

Physical Activity Attitudes, Preferences, and Practices in African American, Hispanic, and Caucasian Girls

Mira Grieser, MHS
Maihan B. Vu, DrPH, MPH
Ariane L. Bedimo-Rung, PhD, MPH
Dianne Neumark-Sztainer, PhD, MPH
Jamie Moody, MS
Deborah Rohm Young, PhD
Stacey G. Moe, BA

Physical activity levels in girls decline dramatically during adolescence, most profoundly among minorities. To explore ethnic and racial variation in attitudes toward physical activity, semistructured interviews ($n = 80$) and physical activity checklists ($n = 130$) are conducted with African American, Hispanic, and Caucasian middle school girls in six locations across the United States. Girls from all groups have similar perceptions of the benefits of physical activity, with staying in shape as the most important. Girls have similar negative perceptions of physical activity, including getting hurt, sweating, aggressive players, and embarrassment. Chores, running or jogging, exercises, and dance are common activities for girls regardless of ethnicity. Basketball, swimming, running, and dance are commonly cited favorite activities, although there are slight differences between ethnic groups. The results suggest that factors other than ethnicity contribute to girls' physical activity preferences and that distinct interventions may not be needed for each ethnic group.

Keywords: *physical activity; adolescent girls; ethnic variation; qualitative; African American girls; Hispanic girls; Caucasian girls*

The level of physical activity in the U.S. population is insufficient to provide protection from adverse health consequences (U.S. Department of Health and Human Services, 1996; Pate et al., 1995; "Physical Activity and Cardiovascular Health," 1996; Healthy People 2000, 1990). Physical activity levels decline, particularly dramatically in girls, as children become adolescents. Because lifestyle behavioral patterns are formed during

Mira Grieser, University of Maryland. Maihan B. Vu, University of North Carolina. Ariane L. Bedimo-Rung, Louisiana State University Health Sciences Center. Dianne Neumark-Sztainer, University of Minnesota. Jamie Moody, San Diego State University. Deborah Rohm Young, University of Maryland. Stacey G. Moe, University of Minnesota.

Address reprint requests to Mira Grieser, MHS, Department of Kinesiology, University of Maryland, Welch Center East, Suite 7, 2809 Boston St. Baltimore, MD 21224; phone: (410) 563-6200 ext. 207; fax: (410) 563-6205; e-mail: mgrieser@umd.edu.

Authors' Note: This research was supported by National Heart, Lung, and Blood Institute Grants U01HL66845, U01HL66852, U01HL66853, U01HL66855, U01HL66856, U01HL66857, and U01HL66858.

Health Education & Behavior; Vol. 33 (1): 1-12 (February 2006)

DOI: 10.1177/1090198105282416

© 2006 by SOPHE

childhood and adolescence (Aarts, Paulussen, & Schaalma, 1997), it is important to devise strategies that can attenuate the decline in physical activity. Prior to developing interventions that target diverse populations, however, attitudes and preferences for physical activity of that population must be identified.

Previous research suggests that physical activity beliefs differ by gender. Girls have lower self-esteem, perceive lower health status, and view themselves as less athletic than do boys (Garcia et al., 1995). Boys are more likely to exercise for competitive and personal recognition reasons, whereas girls are more likely to exercise for weight management and increased personal attractiveness reasons (Tappe, Duda, & Ehnwald, 1989; Godin & Shephard, 1986). These data indicate that girls may benefit from interventions specifically designed for them.

Activity levels of adolescent girls vary according to ethnicity and age. The 2001 Youth Risk Behavior Survey found that vigorous physical activity is more common among Caucasian high school females than among Hispanic and African American high school females, and there is a higher prevalence of inactivity among African American girls than among Caucasian girls (Centers for Disease Control and Prevention, 2002). The decline in physical activity has been shown to be greater in African American girls compared with Caucasian girls (Heath, Pratt, Warren, & Kann, 1994; Kimm et al., 2002). In addition, the prevalence of girls who receive insufficient physical activity is higher among 11th and 12th grade girls compared with 9th and 10th grade girls (Centers for Disease Control and Prevention, 2004).

As these studies indicate, there is a need to reverse this decline in physical activity among girls of all ethnicities. In developing effective interventions, it is important to understand girls' beliefs and attitudes toward physical activity, which are likely shaped by their cultural, societal and economic environments, and personal and behavioral factors. Little is known about possible differences in attitudes and beliefs among adolescent girls of various ethnic and racial backgrounds. It is recognized that women from diverse ethnic groups have differences in their beliefs regarding physical activity (Eyler et al., 2002); therefore, there may also be differences in adolescents.

The Trial of Activity for Adolescent Girls (TAAG) is a multicenter trial to design and test a school and community-based intervention to prevent the decline of physical activity in middle school girls. To inform the TAAG intervention development, several phases of formative research were carried out prior to the intervention. An overall description of these methods is found elsewhere in this issue (Gittelsohn et al., 2006). Other articles in this issue present results on physical activity attitudes and behaviors in adolescent girls (Vu et al., 2006; Staten et al., 2006). This article reports physical activity attitudes, preferences, and practices among middle school girls by addressing the following questions:

- What are the perceived benefits of physical activity according to girls of various ethnic groups?
- What are the perceived negative aspects of physical activity according to girls of various ethnic groups?
- What are the differences and similarities in favorite and most common physical activities by girls of different ethnicities?

Table 1. Sample Size by Ethnicity

	African American	Hispanic	Caucasian	Other	Did Not Report Ethnicity	Total
Interviews	32	14	27	7	0	80
Checklist	20	23	64	21	2	130

METHOD

As described elsewhere in this issue, TAAG formative research was conducted by each of six field centers (i.e., University of Arizona, San Diego State University, Tulane University, University of Minnesota, University of Maryland, and University of South Carolina) to obtain representatives from each predominant ethnic group across geographical region. Girls were recruited from schools not participating in the TAAG main trial so as not to bias later intervention and measurement efforts.

Qualitative and quantitative methods were used. Semistructured interviews and checklists were designed and pretested to answer the research questions. All data collection methods were approved by each university's institutional review board, and informed consent was obtained from a parent or guardian. Written child assent was also obtained prior to data collection.

Semistructured Interview

Girls who participated in the interview were selected from 12 schools, ranging from 1 to 4 schools per field center. Schools were selected to ensure variation in ethnicity, socioeconomic status (SES), and setting across sites. African American girls were recruited from schools characterized as inner city (Louisiana and South Carolina), suburban (Louisiana and Maryland), and rural (South Carolina) and ranging from low SES (Louisiana) to moderate SES (Louisiana, Maryland, and South Carolina), as identified by the percentage of students receiving Free and Reduced Lunch. Hispanic girls were recruited from inner-city (Arizona), suburban (California), and rural (Arizona) areas, ranging from low (Arizona and California) to moderate SES (Arizona). Caucasian girls were recruited from inner-city (South Carolina), suburban (California, Louisiana, Maryland, and Minnesota), and rural (South Carolina) areas, including schools with high SES (Minnesota), moderate (Louisiana, Maryland, and South Carolina), and low (California) SES.

Physical education teachers were asked to select girls from various racial and ethnic backgrounds and physical activity levels to participate in the interviews.

Researchers with expertise in qualitative research methods trained TAAG data collectors to conduct semistructured interviews. Practice interviews and evaluation of the interviews were part of the training.

Eighty interviews were conducted from six field centers. Approximately half of the girls were in seventh grade (ages 11 to 12) and half in eighth grade (ages 12 to 13). Each field center completed an average of 13 interviews, with a range of 8 to 21. Table 1 shows the ethnic breakdown of the sample.

Interviews were conducted between September and December 2001 and were audio-taped and transcribed verbatim.

Semistructured interview questions were formulated based on the informational needs of TAAG intervention planners. This article presents data from the following interview questions: (a) What do you like about physical activity? (b) What good things would happen to you if you got more physical activity? (c) What do you dislike about physical activity? (d) What bad things would happen if you did or did not get physical activity? (e) Is there anything that gets in the way of you being more physically active?

Physical Activity Checklist

Girls who participated in the checklist were selected from 11 schools, ranging from 1 to 3 schools per field center. These were the same schools as used for the interviews, except in two cases. Checklist participants consisted of a sample of girls, independent of the interview sample. Physical education teachers or TAAG staff recruited girls from several classes representative of the student body (excluding advanced or remedial classes).

The checklist was completed by 130 girls, approximately half in sixth grade and half in eighth grade. Each field center conducted an average of 20 surveys, with a range of 14 to 31. Table 1 shows the ethnic breakdown of the checklist sample. African American girls were from Maryland, South Carolina, San Diego, and Louisiana. Hispanic girls were from Arizona, San Diego, Louisiana, and South Carolina. Caucasian girls participated in the checklist at all field centers.

In the checklist, girls were given a list of 54 activities (including sports, recreation, and chore-related activities) and were asked to check the activities they did within the past 7 days. They were also asked to list their three favorite activities. All checklists were conducted during November and December 2001, providing a snapshot of activities done in the late fall.

Data Analysis

Quantitative data from the physical activity checklists were analyzed using the Statistical Analysis System (SAS Version 8.0, SAS Institute, Cary, NC). The qualitative data from the interviews were analyzed using Qualitative Solutions and Research N6, a software program for analyzing text-based data (Qualitative Solutions and Research PTY LTD, 2002). As described elsewhere in this supplement, a codebook with 144 codes was developed to analyze these data (Vu et al., 2006). The data were organized into matrices for the purpose of identifying themes among adolescent girls. Responses to selected items from the checklists were then integrated with the interview analyses to further highlight similarities and differences by ethnicity. This mixed method research strategy of data analysis was used to help generate a more comprehensive understanding of the identified themes.

RESULTS

Perceived Benefits of Physical Activity

To understand the benefits girls associate with physical activity, interview respondents were asked what they like about physical activity and what good things are associated with being more physically active. Many of the perceived benefits of physical activity were similar across ethnic groups, with only slight differences, as shown in Table 2.

Table 2. Benefits of Physical Activity by Ethnicity: Interview Data (*N* = Number of Girls of Each Ethnicity Answering This Question in the In-Depth Interview)

Benefit	African American (<i>n</i> = 32)	Caucasian (<i>n</i> = 27)	Hispanic (<i>n</i> = 14)
Stay in shape, exercise	88	85	64
Run around, being active	48	44	50
Play sports	48	48	43
Social contact, team	15	63	43
Avoid disease	25	33	29
Work toward goal	22	22	14
Keep busy, something to do	32	22	7
Gain energy	30	4	7
Prevent laziness	30	22	7
Trophies, recognition	6	4	—
Relax	—	4	7

NOTE: All figures are percentages.

The predominant benefit of physical activity was staying in shape, as cited by more than three fourths of respondents. It was the most frequently cited benefit in each ethnic group, although African Americans (88%) and Caucasian (85%) girls cited it slightly more often than Hispanic girls (64%), as shown in Table 2.

Girls associated staying in shape with a healthy, strong, and attractive body and considered this to be a significant benefit of physical activity:

I think it would help to keep myself in shape, like if I'm busy all the time, then I'm not just loafing around. . . . When I get older, [like] 40, I can still look like I'm 30. (African American seventh grader, Louisiana)

Just less than half of all girls said that running around and being active and playing sports were benefits of physical activity. Although running around and being active could also be a definition of physical activity, it is included here because of the high proportion of girls who identified it as a benefit.

There was more variation in the less common benefits of physical activity. Socializing and being part of a team were frequently mentioned by Caucasian (63%) and Hispanic girls (43%) but less frequently mentioned by African American girls (15%). In general, all respondents had positive views of adults and children who were involved in physical activity and cited them as positive influences:

I [like] to be part of a team, and I like to play sports and having other people depend on me. (Hispanic eighth grader, Arizona)

Between one fourth and one third of girls from each ethnic group said that physical activity helped them to avoid disease. Working toward a goal was also cited by similar proportions of African American, Hispanic, and Caucasian girls (22%, 22%, and 14%, respectively). Keeping busy was a benefit more commonly cited by African American and Caucasian girls (32% and 22%, respectively) than by Hispanic girls (7%). In general, girls who spoke about benefits such as working toward a goal and keeping busy also rec-

ognized that being involved in physical activity helped them stay away from negative influences and behaviors:

[Without physical activity] I might get into bad stuff, like smok[ing]. I wouldn't have anything to do, and I then would wanna go do something and then my friends who like peer pressure and stuff. Cuz' when I'm doing sports and stuff, I have something to do besides smoke or drink. (Hispanic seventh grader, Arizona)

Thirty percent of African American respondents said that physical activity gave them energy, compared with 7% or less of Hispanic and Caucasian girls. As one African American seventh grader said, "[physical activity] brings out the energy in your bones, your body" (Maryland). Similarly, 30% of African American and almost one fourth of Caucasian girls said that physical activity prevents people from being lazy, whereas very few Hispanic girls mentioned this benefit (7%).

Finally, physical activity as a form of relaxation or stress management emerged in only a few interviews overall. Rewards such as trophies and recognitions were also seldom mentioned.

Perceived Negative Aspects of Physical Activity

Perceived negative aspects of physical activity were also similar across ethnic groups. Many girls (41%) said that getting hurt was a negative aspect of physical activity. Other common themes included sweating (20%) and disliking certain sports or exercises (20%). Less frequently mentioned negative aspects were aggressive players, time away from other things, the belief that excessive workouts lead to illness, and fear of embarrassment.

Injury

As the most commonly stated negative aspect of physical activity, the potential for injury was a concern for girls. They gave examples of friends' or their own injuries, and they spoke of certain sports or situations that they perceived as particularly risky for injury. Aggressive players were frequently mentioned as a cause of injury. These injuries could range from minor discomforts, such as bruises or sore muscles, to more serious injuries:

It would be easy for somebody to get hurt playing a sport. Like somebody who is playing softball could get hit or break a bone or sprain an ankle or wrist. Or jogging, you can hurt your legs. Various things could happen to you while doing physical activity. (African American eighth grader, South Carolina)

It is important to note that girls viewed injury as a negative aspect of physical activity; however, these examples were not given as reasons not to participate in physical activities or sports.

Sweating, Embarrassment, and Physical Discomfort

Girls of all ethnicities talked about the discomforts of physical activity, including sweating, tiredness, and being out of breath. As an African American seventh grader said,

“sometimes, I don’t exercise ‘cause I get tired. I lose breath like when I run; my breath goes away . . . like my throat starts to burn” (South Carolina). A specific dislike of sweating was expressed by about 20% of girls overall:

I don’t like to sweat. Because, for an example, I have dance first period, and it gets my hair all messed up, and it just makes you stink and everything. (Hispanic eighth grader, Arizona)

Several African American and Caucasian girls also linked physical discomforts, such as being tired or out of breath, to embarrassment:

I’ve been knocked down before . . . and then, I got back up and I was breathing very heavy. It looked so embarrassing because the other girls were so physically active, still breathing right, and it was just horrible. (Caucasian seventh grader, Maryland)

Although there were many factors that could indirectly cause embarrassment, only a few girls (9%) spoke directly about embarrassment as a barrier to physical activity. Several Caucasian and Hispanic girls mentioned embarrassment directly, but African American girls did not:

I like to watch [basketball], but I don’t like to play it because I’m not good. . . . I don’t like people to laugh at me. . . . If it is a game and people really want to win, I won’t play because I don’t want to mess it up, and then, they’ll get all mad at me for that. (Caucasian seventh grader, California)

Other Negative Aspects

About 20% of all girls stated their dislike for certain sports or exercises, frequently saying that they did not like running. Also, at least one girl in each ethnic group made a link between excessive physical activity and illness:

Well, I know this one girl in gymnastics. She’s really skinny, and she always gets pneumonia. She always has to go to the hospital because she works out in gymnastics a lot. (Caucasian seventh grader, Minnesota)

Common Physical Activities

Overall, the 10 most common activities done in the past week as reported on the checklist were indoor chores, running or jogging, calisthenics or exercises (including pushups, sit ups, and jumping jacks), dance, playing catch, child care, walking (for exercise and for transportation), volleyball, and jump rope. Table 3 shows these 10 activities by each ethnic group. Of these most common physical activities, indoor chores, running or jogging, calisthenics or exercises, dance, and jump rope were all cited by similar proportions of girls in each ethnic group. There were some ethnic differences in other common activities. Playing catch, childcare, and walking for exercise were each done by three fourths or more of Hispanic girls within the past week, compared with about half of African American and Caucasian girls. Greater proportions of African American girls (60%) and Hispanic girls (57%) reported playing volleyball in the past week, compared with Caucasian girls (34%).

Table 3. Ten Most Common Activities in the Past 7 Days: Checklist Data

Activity	African American (<i>n</i> = 20)	Hispanic (<i>n</i> = 23)	Caucasian (<i>n</i> = 64)
Indoor chores	90	97	83
Running or jogging	95	83	84
Calisthenics	75	65	77
Dance	80	79	73
Playing catch	55	87	47
Childcare	60	78	53
Walking (exercise)	55	74	50
Walking (transport)	40	61	53
Volleyball	60	57	34
Jump rope	50	44	47

NOTE: All figures are percentages.

As the checklist contained more than 40 items, there were some activities that were not as commonly reported but had substantial ethnic variation (data not shown). Basketball was more commonly reported by African American girls (55%) than by Hispanic (43%) or Caucasian (34%) girls. More than half of Hispanic girls also reported riding scooters, compared with smaller proportions of African American and Caucasian girls (35% and 25%, respectively). A higher proportion of Caucasian girls (45%) reported doing gymnastics in the past week, compared with African American (25%) and Hispanic (22%) girls. Finally, aerobics were reported by about one third of Caucasian and Hispanic girls, compared with only 15% of African American girls.

Favorite Physical Activities

Figure 1 shows the activities that were cited as favorites on the checklist by at least 20% of one or more ethnic groups. These activities included basketball, dance, swimming, running or jogging, volleyball, soccer, and rollerblading.

Also, as shown in Figure 1, favorite activities listed by African American girls on the checklist were basketball and running or jogging, each listed by 35% of respondents. These activities were also described as favorites in the interviews with African American girls, in addition to walking.

Swimming emerged as the favorite physical activity among Hispanic girls in the checklists (31%). Hispanic interview respondents and girls of all ethnicities defined swimming in a very broad sense as all activities associated with going to the pool or the beach. Additional favorite activities were dance (26%), rollerblading (22%), and soccer (22%). In the interviews, soccer and rollerblading did not emerge as favorites, although running and basketball did.

Caucasian girls reported their top three favorite activities on the checklist as swimming (30%), basketball (25%), and running (22%). Additional favorite activities that emerged during the interviews were volleyball and soccer.

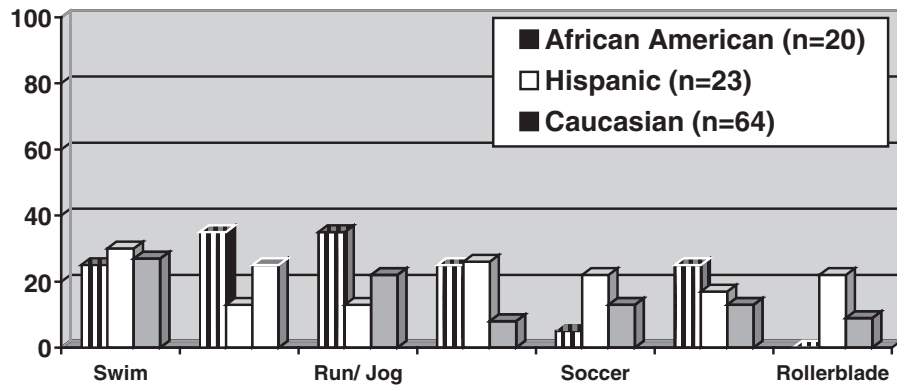


Figure 1. Favorite activities by ethnicity: Checklist data

DISCUSSION

There is much evidence that physical activity interventions are needed to increase activity levels of middle school girls and particularly girls of minority ethnic groups. Other studies have encouraged the consideration of cultural factors when planning physical activity interventions (Eyler et al., 2002; Lowry, Wechsler, Galuska, Filton, & Kann, 2002; Kumanyika et al., 2003). In planning such interventions, it is important to understand the perceptions of different ethnic groups regarding physical activity as well as any variation in common and favorite activities.

The most frequently cited benefit of physical activity, staying fit, was noted among girls of all ethnic groups. Another study also reports staying fit as a benefit of physical activity (Godin & Shephard, 1986). The social aspect of being part of a team or group was appealing to girls of all ethnic groups, although less so to African American girls. This finding indicates that physical activity programs that emphasize health, fitness, and social benefits would appeal to girls of all ethnic groups.

The few ethnic differences emerged in some of the less frequently mentioned benefits, such as gaining energy, receiving recognition, and relaxation. It is unclear whether these benefits were infrequently mentioned because of girls' lack of awareness or because they perceived these benefits to be unimportant.

There did not appear to be conceptual differences in the ways girls of different ethnic groups spoke about the negative aspects of physical activity. Of note, there was no direct mention of anorexia or other eating disorders as being associated with physical activity. Negative aspects of physical activity that were mentioned included fear of injury and/or embarrassment, which can stem from a lack of skills. This finding indicates that interventions to promote and encourage physical activity need to address safety and enhance girls' skills so they feel more confident in participating. Additionally, efforts could be made to create environments where girls can be sweaty without being self-conscious, as girls of all ethnicities viewed sweating as a negative aspect of physical activity. In a study involving focus groups, African American and Hispanic girls reported that physical activity was considered a deterrent to keeping an attractive appearance (Taylor et al., 1999). Providing locker room time for grooming needs before and after physical activities, attractive cloth-

ing for activity, and easily accessible toiletries that can be used when time for the locker room is not available are possible ways to address these negative perceptions.

Many perceived benefits and negative aspects reported by girls were oriented to the physical activity process (having fun with friends, appearance while active, and discomfort) rather than long-term outcomes, which is consistent with adolescent development.

Many of the most common physical activities reported on the checklist—chores, running, calisthenics or exercises, dance, and walking for transportation—were similar across ethnicities, although there were some ethnic differences that appeared. It is not clear if the higher proportions of Hispanic girls reporting playing catch and walking for exercise is due to the warmer climates of the sample of Hispanic girls. Of note is the high percentage of girls, particularly Hispanic girls, who reported doing childcare in the past 7 days. There are opportunities, however, for interventions to make childcare time more active or to create programs that include adolescent girls and younger children.

This study found that certain activities have appeal across ethnic groups. Basketball was consistently listed as a favorite activity, particularly by African American and Caucasian girls. Running was consistently cited in the checklist and during the interviews as a favorite physical activity. Also, during the interviews, some girls said that running was their least favorite activity, indicating that running can be a polarizing activity (Vu et al., 2006). Basketball and running were also listed as common activities in a sample of similarly aged African American and Caucasian girls (Bradley, McMurray, Harrell, & Deng, 2000). Swimming, volleyball, and dance were also favorites across ethnicities and therefore are likely to attract a range of girls.

The low rate of agreement (35% or less) on favorite activities indicates substantial variation within ethnic groups. As a result of this diversity, efforts should be made to provide choice so that all girls have opportunities to participate in activities they enjoy. Furthermore, this low agreement may indicate that areas of interest may not follow lines of ethnicity. Another article in this issue explores segmentation of middle school girls and, using different data sources, did not find consistent ethnic patterns (Staten et al., 2006). It is also recognized that factors other than the activity itself likely affect participating in physical activity programs (i.e., accessibility, social networks, cultural sensitivity of leaders and participants, etc.). Finally, the list of favorite activities may be limited by exposure to various activities; therefore, it is important to introduce girls to new activities that they may discover are enjoyable.

It is notable that in this sample, the list of favorite activities differed substantially from the most common activities. Although running, dance, and volleyball were both common and favorite activities, other favorites, such as swimming, basketball, soccer, and rollerblading, were not as commonly reported within the past week, although this may be due to seasonality factors at some field centers. Efforts could be made to make more of these favorite activities available to girls on a regular basis.

Although representatives from all ethnic groups were included in both the interview and checklist samples, conclusions about ethnic similarities and differences must be interpreted with caution because of the small sample size and the nonrandom selection. Because the checklist was conducted during the cool weather months at about half the sites, the weekly recall is likely to underestimate warmer weather activities. It is also possible that activities in physical education may have influenced activities reported in the past 7 days, with girls attending the same school more likely to report similar activities.

A major strength of this study is the geographic diversity of the sample. Each ethnic group comprised girls from several regions of the country. In addition, girls were recruited from schools in urban, rural, and suburban settings, ranging in SES from low to

high. Moreover, this study used multiple methods—qualitative and quantitative—to explore girls' perceptions of, and experience with, various types of physical activity.

Implications for Practice

The findings of this exploratory study suggest that factors other than ethnic background may contribute to physical activity preferences and that distinct physical activity interventions may likely be unnecessary for adolescent girls of various ethnic groups. However, cultural factors should still be taken into account in the development of interventions (i.e., sensitivity to rules of modesty, attitudes toward being active in presence of boys, etc.) as supported by others (Lowry et al., 2002; Taylor et al., 1999). Additionally, the low rate of agreement within ethnic groups on preferred activities indicates the need for a broad array of physical activity programs to attract all types of girls. Although this study indicates few ethnic differences in physical activity perceptions or preferences of adolescent girls, there may be additional factors that could affect physical activity interventions, which should be explored further across ethnicities.

References

- Aarts, H., Paulussen, T., & Schaalma, H. (1997). Physical exercise habit: On the conceptualization and formation of habitual health behaviours. *Health Education Research, 12*(3), 363-374.
- Bradley, C. B., McMurray, R. G., Harrell, J. S., & Deng, S. (2000). Changes in common activities of 3rd through 10th graders: The CHIC Study. *Medicine and Science in Sports and Exercise, 32*(12), 2071-2078.
- Centers for Disease Control and Prevention. (2002). Surveillance summaries, June 28, 2003. *Morbidity and Mortality Weekly Report, 51*, SS-4.
- Centers for Disease Control and Prevention. (2004). Surveillance summaries, May 21, 2004. *Morbidity and Mortality Weekly Report, 53*, SS-2.
- Eyler, A. E., Wilcox, S., Matson-Koffman, D., Evenson, K. R., Sanderson, B., Thompson, J., et al. (2002). Correlates of physical activity among women from diverse racial/ethnic groups. *Journal of Women's Health and Gender-Based Medicine, 11*(3), 239-253.
- Garcia, A. W., Broda, M. A., Frenn, M., Coviah, C., Pender, N. J., & Ronis, D. L. (1995). Gender and developmental differences in exercise beliefs among youth and prediction of their exercise behavior. *Journal of School Health, 65*(6), 213-219.
- Gittelsohn, J., Steckler, A., Johnson, C., Pratt, C., Grieser, M., Pickrel, J., et al. (2006). Formative research in school and community-based health programs and studies: "State of the art" and the TAAG approach. *Health Education & Behavior, PE: PLS INSERT VOLUME NUMBER, PE: PLS INSERT PAGE NUMBERS.*
- Godin, G., & Shephard, R. J. (1986). Psychosocial factors influencing intentions to exercise of young students from grades 7 to 9. *Research Quarterly for Exercise and Sport, 57*, 41-52.
- Healthy People 2000. (1990). *National health promotion and disease prevention objectives, US Department of Health and Human Services* (DHHS Publication No [PHS] 91-50213.) Washington, DC: U.S. Government Printing Office.
- Heath, G. W., Pratt, M., Warren, C. W., & Kann, L. (1994). Physical activity patterns in American high school students. *Archives of Pediatrics and Adolescent Medicine, 148*(11), 1131-1136.
- Kimm, S. Y., Glynn, N. W., Kriska, A. M., Barton, B. A., Kronsberg, S. S., Daniels, S. R., et al. (2002). Decline in physical activity in black girls and white girls during adolescence. *New England Journal of Medicine, 347*(10), 709-715.
- Kumanyika, S. K., Story, M., Beech, B. M., Sherwood, N. E., Baranowski, J. C., Powell, T. M., et al. (2003). Collaborative planning for formative assessment and cultural appropriateness in the

Girls Health Enrichment Multi-site Studies (GEMS): A retrospective. *Ethnicity and Disease*, 13(Suppl. 1), S15-S29.

Lowry, R., Wechsler, H., Galuska, D. A., Filton, J. E., & Kann, L. (2002). Television viewing and its associations with overweight, sedentary lifestyle, and insufficient consumption of fruits and vegetables among US high school students: Differences by race, ethnicity, and gender. *Journal of School Health*, 72(10), 413-421.

Pate, R. R., Pratt, M., Blair, S. N., Haskell, W. L., Macera, C. A., Bouchard, C., et al. (1995). Physical activity and public health: A recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *Journal of the American Medical Association*, 273(5), 402-407.

Physical activity and cardiovascular health. NIH consensus development conference on physical activity and cardiovascular health. (1996). *Journal of the American Medical Association*, 276(3), 241-246.

Staten, L. K., Birnbaum, A. S., Jobe, J. B., & Elder, J. P. (2006). A typology of middle school girls: Audience segmentation related to physical activity. *Health Education & Behavior*, **PE: PLS INSERT VOLUME NUMBER, PE: PLS INSERT PAGE NUMBERS.**

Tappe, M. K., Duda, J. L., & Ehnwald, P. M. (1989). Perceived barriers to exercise among adolescents. *Journal of School Health*, 59(4), 153-155.

Taylor, W. C., Yancey, A. K., Leslie, J., Murray, N. G., Cummings, S. S., Sharkey, S. A., et al. (1999). Physical activity among African American and Latino middle school girls: Consistent beliefs, expectations, and experiences across two sites. *Women Health*, 30(2), 67-82.

U.S. Department of Health and Human Services. (1996). *Physical activity and health: A report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion.

Vu, M. B., Murrie, D., Gonzalez, V., & Jobe, J. B. (2006). Listening to girls and boys talk about girls' physical activity behaviors. *Health Education & Behavior*, **PE: PLS INSERT VOLUME NUMBER, PE: PLS INSERT PAGE NUMBERS.**