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Physical Activities and Sedentary Pursuits in African American and Caucasian Girls

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The purposes of this study were to describe and compare the specific physical activity choices and sedentary pursuits of African American and Caucasian American girls. Participants were 1,124 African American and 1,068 Caucasian American eighth-grade students from 31 middle schools. The 3-Day Physical Activity Recall (3DPAR) was used to measure participation in physical activities and sedentary pursuits. The most frequently reported physical activities were walking, basketball, jogging or running, bicycling, and social dancing. Differences between groups were found in 11 physical activities and 3 sedentary pursuits. Participation rates were higher in African American girls ($p \leq .001$) *for social dancing, basketball, watching television, and church attendance but lower in calisthenics, ballet and other dance, jogging or running, rollerblading, soccer, softball or baseball, using an exercise machine, swimming, and homework. Cultural differences of groups should be considered when planning interventions to promote physical activity.*

Key words: adolescents, leisure activity, race, sports

Regular participation in moderate-to-vigorous intensity physical activity is widely acknowledged as a key component of a healthy lifestyle for adults and youth (U.S. Department of Health and Human Services [USDHHS], 1996). However, recent national surveys in the United States indicate that most adults and a large percentage of youth fail to meet public health guidelines for physical activity (USDHHS, 1996). These surveys indicate that physical activity levels decline steadily during adolescence and are consistently lower in women than men (Centers for Disease Control and Prevention [CDC], 2002, 2003; USDHHS, 1996). In several surveys, the age-related decline in physical activity was greater in girls than boys (CDC, 2002; USDHHS, 1996). These observations substantiate the need for understanding the determinants of physical activity in adolescent girls and learning how to reduce the age-related decline in physical activity in this group.

Physical activity participation is known to be related to both culture and gender (USDHHS, 1996). Among U.S. adults, physical activity is lower in African Americans than Caucasians, and this difference is particularly pronounced in women (Crespo, Keteyian, Heath, & Sempos, 1996). The same patterns have been observed in U.S. high school students, among whom only 47.8% of African American girls met current guidelines for participating in vigorous physical activity, compared to 59.8% of Caucasian girls (CDC, 2002). It seems likely that the lower physical activity levels of African American girls contribute to the alarmingly high rates of being overweight, obesity, and other cardiovascular disease risk factors observed in this demographic group (Troiano & Flegal, 1998; Winkleby, Robinson, Sundquist, & Kraemer, 1999).

Public health authorities have called for increases in physical activity among all segments of the U.S. popu-

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lation (USDHHS, 1996), and Goal 2 of *Healthy People 2010* emphasized the need to eliminate health disparities across different groups (USDHHS, 2000). Hence, it is important that we expand our knowledge of physical activity behavior among groups that tend to be less active. At present, the scientific literature provides limited information regarding the physical activity preferences of adolescent girls or their levels of involvement in sedentary pursuits. In addition, little is known about how African American and Caucasian girls differ in their participation in specific physical activities and sedentary behaviors. Such information would seemingly be helpful in designing interventions to increase physical activity in these girls, either by directly promoting preferred moderate-to-vigorous physical activity participation or by reducing the high prevalence of sedentary pursuits (CDC, 1997; USDHHS, 1996). Accordingly, the aims of this study were to describe and compare the specific physical activity choices and sedentary pursuits of African American and Caucasian girls.

Method

Study Design and Participants

The present investigation reports cross-sectional analyses of data collected as part of the baseline measurement protocol in a large-scale school-based physical activity intervention study. Participants were eighth-grade girls in 31 middle schools in South Carolina. Assemblies for eighth-grade girls were held to explain the study's importance and measurement protocol and to describe incentives for participation. All girls were invited to participate. One subgroup was recruited in spring 1998, and the second in spring 1999. The mean participation rate for the two subgroups was 36.3%. Overall, 2,746 girls participated (97% of those who had consented) in the study; 49% were African American, and 47% were Caucasian. These percentages were similar to those reported from all girls enrolled in the 31 participating schools (50.4% non-Caucasian, 49.6% Caucasian). Each girl and her primary guardian provided written informed consent prior to data collection. The University of South Carolina Institutional Review Board approved the study.

Physical Activity Recall

The 3-Day Physical Activity Recall (3DPAR) was used to measure participation in physical activity and other behaviors. This instrument is a modification of the Previous Day Physical Activity Recall (PDPAR), which previous studies showed was valid and reliable (Trost, Ward, McGraw, & Pate, 1999; Weston, Petosa, & Pate, 1997). In a recent validity study, vigorous physical activity (VPA), as measured by the 3DPAR, was correlated ($r = .41$, $p < .001$) with log-transformed VPA by accelerometry in 70 eighth- and ninth-grade girls (54.3% Caucasian, 37.1% African American; Pate, Ross, Dowda, Trost, & Sirard, 2003). Other investigators have reported adequate test-retest reliability and validity of physical activity recall in children as young as the fifth-grade and for periods of 2–3 days (Kohl, Fulton, & Caspersen, 2001; Sallis, Buono, Roby, Micale, & Nelson, 1993). Our correlation of .41 is typical for studies using motion sensors to validate self-report instruments in youth (Kohl et al., 2001; Sirard and Pate, 2001). The 3DPAR uses a script and graphic figures to explain the intensity level of common activities. Light activities are described as requiring little or no movement with slow breathing, moderate activities as some movement and normal breathing, hard activities as moderate movement and increased breathing, and very hard activities as quick movements and hard breathing.

Trained research assistants administered the 3DPAR to the participants in the spring of their eighth-grade year. The instrument was always administered on a Wednesday, and participants were asked to recall their activities on the previous 3 days (first Tuesday, then Monday, then Sunday). For each day recalled, participants completed a grid, which was divided into 30-min time blocks, beginning at 7 a.m. and ending at midnight. Participants reported their predominant activity in each 30-min block. A list of 55 activities was provided that included sedentary activities, activities of daily living, physical activities, physical education, and sports. Participants entered the number of an activity and indicated whether the activity was performed at a light, moderate, hard, or very hard intensity. The 3DPAR includes a rating of intensity, because many activities can be performed at varying intensities. We have previously shown that including an intensity rating for each reported activity enhances the validity of this instrument (Weston et al., 1997).

Physical Activity Participation

For this study, a girl was considered a participant in a specific activity if she reported engaging in that activity on at least 1 of the 3 days assessed by the 3DPAR. For each activity, the mean number of blocks for each participant was calculated by dividing the number of reported blocks by the number of days on which she performed the activity.

Data from each day were reduced to the number of 30-min blocks for which the reported activity was rated at an intensity of 3 METs (metabolic equivalent) or more (moderate-to-vigorous physical activity; MVPA) and 6 METs or more (vigorous physical activity; VPA). MET values for each activity were obtained from the Compendium of Physical Activities (Ainsworth et al., 2000). Girls

were classified as meeting physical activity standards if they reported a daily average of two or more 30-min blocks of MVPA or one or more 30-min blocks of VPA.

Body Mass Index

Height was measured to the nearest 1.0 cm with a portable stadiometer and weight was measured to the nearest 0.1 kg with a digital scale. Body mass index (BMI) was calculated by dividing weight in kilograms by height in meters squared.

Statistical Analyses

Because the girls were from 31 different schools and girls in a particular school share a unique social and physical environment, it was important that the statistical analysis control for the influence of school. Accordingly, school was treated as a random effect in all analyses.

SAS mixed model procedures (SAS Institute, 1999) were used to calculate prevalence rates of one or more 30-min blocks during the 3-day period for sedentary and active pursuits. Mixed model logistic regression (GLIMMIX macro with logit link and binomial error) was used to calculate prevalence rates for the total group and compare the rates between African American and Caucasian girls. The dependent variable was participation (yes = 1, no = 0) in specific activities. Race was the independent variable; because others found differences between overweight and nonoverweight girls in physical activity, sport participation, and television watching (Dowda, Ainsworth, Addy, Saunders, & Riner, 2001; Trost, Sirard, Dowda, Pfeiffer, & Pate, 2003; Ward et al., 1997), a second wave of analyses were performed with BMI added to the model. Due to the large number of comparisons (over 50), an alpha level of ≤ .001 was chosen.

For activities in which at least 5% of the girls reported participating, SAS mixed model procedures were used to calculate the mean number of 30-min blocks. Differences were tested between the two groups after adjusting for BMI.

Effect was expressed as r, calculated from two kinds of analyses (Cohen, 1988). A Phi coefficient (equivalent to r) was calculated for each 2 x 2 frequency table (Activity x Race) as $(\chi^2/N)^{1/2}$. Cohen's d (M1 - M2/Pooled SD) was converted to r as $(d/(d^2 + 4)^{1/2})$. According to conventional statistical guidelines (Cohen, 1988) effect sizes r are practically judged as small ($r = .10$), moderate ($r = .20$), or large ($r = .40$).

Results

A total of 2,192 girls completed the 3DPAR. Approximately 51% were African American, and 49% were Caucasian; their mean age was 13.6 years ($SD = 0.6$). For a subset ($n = 1,978$), African American girls had higher BMI than the Caucasian girls (BMI: $M = 23.7$, $SD = 5.8$ vs. $M = 22.2$, $SD = 4.9$, $p < .001$; effect size = 0.14). Fewer African American girls were active compared to the Caucasian girls. About 51% of the Caucasian girls reported on average one or more 30-min block of VPA, compared to only 34% of African American girls ($p < .001$, effect size = .18). Caucasian girls also reported a higher prevalence of meeting the MVPA standard ($p < .001$, effect size = .19), with 80% of the Caucasian girls reporting two or more 30-min blocks of MVPA as compared to 63% of African American girls.

Table 1 presents the prevalence of specific physical activities and sedentary behaviors as calculated from Proc Mixed analysis, with participation (yes = 1, no = 0) as the dependent variable, and racial group alone and with BMI as independent variables. In the overall group and in the separate groups, the most frequently reported forms of physical activity were brisk walking, bas-

Table 1. Percent participation in physical activities and sedentary pursuits among eighth-grade girls **[Table 1 cont. on p. 355.]**

Activity	Total ($N = 2,192$)	African American ($N = 1,124$)	Caucasian ($N = 1,068$)	Effect size	Group difference p value	BMI adjusted p value
Eating						
Eating a meal	95.3	94.3	96.3	.07	< .03	.05
Snacking	63.8	67.3	60.0	.07	< .01	.001
Working						
Working (part-time job, child care)	11.5	10.2	12.9	.04	.06	.11
Doing house chores	51.9	51.0	52.8	.01	.42	.48
Yard work	7.7	4.6	11.0	.10	< .001	< .001

Note. BMI = body mass index; figures in the effect size and group difference columns are unadjusted; figures in the BMI adjusted column are for 1,022 African American and 956 Causasian girls.

Table 1. Percent participation in physical activities and sedentary pursuits among eighth-grade girls **[Table 1 cont. from p. 354.]**

Activity	Total (N = 2,192)	African American (N = 1,124)	Caucasian (N = 1,068)	Effect size	Group difference p value	BMI adjusted p value
After school/spare time/hobbies						
Church	58.9	65.6	51.7	.14	< .001	< .001
Hanging around	75.3	74.6	75.9	.01	.51	.46
Homework	77.0	72.8	81.4	.10	< .001	< .001
Listening to music	62.8	64.9	58.9	.06	.01	.01
Marching band/flag line/drill team	2.6	3.1	2.1	.04	.16	.18
Music lesson/playing an instrument	23.6	20.7	26.6	.08	< .01	.01
Playing video games/Internet	33.9	31.5	36.4	.05	.02	.02
Reading	37.6	38.7	36.3	.03	.29	.37
Shopping	38.3	35.0	41.8	.07	< .01	.01
Talking on the phone	78.9	81.4	76.1	.06	< .01	.002
Watching television/movie	96.0	97.6	94.3	.08	< .001	.001
Transportation						
Riding in a car/bus	91.2	90.5	91.8	.04	.27	.46
Travel by walking	30.3	33.0	27.4	.06	.01	.02
Travel by bicycling	5.6	6.2	4.9	.03	.21	.20
Sleep /bathing						
Getting dressed	74.1	76.8	71.3	.06	.01	.04
Getting ready (hair, make-up)	77.9	74.2	81.7	.09	< .001	.001
Showering/bathing	92.2	93.3	91.0	.04	.35	.51
Sleeping	99.5	99.2	99.8	.04	.07	.09
School						
Club, student activity	18.4	18.5	18.3	.01	.04	.92
Lunch/free time/study hall	75.9	78.0	73.7	.06	.03	.05
Physical education class	37.9	38.3	37.4	.01	.67	.64
Reserve Officers' Training Corps	1.1	1.4	0.8	.03	.22	.15
Sitting in class	98.9	99.1	98.6	.03	.25	.21
Physical activities and sports						
Aerobics/aerobic dancing	6.5	5.7	7.4	.04	.12	.05
Basketball	25.9	30.9	20.5	.13	< .001	< .001
Bicycling	15.6	14.9	16.5	.01	.31	.36
Bowling	3.3	3.1	3.6	.01	.57	.74
Calisthenics (jumping jacks, sit-ups)	8.7	5.7	11.9	.11	< .001	< .001
Cheerleading	4.8	3.4	6.2	.07	< .01	.02
Dancing (social, recreational)	10.2	13.7	6.5	.12	< .001	< .001
Dancing (ballet, jazz, modern, tap)	8.4	6.1	11.0	.09	< .001	.001
Frisbee	1.7	0.9	2.5	.06	.01	.01
Golf	0.6	0.2	1.1	.06	< .001	.04
Horseback riding	2.7	0.4	5.2	.15	< .001	< .001
Ice/roller skating	3.8	3.9	3.6	.01	.76	.95
Jogging/running	17.1	12.3	22.2	.13	< .001	< .001
Karate/judo/martial arts/self-defense	1.0	0.6	1.4	.04	.08	.08
Rollerblading	8.1	5.8	10.7	.09	< .001	< .001
Skateboarding	0.8	0.5	1.1	.03	.05	.05
Soccer	6.1	1.1	11.4	.21	< .001	< .001
Softball/baseball	9.5	5.6	13.7	.12	< .001	< .001
Stationary exercise machine	3.2	1.9	4.6	.08	.001	.001
Swimming, water excercise	5.4	2.3	8.7	.13	< .001	< .001
Tennis	3.0	1.9	4.2	.07	< .01	.01
Volleyball	4.5	3.4	5.7	.05	.01	.01
Walking (briskly)	30.5	28.4	32.8	.04	.04	.01
Weight/circuit training	2.6	2.0	3.2	.04	.08	.12

Note. BMI = body mass index; figures in the effect size and group difference columns are unadjusted; figures in the BMI adjusted column are for 1,022 African American and 956 Causasian girls.

ketball, jogging or running, bicycling, and social dance. In both groups, the most frequently reported after-school or spare time activities were watching television or movies, talking on the phone, "hanging around," doing homework, and listening to music. African American girls were more likely than Caucasian girls to report snacking, attending church, watching television or a movie, playing basketball, and dancing socially ($p \leq .001$). Caucasian girls were more likely to report yard work, homework, "getting ready," calisthenics, ballet and other dance, horseback riding, jogging or running, rollerblading, soccer, softball or baseball, exercise machine use, and swimming ($p \leq .001$). Effect sizes ranged from .07 for snacking to .21 for soccer.

Table 2 presents the mean number of 30-min time blocks reported by African American and Caucasian girls for participation in the specific activities. Compared to Caucasian girls, African American girls reported more time blocks for attending church, talking on the phone, and watching television ($p \leq .001$) and fewer time blocks for doing homework and playing softball ($p \leq .001$). Effect sizes ranged from .24 for attending church to .59 for softball.

Discussion

In the present study, fewer African American girls than Caucasian girls reported meeting standards for participating in MVPA or VPA. Others have also found physical activity differences between African American and Caucasian girls. For example, for 10 years Kimm et al. (2002) followed African American and Caucasian irls enrolled in the National Heart, Lung, and Blood Institute Growth and Health Study. At each measurement period, African American girls reported a lower median MET-times/week score than Caucasian girls. Their score at the age of 9 or 10 years was 30.8 for Caucasian girls and 27.3 for African American girls, an 11.4% difference. At age 13 or 14 years, the score was 18.8 for Caucasian girls and 14.4 for African American girls, a 23.4% difference. By the age of 18 or 19 years, median physical activity scores had declined to 11.0 for Caucasian girls and 0 for African American girls.

Four of the top five physical activities reported by the girls in this study (brisk walking, jogging or running, bicycling, and social dancing) are noncompetitive lifetime activities, that is, forms of physical activity that are prevalent across the lifespan. This finding is similar to that of Bradley and colleagues (Bradley, McMurray, Harrell, & Deng, 2000), who found that the most commonly reported activities of seventh and eighth grade girls were talking on the phone, walking, playing basketball, running, watching television, dancing, playing softball, reading, doing music lessons, and bicycling. In contrast to girls, boys seem to prefer competitive sports and games (Aaron, Storti, Robertson, Kriska, & LaPorte, 2002; Faucette et al., 1995; Gotlieb & Chen, 1985). The most commonly reported activities of seventh and eighth grade boys in the Bradley et al. (2000) study were playing basketball, football, baseball soccer, or video games, running, watching television, bicycling, talking on the phone, and walking. These findings suggest that physical activity interventions for girls should focus on providing lifetime activities, such as walking, running, and bicycling, rather than competitive sports and games.

A major finding of this study was that African American and Caucasian girls differed ($p \leq .001$) in their reported physical activities and sedentary pursuits. For 11 forms of physical activity, the prevalence of participation differed between Caucasian and African American girls. African American girls reported only two of the activities, basketball and social dancing, more often. These findings are consistent with previous studies, which found that African American youth participate more often in basketball and dancing than Caucasian youth (Gotlieb & Chen, 1985; Myers, Strikmiller, Webber, & Berenson, 1996; Sallis, Zakarian, Hovell, & Hofstetter, 1996). Similar differences in leisure-time physical activities were also reported in 18–30-year-old women (Bild et al., 1993). Among African American women, the most common activities were walking, dancing, and exercising at home, while among Caucasian women the most common activities were walking, dancing, and participating in leisure sports.

For three sedentary pursuits (church, homework, and watching television) the prevalence of participation differed between Caucasian and African American girls. Caucasian girls reported doing homework more often, while African American girls reported going to church and watching television more frequently. Of particular note, more African American girls than Caucasian girls reported snacking, and, of the girls who watched television, African American girls viewed it for more 30-min blocks than Caucasian girls. Television watching has been linked to higher energy intake (Crespo et al., 2001) and overweight in youth (Andersen, Crespo, Bartlett, Cheskin, & Pratt, 1998). Reducing television watching may be a way to prevent or reduce becoming overweight; two school-based interventions that were successful in reducing the time spent watching television also reduced BMI among female students (Gortmaker et al., 1999; Robinson, 1999).

These findings raise questions about why African American girls report fewer leisure-time physical activities and more sedentary activities than Caucasian girls. The explanation, as suggested by the social ecological model of physical activity behavior (Sallis, Bauman, & Pratt, 1998), is likely to lie in a combination of personal, social, cultural, and environmental factors. In previously

reported findings on this cohort, we reported differences between African American and Caucasian girls for several environmental and psychosocial correlates of physical activity (Dishman et al., 2002; Felton et al., 2002). For example, African American girls reported having significantly less sports equipment in the home, and they were less likely than Caucasian girls to report that it was safe to walk in their neighborhood (Felton et al., 2002). In addition, we have observed that African American girls, as compared to their Caucasian counterparts, have lower self-efficacy and attitudes regarding physical activity (Dishman et al., 2002).

Cultural and social differences between African American and Caucasian girls may also be an important

Table 2. Mean daily blocks of participation in physical activities and sedentary pursuits among eighth-grade girls

Activity	Total			African American			Caucasian			Effect	Group	BMI
	N	*M*	*SE*	*N*	*M*	*SE*	*N*	*M*	*SE*	size	difference *p* value	adjusted *p* value
After school/spare time/hobbies												
Hanging around	1,648	3.1	0.08	838	3.1	0.10	810	3.0	0.10	.02	.60	.59
Listening to music	1,370	2.0	0.04	734	2.0	0.05	636	2.0	0.05	.01	.56	.77
Playing video games/ internet	747	2.0	0.05	355	1.9	0.07	392	2.1	0.07	.07	.07	.07
Talking on the telephone	1,736	3.2	0.10	918	3.4	0.11	818	2.9	0.11	.14	< .001	< .001
Watching television/ movie	2,106	4.4	0.13	1097	4.9	0.14	1,009	3.8	0.14	.19	< .001	< .001
Attended church (Sunday)	1,285	6.3	0.09	737	6.6	0.12	548	5.8	0.13	.11	< .001	.001
Homework	1,660	1.9	0.09	804	1.8	0.09	856	2.1	0.09	.16	< .001	< .001
Transportation												
Travel by walking	655	1.9	0.10	368	1.8	0.11	287	2.0	0.12	.03	.31	.31
Travel by bicycling	123	1.6	0.08	70	1.6	0.11	53	1.6	0.12	.02	.88	.42
Getting dressed/ ready												
Getting dressed	1,626	1.2	0.01	864	1.2	0.02	762	1.2	0.02	.04	.07	.08
Getting ready (hair, make-up)	1,707	1.2	0.01	834	1.2	0.02	873	1.2	0.02	.02	.60	.59
School												
Physical education class	911	1.6	0.06	473	1.6	0.07	438	1.6	0.07	.06	.96	.99
Reserve Officers' Training Corps	25	1.2	0.18	16	1.2	0.18	9	1.3	0.19	.20	.41	.41
Physical activities and sports												
Aerobics/aerobic dancing	146	1.6	0.07	64	1.6	0.10	82	1.6	0.09	.03	.54	.89
Basketball	566	2.1	0.09	351	2.2	0.10	215	1.9	0.12	.07	.01	.03
Bicycling	339	1.6	0.05	168	1.6	0.07	171	1.7	0.07	.06	.27	.24
Calisthenics (jumping jacks, sit-ups)	188	1.3	0.04	62	1.4	0.07	126	1.3	0.05	.15	.06	.07
Cheerleading	101	2.7	0.23	35	2.6	0.34	66	2.8	0.27	.09	.57	.51
Dancing (social, recreational)	224	1.8	0.13	154	1.7	0.14	70	2.1	0.19	.17	.05	.06
Dancing (ballet, jazz, modern, tap)	192	2.5	0.16	70	2.0	0.21	122	2.8	0.18	.25	.001	.003
Horseback riding	60	2.5	0.26	4	1.6	0.99	56	2.6	0.27	.23	.36	.33
Jogging/running	377	1.6	0.06	140	1.6	0.09	237	1.6	0.07	.02	.69	.65
Rollerblading	178	1.7	0.09	65	1.5	0.14	113	1.9	0.11	.17	.03	.01
Soccer	128	2.3	0.15	11	1.4	0.42	117	2.4	0.15	.33	.03	.04
Softball/baseball	212	2.6	0.18	70	1.9	0.24	142	3.0	0.20	.28	< .001	< .001
Swimming, water exercise	114	3.5	0.40	28	2.6	0.57	86	3.9	0.42	.27	.04	.05
Volleyball	99	1.9	0.15	39	1.5	0.21	60	2.2	0.17	.29	.005	.01
Walking (briskly)	675	1.7	0.06	325	1.7	0.07	350	1.7	0.07	.00	.95	.82

Note. *M* = mean; *SE* = standard error; BMI = body mass index; figures in the effect size and group difference columns are unadjusted; figures in the BMI adjusted column are for 1,022 African American and 956 Caucasian girls.

factor in their choices of specific physical activities. For example, in the present study about 19% of both African American and Caucasian girls reported dancing. But more African American girls reported social dancing, while more Caucasian girls reported participating in ballet and other dance. These differences in activity preferences provide important guidance in designing physical activity interventions for youth. It is appropriate to emphasize culturally relevant activity forms in intervention programs designed to serve diverse groups of youth. Indeed, some previous interventions studies reported success in applying this principle (Davis et al., 1999; Resnicow et al., 2000).

Girls who reported participating in an activity over the 3-day recall period also reported the number of 30-min blocks they spent engaged in the activity. African American girls reported more time talking on the phone, watching television or a movie, and attending church, while Caucasian girls reported more time doing homework. Among the girls who reported walking, playing basketball, dancing socially, and "hanging around," there were very few differences in the reported number of blocks between the two groups of girls. However, Caucasian girls who reported participating in ballet, tap, and other dance, rollerblading, swimming, and playing soccer, softball, and volleyball engaged in these activities for longer periods than the African American girls who reported the same activities. Myers et al. (1996) also reported differences in minutes spent in specific activities. In that study, African American students in fifth to eighth grade reported more minutes watching television, jumping rope, dancing, and playing basketball, while Caucasian youth reported more minutes playing outdoors, playing football, and doing gymnastics. These findings suggest that physical activity interventions for girls should be planned with the activity preferences of different cultural groups in mind.

The findings of the present study may also have important implications in physical education. If the 10 forms of physical activity most frequently reported by the participants in this study are compared with the most frequently reported physical education activities (Burgeson, Wechsler, Brener, Young, & Spain, 2002; Simons-Morton, Eitel, & Small, 1999), some clear similarities and contrasts emerge. Common physical education activities reported by the eighth-grade girls in this study were playing basketball, baseball, and softball, jogging, running, and doing calisthenics. However, girls commonly reported walking, bicycling, social dancing, other dancing (ballet, etc.), rollerblading, and doing aerobics, but these are not among the most common activities in physical education classes. On the other hand, physical education programs frequently include volleyball, soccer, kickball, and touch football, none of which the girls in this study reported as common activities. It seems possible that physical education classes could be made more enjoyable and relevant for girls, if the curriculum was broadened to include activities known to be attractive to girls.

Strengths of the present study include the large number of participants, the nearly equal numbers of African American and Caucasian girls, the collection of weekday and weekend activity data, and the inclusion of schools situated in communities ranging from rural to urban. The present study also reported differences in a large number of physical activities and sedentary activities in a specific age group of African American and Caucasian girls. Limitations of the study include the cross-sectional design and the self-reporting of physical activities and sedentary pursuits. Further, all participants were from South Carolina, and socioeconomic status (SES) was not measured in this study. Consequently, it was not possible to determine how SES may have affected the differences between African American and Caucasian girls. It is possible that unequal opportunities to participate in some activities due to financial limitations or access restrictions could account in part for those differences. The response rate was moderate (although the sample reflected the racial makeup of the 31 middle schools the girls attended). Nevertheless, these finding should help in planning interventions to prevent the age-related declines in physical activity among girls. Such interventions may contribute to preventing being overweight, obesity, and other cardiovascular disease risk factors in girls and women of all groups.

In summary, high percentages of eighth-grade girls in the present study reported several 30-min time blocks in sedentary pursuits, including watching television or a movie, talking on the phone, and "hanging around." Differences in physical activity were also observed, with more African American girls reporting playing basketball and social dancing and more Caucasian girls reporting doing calisthenics, ballet or other dance, horseback riding, jogging or running, rollerblading, playing soccer, softball, or baseball, using an exercise machine, and swimming. Because all the girls were from South Carolina, the findings of this study may not be generalizable to other populations. Nevertheless, the findings suggest that interventions to promote physical activity in adolescent girls should focus on lifetime physical activities, such as walking, swimming, and social dancing. Furthermore, such interventions should consider the different physical activity preferences of African American and Caucasian girls and provide a wide range of activity opportunities.

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