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Dads Matter, Too: Fathers' Impact on Physical Activity in Black Women

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The purpose of this study was to explore the impact of father involvement on physical activity behaviors among Black women in college. Data were collected at a large, predominantly White university. Forty-two (Mage= 19.79, SD=1.52) Black women wore Fitbit ZipTM activity trackers, completed father involvement scales, and demographic questionnaires. Height and weight status were taken to compute BMI. Seventy-one percent of participants reported high levels of father involvement, and most (86%) were moderately active, despite 62% having > 25 BMI. Fifty-seven percent did not meet minimal weekly step count recommendations for good health (>52,500); however, only 17% were sedentary (<35,000). Although all father involvement and physical activity relationships were weak, sixty-four percent of participants reported that fathers were directly involved in their physical activities, with 43% reporting that fathers were actively engaged. Fathers are involved in Black daughters' lives, but their impact on physical activity needs further exploration. Findings can aid in the development of culturally appropriate physical education pedagogy, and encourage the inclusion of fathers/men in public health promotion, as they are excluded in the schooling of Black female and health and physical activity research.

Keywords: Father involvement, African American families, African American females, Black fathers, African American fathers

Introduction

Father involvement (and the lack thereof) has lasting effects on children's well-being. Most father involvement studies tend to explore social influence and psychological outcomes (Adamsons & Johnson, 2013; Allgood et al., 2012; Sağkal et al., 2018), and very few consider father impact on physical activity—especially among Black female offspring (Morgan et al., 2018; Neshteruk et al., 2017). Limited research on long-term father involvement and physical activity is concerning, particularly since Black fathers have shown to enjoy, value, and communicate with children through physical activity (Ransaw, 2017). Of equal concern, most Black American females do not meet the physical activity recommendations for good health, and most are overweight or obese (American Heart Association [AHA], 2015; Centers for Disease Control and Prevention [CDC], 2015). Furthermore, Black fathers are excluded in parenting literature and physical activity investigations that target daughters (Ransdell et al., 2004)—

perhaps due to the prevalence of mother-led homes in Black families (Pew Research Center, 2015). Despite evidence that Black nonresident and non-biological fathers are involved (Fenton, 2014; McDougal & George, 2016), many, regardless of residential locale or biology, are left out of the equation.

More optimistically, research trends that include fathers in physical activity research have started to emerge (Morgan et al., 2018; Morgan et al., 2017; Young et al., 2019; Young & Morgan, 2017). In the only father-daughter physical activity intervention at the time of this study, Morgan et al. (2018) found active engagement by fathers increased physical activity among daughters. Fathers' physical activity behaviors also increased, illustrating dual benefit. While this study's findings show promise and benefit additional inquiry, participants were preadolescent Australians with cultural complexities that differ from Black American families.

Although the previous study limits generalizations to Black American communities and post-adolescent children, Black fathers have shown to positively impact or engage in daughters' physical activity and sport participation (Blackshear, 2019; Ransaw, 2017). Amid Black females' low physical activity and high obesity rates, the concern lies in continued poor health outcomes for Black women (AHA, 2015; CDC, 2015). Taking into account the gap in the literature regarding the effects of father involvement on physical activity behaviors among Black females, the purpose of this study was to explore the long-term effects of father involvement on physical activity behaviors among women in college. Also explored were family structure and parental education (for socioeconomic status), as both have shown to impact physical activity of Black females (Barr-Anderson et al., 2017; Yelick, 2017). Furthermore, since sedentary living increases the risk of obesity, along with the high obesity rates affecting Black women (AHA, 2015), another aim was to explore the relationship between father involvement and body mass index. An additional objective of the study was to identify father behaviors that may contribute to sustained physical activity levels among Black females for a lifetime. Last, we make recommendations to leaders in education and public health regarding how fathers can be included in schools, curricula, and research that benefits Black girls' and women's overall well-being.

Conceptual Framework

Acknowledging that men and fathers value and promote sport and physical activity among male offspring, a shift in attention directed towards girls and women may positively impact women's physical activity behaviors and health. The social and mental benefits that fathers have on female development have been established (Allgood et al., 2012). An understanding of how and the degree to which fathers influence daughters' physical activity could aid in the development of culturally appropriate interventions and programs to increase physical activity engagement among Black women. Given that physical activity and sport are gendered activities that are promoted heavily by physical education teachers, fathers, and men to sons and boys (Claringbould & Adriaanse, 2015; Messner, 2009; Mullins, 2015), these practices and beliefs may contribute to higher rates of physical activity for males over the lifespan. In contrast, females are often discouraged from physical activity and sport participation due to

stereotypic gender norms that continue to plague girls and women today (Messner, 2009; Mullins, 2015). Perhaps if fathers directed attention toward daughters and girls by socializing them to engage in physical activity, health and physical activity outcomes would improve.

Despite the lack of encouragement that girls receive to participate in physical activity and the exclusion of fathers in physical activity research, promising outcomes have started to emerge (Kaseva et al., 2017; Morgan et al., 2017). For instance, Kaseva et al. (2017) found that fathers' physical activity behaviors had long-standing positive effects on male and female children. Furthermore, a residual effect was evident as the fathers' physical activity behaviors demonstrated during childhood continued to influence their children's physical activity habits throughout adulthood. Specifically, when fathers engaged or did not engage in physical activity, daughters were more likely to follow a similar pattern. Findings from this study support the current study's focus on the long-term fathers' impact on sustained physical activity among women.

Additionally, there is a dearth of cross-gendered considerations for Black father-daughter dyads. It appears that fathers who promote, encourage, nurture, and participate in physical activities with daughters (perhaps as they would sons) contribute to positive health and physical activity outcomes over the lifespan (Blackshear, 2019; Morgan, et al., 2018). Therefore, a cross-gendered framework that challenges traditional gender roles guides this research, which adopts a non-stereotypic socialization of girls to promote physical activity and sport engagement. As such, the social and gendered influences that fathers and family have during adolescence, and the impact on long-term health and physical activity outcomes, helped formulate the research questions:

1. Do fathers act as socializing agents and advocates of health and physical activity promotion among Black women?
2. Are there differences in physical activity engagement (and BMI-secondary) between high- and low-level of father involvement groups?
3. Are there differences in physical activity engagement (and BMI) between women with varying family structures?

The hypotheses formulated from each research question include:

1. Fathers act as socializing agents in health and physical activity promotion among Black women.
2. High father involvement groups will engage in more physical activity and have lower BMIs than low father involvement groups.
3. Women raised in two-parent households with a father present will engage in more physical activity and have lower BMIs than those raised in single-mother-led families. See Figure 1 for the conceptual model.

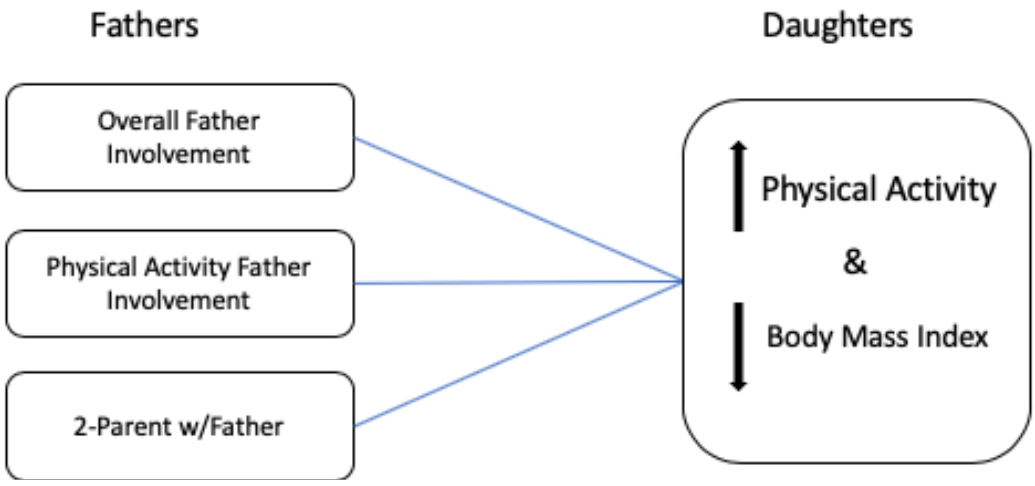

Figure 1. Cross-gendered socialization that promotes physical activity and healthy body composition.

Black Women, Physical Activity, and Health

Well-known benefits of physical activity include a healthy body weight, lower rates of chronic illness, increased life expectancy, and improve mental well-being (AHA, 2015; Jia & Lubetikin, 2014). Black women consistently rank at the bottom of physical activity participation and the top of the overweight and obesity scales (AHA, 2015; CDC, 2015; Hales et al., 2017). Black women also have a higher prevalence of heart disease, type 2 diabetes, and high blood pressure than women of other ethnic groups—living a sedentary lifestyle is linked to these chronic illnesses (AHA, 2015; Siddiqi et al., 2011). Research efforts that positively impact Black women's health outcomes often fall short and seldom consider the cross-gendered dynamics and the inclusion of men.

Father Involvement, Family Structure, and Physical Activity

Fathers tend to gravitate toward gender social norms of physical activity and sport promotion among sons. This cross-cultural phenomenon is consistent in the literature (Claringbould & Adriaanse, 2015; Coakley, 2017; Ellis et al., 2014; Messner, 2009). Despite the pull of fathers (and mothers) towards sons' physical activity and sports participation, there is evidence that fathers positively impact daughters' physical activity behaviors as well. Dagkas and Quarmby (2012) found girls and boys in United Kingdom (U.K.) inner-city schools reported biological fathers promoted and participated with them in physical activities. Resident biological fathers, however, had more opportunities to engage and support children's activity, as children reported declines in involvement when fathers lived elsewhere. This decline in father involvement is reflective in U.S. families, particularly among Black families, which tend to be mother-led (McDougal et al., 2018; Pew Research Center, 2015). Although Black non-biological and nonresident fathers are more involved than what is propagated (Fenton, 2014; Gadsden et al., 2003; McDougal & George, 2016), biological and resident fathers have shown to have a more positive impact on children's well-being, including physical activities (Adamsons, & Johnson, 2013; Ransaw, 2017). Consistent with U.S. families, the U.K. study found children living in single-mother homes had lower socioeconomic status and lived in high crime communities,

which prevented safe spaces for children to participate in physical activity (e.g., riding bikes), posing additional challenges for (Black) father-daughter engagement and female physical activity (Gadsden et al., 2003).

Methods

Procedures

A cross-sectional, mixed methods design explored the influence of retrospective father involvement on physical activity behavior patterns of Black college women. The university's Institutional Review Board approved study protocols, and the lead researcher's startup funding aided in research. Advertising and recruitment occurred in the university's Student Union and the daily e-announcement received by all enrolled students and faculty. Before data collection, participants were given study details and completed informed consent forms. Participants' height and weight were taken, date of birth (DOB) was recorded, and participants were assigned a Fitbit Zip ™ with their personal data entered (height, weight, and DOB), which was worn for seven consecutive days. Participants completed the father involvement scale and demographic questionnaire after physical activity data collection and received a $10 university gift card for their participation.

Measures

Demographics. A study-designed demographic questionnaire assessed age, academic year, father figure, family structure, parental marital status, household makeup from ages 11 to 18, parental/life changes (e.g., divorce, death, military deployment, marriage), and parents' education.

Body mass index. Body composition was determined using the standard body mass index (BMI) indices derived from height and weight using the BMI formula (CDC, 2017).

Physical activity. Fitbit Zip ™ activity trackers measured physical activity for 7 days. The Fitbit Zip™ is a tri-axial accelerometer that tracks daily physical activity, including step count, distance in miles, and calories expended, and can store data up to 7 days. The Fitbit Zip™ has wireless Bluetooth capabilities for ease of data collection (Schneider & Chau, 2016). Five thousand and fewer steps classify one as sedentary or inactive (Jahan & Shenoy, 2017; Mestek et al., 2008); 7,500 steps appears most beneficial for favorable health outcomes; and many agree 10,000-15,000 steps are better physical activity goals for cardiovascular health (Cocate et al., 2014; Jahan & Shenoy, 2017; Mestek et al., 2008; Saldías et al., 2018). Physical activity cutoffs, developed from the literature, include < 5000 daily steps ($\leq$ 35,000/week) for sedentary, 5001 to 7499 daily steps (> 35,000 to < 52,500/week) for moderately active, 7500-9999 daily steps (> 52,500 to < 70,000/week) for active, and greater than 10,000 daily steps ($\geq$ 70,000/week) for highly active (Cocate et al., 2014; Jahan & Shenoy, 2017; Mestek et al., 2008).

Father involvement. Finley and Schwartz's (2004) quantitative Father Involvement Scale (FIS) measured father involvement, which includes 20 domains and three subscales. Father involvement subscales are (a) *Expressive* (leisure, fun, play, companionship, sharing activities, emotional development, social development, caregiving, physical development, and spiritual development), (b) *Instrumental* (developing responsibility, discipline, ethical/moral

development, providing income, being protective, career development, developing independence, and school/homework), and (c) *Mentoring/advising* (developing competence, mentoring/teaching, advising, and intellectual development). A separate Physical Activities domain was added but analyzed independently and not included in the subscale regression analysis. The FIS rates each father involvement domain on a 1-5 Likert scale to participant responses on how involved fathers were in each domain: 1=*Never Involved*, 2=*Rarely Involved*, 3=*Sometimes Involved*, 4=*Often Involved*, and 5=*Aways Involved*. Overall, father involvement mean scores were used, independent domain mean scores were explored, and subscale regression analysis was conducted. Internal reliability of subscales was replicated ($\alpha = .92$) and similar to Finley and Schwartz's (2004) Cronbach alpha score of .96.

Results

Participants

Forty-two self-identified Black female undergraduate college students aged 18-24 (M_{age} = 19.79, *SD* = 1.52) attending a large, predominantly White university participated in the study. The sample included 10 freshmen, 12 sophomores, 12 juniors, and eight seniors. Thirty-three (79%) women were raised in two-parent, heterosexual households, and nine (21%) in single mother-led homes. Twenty-nine had parents who were married, three together unmarried, four divorced before adolescence, and three separated (two preadolescents, one at age 16). Twenty-nine women identified biological fathers as their father figure, eight stepfathers, two uncles, one grandfather, one godfather, and one coach. Two participants never met their biological fathers (one died before age one and the other separated from the mother before birth), and one lost her father at the age of 10. Five had fathers who served in the military 2-20 years. One participant's father served 3 years in prison, and 14 had fathers who lived in another state from 2 years to their entire lives.

Data Analysis

Descriptive statistics (mean, standard deviation, and percentages) using STATAIC were employed for demographic data and physical activity levels. Correlation analysis determined the relationship between father involvement and physical activity levels among the study population. Multiple regression established the relationship of each variable (e.g., father involvement subscales) to physical activity and BMI, and to determine the best predictor of physical activity and low BMIs among the study sample. ANOVA determined the significance of group differences. Responses to the question that asked participants the extent of physical activity father involvement were coded by frequency to identify father behaviors that impacted physical activity among the study population.

Family Structure

Women from single-parent households had higher levels of physical activity (*M* = 53,054, *SD* = 10,806) than women from two-parent families (*M* = 51,876, *SD* = 21,427). Although this difference was non-significant, most participants (79%) were from two-parent families, preventing an appropriate statistical comparison between groups; however, participants with the highest physical activity were from two-parent, heterosexual households.

Father Involvement

Sixty-nine percent reported biological fathers on the demographic questionnaires; however, when responding to the FIS scale, "*Who do you consider the father figure in your life (for example, biological father, stepfather, uncle, brother, teacher, preacher, etc.)? Use your father figure when completing the following items,*" 74% responded based on their biological fathers. Rounded mean scores established each category of father involvement. Most women (n = 30, 71%) reported fathers were very involved (4-often, 5-always), 19% (n=8) reported moderate involvement (3-sometimes), and only four (10%) participants reported low (1-never, 2-rarely) father involvement. Fathers were most involved in the *instrumental* subscale (M = 4.04, SD = .90) followed by the *mentoring* (M = 3.98, SD = 1.13) and *expressive* (M = 3.55, SD = 1.17) subscales. Domains with the highest levels of involvement were Income (*instrumental*) (M = 4.48, SD = .92), followed by Being Protective (*instrumental*) (M = 4.33, SD = 1.07), and Competence (*mentoring*) (M = 4.24, SD = 1.05). Fathers were least involved in the Physical Activities domain (M = 3.26, SD = 1.50).

Physical Activity

Physical activity varied greatly among participants with the range in average weekly step count being 19,881-102,128. Among the sample, 17% of participants were sedentary (< 35,000 steps/week), 41% moderately active (≥ 35,001 to < 52,500 steps/week), 26% active (≥ 52,500 to < 70,000 steps/week), and 17% highly active (≥ 70,000 steps/week). Only n=8 women from two-parent homes met the high activity (≥ 70,000) criteron.

BMI

The results showed 2% of participants were underweight, 36% normal weight, 36% overweight, and 26% were obese. There was an inverse relationship between BMI and step count. As BMI increased, step count decreased. This strong relationship was significant among the obese participants (r = -.62, p = .04). The relationship between overall father involvement and BMI was extremely weak (r =. 03, p = .83); however, high levels of Physical Activity Father Involvement was the best predictor of a lower BMI when added to the father involvement subscales regression model (t = -2.00, p = .05). See Tables 1 and 2 for BMI regression summaries with unstandardized and standardized coefficients. There were no significant differences in family structure and BMI; however, the same imbalance in family structure prevented an appropriate comparison.

Table 1

Summary of Multiple Regression for Father Involvement Subscales Predicting BMI

Variable	*B*	S.E. *B*	*β*	*t*	*p*
Expressive	0.17	1.19	0.04	0.14	0.89
Instrumental	1.74	2.15	0.31	0.81	0.42
Mentoring	-1.24	1.60	-0.27	-0.77	0.44

Note. R^2 = .02; Adjusted R^2 = -.05

Table 2

Summary of Multiple Regression for Father Involvement Subscales including PAI Predicting BMI

Variable	*B*	S.E. *B*	*β*	*t*	*p*
Expressive	1.73	1.39	0.39	1.25	0.22
Instrumental	1.06	2.09	0.19	0.51	0.62
Mentoring	-0.30	1.61	-0.07	-0.18	0.85
Physical Activity Father Involvement	-1.81	3.75	-0.53	-2.00	0.05*

Note. R^2 = .12; Adjusted R^2 = -.02

Father Involvement and Physical Activity

The negative relationship between Overall Father Involvement (OFI) and physical activity was very weak (r = -.06, p = .69). Also weak was the relationship between Physical Activities Involvement (PAI) and physical activity (r =. 03, p = .85). Although an ANOVA was conducted to explore group differences between OFI levels and physical activity, there were not enough low father involvement responses for adequate comparisons; therefore, the one observation of *never involved* was removed from the analyses. There were no significant differences between groups $F(4, 37) = 1.57$, p = .20; see Appendix. There were also no significant associations in the regression model—t values and p scores for each subscale are as follows: *instrumental* (t = 1.12, p =.27); *expressive* (t = -1.17, p =.25); and *mentoring* (t = -0.49, p = .62), A similar outcome was evident when PAI was added to the regression model. Although the *instrumental* subscale (t = 1.34, p = .19) and PAI domain (t = 1.36, p = .18) had positive associations to physical activity, the *expressive* (t = -1.74, p = .09) and *mentoring* (t = -0.87, p = .39) subscales had negative associations; however, all were non-significant. See Tables 3 and 4 for physical activity regression summaries with unstandardized and standardized coefficients. A second ANOVA was conducted to explore group differences between the added PAI domain and physical activity. There were no significant differences between groups $F(4,37) = 0.93$, p = .46). There were also no significant differences between physical activity and parental education groups and father figure type, and all relationships were weak.

Table 3

Summary of Multiple Regression for Father Involvement Subscales Predicting Physical Activity

Variable	*B*	S.E. *B*	*β*	*t*	*p*
Expressive	-5237.3	4486.10	-0.31	-1.17	0.25
Instrumental	9058.0	8080.42	0.42	1.12	0.27
Mentoring	-2974.8	6010.53	-0.17	-0.49	0.62

Note. R^2 = .05; Adjusted R^2 = -.03

Table 4

Summary of Multiple Regression for Father Involvement Subscales Predicting Physical Activity

Variable	*B*	S.E. *B*	*β*	*t*	*p*
Expressive	-9324.84	5361.53	-0.56	-1.74	0.09
Instrumental	10847.56	8100.00	0.50	1.34	0.19
Mentoring	-5436.62	6215.06	-0.32	-0.87	0.39
Physical Activity Father Involvement	4744.16	3493.21	0.36	1.36	0.18

Note. R^2 = .09; Adjusted R^2 = .00

Despite the Physical Activities domain showing the lowest report of father involvement (*M* = 3.26, *SD* = 1.50), *n*=27 women (64%) reported fathers were directly involved in their physical activities. Five involvement themes emerged from participant frequency in responses, which included 18 fathers who were *Actively Engaged* (e.g., participated with them in activities), 16 provided *Support* and *Encouragement,* seven provided *Education or Advice,* five reported that fathers *Role-modeled* physical activity and healthy behaviors, and three reported *Logistical support,* including transportation. Only one participant reported financial support, although the *Income* father involvement domain score was the highest (*M* = 4.48, *S.D.* = .92). Below are some participant responses used to formulate themes:

Actively Engaged

"*We go biking and walking together.*"

"*Often trained with me when I played basketball.*"

"*Assisted in practicing for sports. Practiced in physical activity together (basketball, swimming, etc.).*"

Support and Encouragement

"*Encouraged me to play sports/get involved.*"

"*Encourage[d] exercise/sports.*"

"*He encouraged me into running track. He put me in gymnastic and dance.*"

"*When I was in middle school, I played basketball, and he influenced me to do so, which I can say this experience shaped my relationship with working out.*"

Education or Advice

"*I played softball—he often would help develop my skills.*"

"*He has always told me to be active where I could stay in shape and be healthy.*"

Role-Modeled

"*My father used to do track and football in high school and college, so I wanted to take up a sport as well.*"

"*He also used to coach football, and I'd be with him on the sidelines or cheering.*"

Logistical Support

"*I began dancing at the age of 3, and he would always take me to rehearsal.*"

"*He took me to every practice and competition that I needed to be at as well.*"

Limitations

Although objective physical activity measures surpass subjective recall measures, and the Fitbit Zip™ has shown to be a reasonable method of tracking physical activity, it also overreports physical activity (Schneider & Chau, 2016). Furthermore, participants who wear Fitbits™ for research tend to increase physical activity (Dunn & Robertson-Wilson, 2018; Goodyear et al., 2017), which poses concern of physical activity outcomes of participants, as activity levels could be conflated. Additionally, attending college and walking across campus could have led to the increase in distance covered. Future consideration is to compare students who live on campus versus those off-campus. The quality and intensity of steps are also difficult to adequately assess, as there are variations in energy expenditure due to stride length, size, and sex (Schneider & Chau, 2016). Last, sample size prevents generalization, and daughters provided fathers' involvement accounts. Further considerations are to include fathers and assess their physical activity behaviors to determine if fathers' behaviors impact daughters' physical activity levels.

Discussion

Reports suggest 10,000 steps a day is a realistic target to ensure good cardiovascular health (Cocate et al., 2014; Jahan & Shenoy, 2017; Mestek et al., 2008). However, most participants failed to meet the ideal step count marker, especially those with higher BMIs. Although higher education has been associated with increased physical activity and lower obesity rates (Whitaker et al., 2018), despite their collegiate status, participants' physical activity trajectories were low, and obesity trajectories were high. Furthermore, those with lower step counts had higher BMIs, which is consistent in the literature (Mestek et al., 2008). Considering that heart disease is the second leading cause of death for Black women aged 25 and over, and the third leading cause of death for Black women between the ages of 20 and 24 (CDC, 2015), low physical activity concerns are heightened for study participants, especially when educated women are not meeting the ideal 10,000 daily step count.

Participant BMIs were high; however, high levels of Physical Activity Father Involvement predicted lower BMIs, which could be mitigated by increased physical activity. However, the low R^2 values suggest other factors are influencing outcomes. Additionally, cultural differences influence BMI outcomes. For example, Black women tend to have higher BMI thresholds (e.g., Overweight 28 vs. 25, Obese 32 vs. 30) than other racial groups before adverse health outcomes are evident (Kam, n.d.). Furthermore, BMI categories were derived from a White male body type and structure (Jacobs & Blackburn, 2014), and is unable to measure fat in the body (Ahima & Lazar, 2013). Black women also have more muscle mass than White women, and fat is distributed differently between these groups with Black women having lower amounts of visceral fat, the most dangerous type of fat (Aloia et al., 1999; Stanforth et al., 2004), which further skews BMI outcomes. Furthermore, cultural concepts of beauty for Black women that include a larger body stature differ from White cultural beauty norms, which tend to embrace a thinner frame (Abrams & Stormer, 2002; Carter-Francique, 2011). This cultural concept perhaps explains the overweight and obese participants' high step count (>70,000/week); they may recognize the benefits of physical activity but desire to maintain a culturally preferred

and acceptable body size. Although the high step counts are encouraging and positively associate with better health, high BMIs at the current cutoffs still pose additional health risks for Black women (CDC, 2017).

Participants reported high levels of father involvement irrespective of physical activity and weight status, which illustrates the homogeneity among the group and possibly attributing to similar outcomes. Findings also highlight the diverse, complex family structures within Black American families (McDougal et al., 2018; Pew Research Center, 2015) and challenge the belief that Black fathers are not involved. Consistent with other studies (Blackshear, 2019; Morgan et al., 2018), fathers were actively involved in daughters' physical activities and encouraged them to be physically active, which is encouraging as fathers tend to engage in these behaviors with sons (Claringbould & Adriaanse, 2015; Coakley, 2017). Perhaps fathers who encourage daughters to engage in physical activities and participate with them will improve long-term physical activity outcomes.

There were no significant associations in the *instrumental*, *expressive*, and *mentoring* father involvement subscales on physical activity, which differs from previous research where the *expressive* subscale (leisure, fun, play, companionship, sharing activities, emotional development, social development, caregiving, physical development, and spiritual development) was positively associated with physical activity among African American adolescent girls (Blackshear, 2019), which may illustrate a difference in maturation in identifying father involvement domains. Also, the FIS father involvement scale takes into account retrospective accounts of father involvement, and the adolescent girls reflected on pre-pubescent experiences, whereas the college participants reflected on father involvement during adolescence. Further exploration of these factors is warranted.

Family structure or having a resident father may also impact physical activity outcomes as all women in the highly active group were from two-parent, heterosexual households. Fathers who reside with daughters have shown to be more involved (Dagkas & Quarmby, 2012) and may have the potential to make a greater impact on physical activity outcomes given the increased opportunities to engage actively. Jaeschke et al. (2017), however, found parental marital status did not affect children's physical activity, although the meta-analysis included a multi-ethnic sample, which limits generalizations to Black families.

Educational Recommendations

While traditional father-daughter dances promote father engagement, schools can offer additional physical activity opportunities for fathers and daughters that extend beyond one event. Schools, counselors, and physical educators can take on an active role by explicitly informing the school community of the benefits that fathers have on female physical activity behaviors regardless of a father's residential locale. For girls who have absent, uninvolved, deployed, or deceased fathers, surrogate fathers (other male figures—uncles, stepfathers, grandfathers, teachers, coaches) can step in, as other men have also shown to impact female physical activity positively (Blackshear, 2019). Physical education teachers could explore and implement culturally relevant approaches. Considerations may include the following:

- Consistent promotion of the benefits of living a physically active life including improved mood, healthy weight status, academic improvement, and overall wellbeing through instruction, newsletters, and school media platforms.
- Share data with families and leadership on the importance of father engagement in short- and long-term physical activity behaviors of female offspring.
- Invite fathers and other male surrogates to physical education classes to participate in (and possibly lead/collaborate) activities with girls (e.g., field days).
- Increase the quantity of father-daughter engagement days and include additional physical activities (sports, walking, yoga).
- Enlist fathers as active health and physical activity promotors/ambassadors—this is especially important as women/mothers tend to be the "go-to" parent in schools and physical activity interventions that target Black girls (Ransdell et al., 2004).
- Remind physical education teachers that physical education programs and instruction often focus on activities that are pro-male and anti-female (Mullins, 2015). By soliciting student feedback and offering same-gendered P.E. options not only give students a choice, which has shown effective in P.E., but ensures that cultural considerations in P.E. curricula are employed.

Public Health Research Recommendations

As the negative health trajectories among Black women are frequently reported in the media and literature, public health officials can also take a stand to effect change. Recommendations include the following:

- Recruit fathers and father figures in physical activity and health research that involve Black girls and women
- Educate Black parents on the positive impact fathers can have on their daughters' physical activity and health outcomes
- Develop programs that explicitly confront the beliefs that girls should not engage in physical activity and sport
- Recognize that effective approaches among White and other groups may not be effective among Black families
- Acknowledge that gendered-racism in practice and policy contributes to poorer health outcomes for Black women
- Create messaging or public service announcements with facts about the benefits of sport and physical activity among Black females (e.g., Play 60)
- Fund organizations that promote physical activity engagement among Black females (e.g., Black Girls Run; Pretty Girls Sweat)
- Employ culturally appropriate measures (e.g., BMI and waist circumference), as cutoff points vary across gendered racial groups (Boffetta et al., 2011; Laxy, Teuner et al., 2018)

Conclusion

Expanding traditional gendered concepts of physical activity among females could lead to more physical activity among Black women. Fathers have shown to positively impact daughters' physical activity levels (Blackshear, 2019; Dagkas & Quarmby, 2012; Morgan et al., 2017), but the degree of long-term impact is unknown. Furthermore, father involvement benefits children's well-being over the lifespan (Allgood et al., 2012), and considerations for cross-gendered approaches are recommended. Additionally, the strong significant correlation between low physical activity and high BMI highlights the urgency in finding factors and solutions that encourage and promote healthier lifestyles for Black women. Participants' open-ended responses on father involvement behaviors on physical activity suggest qualitative approaches may better illustrate father behaviors that positively impact daughters' physical activity participation. As researchers and educators work to identify sociocultural factors that impede and promote physical activity to improve health outcomes for Black females, fathers should be part of the discussion.

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Appendix
ANOVA Results

ANOVA Results for Overall Father Involvement Group Differences in Body Mass Index

Source	*df*	*SS*	*MS*	*F*	*p*
Between Groups	4	137.204972	34.3012429	1.35	0.27
Within Groups	37	939.353271	25.3879263		

ANOVA Results for Physical Activity Father Involvement Group Differences in Body Mass Index

Source	*df*	*SS*	*MS*	*F*	*p*
Between Groups	4	63.1135177	15.7783794	0.58	0.68
Within Groups	37	1013.44473	27.390398		

ANOVA Results for Overall Father Involvement Group Differences in Physical Activity

Source	*df*	*SS*	*MS*	*F*	*p*
Between Groups	4	2.2703e+09	567570067	1.57	0.20
Within Groups	37	1.3367e+09	361261282		

ANOVA Results for Physical Activity Father Involvement Group Differences in Physical Activity

Source	*df*	*SS*	*MS*	*F*	*p*
Between Groups	4	1.4218e+09	355445332	0.93	0.46
Within Groups	37	1.4215e+09	384193686		