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Original Research

Sociodemographic profile of an Olympic team

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ABSTRACT

Objectives: To document the distribution of sociodemographic markers (race and relative access to wealth) in athletes participating at the summer and Winter Olympic Games (OGs).
Study design: Cross-sectional descriptive epidemiological study.
Methods: Sociodemographic data were collected from publically available resources for all athletes representing four countries (Canada, United States of America, Great Britain and Australia) at the 2014 Sochi Winter OGs and 2016 Rio Summer OGs. The prevalence of white and privately educated athletes were identified for each sport, country, and team with consideration and comparison to the general population. Access indices (i.e. the combined race socio-economic access index [CAI]) were developed to describe the relative distribution of white and privately educated athletes representing each sport, country and team compared to the respective general population.
Results: A total of 568 winter and 1643 summer athletes were included in this study. Privately educated athletes constituted 30.3% and 32.7% of winter and summer athletes, respectively; while 94.9% of winter and 81.7% of summer athletes were white. The CAIs of the Canadian, American, British and Australian winter Olympic teams were 0.52, 0.42, 0.61 and 0.45, respectively. The CAIs, for the Canadian, American, British and Australian summer Olympic teams were 0.89, 1.13, 0.82 and 0.83, respectively. Summer and winter sports with the greatest and least racial and socio-economic biases were identified.
Conclusion: Racial and socio-economic biases were identified in both summer and winter Olympic sports; predominantly favouring white and privately educated Olympic athletes. These findings prompt further inquiry into barriers for sport-specific participation and advancement, in addition to the practice of providing substantial public resources in support for Olympic sports and athletes.

Introduction

Non-communicable disease is one of the leading causes of mortality and morbidity with physical inactivity identified as a strong modifiable risk factor.[1] Increasing population-wide physical activity requires diverse health promotion initiatives including lifestyle and community-based interventions.[2,3] Many countries place heavy societal emphasis,

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through the investment of significant public resources, on high-performance sport as a potential strategy to increase population-wide physical activity and sport participation, despite a paucity of evidence supporting this practice.[4–8]

Olympic athletes and sports consistently receive direct financial public support in many countries including Canada, Great Britain and Australia.[9,10] The International Olympic Committee (IOC) promulgates the principles of equality and participatory parity within sports;[11,12] however, the equity of the Olympic Games (OGs) has been scrutinised through the identification of several exclusionary elements.[13–20] Access to wealth, both individually and as a nation, has been purported to be a strong predictor for participation and success at the OGs.[13–23] Moreover, the prominent eurocentricity of the OGs, particularly pertaining to winter sports, has also raised concerns about the actuality of the purported inclusive nature of the OGs.[13,19] It has been suggested that many winter sports are selected from largely Northern European and white North American populations with relative access to wealth, promoting the establishment of an insular competition.[13,14,19]

Despite the anecdotal reports on the selective nature of the OGs,[13,14,16,17,19] there has been limited previous investigation documenting the distribution of sociodemographic variables amongst an Olympic team. Surveying this sociodemographic data and identifying potential disparate group representation can provide insight into inherent inequitable access or barriers to sport participation and/or advancement. Given that many countries, including Canada,[8] provide significant public financial support for Olympic sports and athletes,[9,10] identifying any disproportionate representation and potential exclusionary elements is critical. Therefore, the purpose of this study is to describe the sociodemographic profile of select winter and summer Olympic teams.

Methods

Data collection

Sociodemographic data of all athletes selected for the Canadian, American, British and Australian 2014 Sochi Winter OGs and 2016 Rio Summer OGs were included in this study. The countries of interest were selected given their populations of predominant European descent and large team contingents.

All included data were collected from publically available resources, including a countries' Olympic committee database, sport organisations' database, school-specific (i.e. university, college, or secondary school) database, personal biographies, media reports and professional social media profiles. A second researcher independently confirmed the accuracy of all coded data and any discrepancies in coding were reconciled by consensus.

Data collected included the sex and race of each athlete, in addition to the secondary school-type (private, public or home school) attended. The race of each athlete was determined by coding the profile photograph on a country's Olympic athletic database. Athlete race was subjectively classified as 'white' or 'non-white' by two independent coders. Additional photographs from Olympic committee sources were utilised when the profile photograph was unavailable.

Secondary school-type was identified through information provided on the school or school board website. Public schools were defined as state funded schools with no tuition fees for core required credits. Private schools were defined as private schools, independent schools, and schools requiring tuition fees for core required credits. An athlete was coded as having attended a private secondary school if they attended a private school for a minimum of one year. Access to private education for one year was arbitrarily considered to have sufficient sensitivity and specificity to discriminate private education as a surrogate marker of an individual's relative access to wealth. Home schooling is often an option afforded to and exploited by wealthy elite athletes given the flexibility it provides for training schedules and was, therefore, differentiated from public schooling. Institutional research ethics board approval was obtained for this study.

Data analysis

Descriptive statistics were used to describe the prevalence of white and privately educated athletes for each sport, team and country. A Fisher's exact test was utilised to compare the distribution of privately educated athletes on each team and country by sex and race. A binomial test was used to identify differences in the prevalence of white and privately educated athletes compared to the general population. All tests were 2-tailed and significance was set at $P < 0.05$. To control for multiplicity of testing, a significance level adjustment was performed using a false discovery rate (FDR) control for all variables identified with an initial significance level of $\alpha < 0.05$.[24] No test failed to reach FDR adjusted significance.

Access indices

The race access index (RAI), socio-economic access index (SAI) and combined race socio-economic access index (CAI) were developed, modified from the College Access Index,[25] to describe the racial and socio-economic distribution of each sport and team relative to the general population. The RAI is defined as the ratio of the prevalence of non-white athletes in a sport or team to the prevalence of non-white individuals in the general population of the respective country. The SAI is defined as the ratio of the prevalence of athletes who attended a public secondary school in a sport or team to the prevalence of students who attended a public secondary school in the general population of the respective country. The CAI is the average of the RAI and SAI. RAI, SAI and CAI of 1.0 reflect a representative distribution of race and/or secondary education-type for each specific country and a CAI of less than 1.0 indicates a skewed distribution favouring white and/or private secondary education, a marker of socioeconomic status (SES). An arbitrary RAI, SAI and CAI cut-off of greater than 0.85 was used to define sports and teams with minimal bias favouring white and/or privately educated athletes.

General population data for race and secondary school type

The prevalence of white and privately educated individuals were estimated for each country based on the most recent census-type data. In Canada, the prevalence of publicly and