Older Adults’ Perceived Physical Activity Enablers and Barriers: A Multicultural Perspective

Anna E. Mathews, Sarah B. Laditka, James N. Laditka, Sara Wilcox, Sara J. Corwin, Rui Liu, Daniela B. Friedman, Rebecca Hunter, Winston Tseng, and Rebecca G. Logsdon

This study identified perceived physical activity (PA) enablers and barriers among a racially/ethnically and geographically diverse group of older adults. Data were from 42 focus groups conducted with African Americans, American Indians, Latinos, Chinese, Vietnamese, and non-Hispanic Whites (hereafter Whites). Constant-comparison methods were used to analyze the data. Common barriers were health problems, fear of falling, and inconvenience. Common enablers were positive outcome expectations, social support, and PA program access. American Indians mentioned the built environment and lack of knowledge about PA as barriers and health benefits as an enabler more than participants in other groups. Whites and American Indians emphasized the importance of PA programs specifically designed for older adults. Findings suggest several ways to promote PA among older people, including developing exercise programs designed for older adults and health messages promoting existing places and programs older adults can use to engage in PA.

Keywords: aging, cognition, exercise, focus groups, perceptions, qualitative research

Physical activity is important for healthy aging. It plays a role in reducing all-cause mortality and preventing many chronic conditions including coronary heart disease, colon and breast cancer, and Type II diabetes mellitus (Cress et al., 2004; Friedenreich, 2001; Physical Activity Guidelines Advisory Committee, 2008). Physical activity also improves body-fat distribution, physical functioning, and mental health (Friedenreich, 2001; U.S. Department of Health and Human Services [USDHHS], 1996) and may help maintain cognitive health (U.S. Centers for Disease Control and Prevention [CDC] & Alzheimer’s Association, 2007).
Recently published physical activity recommendations suggest that each week older adults should do at least 30 min of moderate physical activity 5 days, or 20 min of vigorous physical activity 3 days; 8–10 strength exercises 2 days; and flexibility exercises for at least 10 min 2 days (Nelson et al., 2007). Many older adults do not meet these recommendations (CDC, 2008b). Nationally, 52% of adults age 55–64 and 61% of those 65 and over do not meet recommendations for moderate or vigorous physical activity (CDC, 2008b). Notably larger percentages of older African Americans (73%) and Latinos (66%) do not meet the physical activity recommendations than non-Hispanic Whites (58.9%; hereafter referred to as Whites; CDC, 2007b), although recent estimates based on accelerometer data suggest that racial/ethnic differences in older people’s physical activity levels may be less than previously thought (Troiano, Berrigan, & Didd, 2008). Less is known about rates of physical activity among older Asian Americans (Wilcox, 2002) and American Indians (CDC, 2007b).

It is not clear why minorities may be less active than Whites (Gallant & Dorn, 2001), although the reasons are likely multidimensional and complex (Kumanyika et al., 2007). For example, cultural attitudes about desirable body weight (Crespo, Smit, Carter-Pokras, & Andersen, 2001), differences in availability of recreational resources (Moore, Diez Roux, Evenson, McGin, & Brine, 2008), and poor maintenance of sidewalks in minority neighborhoods (Kelly, Schoot, Baker, Barrbridge, & Lemes, 2007) may contribute to racial disparities in physical activity. Furthermore, some studies have shown that older minorities are more likely to have comorbid conditions (Fillenbaum, Pieper, Choen, Cornoni-Huntley, & Guralnik, 2000; Shih, Song, Chang, & Dunlop, 2005) and to be obese (CDC, 2008a); these factors may limit their ability to engage in regular physical activity. Educational level and socioeconomic status may moderate the relationship between race/ethnicity and physical activity (Marshall et al., 2007), with lower levels of either factor associated with less physical activity. The purpose of this study is to examine perceived physical activity enablers and barriers among a diverse group of older adults and to explore racial/ethnic differences in these enablers and barriers. The findings can be used to inform the development of messages promoting physical activity among older adults, as well as physical activity programs designed specifically for older adults.

**Older Adults’ Perceived Physical Activity Enablers and Barriers**

The amount of research examining perceived physical activity barriers and enablers among older minorities has grown in recent years (Belza et al., 2004; Bopp et al., 2007; Dergance et al., 2003; Henderson & Ainsworth, 2000, 2003; Juarbe, Turok, & Perez-Stable, 2002; Melillo et al., 2001; Wilcox, 2002; Wilcox, Oberrecht, Bopp, Kammermann, & McElmurray, 2005). This is a useful area of research because minorities will represent increasingly large proportions of adults age 65 and over in the United States. In 2000, nearly 85% of the population was White; this will decline to about 64% in 2050. Growth will be greatest among the Latino population, 4.8% in 2000 and projected to be 16.4% by 2050. Among African Americans the analogous percentages are 7.9 and 12.2; among Asians and Pacific Islanders, 2.3 and 6.5 (Friedland & Summer, 2005). Perceived physical activity barriers and
Perceived Physical Activity Enablers and Barriers

enablers among older adults are presented here organized into five areas: individual, interpersonal, community, environmental, and cultural.

**Individual**

Older adults from racial/ethnic minority groups have reported several individual-level physical activity barriers. Time constraints have been reported by Latinas age 60 and over (Juarbe et al., 2002), African American and American Indian women age 40 and older (Henderson & Ainsworth, 2003), and older African American women and men (Bopp et al., 2007). Lack of determination and motivation has been reported as a physical activity barrier by older Latinas (Juarbe et al., 2002) and older African American women and men (Bopp et al., 2007). Sedentary Mexican Americans have reported lack of self-discipline, interest, and enjoyment to be barriers. Fear and feelings of inappropriateness have been reported by Latinas age 60 and over (Melillo et al., 2001) and older American Indians/Alaskan Natives (Belza et al., 2004). Similarly, self-consciousness has been reported as a barrier by older, sedentary Mexican American women (Dergance et al., 2003). African American and White adults age 50 and older reported risks of “overdoing it” and being “too old” as barriers to physical activity (Wilcox et al., 2005). Personal health has been reported as a barrier by older Latinas (Juarbe et al., 2002), older American Indians/Alaskan Natives (Belza et al., 2004), and older African American women and men (Bopp et al., 2007). In addition, lack of knowledge was noted as a barrier by older, sedentary Mexican American women (Dergance et al., 2003) and older African American women and men (Bopp et al., 2007).

Older adults have reported several factors that motivate them to be active, including improved health reported by older Latinas (Juarbe et al., 2002) and older African American women and men; improved quality of work and improved physical fitness reported by older Latinas (Juarbe et al., 2002); improved self-esteem, mood, shape, and health reported by sedentary Mexican American and White women (Dergance et al., 2003); and spirituality reported by African American men and women 55 and over (Bopp et al., 2007). Additional individual-level enablers include available transportation reported by older White and African American women (Wilcox et al., 2005) and having a routine for physical activity reported by older Chinese and Vietnamese women and men (Belza et al., 2004). Older African American women and men also reported enjoyment as a physical activity enabler (Bopp et al., 2007).

**Interpersonal**

Social support has been reported as an important enabler of physical activity by African American and American Indian women age 40 and older (Henderson & Ainsworth, 2003), older African American men and women (Belza et al., 2004; Bopp et al., 2007), and Latinas age 60 and over (Melillo et al., 2001), with older Latinas reporting cultural unity and help from health providers as important sources of support. Family roles have been mentioned as both barriers and enablers. Caring for families has been reported as a barrier to physical activity by older Mexican and White women (Gonzalez & Jirovec, 2001) and older African American women and men (Bopp et al., 2007), whereas older Latinas have reported passing on physical
activity as a family legacy as an improved family role and a benefit of physical activity (Juarbe et al., 2002).

Community

Older Latinas reported community resources as physical activity enablers (Meliillo et al., 2001). Older African American men and women have suggested church as important for promoting physical activity (Bopp et al., 2007). Older Mexican women reported job responsibilities and church commitments as major obstacles to regular physical activity (Gonzalez & Jirovec, 2001). Older American Indians expressed concern that traditional customs, including physical activity, were becoming less important because of assimilation into the broader culture (Henderson & Ainsworth, 2003).

The Built Environment

Older Latinas reported distance to recreation facilities as a physical activity barrier (Juarbe et al., 2002). Mexican American women reported lack of transportation as a barrier to physical activity (Dergance et al., 2003). African Americans and American Indians mentioned lack of recreational facilities as a major barrier (Henderson & Ainsworth, 2003). In another study (Wilcox et al., 2005), older African American and White women reported lack of exercise facilities and no sidewalks as barriers and free facilities and age-appropriate programs as enablers.

Cultural Influence on Physical Activity

Culture, which can notably influence how a group’s members view and interact with the world (Garcia, 2006), may affect health-promoting behaviors such as physical activity, as well as views about enablers and barriers to these behaviors. For example, our previous work suggests that Chinese and Vietnamese older adults value balance and moderation and stress the importance of not overexercising oneself when participating in physical activity; however, these themes were not commonly expressed by older African Americans, American Indians, Latinos, or Whites (Wilcox et al., 2009). Examining perceived physical activity barriers and enablers may provide insight regarding which issues are most salient for particular cultures.

Federal Calls to Action and Contributions of This Study

Healthy People 2010 (USDHHS, 2000) calls for a reduction in health disparities. Physical activity plays an important role in preventing many chronic health conditions and improving quality of life (USDHHS, 1996). Thus, effectively promoting physical activity among all racial/ethnic groups is an important component of reducing health disparities. Identifying commonalities and differences in perceived physical activity barriers and enablers among various racial/ethnic groups may contribute to developing effective programs promoting physical activity. Eliminating health disparities encompasses more than eliminating racial/ethnic disparities. Older individuals are less likely to be active than younger adults (CDC, 2007b), so
research is needed to identify how to best promote physical activity among older adults to reduce the age disparity in physical activity and avoidable morbidity.

This research builds on a previous study (Wilcox et al., 2009) that examined perceptions about the link between physical activity and nutrition and cognitive health in a diverse group of older adults, using data from a nationwide study. That study and the current research were conducted in response to a federal call for formative research that would provide a foundation for interventions promoting cognitive health through increased physical activity and other means (CDC & Alzheimer’s Association, 2007). Such interventions are useful; research shows that regular physical activity may help prevent or delay cognitive decline (Kramer & Erickson, 2007; Lautenschlager et al., 2008; Rockwood & Middleton, 2007). The findings from the study by Wilcox et al. (2009) suggest that participants knew about the relationship between physical activity and cognitive health and that interventions and media messages emphasizing the positive role of physical activity in brain health might be especially persuasive.

This study goes one step farther by identifying specific perceived physical activity enablers and barriers described by focus-group participants in the context of cognitive health. The perceived physical activity enablers and barriers described in this study were in the context of discussions about physical activity and cognitive health; however, participants also had occasion to express their thoughts about physical activity as it might relate to health generally. Thus, the responses provided by participants allowed for the examination of racial/ethnic similarities and differences in perceived physical activity enablers and barriers in the context of discussions on physical activity and cognitive health and physical activity and general health.

Using a sample of older Americans composed of six racial/ethnic groups—African Americans, American Indians, Latinos, Chinese, Vietnamese, and Whites—the study objectives were to identify perceived physical activity enablers and barriers among a diverse group of community-dwelling older adults and examine ways that these perceptions differ by race/ethnicity. The findings may further inform the development of messages and interventions to promote physical activity and cognitive health.

**Methods**

**Design and Methods**

**Focus-Group Participants and Selection Criteria.** A total of 42 focus-group sessions (see Table 1) conducted between November 2005 and August 2007 with 396 older adults living in the community were analyzed for this study: 10 African American, 4 American Indian, 4 Chinese, 2 Latino, 19 White, and 3 Vietnamese. The focus groups were conducted in the nine states with universities participating in the Prevention Research Center’s Healthy Aging Research Network (PRC-HAN) in the Healthy Brain Study (The Healthy Aging Research Network Writing Group, 2006; Laditka, Beard, et al., 2009): California, Colorado, Illinois, Pennsylvania, North Carolina, South Carolina, Texas, Washington, and West Virginia. In 10 focus groups, at least 80% of participants reported having the same race/ethnicity. We included these groups in the study sample, assigning them categories of race/ethnicity based on the predominant group composition. Seven of the 10 groups
without complete homogeneity were White, two were African American, and one was American Indian. All other focus groups were homogeneous with regard to race/ethnicity. Recruiting took advantage of the cultural, economic, geographical, and racial/ethnic diversity of the communities in which PRC-HAN centers are located to provide information that would be useful for developing communication interventions for specific groups, as well as for the general population (Laditka, Beard, et al., 2009; Laditka, Corwin, et al., 2009). Recruitment sources included senior centers, community members’ networks, churches, and regularly scheduled community activities. Participants responded to recruitment fliers that were tailored to individual sites and populations but were consistent in content among all sites. Minorities were oversampled to ensure sufficient numbers to provide useful data. Of the four American Indian focus groups, two were conducted in North Carolina and two in rural areas of Washington State. Participants in the three Vietnamese focus groups were older, recent immigrants to the United States living in the San Francisco area. Of the two Latino focus groups, one was conducted in Washington State with first-generation immigrants from Mexico and Central America and the other in the San Luis Valley of southern Colorado with English-educated descendants of nonnative settlers. Additional details about the composition of the focus groups are available (Bryant, Laditka, Laditka, & Mathews, 2009; Wilcox et al., 2009).

**Focus-Group Procedures.** To elicit participants’ attitudes about topics related to brain health, we developed a nine-item focus-group discussion guide (Laditka, Beard, et al., 2009). The analysis for this study focused on participants’ perceived physical activity enablers and barriers. Participants were not asked directly about physical activity enablers and barriers. These concepts emerged when they were asked to “Describe the things we can do to keep our brains healthy and keep our memories and ability to think as we age” and “What changes regarding your diet, activity level, or social involvement are you willing to make?”

“Brain health” was noted as a focus-group topic in the recruitment materials. Before each focus group, the purpose of the study was discussed with participants and informed consent was obtained. The informed-consent form included the statement “We want to learn what you think about brain health. We also want to learn what you think about some health behaviors that may help to promote brain health.” Thus, consistent with the grounded theory approach (Patton, 1980) responses were analyzed in the context of a discussion that occurred within the study’s primary focus on brain health. The term *brain health* was used instead of *cognitive health*, working from the premise that most participants would relate more readily to this term; hereafter, the terms *brain health* and *cognitive health* are used interchangeably. Participants also completed a paper survey that asked about demographics, health behavior, and other characteristics (Byrant et al., 2009).

Focus-group sessions, 90–120 min in length, were facilitated by experienced moderators and observers. The moderators used comprehension probes to obtain and clarify responses from participants (Stewart & Shamdsani, 1990). For example, the moderator may have asked, “Would you give me an example of what you mean?” All groups were audiorecorded. Groups were conducted in English with the exception of three Chinese and three Vietnamese groups. These groups were conducted in Cantonese, Mandarin, and Vietnamese by native-speaking moderators and assistants. The consent form, discussion guide, and survey for these groups were
<table>
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<tr>
<th>Characteristic</th>
<th>African American (n = 95)</th>
<th>American Indian (n = 34)</th>
<th>Chinese (n = 36)</th>
<th>Latino (n = 10)</th>
<th>Vietnamese (n = 26)</th>
<th>White (n = 195)</th>
<th>Total sample (N = 396)</th>
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<tr>
<td>Age, M (SD)</td>
<td>70.0 (8.4)*</td>
<td>69.6 (9.9)</td>
<td>69.0 (8.3)*</td>
<td>61.3 (6.0)**</td>
<td>60.6 (7.7)**</td>
<td>74.4 (8.1)</td>
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<td>31.7 (8.3)**</td>
<td>31.0 (5.5)*</td>
<td>23.3 (3.2)**</td>
<td>30.5 7.4</td>
<td>22.4 (3.3)**</td>
<td>27.7 (5.5)</td>
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<td>50–64 years</td>
<td>25, 26.3**</td>
<td>9, 26.5**</td>
<td>10, 27.8**</td>
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<td>20, 76.9**</td>
<td>18, 9.3</td>
<td>89, 22.6</td>
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<td>65–90 years</td>
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<td>25, 73.5</td>
<td>26, 72.2</td>
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<td>175, 90.7</td>
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<tr>
<td>male</td>
<td>10, 11.6**</td>
<td>6, 18.2</td>
<td>11, 30.6</td>
<td>3, 30.0</td>
<td>11, 42.3</td>
<td>55, 28.8</td>
<td>96, 25.1</td>
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<td>female</td>
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<td>27, 81.8</td>
<td>25, 69.4</td>
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<td>15, 57.7</td>
<td>136, 71.2</td>
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<td>married</td>
<td>28, 29.5</td>
<td>14, 41.2</td>
<td>20, 55.6</td>
<td>9, 90.0**</td>
<td>16, 61.5*</td>
<td>77, 39.7</td>
<td>164, 41.5</td>
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<td>not married</td>
<td>67, 70.5</td>
<td>20, 58.8</td>
<td>16, 44.5</td>
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<td>231, 58.5</td>
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<td>Highest education</td>
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<td>&lt; high school</td>
<td>18, 19.0</td>
<td>6, 17.7</td>
<td>7, 19.4</td>
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<td>tech. or vocational</td>
<td>31, 32.6</td>
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<td>≥ college degree</td>
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<td>6, 17.7</td>
<td>12, 33.3</td>
<td>2, 20.0</td>
<td>4, 15.4</td>
<td>31, 16.0</td>
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### Table 1 (continued)

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<tr>
<th></th>
<th>African American (n = 95)</th>
<th>American Indian (n = 34)</th>
<th>Chinese (n = 36)</th>
<th>Latino (n = 10)</th>
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<td>&lt;$20,000</td>
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<td>16, 51.6</td>
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<td>12, 46.2</td>
<td>83, 46.6</td>
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<td>$20,000–39,999</td>
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<td>$40,000+</td>
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<td>9, 25.0</td>
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<td>regularly active</td>
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<td>7, 21.9</td>
<td>18, 58.1*</td>
<td>1, 11.1</td>
<td>13, 52.0</td>
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<td>irregularly active</td>
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<td>inactive (&lt;10 min/wk)</td>
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<td>5, 15.6</td>
<td>2, 6.5</td>
<td>1, 11.1</td>
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<td>24, 13.3</td>
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<td><strong>BMI</strong></td>
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<td>normal weight (&lt;25)</td>
<td>25, 26.3**</td>
<td>6, 17.6**</td>
<td>20, 55.6**</td>
<td>3, 30.0</td>
<td>17, 65.4**</td>
<td>67, 34.4</td>
<td>138, 34.8</td>
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<td>overweight (25 to &lt;30)</td>
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<td>10, 29.4</td>
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<td>79, 40.5</td>
<td>136, 34.3</td>
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<td>obese (30+)</td>
<td>46, 48.4</td>
<td>18, 52.9</td>
<td>2, 5.6</td>
<td>4, 40.0</td>
<td>3, 11.5</td>
<td>49, 25.1</td>
<td>122, 30.8</td>
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</table>

*Note.* Values are f, %, unless noted otherwise. BMI = body-mass index; GED = General Educational Development. BMI is calculated as kg/m² and categorized by CDC standards. Using guidelines for many Asian populations suggested by the World Health Organization (2004), BMI categories for Vietnamese and Chinese participants were calculated as normal weight < 23, overweight = 23 to <27.5, and obese = 27.5+. Pairwise comparisons using chi-squared tests were conducted for all categorical variables, comparing each ethnic minority group with Whites.

*p < .05. **p < .01.
translated. Transcripts of the six Chinese and Vietnamese groups were translated into English. Because of resource constraints, some focus groups with American Indians, Latinos, and half of the African American focus groups did not match moderator and participant ethnicity. The study was approved by the institutional review board at each participating PRC-HAN site.

Qualitative-Data Analysis

The audio recordings were transcribed verbatim into Microsoft Word. A detailed description of the coding process and data management is available (Laditka, Corwin, et al., 2009). Transcripts were imported into ATLAS.ti (version 5.0; Muhr & Friese, 2004), a qualitative-data-management software program. All the coded data were printed out by code type, reviewed for accuracy, and examined for links to other codes. This “axial coding” process (Strauss & Corbin, 1998) connected code categories; it identified relationships that could reasonably be taken to represent common themes. As part of the interpretive process, comparing and contrasting themes within and across groups, the constant-comparison method (Glaser & Strauss, 1967) allowed for the discovery of similarities and differences in the data.

Similarities and differences in perceived physical activity barriers and enablers were identified within racial/ethnic groups, and then similarities and differences were examined between racial/ethnic groups (Boeije, 2002).

Survey-Data Analysis

Participant survey data were analyzed by race/ethnicity using Statistical Analysis Software (SAS, Cary, NC) version 9.1.3. Whites were selected as the reference category for all comparisons because they had the largest representation among focus groups. For categorical variables, chi-square tests were performed, using pairwise comparisons of each minority group with Whites. For continuous variables, the nonparametric Kruskal–Wallis test was used. In addition, for continuous variables, pairwise comparisons using the Kolmogorov–Smirnov test were conducted, comparing each minority group with Whites. To assess physical activity, several survey questions were adopted from the Behavioral Risk Factor Surveillance System (CDC, 2007a). Participants were categorized as active, or meeting the CDC-recommended activity level, if they reported engaging in at least 30 min of at least moderate-intensity physical activity on 5 or more days each week (Nelson et al., 2007). Physical activities that “make you breathe faster, or make your heart go faster” were considered to qualify as at least moderate-intensity activities. Participants reporting less than 10 min of physical activity each week were categorized as inactive. All other participants were categorized as irregularly active.

Results

Participant Characteristics

Demographic and behavioral characteristics of the 396 participants from the 42 focus groups are reported in Table 1. Several participant characteristics differed substantially and significantly by race/ethnicity. A substantially higher proportion of Chinese reported being regularly active than Whites. Compared with Whites,
significantly higher proportions of African Americans and American Indians were overweight or obese and notably lower proportions of Vietnamese and Chinese were overweight or obese. Larger proportions of Latino and Vietnamese participants were age 50–64, whereas larger proportions of White, American Indian, Chinese, and African American participants were age 65–90. A greater percentage of Latino and Vietnamese participants were married; a greater percentage of African Americans, American Indians, Chinese, and Whites were not married. Nineteen percent of participants reported they had not graduated from high school or completed a GED (General Educational Development), 38% were high school graduates, 26% had graduated from a technical or vocational school, and 17% had graduated from college. About half of participants reported annual income less than $20,000, about a third $20,000–39,999, and 20% at least $40,000.

Thematic Analysis Results

The sections that follow describe themes and subthemes identified in the focus-group results, including racial/ethnic similarities and differences. The themes and subthemes are also summarized in Table 2.

Physical Activity Barriers. No barriers to physical activity were mentioned in common across all racial/ethnic groups. Barriers discussed frequently by at least three racial or ethnic groups are described as follows.

Physical Health Problems. Health problems were the most commonly reported barriers in the African American, White, and American Indian groups. Health problems mentioned included

- Heart problems: “I had to go back and get a stent in my heart, I know I’m not going to do no more running.” (African American)
- Arthritis: “Well I have arthritis pretty bad in my legs, well in my body period. . . . Sometimes it affects you, you just don’t feel like walking.” (African American)
- Back problems: “I do 10 minutes on a treadmill at a slow speed and that’s it. About that time, my back’s killing me.” (White)
- Incontinence: “Well to me it also helps to know that other people don’t do stuff because of incontinence.” (American Indian)
- Functional limitations: “The gardening was the same as hers; I couldn’t get up and down.” (American Indian)

Whites talked frequently about health problems in general, without referencing specific diseases: “I mean if you’ve got a lot of stuff wrong with you, you just kind of give up.” African American participants said that pain associated with health problems keeps them from being active: “I keep telling myself, no, I can’t do that, that hurts.”

Fear of Falling. Fear of falling was mentioned by African Americans, Whites, and American Indians as a barrier to physical activity. Some American Indians said they feared falling with no one nearby to help. One American Indian commented, “Well I find that I am afraid of falling and being alone. I don’t want to just lay there because I decided to do such and such as an exercise.”
Table 2  Perceived Physical Activity Barriers and Enablers, Summary of Themes and Subthemes by Race/Ethnicity

<table>
<thead>
<tr>
<th>Themes/Subthemes</th>
<th>Race/Ethnic groups</th>
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<tr>
<td><strong>Barriers</strong></td>
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<tr>
<td>Physical health problems</td>
<td>AA, AI, W</td>
</tr>
<tr>
<td>Types</td>
<td>AA, AI, W</td>
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<tr>
<td>associated pain</td>
<td>AA, AI, W</td>
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<tr>
<td>Fear of falling</td>
<td>AA, AI, W</td>
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<tr>
<td>associated fear of no one around to help</td>
<td>AI</td>
</tr>
<tr>
<td>Physical activity as inconvenient</td>
<td>AI, L, W</td>
</tr>
<tr>
<td>Waking early</td>
<td>AI, W</td>
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<tr>
<td>inconvenient hours</td>
<td>AI</td>
</tr>
<tr>
<td>Built environment</td>
<td>AA, AI, L, W</td>
</tr>
<tr>
<td>community design</td>
<td>AA, AI, L, W</td>
</tr>
<tr>
<td>comparison with other communities</td>
<td>AI</td>
</tr>
<tr>
<td>Built environment tied to convenience</td>
<td>AI</td>
</tr>
<tr>
<td>Lack of knowledge</td>
<td>AI, W</td>
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<tr>
<td>instruction associated with safety</td>
<td>AI</td>
</tr>
<tr>
<td>Financial costs</td>
<td>AA</td>
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<tr>
<td>Additional barriers</td>
<td></td>
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<tr>
<td>lack of transportation</td>
<td>AI, W</td>
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<td>weather</td>
<td>AA, W</td>
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<tr>
<td>lack of time</td>
<td>AA, V</td>
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<td>overdoing it</td>
<td>W</td>
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<tr>
<td>self-consciousness</td>
<td>AI</td>
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<td>too old</td>
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<tr>
<td><strong>Enablers</strong></td>
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<tr>
<td>Outcome expectations</td>
<td>AA, AI, C, V, W</td>
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<tr>
<td>Health benefits</td>
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<tr>
<td>feel better</td>
<td>AA, AI, C, V, W</td>
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<tr>
<td>Social support</td>
<td>AA, AI, W</td>
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<tr>
<td>Physical activity programs</td>
<td>AA, AI, W</td>
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<tr>
<td>Senior specific</td>
<td>AI, W</td>
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<tr>
<td>low-impact activities</td>
<td>AA</td>
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<tr>
<td>social support</td>
<td>AA, AI, W</td>
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<td>Additional enablers</td>
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<td>seeing others being active</td>
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<td>medical assistive devices</td>
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<td>conducive built environment</td>
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<td>low-cost activities</td>
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<td>education about physical activity</td>
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*Note. AA = African American; AI = American Indian; W = non-Hispanic White; L = Latino; V = Vietnamese American; C = Chinese American. Race/ethnicity categories are from participant self-reports.*
Physical Activity as Inconvenient. Whites, American Indians, and Latinos said that physical activity was difficult or inconvenient to fit into their current lifestyles. Whites said it was challenging to get up early every morning to be active. Several American Indians mentioned that the facility where they exercise has inconvenient hours. American Indian participants also described how convenience affects daily activity choices:

Convenience turns out to be a hell of a trap. That’s what I’ve been thinking about, you know, I look at those escalators and think yeah, I can go up the escalator, but then I don’t walk. And then I decided I should walk instead of take the escalator. But, you know, it’s convenient.

Built Environment. African Americans, Latinos, Whites, and American Indians mentioned the built environment as a barrier to physical activity, although these comments were most common among American Indians. Participants said they would like to walk for transportation and leisure but that their communities made this challenging. One American Indian couple described how they drive around searching for a place to walk:

[Female participant] If we want to walk, we have to drive somewhere. It’s sad to drive somewhere to go take a walk. [Male participant] That’s what we went [sic], we spent an hour one day looking for a place to walk. . . . Driving around and I couldn’t find a place because there was, somebody else owned the land or something, so I couldn’t do it. So, I went back home.

Several American Indians compared their communities to others that are more conducive to walking and biking:

It seems really stupid to me, you know, and I would rather that the city was designed so you had to go somewhere to get something, you know. The city in Geneva, Switzerland, a beautiful city, it is designed for walking around.

An American Indian spoke favorably of communities where physical activity was a necessity rather than a choice:

When I lived in Mexico . . . I had to go to the village and I knew that was 552 steps, but I had to go there to get ice or I had to go get some carrots or tomatoes or whatever the heck it was. I had to walk that way because we, we had, we had no wheels. Nothing was designed for convenience because you lived in pathways and dunes and stuff. . . . So, you didn’t think about I’m going for a walk. No, I’m going to get this stuff and you just happened to be walking to do it. But, and then, it, it’s a terrible tragedy living in convenient environments. And ultimately, all of that is taken away from you, so you have to consciously say I’m going to walk. Not because I’m going somewhere, but because my body’s got to move. And that’s a little frustrating.

Lack of Knowledge. More often than other racial/ethnic groups, American Indians said they lacked knowledge about types of physical activity they should engage in. Participants said they had access to exercise facilities and exercise equipment such as treadmills but that they were uncomfortable exercising without instruction and felt it was unsafe:
Well we got an exercise room there, but we don’t have anybody to work with the elders to do the exercises. ‘Cause you need to use it and be wise and we can’t overdo things. We don’t have anybody to come—to instruct us. (American Indian)

**Financial Cost.** Financial cost was mentioned as a barrier only by African Americans. They said they wanted to be more active but that exercise groups and facilities were too expensive. “I would like to see a, a gym that I can afford. They have gyms, but I can’t afford to join one.” Another African American said “I would like to be involved with all of us. You know, in, in one place. . . . If we could afford it. Right now, I can’t afford to go to the gym.”

**Additional Barriers.** Additional barriers mentioned less frequently in various groups included

- Lack of transportation to places where participants could be active: “Some of them don’t have transportation. Transportation’s a big issue.” (American Indian)
- Weather: “I said, even when it was raining, I can’t walk because it was too wet. It got dry and I said, I can’t walk because it’s too hot.” (White)
- Lack of time: “But every single day I go to work, but oppositely, I don’t have time to go exercise because I like to do house chores. The smaller jobs, I like those so time is lost that could have been for exercise.” (Vietnamese)
- Overdoing it: “But see, he gets on 10 minutes a day and that may be, he may be doing his body damage. . . . You can overdo the treadmill.” (White)
- Self-consciousness: “The staff there would stop and be watching us exercise. It bothered some of the elders so they wouldn’t exercise anymore.” (American Indian)
- Being too old: “After you get so old, then you can’t, you can’t, exercise.” (White)

**Physical Activity Enablers**

**Outcome Expectations.** The most commonly reported enabler among all groups was the expectation of positive outcomes. Outcome expectations included both health benefits and a general sense of feeling better. Health benefits of physical activity were mentioned in every racial/ethnic group; all said physical activity improves brain health: “They like to ride a bicycle, play sports. When they get older, they’re still sharp” (Vietnamese). “We need to use all approaches to keep the brain healthy. . . . This is an issue of all aspects . . . diet, exercise” (Chinese).

Several African Americans and Whites said physical activity helps with blood circulation. An African American commented, “And when you’re doing it, you’re breathing in more oxygen and your circulation is increasing.” Several African Americans, Whites, and American Indians said physical activity helps manage weight. A White participant said “It changed me 12 pounds. It took about 2 years. I mean, it wasn’t, it really wasn’t no crash diet, it wasn’t none but just slow and easy.” Two of the American Indian groups focused primarily on physical activity as useful for weight loss; one participant commented, “It’s mainly to lose weight. . . . Maybe it helps your mind. I don’t know, but I, I, when I exercise it’s mainly to lose weight” (American Indian).
Additional health benefits mentioned less frequently included improvements with back problems: “Yoga helped your back problem? Yeah” (American Indians); prevention of osteoporosis, “Strength training is also important to do something that helps you because as people age, we lose our arm muscle and walking is not enough, it helps us with the effect of osteoporosis and things like that” (White); and improved mental health, “If I feel kind of depressed or something I go outside and do something and it always helps me” (White). In one of the Latino groups, a participant also described the benefits of exercise in general terms, saying “they were very healthy. . . . I think it has to do with exercise.”

American Indians were more likely to report health benefits of physical activity than participants from other racial/ethnic groups. Several African American, White, and Chinese participants mentioned that physical activity helps people feel good or feel better, without mentioning a specific health condition. Participants said that physical activity helps them feel younger, have more energy, and become relaxed: “I start walking and I felt much better, I can see the difference in it. It really helps if you walk” (African American).

Social Support. The value of social support was mentioned in the African American, Chinese, White, and American Indian groups. Participants emphasized that physical activity is more enjoyable when you have company: “Exercise with company is easier to do than by yourself” (American Indian). “Meet me a nice friend where we can go out every now and then and do the cha-cha or the salsa or, you know, and any kind of exercise, you know” (African American).

Access to Physical Activity Facilities and Programs. African American, White, American Indian, Latino, and Chinese groups said that physical activity programs and facilities were important enablers. A Chinese participant commented,

Many old people in their 50s and 60s have a lot of energy, but they don’t know where to go and have recreations. . . . The government can organize classes to teach old people how to dance. Through dance classes, old people can be more physically active.

Several White, Chinese, and Latino participants mentioned senior centers as an enabler, with a Chinese participant emphasizing the importance of ethnic-specific senior centers: “I think ethnic-specific senior centers like this are really great to help us old folks.” Whites, African Americans, and American Indians commented about the importance of physical activity programs specifically designed for older adults. A White participant commented, “I think it would be a really good thing to have an exercise program that would be more inclusive for seniors.” African Americans said they would enjoy low-impact activities, such as water aerobics, that would be easier on their joints: “But I would love water aerobics because that would be a good exercise and it would not bother my knees.” “I would do that. I would do that.” “I could do that, too. I love that.”

Additional Enablers. Additional enablers mentioned less frequently included

• Seeing other people being active: “If I went outside and saw people working then it make me want to do it.” (Vietnamese)
• Having medical assistive devices (e.g., a walker): “And I think if I get a walker, I can walk farther.” (White)
• Having a conducive built environment: “I could walk more, ’cause out where we live, it’s easier to walk.” (African American)

• Low-cost activities: “It’s a private place, and you can go there and pay 2 dollars. Now for a person that wants to go a couple times a week, that’s good exercise. And, and that 2 dollars ain’t as bad as 15 or 20.” (White)

• Education about physical activity: “I think we have to educate people.” (Latino)

Discussion

This study provided a unique opportunity to hear about perceived physical activity barriers and enablers in the context of brain health from a sample of ethnically/racially and geographically diverse older adults. Our research adds to the literature by addressing two understudied areas: presenting views of multiple racial/ethnic groups and representing groups that have received little attention. A new finding of our study is that there were several notable differences in perceived physical activity barriers and enablers among racial/ethnic groups.

Although several groups mentioned the built environment as a physical activity barrier, American Indians were more likely to do so. Some American Indians expressed frustration that they could not find places to walk in their communities. They also said that physical activity has been removed from their lives by modern conveniences such as one-stop shopping venues they have to drive to and escalators built next to stairs. Several American Indians reminisced about places they had lived that required activity. Most comments about the built environment offered by American Indians were made by participants of two focus groups who lived in rural Washington State, where physical work (e.g., farming, fishing, canoeing, traditional dancing) is valued. It may be that those with a tradition of physical activity are more aware of factors affecting their ability to be active, such as the built environment.

African Americans were more likely than other racial/ethnic groups to say that financial costs of exercise facilities and equipment were a barrier. Other studies have found that lower income African Americans reported financial costs as a major barrier to physical activity (Bopp et al., 2007; Carter-Nolan, Adams-Campbell, & Williams, 1996; Eyler et al., 1998). As in those earlier studies, our result may be associated with the lower incomes of the African American sample. Based on data from the U.S. Census Bureau (2008), the average median household income in the recruitment states in 2006–2007 was $48,078. Most African Americans in the study sample reported annual incomes less than $20,000 (56.5%) or $20,000–39,000 (32.9%).

Barriers to physical activity mentioned by multiple racial/ethnic groups included health problems—the most common barrier—including heart, back, arthritis, and functional limitations. Physical activity may help improve such medical conditions through improved aerobic capacity, blood lipid profile, blood pressure, body composition, glucose tolerance, bone density, strength, flexibility (Cress et al., 2004), and physical function (Kelley, Kelley, Hootman, & Jones, in press). Kelley et al. estimated that 1.8 million older adults age 50 and over could improve their physical function if 11.2% of currently nonexercising older adults became physically active.

Additional barriers mentioned by multiple racial/ethnic groups were fear of falling and perceptions that physical activity is inconvenient (e.g., inconvenient
hours of operation at exercise facilities and living in environments not conducive to physical activity). A number of barriers identified in this study are consistent with those found in previous studies with older adults, including health issues (Eyler et al., 1998; Gonzalez & Jirovec, 2001; Juarbe et al., 2002), fear of falling (Wilcox, 2002), financial cost (Juarbe et al., 2002), feeling too old (Wilcox et al., 2005), lack of knowledge (Dergance et al., 2003), the built environment (Wilcox et al., 2005), and lack of time (Juarbe et al., 2002). However, lack of time, a commonly reported barrier to physical activity among adults in general (Sallis & Owen, 1999) and older adults (Eyler et al., 1998; Lian, Gan, Pin, Wee, & Ye, 1999), was rarely mentioned in this study.

Physical activity enablers discussed by multiple racial/ethnic groups included positive outcome expectations (e.g., improved brain health, mental health, weight management, blood circulation), social support or companionship, and access to physical activity programs or facilities. Consistent with previous research, the most commonly reported enabler was an expectation of health benefits (Juarbe et al., 2002; Wilcox, 2002). Also consistent with prior work, participants in our study mentioned a wide range of health benefits (Juarbe et al., 2002). Health issues are complex, however; they may operate as both barriers and motivators to being active (Cohen-Mansfield, Marx, & Guralnik, 2003).

In contrast with previous studies (Eyler et al., 2002; Henderson & Ainsworth, 2003), American Indians were more likely than other racial/ethnic groups to mention lack of knowledge about physical activity as a barrier. American Indians mentioned health benefits of physical activity, indicating that they know the importance of engaging in physical activity. Their lack of knowledge was related to what physical activities they could safely perform. This issue should be further explored.

Several limitations should be noted when considering the findings. The majority of the sample was female, Chinese and Vietnamese groups were younger than other groups, and there were only two Hispanic groups. Furthermore, focus groups with older Latinos were not conducted in Spanish; thus, this may have been a relatively acculturated sample of older Latinos, a factor that could influence the results. In addition, participants were recruited in different ways across sites. It is difficult to determine whether differences among groups are associated with race/ethnicity, recruitment strategies, geographic region, or other factors such as differences in age or socioeconomic status. Participants represent a convenience sample that may be more socially active than typical older adults, so the results may not represent older adults who are less socially active. It should be noted that we identified perceptions about physical activity enablers and barriers without directly asking about them, as is more common in related research. Rather, barriers and enablers were offered without prompting from the researchers. As a result, it may be that these barriers and enablers are the most salient to participants. The sociodemographic survey asked participants to report moderate physical activity only, rather than both moderate and vigorous physical activity; therefore, only frequency and duration of moderate physical activity were used when categorizing participants as active or not. However, relatively few older adults engage in vigorous physical activity (CDC, 2008b).

Few barriers or enablers were mentioned by Vietnamese participants. This result may be related to characteristics of the individuals in these focus groups. For example, most Vietnamese participants were recent immigrants and had low
English proficiency, education, and income. Experiences of many recent Vietnamese immigrants are characterized by resettlement disruptions, family separation, cultural disorientation, financial hardship, and long work hours (Thai, 2008). Furthermore, the fact that these groups did not discuss barriers or enablers to physical activity, or did so rarely, does not provide conclusive evidence that these issues are not important to them. Although the multiple focus groups representing each race/ethnicity reduce the likelihood that views common among a demographic group would not be stated, it is possible that focus-group dynamics or other factors caused discussions to focus on other characteristics. Additional research is warranted with Vietnamese Americans to examine physical activity and perceived enablers and barriers.

The findings from this study provide a foundation for developing health communications to promote physical activity among older adults. For example, messages may be needed specifically for older adults who feel that they are too old to be active or that they cannot be active because they have a chronic condition. Messages targeting these groups could provide ideas for low-impact activities such as water aerobics and chair exercises. Messages could also include information about local community resources with free or low-cost exercise instruction designed specifically for older adults and/or for individuals in particular racial/ethnic groups. It may be useful for communication to promote activities preferred by particular racial/ethnic groups, such as yoga and Tai Chi for older Chinese and Vietnamese people (Wilcox et al., 2009).

While broader messages based on physical activity barriers mentioned by several groups could target multiple racial/ethnic groups (e.g., information about low-impact activities), messages targeted to specific groups based on racial/ethnic differences in perceived physical activity enablers and barriers may also be useful. When developing messages for specific racial/ethnic groups, cultural sensitivity and consideration of values and other characteristics of the population of focus are vital (Resnicow, Baranowski, Ahluwalia, & Braithwaite, 1999). Developing targeted messages based on racial/ethnic differences in physical activity barriers and enablers may enhance the cultural appropriateness and effectiveness of messages, as they are perceived based on the beliefs and experiences of the target population.

African Americans in our sample, who generally had lower incomes than other study participants, mentioned financial cost as a barrier to physical activity. Messages targeting those with fewer financial resources could provide ideas for low-cost physical activities, such as at-home exercise videos or mall walking, or information on low-cost physical activity facilities in their communities. In addition, some American Indians mentioned a perceived lack of access to physical activity facilities and programs. Some research has shown that perceptions of the built environment do not always match objective assessments (McGinn, Evenson, Herring, Huston, & Rodriguez, 2007). Messages about accessible places where people can engage in physical activity may have a positive public health impact on groups such as the American Indians in this study.

Future research may include developing and testing messages such as those highlighted in this discussion. In addition to testing message content, further research is needed to identify preferred spokespersons and channels for message dissemination. Previous studies have suggested that African Americans want messages framed specifically for them (Brown & Williams, 1994; Chan, Haynes, O’Donnell, Bachino, & Vernon, 2003) and that they prefer sources specific to
their culture, such as African American ministers, African American doctors, and African American celebrities (Odedina et al., 2004). On the other hand, American Indians have a strong oral tradition and may prefer testimonials for transmitting culturally appropriate health messages across generations (Friedman & Hoffman-Goetz, 2007). These cultural differences in preferred information sources support the need for further research on the effectiveness of various communication channels and messengers for disseminating physical activity messages to specific racial/ethnic groups.

Our findings also suggest several implications for practice and policy. Participants mentioned several physical activity enablers that could help older adults continue to be active despite health problems. For example, they mentioned needs for physical activity programs designed specifically for older adults and low-impact exercises that would be easier on their joints, such as water aerobics. Several participants mentioned how assistive devices such as walkers and canes have enabled them to continue being active despite functional limitations. With medical issues continually reported in the literature as a major barrier to physical activity (Sallis & Owen, 1999; Wilcox, 2002), it is useful for health professionals to take these suggestions into consideration when planning physical activity programs for older adults. Modified physical activity programs allowing older adults with functional limitations and disabilities to remain active can provide opportunities for improved quality of life, because physical activity plays a major role in improving functional ability in older adults (Bruce, Fries, & Hubert, 2008).

Effectively promoting increased physical activity to multiple racial/ethnic groups is important. Even small increases in physical activity may improve health, delaying morbidity and mortality (Chipperfield, 2008; USDHHS, 1996). There are differences by race/ethnicity in physical activity barriers and enablers. It is likely that there will also be differences in preferences for physical activity health-promotion messages and programs. When developing programs to promote cognitive health, public health professionals need to respond to the preferences of groups that identify themselves by race, ethnicity, or culture.

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