Little systematic effort has been expended in the examination of health promotion and disease prevention among black American adults. Health promotion and disease

prevention efforts, however, can only work when appropriate gender and situational needs are considered. To this end, the present analysis attempts to clarify the role of gender, among other sociodemographic influences, in predicting participation in regular physical activities among adult black American men and women 51 to 61 years of age.

Unlike previous research that has had to focus on limited socioeconomic groups within the black population, this research, using data from the national HRS survey, examined a more heterogeneous adult black population. Thus, the data presented here reveal several interesting findings about the role of gender, income, self-perceived health, and marital status in predicating regular physical activity. These data can be used by social workers, health care providers, policymakers, and program developers in identifying subsets of the population at particular risk of remaining physically inactive.

For example, it appears that black women, who are divorced or separated, are particularly inactive. Given what is known about the relationship between regular physical exercise and the risk of breast cancer, cardiovascular disease, obesity, and other severe and chronic health conditions, programs tailored to meet their unique circumstances are needed. Specifically, consideration of factors such as affordability, neighborhood access, and child care would seem important in reaching this particularly vulnerable subgroup.

As with most survey research the present study has some limitations. First, the study relied on recall and self-reports, biases that are indigenous to survey research. Further, the current analysis is based on cross-sectional data that limits the ability to establish change or causation. The fact that the physical activity variables only measured frequency, and not the intensity or time invested in the exercise, is another limitation. Despite the limitations, however, the current study provides an introduction to gender differences in physical activities of black American adults. It also opens the potential for subsequent studies to focus on changes over time by using data from future waves of the national HRS longitudinal study.

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