

Exploring Women's Marathon Participation in the United States, 1980-2019

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ABSTRACT

Over 45 percent of participants in U.S. marathon events identify as women (World's Largest, n.d.), a noteworthy development considering women comprised just 11% of participants in 1980 (Ryder, 2013). Most U.S. women competing in marathon events also identify as white and middle class, indicating significant racial and socio-economic divisions in this growth in participation. The rise in U.S. women's marathoning is linked to historical changes in the late twentieth century, particularly the passage of Title IX, movements for social justice and women's liberation, and the commercialization and marketization of running events. How does the increase in women's participation relate to performance rates in organized marathon events? To better understand the historical and sociocultural factors associated with U.S. women's engagement in marathoning, this article examines the performance statistics and demographics of the top U.S. women marathon runners from 1980 to 2019 in three major marathon events in the country: New York City, Boston, and Chicago. Results demonstrate the age of high performing female marathon runners has increased significantly during the period, while race time has decreased significantly, and top performers have been largely white. These findings are discussed and contextualized with respect to historical and sociocultural factors surrounding the growth in U.S. women's marathon participation.

Keywords: women's marathon, sport history, performance, Title IX, race/ethnicity

INTRODUCTION

In the last fifty years, there have been important developments with regard to organized marathon events in the United States (U.S.). First, marathon events have increased in popularity due to event entrepreneurs, organizers, and researchers marketing running sports as an exercise in personal well-being and touting its potential range of health benefits, including cardiovascular fitness, muscle strengthening, and stress relief (Cooper, 1992; Miller, 2020). This expansion is part of a broader growth in the running industry, with an estimated annual worth of about \$1.4 billion and race companies sponsoring over 30,000 running events each year, from short sprints to ultramarathons (Lacke, 2018). In terms of marathons specifically, there over 1000 competitive races in the U.S. each year with a combined total of approximately 1.1 million runners (Galic, 2022).

Author Susan Lacke (2018) asserts that running in the U.S. today, including marathon running, has 'transformed into a full-on cultural movement spurred in large part by the rapid growth of women in the sport' (para. 3). This is evident in the growth in the number of women competing in marathon events, with over 45 percent of U.S. marathon participants identifying as women as of 2017 (World's Largest, n.d.). This is a notable development in U.S. women's sport history, considering just 11 percent of all marathon finishers in 1980 were women (Ryder, 2013). In terms of overall running participation in the country, the 26.2 Foundation reports that six out of every ten runners now identify as women (Demographics and Trends, n.d.). Today there are more women than men

participating in marathoning around the world for the first time and the U.S. has one of the largest percentages of women marathon runners compared to other nations (Andersen, 2021).

There are important social divisions within this growth in women's marathon participation in the U.S., notably related to racial identity. A recent Running USA survey found that white women comprise a majority of the U.S. women's marathon running population—African American women runners, by comparison, make up less than 10% (Petrzela, 2020). Indeed, African American women runners continue to be underrepresented in marathon running, despite statistics indicating that more Black Americans and Black women are running competitively and recreationally than in previous decades (Chenault, 2019). Further, there is little to no information on the participation of women who subscribe to other ethnicities, likely because participation rates are so low. For example, less than 5% of Hispanic women identify as runners (McShane and Armas, 2017). Within the past few years there have been a variety of running groups and initiatives created to support and promote inclusion within the running industry, such as the Running Industry Diversity Coalition, an organization that is also aiming to provide data on the racial and ethnic composition of running in the U.S. (Running Industry Diversity Coalition, n.d.).

In addition, there appears to have been a shift in athletic longevity, with an increase in the age of runners and faster performances among these older participants. As one recent example, a runner named Keira D'Amato, a 37-year-old mother of two, broke the U.S. women's record at the Chevron Houston Marathon (Meet 2022, 2022). D'Amato's victory in Houston is also remarkable as she took a seven-year hiatus due to an ankle injury, during which time she had two children. D'Amato's performance is indicative of a broader shift within women's sports, as other celebrated older female athletes perform at elite levels in organized international events. In the case of the Olympic Games, a few notable U.S. examples are Kerri Walsh-Jennings, a bronze medalist in beach volleyball at the 2016 Rio Olympic Games at 38 years old (Quigley, 2021); Dara Torres, a silver medalist in swimming at the 2008 Beijing Olympic Games at 41 years old (Robb, 2010); and, Lindsey Jacobellis, a gold medalist in snowboard cross at the 2022 Beijing Olympics at 36 years old (Diaz, 2022). Though these women have been revered for their persistence and exceptional performances, they also signal a more widespread trend of women demonstrating high-level athleticism at older ages across all sports, including marathon running.

How does this significant growth of women's participation in organized, competitive marathon events relate to developments in the broader, ongoing 'revolution' in women's sports participation since the latter half of the twentieth century (Brake, 2010; Cahn, 1995)? If there are now dramatically more women participating in marathon events specifically, and sports in general, are we also seeing improvements in the performance times of elite participants? If there continue to be significant social divisions in the demographics of women marathon participants, particularly in terms of socioeconomic status and race, are these divisions also visible in terms of the top finishers at marathon events? If so, what do these things suggest regarding the possible links between historical context and performance in the case of women's marathoning? To engage with such questions, this article examines the performance and demographics of the top U.S. women marathon runners in major marathon competitions in the country from 1980 to 2019, the years that witnessed considerable growth in women's participation. Specifically, the performance and demographics associated with three important U.S. marathon events are analysed: the New York City (NYC) Marathon, the Boston Marathon, and the Chicago Marathon. The goal is to highlight and better understand possible connections between significant historical and sociocultural changes, processes and politics within broader U.S. society, the ongoing historic growth in women's participation in marathon running, and their performance in organized marathon events.

Results from our data indicate that the age and race time of high performing female marathon runners has improved significantly since 1980, with top performers in all three events almost wholly identifying as white. As such, we argue that improvements in U.S. women's marathon performances since 1980, intertwined with the racial and social divisions and inequalities apparent within this development, correlate with particular historical developments in the latter half of twentieth century, namely the passage of Title IX of the Education Amendments Act of 1972 (Brake, 2010), the so-called 'second wave' of feminist activism in the 1960s and 70s (Festle, 1996), and the boom in fitness and running consumerism in the 1970s and 80s (Sassatelli, 2010; Plymire, 2006). We suggest that the expansion of opportunities for women to participate in distance running since the inception of Title IX, which has predominantly benefitted white, middle-class women (Pickett et al., 2012), along with marketing efforts directed towards the white, middle-class female marathon runner, seem to have been key factors fuelling the changes in participation and performance statistics.

HISTORY OF WOMEN'S MARATHONING

The history of women's marathoning should be situated within the broader history of sport in the U.S., a gendered and racialized history in which groups of women have and continue to struggle to gain access and acceptance in sporting spaces originally designed to promote white masculine supremacy (Hargreaves, 1994; Cahn,

1995; Kimmel, 1996; Kidd, 2013; Schultz, 2014). Historians and sociologists have studied the ways in which women have participated in a social institution that, since at least the nineteenth century, has served as a ‘powerful cultural arena for the perpetuation of the ideology of male superiority and dominance’ (Messner, 1988: 199; Schultz, 2018). For African American women who wanted to participate in sports in the twentieth century, they also had to contend with issues of racism, racial stereotypes and discrimination that intersected with gender and social class. Race, historian Jennifer Lansbury (2014) notes, ‘always made a difference’ in differentiating their experiences from that of their white female counterparts (6). Despite achieving at the highest levels in a multitude of sports and becoming marketable, highly visible celebrities, women athletes from the twentieth century to the present continue to encounter gender and/or race-based forms of discrimination in the androcentric realm of sport. Such forms of discrimination include, but are not limited to: unequal pay (Alvarez, 2019); sexualisation in traditional and online media (Kane, 1996; Kavanaugh et al., 2019); exclusion from televised news and highlights shows (Cooky et al., 2021); the discriminatory practice of gender-verification testing in Olympic and international sport (Cooky and Dworkin, 2013; Pieper, 2016); restricted access to leadership positions (Kane and LaVoi, 2018; LaVoi, 2013); and the embedded sexism within sports and sporting organizations (Fink, 2016; Hindman and Walker, 2020).

Historians have documented how women have engaged in long distance running regardless of their access to organized marathon events throughout this gendered history (Jutel, 2003). Jaime Schultz (2015) writes that women have presumably been running ‘great distances’ long before the International Olympic Committee held its first officially sanctioned women’s marathon event in 1984, considering that ‘[e]ndurance running is a way of life in several cultures around the world’ (73). There are ‘sporadic’ accounts of women competing in various all-male marathon events since at least the turn of the twentieth century (Kuscik, 1977: 73), including two women who purportedly ran the marathon during the first modern Olympic event in 1896 (Tamini, 1993). Prior to the widespread acceptance of women as athletes later in the twentieth century, women were forced to look for discrete or unofficial ways to compete as ‘athletics’ officials persistently forbade women’s participation’ in official races (Schultz, 2015: 73). Restrictions on their participation were often based on longstanding medical myths and social stereotypes concerning the frailty of women’s bodies, along with fears that perceived masculine sports, such as running and track and field events, would damage a woman’s feminine beauty and reproductive system (McDonagh and Pappano, 2007). These myths and stereotypes would help limit women’s participation in long distance running events until the 1960s and 1970s, when organizations like the Association for Intercollegiate Athletics for Women (AIAW) emerged to challenge restrictions and advocate for women’s opportunities at all levels of sport (Ware, 2011: 142).

The rise of the woman marathon runner coincided with the rising popularity of organized marathon in the latter half of the twentieth century. There was what one historian calls ‘an explosion of distance running events and in the number of people running or jogging’ (Chase, 2012: 245), with race events increasing exponentially from five in 1959 to about 200 in 1977. Major marathons like Boston and NYC went from having hundreds of starting runners to thousands and tens and thousands by 1980 (Cooper, 1992). As part of this shift in popularity, the number of women runners participating in events jumped from about twenty at the beginning of the 1960s, to over a hundred in the 1970s, to hundreds in the 1980s (Cooper, 1998: 158; Marathon, 1984; Schultz, 2015). Schultz (2015) claims that women were both ‘dismiss[ed] and dissuad[ed]’ (73) from participating in long distance running events until the 1960s, when ‘an incalculable number of women found in running emboldening and transformative experiences, many of which changed their relationships with others, with themselves and with their bodies’ (79). In terms of the marathon, this idea was illustrated through the prominent example of Kathrine Switzer, who, in 1967, became the first woman to compete in the Boston Marathon, using her first and middle initials to register for the event and evade officials (Switzer, 2017; Renick and Velez, 2013).

In 1970, women were formally permitted to compete in Amateur Athletic Union (AAU)-sanctioned marathon events, and by the end of the decade marathons transformed from ‘relatively non-commercialized, middle-class’ events restricted to men to contests with scores of women participants, demonstrating that the ‘marathon was no longer just for the elite athlete nor was it reserved only for men’ (Chase, 2012: 245; Cooper, 1992). The 1970s arguably ushered in a ‘competitive age’ in women’s long-distance running, as well as the white woman marathon runner as a cultural symbol of female empowerment (Switzer, 2017; Cooper, 1992). The 1970s also constituted a period in which marathon entrepreneurs increasingly shifted their focus to (white, middle-class) women as potential sporting consumers and participants in physically active pursuits such as aerobics and running (Andreasson and Johansson, 2014; Festle, 1996; Plymire, 2006).

THEORETICAL AND METHODOLOGICAL CONSIDERATIONS

Anchored in the historical development of U.S. women’s athletic performance in major marathon events since 1980, a period which was at least partly shaped by historical developments in the preceding decades, this research is informed by scholarship on the social justice movement for women’s liberation and what historians have called

the 'second wave' of feminist activism of the 1960s and 70s (Stansell, 2010). This constituted a period of feminist activism that shed light on persistent and systemic gender inequalities in everyday life, including the traditionally male-dominated sphere of sport (Lee, 2007). Second-wave feminism, with its 'language of equality, opportunity, and rights' (Cahn, 1995: 249), influenced young women in the latter half of the twentieth century to openly and actively challenge longstanding notions of sports as male preserves and fuelled a new era of increased opportunity for women's sport (Schultz, 2014). Historians of women's sport, such as Susan Cahn (1995), argue that the second-wave feminist movement catalysed women's interest in sport throughout the U.S. In 1972, amidst the historic movement for women's liberation and second-wave feminism, the U.S. Congress also passed landmark legislation commonly known as Title IX, which stipulated that 'any education program or activity receiving Federal financial assistance' shall not discriminate or exclude any individual from participating or benefitting 'on the basis of sex' (Education Amendments Act of 1972, 2021). Historians of U.S. women's sport have underscored that Title IX, emerging during a period marked by feminist activism, 'renewed interest in women's sport nationwide' and helped usher in a 'dramatically new era' of women's sports that extends to the present (Schultz, 2014: 246). Today, scholars credit Title IX for serving as 'the catalyst for girls' and women's increased access to athletic participation opportunities' at schools and universities (Pickett et al., 2012: 1582).

The impact of the feminist movement on sport extended beyond Title IX. According to historian Mary Jo Festle (1996), women increasingly entered sporting spaces and challenged discrimination in sports 'everywhere they found it—in community programs like Little League Baseball; in high schools and universities; in clubs, road races, locker rooms and weight rooms' (107). The impact of the feminist movement on sport was perhaps most visibly symbolized in Billie Jean King's nationally televised defeat of Bobby Riggs in their 1973 'Battle of the Sexes' tennis match, dismantling myths of male superiority in sports and signifying 'the broader struggles for women's liberation and women's equality' (Cooky, 2017: 613). It was during this era of second-wave feminism that women and organizations actively confronted gender discrimination in marathon and long-distance running events, including the Road Runners Club of America's challenging of the AAU's ban on women competing in official events like marathons (Longman, 2011). Informed by this historical literature of sport during the movement of women's liberation and second-wave feminism, we approach the marathon event as what Messner (1988) calls a 'contested ideological terrain' in which women's athletic success represents a rebuke of the notion of male superiority in sports.

The article is also informed by scholarship on the racialized and classed aspects of the second wave of feminist activism in the 1960s and 70s, in order to better understand and contextualize prevailing racial and class inequalities within women's sport. Historians contend that the second-wave feminist movement exhibited the racial divisions of the era (Breines, 2006), and Black feminist activists encountered difficulty bringing Black feminist issues to the forefront of what was predominantly a white and middle-class feminist movement (Taylor, 2012). In response to their marginalization within the feminist movement, African American and Black lesbian feminist activists made the case, in what came to be called the *Combahee River Collective Statement*, for the 'development of integrated analysis and practice based upon the fact that the major systems of oppression are interlocking' (Combahee River Collective, 1977: para. 1; see also Taylor, 2012). Through this history of Black feminist activism, there has emerged a critical and scholarly tradition known by the term intersectionality, which focuses on the role of power, oppression, and privilege in the production of knowledge and recognizes that there are 'multiple dimensions and modalities of social relations and subject formations' that shape the experiences of women (and women athletes) of color (McCall, 2005: 1771; see also Collins and Bilge, 2016; Crenshaw, 1989). This scholarship contributes to and complicates our approach to the study of women's marathon by helping us highlight the existence and persistence of other social inequalities within organized sport and their important intersections within the gendered experiences of women athletes.

Data Collection

The number of individuals, performance times, and demographics of the top 10 overall female finishers were collected using official race databases and race archives for the top three largest marathons in the U.S. (Chicago Marathon, NYC Marathon, and Boston Marathon) from 1980-2019. The races were selected due to being the largest and most renowned marathons in the U.S. with the greatest prize purse for the top 10 overall men and women (Abbott World Marathon Majors, n.d.). Among these, the finishers representing the U.S. were analysed. The U.S. female performers placing in the top 10 overall were selected for analysis, with a focus on top performance trends over the study period. Information about participant event time, age, and race/ethnicity was documented for the three event locations between the years 1995 and 2019. Age and race/ethnicity were determined from race databases and/or publicly available athlete profiles. From 1980 to 1995 only time and age information about participants in the NYC Marathon was available. Dates between 1995 and 2019 were compiled from all three race events with the exception of 2012 during which the NYC Marathon did not take place. For continuous variables (i.e., race time, age), an average was taken for the individuals placing in the top 10 in all three

race events. These were then averaged and depicted in five-year clusters (Figure 1 and Figure 2) to perform categorical analyses over the timeframe studied and provide further insight into the changes noted over time. In addition to the total number of top 10 U.S. finishers, the number of unique finishers (excluding repeat top 10 finishes within each five-year cluster) was recorded. Further, because data from 1980 to 1995 was only obtained for one marathon and only the top 10 finishers were recorded, the number of U.S. women finishing in these competitive places was almost always in single digits. This created substantial sample size discrepancies when comparing to later years. Hence, five-year clusters were used for end-point analyses. When reporting number of finishers, total percent of U.S. finishers in the top 10 was also reported to account for smaller sample sizes in 1980-1995. For categorical variables (race/ethnicity), frequencies were compiled from all three events and converted to percentage of all individuals from the U.S. placing in the top 10. The average percentage within each five-year cluster is depicted in Figure 3.

Statistical Analysis

Age and event time of U.S. runners were analysed using linear regression to evaluate the changes over the years for which data was available. Both variables were assessed for homogeneity of variance, linearity, and normality of residuals distribution and all assumptions were met. The analyses were run to include U.S. women who finished in the top 10 in each included race. When a significant or trending coefficient was identified, a one-way ANOVA (1×8) was performed to identify an effect for the cluster years on the dependent variable, either age or event time. A Tukey *post hoc* analysis was performed when a significant main effect was identified. For race/ethnicity, logistic regression was used to identify the odds of a white woman from the U.S. finishing in the top 10 compared to any other race/ethnicity. For this analysis, a data set including all top 10 finishers from the Boston, NYC, and Chicago Marathons from 1995-2019 was used, though only U.S. women were analysed. Data are presented as mean \pm SD. A significance level of $\alpha = 0.05$ was used, and $\alpha < 0.10$ was considered indicative of a trend.

RESULTS

Number of U.S. Finishers and Event Time

The number of U.S. finishers in the top 10 for each five-year cluster and unique finishers (excluding repeat top 10 finishes within each five-year cluster) are depicted in Table 1. Among U.S. top 10 finishers, event completion time has significantly decreased ($p < 0.001$) from 1980 to 2019 (Figure 1). For every year that passed, the average event time decreased by 0.13 minutes (7.8 seconds) ($\beta = -0.131$, $p < 0.001$) for top 10 finishers. One-way ANOVA revealed a significant effect for cluster ($p = 0.003$) and *post hoc* testing revealed that the average event time in 1980-1984 (156.8 ± 4.7 min) was significantly longer than that recorded in 2010-2014 (151.3 ± 3.1 min, $p = 0.006$) and 2015-2019 (151.9 ± 6.5 min, $p = 0.009$). No other significant differences were noted between the five-year clusters.

Table 1. Number of top-10 finishers representing the United States in each five-year cluster depicted as total number and percent of all top-10 finishers

Year	Total [n (%)]	Total unique [n (%)]
1980-1984	22 (44)	20 (40)
1985-1989	8 (16)	8 (16)
1990-1994	7 (14)	7 (14)
1995-1999	20 (15)	13 (10)
2000-2004	21 (14)	18 (12)
2005-2009	30 (20)	18 (12)
2010-2014	31 (22)	24 (17)
2015-2019	48 (32)	34 (23)

Results from 1980-1995 include only the New York City (NYC) marathon. Results from 1995-2019 include NYC, Boston, and Chicago Marathons. Total percent of finishers accounts for smaller sample sizes in 1980-1995.

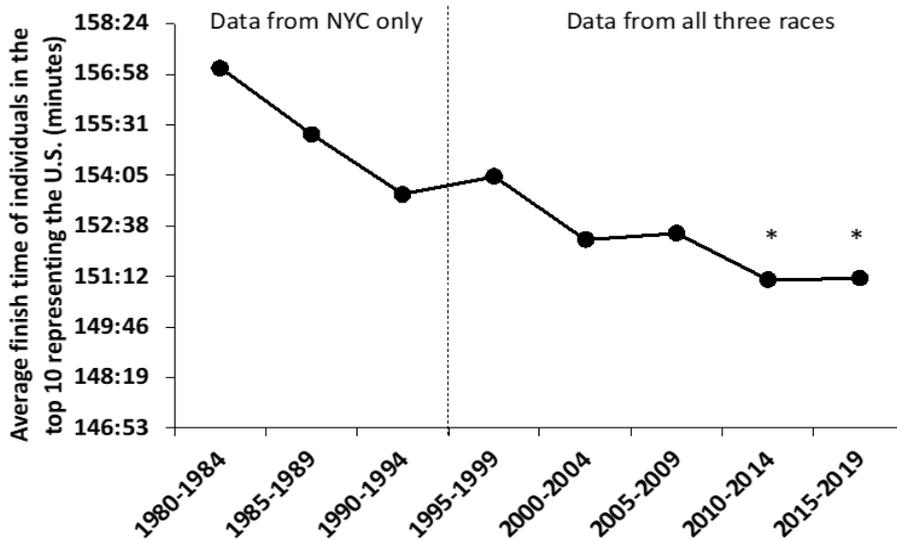


Figure 1. Average finish time (minutes) of Unites States women placing in the top-10 at the three major US marathons. Data are presented as averages of five-year clusters from 1980-2019. Results from 1980-1995 include only the New York City (NYC) marathon. Results from 1995-2019 include NYC, Boston, and Chicago Marathons (* indicates significantly different than the 1980-1984 cluster).

Age

Age increased significantly from 1980 to 2019 ($p = 0.018$) among top 10 finishers representing the U.S. (Figure 2). One-way ANOVA identified a significant effect for cluster ($p < 0.001$). *Post hoc* testing revealed that athletes in 1980-1984 (27.0 ± 4.2 years) were significantly younger than those competing in 1995-1999 (33.3 ± 4.2 years, $p < 0.001$), 2000-2004 (32.8 ± 5.3 years, $p < 0.001$), 2005-2009 (31.0 ± 5.4 years, $p = 0.022$), and 2015-2019 (30.9 ± 4.6 years, $p = 0.1$). A trend towards a difference was noted between mean age in 1980-1984 and in 2010-2014 (30.4 ± 4.2 years, $p = 0.089$). No difference in age was detected between 1980-1984 and 1985-1989 ($p = 0.88$) or 1990-1994 ($p = 0.44$) when only NYC race data was available. Additionally, no change in age was noted between any cluster from 1995-1999 and 2015-2019 ($p > 0.25$).

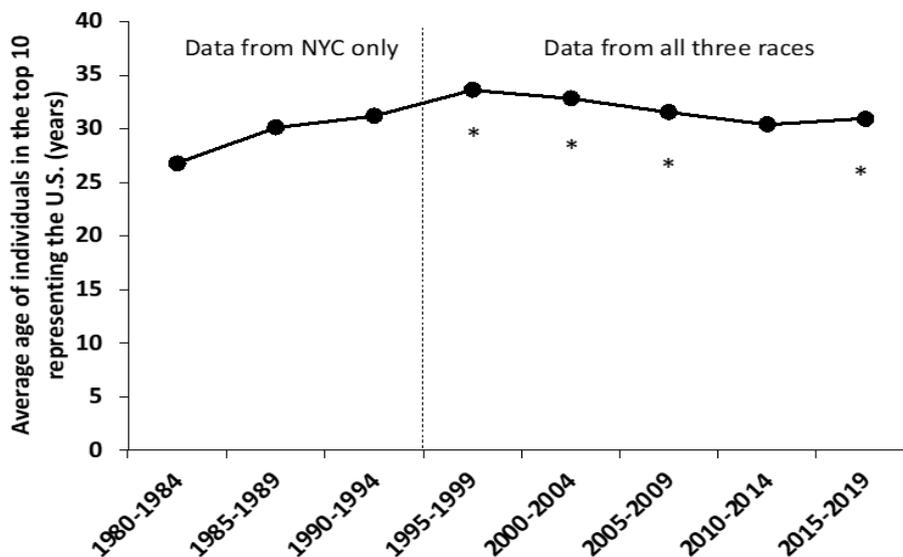


Figure 2. Average finish age (years) of Unites States women placing in the top-10 at the three major US marathons. Data are presented as averages of five-year clusters from 1980-2019. Results from 1980-1995 include only the New York City (NYC) marathon. Results from 1995-2019 include NYC, Boston, and Chicago Marathons (* indicates significantly different than the 1980-1984 cluster).

Race/Ethnicity

A total of 150 U.S. women placed in the top 10 in the three selected events from 1995-2019 and 134 of these women were white (Figure 3). The odds that a female representing the U.S. finished in the top 10 were 11.4 times higher for whites compared to all other races/ethnicities (Odds ratio = 11.35, 95% Confidence interval: [6.6,19.6]). Of the 150 women who finished in the top 10, only 16 women were of other ethnicities and 14 of these 16 finishers were U.S.-born citizens (13 Hispanic, 1 Native American), as opposed to recruits from other countries (1 Black, 1 Asian). Fewer than 2% of top 10 finishers representing the U.S. across all years studied were Black.

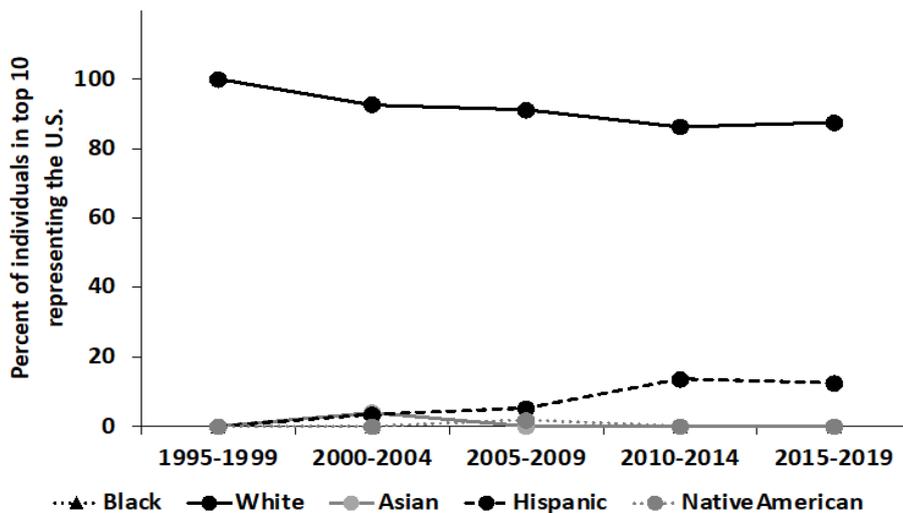


Figure 3. Racial/ethnic representation (percentage) of US women placing in the top-10 at the three major US marathons. Data are presented as averages of five-year clusters from 1995-2019 and include NYC, Boston, and Chicago Marathons. Data on race/ethnicity of athletes was not available prior to 1995.

DISCUSSION

Exploring the shifting historical and cultural context associated with the aforementioned dramatic growth in participation and improvement in elite women's marathon performance is paramount. As outlined in previous sections, the early 1970s marked an era wherein changing legislation and societal ideologies, along with significant interest and involvement, sanctioned and encouraged women's participation in competitive marathon events. The results from the four decades of women's marathon participation reviewed in this study suggest that the shifting norms regarding female athleticism and the marketization of the female marathon runner, in tandem with the inception of Title IX, not only offered essential opportunities to women and girls, but ultimately shaped changes in participation and elite performance in women's marathon. The results also demonstrate significant differences across the dimensions of event time, as well as age and race/ethnicity, each of which is anchored in important, contextual socio-cultural factors associated with rising participation rates in women's marathoning in the latter half of the twentieth century.

Event Time

In particular, the results presented herein demonstrate that the race time for the top 10 finishers has significantly decreased, by almost five minutes, during the time period covered in this research, although the data also suggest a plateau in time since 2010. According to Millard-Stafford et al. (2018), the event time performance gap between men and women is approximately 12.6% and has been holding stable since 1980, whereas in 1972 and 1976 it was 17.3% and 14.2% respectively, and consequently they argue that 'Title IX quickly and 'clearly narrowed the performance gap' (531). Indeed, world-wide marathon times in women have remained relatively stable since the mid-80s (Sparling et al., 1998; Senefeld, 2015). However, in line with our findings, Pate and O'Neill (2007) reported similar improvements in race time between 1976 and 2005, specifically among U.S. women. These statistics are further contextualized in relation to the exponential growth of marathon races allowing female participants in the 1970s (Schultz, 2015). Schultz (2015) asserts that marathon runners at this time 'challenged conventional gender norms by not only completing races, but also by doing so in increasingly faster times. Their athletic performances made important political statements about women's physical capabilities' (75). Eventually the women's marathon became a sanctioned race at the 1984 Olympics, cementing its status as a globally important, competitive event for women. Ultimately the 1970s marks a pivotal time period for women's marathon as the passage of Title IX

coincides with major race events finally allowing women to compete and thus can be credited with contributing to these corresponding decreases in women's marathon times.

Age and Socioeconomic Status

As the results demonstrate, the age of high performing female U.S. marathon runners increased significantly over the four decades studied. The average age of the women runners who finished in the top 10 in the last five-year time cluster reviewed is almost 31 years old, compared with 27 years old between 1980 and 1984. Since the marathon is not an NCAA sport, most competitive female runners enter events post-collegiately. Further, physiologically-speaking, declines in neuromuscular system functioning can begin to take place around 30 years of age (Hunter et al., 2016). While these declines are not as pronounced in athletes (Power et al., 2010), remaining competitive in the faster 5km and 10km distances can become more difficult which may result in more women transitioning to the marathon in their late 20s/early 30s to extend their competitive careers. Limitations in the number of marathon races physiologically tolerated in a year, as well as complex tactical strategies and experience racing a marathon distance, can take time to become accustomed to, potentially leading to women peaking at this specialty at later ages (Noble and Chapman, 2018).

In the first study to examine the age of marathon runners, Hunter et al. (2011) note that both the top male and female performers are typically in their late 20s. The increasing age of elite marathon athletes 'reflects motivation to train and remain competitive in sport' (Millard-Stafford et al., 2018: 533). In an analysis of the Berlin Marathon finishers, Nikolaidis et al. (2019) found that women's age at peak performance is 32. Further, findings from Elmenshawy et al.'s (2015) study on the ages of Olympic medalists in track and field, swimming, rowing, and speed skating echo the aforementioned marathon results, reporting that the peak performance age for women athletes has increased in the modern era.

As with event time, the results suggest that the impact of Title IX can be seen through the increase in age among U.S. women marathon finishers. The inception of Title IX in 1972 means that in the mid-to-late 1970s and 80s more young girls and women had the opportunity and encouragement to participate in organized sport at schools and at the collegiate level. Consequently, the late 1990s and 2000s featured more college-aged women wanting to continue their sport careers via intercollegiate athletics. It was during the time period studied that shifting socio-cultural dynamics, including the marketization of female athleticism by sporting and commercial organizations, undoubtedly spurred interest among women in continuing sporting and physically active pursuits beyond high school and/or college athletics. This includes opportunities for women to engage in long-distance running events outside of or after completing their academic pursuits. In other words, we are suggesting that there seems to be a mutually reinforcing relationship between the cultural phenomenon of women in the U.S. increasingly embracing the expanded opportunities to compete in organized sporting events well into adulthood, and the trend of increased average age of top finishers representing the U.S. in the major marathon events studied.

The impact of the expansion of sporting opportunities is both enmeshed with and has manifested through the increasing age of the runners. Historical accounts on the development of women's marathoning in the late twentieth century typically cite increased commercialisation and marketization of marathon as helping to galvanize the popularity of the sport and the longevity of women's participation. As early as the 1970s, entrepreneurs like NYC Marathon founder Fred Lebow began to market marathon events to the middle and upper-middle classes, particularly white recreational runners. Marathon event organizers 'consciously' tried to appeal to affluent, 'less serious' recreational runners to attract sponsorships and generate profits (Cooper, 1992: 248). This was part of an effort to not only attract sponsors and generate profit, but also to capitalize on women's burgeoning interest in recreational running. The events were increasingly promoted not so much as a competition for serious athletes, but as a fitness pursuit offering 'health-enhancing properties' for participants (246). Over the past four decades, the appeal of marathon (and other endurance pursuits, e.g., road and trail run events, triathlons, obstacle/challenge races) as a recreational and consumer pursuit, occurring in conjunction with changing social norms concerning women's athleticism, has resulted in a new women's recreational sport culture (Pauline, 2014).

Spurring the proliferation of marathon events, sports and fitness apparel corporations, such as Nike, have worked to increasingly incorporate the image of the athlete woman in their marketing and advertising campaigns to capitalize on the expanding demographic of potential female fitness and sporting consumers and profit from the rise of the woman runner as a feminist icon (Cahn, 1995). The dynamic transformation of women's fitness apparel since the 1970s and 80s can be illustrated through the advent of the sports bra, a popular consumer product that did not exist until the late 1970s and was initially just two jockstraps sewn together (Schultz, 2004). Today, corporate sports apparel makers dedicate a significant portion of the marketing and public relations energies to the female athletic market segment, evidenced through women-focused marketing efforts such as 'Nike Unlaced,' the corporation's four-pronged approach to customized women's sneakers (Teng, 2020). Aimed at bolstering revenue production and corporate profits, apparel companies continue to target the female athlete market segment with customized, technology-infused, gendered running gear. Lavrence and Lozanski (2014) argue that other popular

athletic apparel brands such as lululemon symbolize 'highly classed ideas of health' and personal responsibility (85), ultimately employing marketing strategies that 'fold discourses of empowerment into consumerism' to attract female customers and drive brand loyalty (78). The marketing messages of these corporations target women with consumer purchasing power, typically white and middle-class women, who the corporations believe are desiring popular athletic apparel, to embody trends and a brand ethos, as well as to train. These brands have engineered sportswear tailored to women's bodies designed to provide style and function, such as sports bras, running skirts, tank tops, shoes and more (Pauline, 2014). Further, companies are turning their efforts to younger consumers in order to harness brand loyalty at an early age. With a greater directed emphasis on corporate marketing attention follows more participants and increased competition, subsequently promoting longevity in participating in the sport and, we argue, contributing to the increased age of women participants in organized recreational sporting events such as marathons.

Today, not only are the majority of women running marathon races in their 30s and 40s, with women typically outnumbering men in co-ed races (Bachman, 2016), but there has also been what Pauline (2014) terms 'a surge in women-only events that have been embraced by the public' (4). A few notable examples are the Disney Princess or Tinker Bell Half Marathon events, which are now some of the largest marathon races in the U.S. and are commercial, corporate-sponsored events typically focused around 'fun, camaraderie, and family' (Miller, 2014: 4). There are also obstacle races, such as Mudderella or the Dirty Girl, which have also taken off in recent years and focus on female empowerment (Pauline, 2014: para 3). According to one *Runner's World* journalist, such women-only races 'started as a way to show the world that women could run long distances, and to give women a place to prove to themselves that they could run' (Miller, 2014: para. 3). Many of these gender-specific race events, targeting specifically female consumers and promoting a supposed ethos of inclusivity, often advertise incentives such as an opportunity for a weekend getaway, other forms of pampering, a connected community through social media, and expert advice and information (e.g., nutrition, dieting, training regimens) (Miller, 2014; Pauline, 2014). These marketed events are presumably contributing to the increase in women's participation of virtually all ages and abilities.

However, there also remains an important class distinction within this trend as a prerequisite of participation is typically a socioeconomic status in which one must have the available time to train and attend an event, as well as the financial resources, transportation, and potentially childcare. Further, there exists an undeniable relationship between social class and race/ethnicity, particularly with distance running. For instance, the five top running cities and towns across the U.S. are largely white and remain segregated with respect to running communities (Benton, 2021). Moreover, racial segregation, education level, and running participation are highly correlated (Bridges, 2019). Non-white participants cite safety concerns associated with training, including hate crimes, time, and family obligations as barriers to endurance running participation (Benton, 2021). Historical linkages between race and class have created spatial inequality wherein more Black Americans and people of color are living in poverty and/or poorer neighbourhoods than white Americans. Thus, environmental geographies restrict access to physical spaces to run and train, and further, differing occupational and custodial care commitments limit women's ability to be physically active, let alone have time to train for an endurance event. These considerations underscore how contemporary marathon races often serve as competitions for more affluent, privileged, white women.

Race/Ethnicity

Illustrated within the discussion of age and socioeconomic status, white, middle-class females represent the majority of marathon event participants. Simultaneously (and potentially inadvertently), Title IX has also contributed to the relative absence of women of color competing in the major marathon events in the country. The final dimension of this article's analysis considered the race/ethnicity of the U.S. women top 10 finishers since 1980. Results demonstrated that runners placing in the top 10 were almost wholly white women. Specifically, 89.3% (134/150) of female top 10 finishers were white, while 8.6% (13/150) were Hispanic. The other approximately two percent identified as Native American or women originating from outside of the U.S. These findings are not surprising, but they reveal important areas for opportunity and participation-related improvements in women's marathon and highlight glaring gaps in Title IX legislation that have yet to be adequately addressed. While marathon generally occurs outside of institutions receiving federal funding and therefore does not have to conform to Title IX legislation, K-12 schools and universities are the primary feeder system for Olympic and professional sport athletes, and therefore those women that receive the opportunity to compete in sports at a young age are more likely to continue their participation (Bergland, 2015).

Title IX, as applied to sports, has focused on gender rather than race, and therefore white women have benefited far more than their Black counterparts (Rhoden, 2012; Theune, 2019). As we have discussed previously in this article, although Title IX has had a significant impact on women's sports in the U.S., women are still disadvantaged when compared to men. In the case of women athletes of color, this inequality is compounded in that they face both gender and race-based discrimination, a 'double jeopardy' associated with their participation opportunities

(Pickett et al., 2012: 1582; see also Theune, 2019). Accordingly, Theune (2019) argues that intersectionality is an important consideration as it 'can be used to examine how racial and sex inequalities converge to limit access to sports participation opportunities for Black women and girls' (2). Designed as a 'single-axis' piece of legislation, Title IX focused primarily on the issue of gender equality, which, as Mathewson (2012) notes, was 'premised on the notion that interest in athletic ability were equally distributed between genders' (296). As a result, the sporting opportunities created after Title IX have disproportionately benefitted white, particularly middle-class, female athletes (Evans, 1998). African American women, women of color, and working-class women receive disproportionately fewer benefits in relation to Title IX than their white, middle-class counterparts (Theune, 2019). In particular, 'girls of colour, girls of lower socioeconomic status, and girls in urban and rural areas often enter sports later, participate in lower numbers, and drop out earlier than white girls, suburban girls, and girls from higher socioeconomic status' (Staurowsky et al., 2020: 16).

Such racial inequalities are evident in the participation rates of white and African American women athletes following Title IX. Pickett et al. (2012) found that over a 30-year period (1972–2002), the levels of sports participation for white girls increased from 30.6% to 39.9%. Meanwhile, during the same period, the levels of sports participation for Black girls decreased from 34.7% to 27%. Further, white girls are more likely to participate in privatized sport opportunities which is in opposition to their non-white counterparts who are more likely to participate in school-based programs (cited in Staurowsky et al., 2020). In addition, Black girls do not have the same range of sports offerings in high school as white women do, often because they are enrolled in schools that are not resource-rich and are populated with lower income students (Pickett et al., 2009, 2012; Staurowsky et al., 2020; Theune, 2019). Coupled with this is the fact that 'schools attended by African American females tend not to offer the "growth sports" leading to college athletic scholarships—for example, soccer, volleyball, crew, softball, and the like—in similar proportions to those available in schools with large concentrations of white females' (Pickett et al., 2012: 1594). Scholarships in these sports often attract white, middle-class female athletes, causing female athletes of color to be directed to a particular, narrow set of sports, predominantly basketball and track and field (Pickett et al., 2012; Theune, 2019). As this study has demonstrated, despite the direction into high school and collegiate track and field, African American women are still historically absent from the top marathon finishers. The confluence of structural factors adversely impacting participation opportunities for working-class athletes and women athletes of color is arguably contributing to, or at the very least shaping, their exclusion from recreational, post-collegiate and consumer-driven sporting opportunities such as marathon events (Hextrum and Sethi, 2021; Pickett et al., 2012; Theune, 2019).

Accordingly, critics assert that Title IX can be conceptualized as 'both problematic and advantageous—[it created] segregated opportunities for women based on their presumed athletic inferiority, which, ironically, also facilitated their access to athletic opportunities,' particularly if they were white and middle class (Theune, 2019: 4; see also Hextrum and Sethi, 2021). Hextrum and Sethi (2021) argue that Title IX reifies 'gender discrimination from a white, middle-class vantage,' cementing 'race and class inequities' (3). This is largely due to the perception that Title IX has *reinforced* the segregation of sports and ignores existing racial and class inequalities (Brake, 2010). Rhoden (2012) refers to race as a 'debilitating limitation of Title IX' that is rarely discussed. Accordingly, this article presents results that seem to underscore the subtle, yet systematic impact that Title IX has had on both white women and women of color in marathon running. Moreover, our findings add credence to Theune's (2019) assertion that 'sports functions as a hierarchy distributing disproportionate sporting opportunities to privileged groups...while keeping disadvantaged groups, particularly Black women and girls, "in their place," limited to separate and unequal chances to play' (7).

CONCLUSION, LIMITATIONS AND FUTURE DIRECTIONS

This article has presented important results that outline performance and demographic changes within elite U.S. women's marathoning with respect to age, event time, socioeconomic status, and race/ethnicity. Specifically, we have argued that not only have organized, commercial marathon events in the U.S. grown in popularity, there have also been improvements in performance among elite women runners, evidenced by the demographics of top finishers. There appears to be important parallels between the demographics and social divisions within these performance statistics and the historical developments that arguably fuelled women's participation in events such as marathons, including Title IX, the commodification and marketization of the woman runner as a feminist icon, as well as important socio-cultural, contextual shifts related to the women's sport economy more broadly. Collectively, these developments have led to greater opportunity, especially for white women, which is reflected in improvements in top performance times. Certainly, women's sports and women athletes deeply benefited from the opportunities they were afforded 50 years ago with the passage of the Congressional legislation in 1972. However, as Staurowsky et al. (2020) explain, 'women athletes and women sport leaders are still confronted with challenges that impede their full and fair access to play, compete, and work; that contribute to work and play

environments that are unwelcoming; and that leave girls and women too often chasing equity' (34). Hextrum and Sethi (2021) also caution that '[u]ncritically celebrating Title IX disguises persistent gender inequities in sport' (2). Thus, it is paramount that the next 50 years of Title IX legislation build on the first 50 years and strive to even the playing field by facilitating more sporting opportunities for underserved girls and women given the imbalances that exist related to participation and performance.

There were limitations with respect to the research and results presented herein that should be noted. First, men's marathon performance in these races over this period of time was not concomitantly analysed. Understanding men's performance associated with age, event time, and race/ethnicity as a basis of comparison would provide some interesting results that might further contextualize our findings. Second, data on race and ethnicity was not available through public records prior to 1995, nor were official event results for the Boston or Chicago Marathons. Thus, trends reported prior to 1995 reflect only NYC Marathon results. Similarly, data prior to 1980 was not available through public records and future analyses should extend examinations of trends prior to the passage of Title IX. We opted to analyse results from the three U.S. marathons with the greatest overall participation rates, however including additional races could add important context (Running USA, 2017). Further, as is common in elite runners, several women repeated top 10 finishes over multiple years, however our data still present success in U.S. women marathon runners over four decades. Finally, we have chosen to focus on U.S. top performers, which inherently limited sample size in some of the five-year clusters. Future studies should include other popular U.S. marathons and international events as well as a comparison with non-U.S. performers and performances beyond the top 10. Specifically, analyses of Black women's performance trends from non-U.S. countries are of particular interest for future inquiry.

Future research should also consider international top 10 finishers in these races and any contextual factors in other countries potentially impacting the rise of the female marathoner, particularly given that women's marathon has only been an Olympic event since 1984. Further, understanding more about how international recruitment and flexible citizenship impact women's opportunities in this sport would provide perspective regarding global opportunity, national soft power strategies, and the business of women's marathon. In addition, inquiry into other factors influencing performance and participation is paramount. For example, understanding the impact of environmental conditions, technology or gear, and equipment development would add context to event times. Moreover, approaching future research from a diversity, equity, and inclusion perspective could lead to important questions regarding how women find their way into marathon, at what age, and with what athletic background, and offer crucial insight into how the sport can provide more opportunity for girls and women. Specifically, organizations like Black Girls Run and Girls on the Run are now widespread, offering young girls more ways to learn the sport of running (Miller, 2014). In addition, in recent decades there have been increased opportunities for individuals with disabilities to participate in running events at all levels, for instance, some marathon events have wheelchair divisions. The exploration of the intersection of disability, gender, and race/ethnicity in running is an understudied area of inquiry that is important to investigate as increased opportunities may spur future demographic change in marathon and other running sports. Generational change is also an important consideration as millennials are not participating in marathon in the same numbers as older women which may alter the future of the sport in myriad ways (Bachman, 2016). Understanding how women of different ages understand and interpret opportunity and female athleticism is an area worthy of future investigation. Lastly, consideration of related running events, such as ultramarathoning, should be studied to see if the same trends are present and/or how to ameliorate and diversify participation opportunities.

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