

# The Root of Physical Inactivity Among African-American Women: Identifying Exercise Friendly Hairstyles

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## Abstract

*The purpose of this study was to provide information regarding hair maintenance that would increase physical activity among African-American women. A descriptive study design was used, along with Survey Monkey to obtain online responses from African-American female participants over the age of 18 that were associated with four predominately African-American social organizations. Participants were asked to rate the "ease of use" of 8 hairstyles commonly worn by Black or African-American women living in the United States as it related to three physical activity (PA) intensity categories: light to moderate, vigorous, and water-based physical activity. The results revealed that short natural styles had low maintenance scores for all three PA categories (1.19, 1.27, and 1.34, respectively). Increased knowledge and understanding of the complex and varied hair care practices common among African-American women will improve development of exercise-based health interventions for this population.*

**Key Words:** African American women, hair styles, physical activity

## Introduction

Research has established that physical inactivity is a major public health crisis due to its association with most chronic diseases (obesity, type 2 diabetes, hypertension, cardiovascular disease, and certain cancers) (Booth, Roberts, & Laye, 2012; Mozaffarian et al., 2015), leading to increased morbidity and mortality, and an estimated 11.1% of aggregate healthcare expenditures (Carlson, Fulton, Pratt, Yang, & Adams, 2015). However, while evidence supports that regular physical activity (PA) is essential and beneficial in reducing the risk for most of these chronic diseases (Booth et al., 2012), only about 20% of African-American women currently meet the federal PA guidelines (Benjamin et al., 2017).

Physical inactivity is defined as not engaging in physical activity beyond daily functioning as recommended by the 2008 *Physical Activity Guidelines for Americans* (Blair, 2009; Knight, 2012). These guidelines recommend

that adults between 18 and 64 years of age engage in a minimum of 150 minutes of moderate-intensity aerobic activity, 75 minutes of vigorous-intensity aerobic activity, or an equivalent mix of both each week (U.S. Department of Health and Human Services [DHHS], 2008). Additionally, muscle-strengthening activities should be done two or more days each week (DHHS, 2008). The failure of African-American women to meet these recommendations can be seen in their higher prevalence of health problems compared to White and Latina women (Benjamin et al., 2017) (See Table 1).

So why are only 20% of African-American women meeting PA guidelines? Current research indicates that African-American hair care maintenance may be a significant deterrent (Huebschmann, Campbell, Brown, & Dunn, 2016; O'Connor, 2011; Woolford, Woolford-Hunt, Sami, Blake, & Williams, 2016; Zeveloff, 2008). For example, in 2011 the Surgeon General of the United States, Dr. Regina Benjamin, advocated for African-American women to put their health and well-being before their hair (Martin, August 8, 2012). Stating, "Don't let hair get in the way," Dr. Benjamin emphasized that not only could excess weight, obesity, diabetes, hypertension, and strokes be significantly reduced with regular physical activity, but so could the economic burden that these diseases place on society (Martin, 2012).

## Purpose of the Study

The purpose of this study was to quantify which hair care styles would result in a higher incidence of African-American women being more physically active or compliant with PA guidelines. The aim of this study was to provide hair care tips and maintenance strategies to help African-American women overcome barriers to becoming more physically active; in other words, to adopt "exercise friendly" hairstyles.

## Review of the Literature

Physical inactivity is multifactorial, and although hair care is not the sole deterrent to physical activity in women of African descent, it has emerged as a recur-

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**Table 1. Prevalence of Health Conditions in Women by Race (%)**

Health Condition	White	Hispanic	Black
Met Federal PA guidelines	23.5	16.8	19.9
Overweight & obesity, BMI > 25 kg/m <sup>2</sup>	63.7	77.1	82.2
High blood pressure	32.3	30.7	46.3
Diagnosed DM	7.4	12.7	13.6
CVD	35.1	33.3	47.7
Stroke	2.8	2.6	4.0

Physical Activity (PA); Diabetes (DM); Cardiovascular disease (CVD)  
**Source:** Author W. Williams Created from data from the Heart Disease and Stroke Statistics—2017 Update<sup>3</sup>

ring theme in several survey and focus group studies of physical activity in African-American women in the United States (Ainsworth, Irwin, Addy, Whitt, & Stolarczyk, 1999; Boyington et al., 2008; Brown, 2009; Grieser et al., 2006; Hall et al., 2013; Huebschmann et al., 2016; Patton, 2006; Woolford et al., 2016). Hair has great personal and social importance to many women regardless of race (Johnson, Godsil, MacFarlane, Tropp, & Goff, 2017) and is often viewed as an indicator of health, desirability, and social status (Weitz, 2001). In African-American culture especially, hair can carry particular emotional, social, and political weight not seen in other ethnic groups in the United States (Johnson et al., 2017), possibly due to the unique structure, appearance, and versatility of hair in persons of African descent. In 2011, \$684 million was spent on ethnic hair care products (Dwoskin, 2013), and African-American women spend 80% more on hair care products and services than women in other U.S. ethnic groups (Holmes, 2013). Significantly, African-Americans make up 13% of the U.S. population, but account for 33% of all U.S. hair care sales (Grubow & Morris, 2010).

In a study to identify modifiable factors in African-American women that could lead to an increased prevalence of obesity, (Railey, 2000) found that 48.6% of African-American women respondents indicated that hair care concerns influenced when and how long they exercised, 57.5% visited their hairdresser at least twice a month, and 60% had considered going “natural” to increase their physical activity level (Railey, 2000). Most of the women in this study had a BMI greater than 27 kg/m<sup>2</sup> (Railey, 2000). Likewise, a study conducted by Hall and colleagues (2013) to characterize the influence of hairstyle maintenance on exercise behavior in African-American women resulted in similar findings. Thirty-eight percent of the participants reported avoiding exercise at times because of hair care concerns, 36% reported avoiding swimming and water activity due to their hair, and 29% reported avoiding aerobic/gym activity for the same reason (Hall et al., 2013). Half of

the participants also reported considering modifying their hairstyle to accommodate exercise (Hall et al., 2013). The main hairstyle-related barrier reported in most studies by African-American women was the extra time and money to restyle their hair due to perspiration “sweating out” their hair (Huebschmann et al., 2016; Im et al., 2012; Martin, 2012; O’Connor, 2011; Woolford et al., 2016). African-American women spend considerable time and money chemically relaxing their naturally tight hair into smoother, straighter hair styles, and exposure to moisture from sweating can easily reverse this process, resulting in many African-American women avoiding physical activity (Holmes, 2013; O’Connor, 2011). A study by Woolford et al. (2016) supported the fact that ethnic identity was positively associated with levels of PA, and hairstyle choices appeared to be a barrier to PA in some participants.

#### Description of Common Hairstyle Practices for African-American Women

The following hairstyles and techniques are commonly worn by Black or African-American women:

**Heat Straightening.** Heat straightening involves using high heat temperatures ( $\geq 350^{\circ}$  F) to smooth out the natural tight curl texture associated with African-American hair. This method is commonly known as “pressing the hair,” using metal devices (pressing combs, flat irons, or hot irons) to apply to the hair to achieve a straighter, smoother look or style (Quinn, Quinn, & Kelly, 2003). This method is temporary and once the hair comes in contact with water or moisture (sweating or perspiring), the hair will revert back to its natural curl pattern (Quinn et al., 2003). Therefore, to maintain this process, the person must avoid situations associated with exposure to moisture (sweating or perspiring, humidity, or swimming).

**Chemical Relaxing.** Chemical relaxing uses chemicals to straightens the natural tight curl texture of the hair, also referred to as “perming.” The chemical compound is usually composed of sodium or potassium hydroxide (lye),

which is then applied to the hair for a set time frame, then shampooed (Quinn et al., 2003). A licensed stylist should perform the chemical relaxing process (or perming the hair); however, home kits (no-lye, milder formulation) are available. The relaxing process leaves the hair smooth and straight and is more resistant to changes associated with moisture exposure. However, excessive exposure to moisture (sweating or perspiring; swimming) can shorten the time frame between relaxing, from 6 to 8 weeks to 4 to 6 weeks (Roseborough & McMichael, 2009). In other words, the hair reverts back sooner, requiring more frequent appointments to the salon and more time and expense to the individual.

**Hair Weaves.** Women of all ethnicities use hair weaves. These are hair extensions that are sewn, glued, or clipped near the scalp to increase fullness and length of hair (Roseborough & McMichael, 2009). African-American women are experienced users of this style and have developed many techniques to simulate longer or fuller hair. In the most common technique, the woman's natural hair is braided against the scalp and hair extensions are sewn onto the woman's natural hair braids. Hair extensions are most often straight in texture, though curly and kinky textured extensions can be used as well. Hair extensions can be made from either human or synthetic hair and are more resistant to light moisture exposure (sweating or perspiring) than natural straightened hair of African-American women (Roseborough & McMichael, 2009).

**Braids.** Hair braiding involves interweaving at least three pieces of hair to form a braid or plait that starts from the scalp and is woven down to the tip of the hair (Quinn et al., 2003; Roseborough & McMichael, 2009). Braiding or cornrowing of one's own natural hair can be created in many styles and is easy to maintain over several weeks with little maintenance. A person can also have human or synthetic hair interweaving or braided along with their natural hair to extend the length or increase fullness. The braiding process, depending on the style, may take several hours; however, exposure to moisture or water will usually not alter the style. Therefore, braids are considered a very "exercise friendly" hairstyle.

**Locs.** Locs are strands of hair that start off as twisted coiled hair that interlock over time. The hair is not combed; instead as "new growth" occurs at the root, it is twisted into the previous locked hair or coiled hair and allowed to continue to grow unaltered (Sandeen, 2016). A person may choose to wear locs in an even, uniform size and style, or allow them to be freeform (a variety of sizes and shapes). The process of locking one's hair may take several months; it also depends on the person's natural curl pattern (tighter curl patterns will loc faster). Once the hair is firmly locked, it is resistant to moisture and water. In fact, moisture exposure of locs will help ensure the locking process (Sandeen, 2016).

**Loose Natural Styles.** Loose, natural styles are hairstyles that are unaltered by heat or chemical processing. These styles are commonly known as "natural" (not the

same as locs), and are frequently seen in the form of afros, but can be worn in many styles (Bey, 2011). Afros were very popular in the 1960s during the Civil Rights Movement, and regained popularity again between 2006 and 2010 (Bey, 2011).

### Institutional Review Board Approval

This was an independent study conducted by the second author to discover how best to overcome the hair barriers to physical activity voiced by patients. Dr. Alleyne is an independent practitioner with a dedicated breast surgery practice in Long Beach and Los Angeles, CA. This study met the exempt status for IRB; however, the principles of the Declaration of Helsinki were maintained regarding data collection. Participants were not patients seen in her practice; participation was strictly voluntary; no identifying information or medical information was obtained from the participants; and participants had the freedom to stop answering questions at any time during the survey process.

### Methodology

#### Design, Sample and Setting

A descriptive study design was used to elicit information from physically active African-American women regarding what hairstyles were most amenable for them to engage in and maintain physical activity. The inclusion criteria included woman of Black or African-American descent in the United States over the age of 18, with no limitations preventing them from being physically active. Information about the study was posted on the participants' Facebook pages associated with the following organizations: Black Girls Socialize, a Los Angeles social club for members of Black Girls Run; female members of the Black Triathletes Association and the Black Cyclist; and members of Delta Sigma Theta Sorority.

Survey Monkey, an online survey platform, was used to obtain responses from participants from May 2014 through February 2016. Participants were asked to rate the "ease of use" of 8 hairstyles commonly worn by Black or African-American women as it related to three physical activity categories. "Ease of use" is defined as a style that does not hinder or interfere with engagement in PA as recommended by the 2008 Physical Activity Guidelines (U.S. Department of Health and Human Services, 2008). The three physical activity categories are:

- Light to moderate intensity PA (exercise that does not cause sweat or produce shortness of breath; able to speak and sing)
- Vigorous intensity PA (heavy sweating and breathing; may be unable to speak or sing)
- Water related PA of any intensity

Using the "ease of use" rating scale: (1) easy, (2) moderately easy, (3) not easy, and (4) I've never worn this style, the participants were asked to rate the following eight hairstyles:

- Relaxed or chemically straightened
- Pressed or other heat straightened hairstyles
- Full weave
- Partial weave
- Braids or twists with extensions
- Locs (traditional locs or sisterlocs)
- Short natural styles (short afro)
- Medium or longer natural styles (unaltered texture, buns, or pulled back)

Each of the eight hairstyles was scored with the rating scale of: (1) very easy, (2) moderately easy, and (3) not easy. The mean score of each hairstyle was calculated, with lower scores indicating better “ease of use.” In other words, a low score indicated that a hairstyle was easier to maintain during exercise (more exercise-friendly than most).

**Results**

The total number of participants that completed the survey was 201 (N = 201). The majority of participants were over 40 years of age, with 58% of the participants having earned a graduate degree. The demographic data of the study participants can be seen in Table 2. The results indicate that Straightened Styles (relaxed or chemically processed) are commonly worn but have the least favorable ease of use scores for all three PA categories as seen in Table 3. Short Natural Styles and Braids with Extensions had best ease of use scores for all PA categories and were worn by many participants. Loc Styles were less commonly worn (28%), but had good ease of use scores for all PA categories. Short Natural Styles scored under 1.5 for all PA types. Full Weave has ease of use scores comparable to

**Table 2. Demographic Information of Study Participants (N = 201)**

Age	%
18 - 24	2
25 - 40	32
41 - 65	65
Over 65	1
Educational Level	%
High school or GED	1.1
Some college but no degree	8
Associate’s degree	5.3
Bachelor’s degree	28.2
Graduate degree	57.4

Long Natural Styles for non-water based PA. Long Natural Style had better ease of use for water-based PA than Full Weaves. Weaves/Sew In Extensions mimic natural or straightened texture styles with good ease of use, particularly for non-water based PA (See Tables 2 and 3).

**Discussion**

The evidence supports that physical activity can improve one’s health and decrease certain risks factors; however, many physical activity studies do not include components

**Table 3. Rating of Hairstyles According to Physical Activity Intensity (N = 201)**

Hairstyles	Light to Moderate	Vigorous	Water related
Relaxed or chemically straightened	2.13 (77%)	2.37 (78%)	2.57 (74%)
Pressed or heat straightened hairstyles	2.65 (73%)	2.82 (74%)	2.88 (22%)
Full weave	1.63 (52%)	1.85 (30%)	2.52 (29%)
Partial weave	2.03 (34%)	2.2 (34%)	2.62 (30%)
Braids or twists with extensions	1.2 (66%)	1.36 (66%)	1.83 (62%)
Locs (traditional locs or sisterlocs)	1.4 (28%)	1.47 (28%)	1.91 (28%)
Short natural styles (short Afro)	1.19 (55%)	1.27 (55%)	1.34 (53%)
Medium or longer natural styles (unaltered texture, buns or pulled back)	1.8 (75%)	1.85 (73%)	2.06 (71%)

“Exercise friendly” hairstyles fall below 1.5 with 1 being very easy.  
(% participants that have worn that hairstyle)

specifically related to African-American hair concerns, such as “sweating out one’s perm.” Researchers have established that cultural perspectives, such as those regarding hair styles, should be considered when recommending or establishing physical activity programs aimed at African-American women (Harley, Odoms-Young, Beard, Katz, & Heaney, 2009), and addressing hair maintenance as a deterrent may significantly improve the overall health of African-American women. Healthcare providers recommending PA programs should be aware of hair care as a potential PA barrier not widely discussed outside communities of African descent, and that increased knowledge of the complex and varied hair care practices common among African-American women may improve development of exercise-based health interventions for this population. It is essential that healthcare providers and researchers develop and test interventions that acknowledge these cultural differences regarding hairstyle maintenance. A key recommendation from a Huebschmann et al. (2016) study is building self-efficacy to restyle hair after PA (Huebschmann et al., 2016). Having some knowledge regarding African-American hairstyles and care is a step toward promoting and encouraging African-American women to be more physically active. If hair care is a PA participation barrier for African-American women seeking to increase activity, those women should consider hairstyles with amenable ease of maintenance. As more African-American women choose to wear more natural hair styles that are less affected by perspiration, then hair maintenance as a deterrent to physical activity may be reduced. For styles, less easy to maintain but commonly worn, peer to peer hair-management information sharing can help African-American women overcome barriers to physical activity.

### Limitations

Although this study revealed important insights regarding African-American women overcoming PA barriers associated with hair maintenance, some limitations must be considered. First, most of the women in this study were over 40, and PA levels and hairstyle issues may vary with age; therefore, future studies should stratify participants based on age and activity levels. Second, the majority of participants were highly educated; therefore, their hair maintenance issues may differ from women in a lower socio-economic status. Finally, not all women may have Internet access to respond to the online survey.

### Conclusions

Physical activity is a simple process that could significantly reduce health disparities among African-American women and ensure improved health equity. Being cognitive and receptive to the fact that hair care maintenance is a significant barrier among African-American women can lead to better understanding of how best to assist them to be more physically active. Consistently grouping or classifying all women the same has contributed to the inequities in some healthcare programs. It must be recognized that African-American women have unique

challenges not experienced by White women or other ethnic groups. Researchers and healthcare practitioners must consider hair maintenance when recommending physical activity measures to African-American women, and future research projects would be remiss not to address these issues. Ultimately, the sociocultural importance of hair care maintenance to African-American women must be factored into physical activity interventions aimed at this population.

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