OLYMPIC YEAR IMPACT ON LEISURE-TIME PHYSICAL ACTIVITY RATES WITHIN AND ACROSS CANADIAN PROVINCES AND TERRITORIES

Abstract

Aims: This study examined the relationship between Olympic years and leisure-time physical activity levels across Canadian provinces and territories, as well as between genders. Methods: Analysis of long-term regional and national data on physical activity patterns confirmed that average activity rates were significantly higher ($\chi^2 = 8.52, p < .01$) for Winter vs. Summer Olympic Years. Results: Results indicate significant long-term temporal, sex and geographic trends which establish a reoccurring increase in physical activity amongst moderately active Canadian males (leisure-time physical activity rates were somewhat lower amongst females) across all provinces and territories during Winter Olympic years. This suggests that the Olympic Games, particularly the Winter Olympics, may act as a catalyst for increasing Canadian leisure-time physical activity rates - predominately amongst males. Subsequently, this paper recommends that greater media campaigns be directed toward Canadian females in an attempt to increase their leisure-time activity levels. Furthermore, greater emphasis should be placed on providing fitness programs for employees at their workplace - facilitating ease and convenience for increased leisure-time physical activity in general.

Key words: LEISURE-TIME / PHYSICAL ACTIVITY / OLYMPIC YEARS / NORTH AMERICA

INTRODUCTION

The promotion of an active lifestyle will always be a critical health issue in Canada. Regular participation in physical activity has been demonstrated to prevent several conditions including heart disease, hypertension, stroke, type II diabetes, osteoporosis, certain cancers, depression, and reduced functional ability in older age (Bassett, Pucher, & Crouter, 2008). In February of 2003 the federal, provincial and territorial governments resolved to increase leisure-time physical activity levels 10% by
the year 2010. According to the 2007 Federal-Provincial-Territorial Conference of Ministers responsible for Sport, Recreation and Fitness, a review of the first 4 years confirmed that governments had failed in their stated purpose.

In 2007, 46.5% of the Canadian female population were physically active during their leisure-time which was a 1% decrease from 2007, and leisure-time activity rates among Canadian males also decreased (from 53.3% to 51.5%) during the same time period (Curtis, White, & McPherson, 2000). Consequently, a holistic investigation examining trans disciplinary phenomena (such as the Olympic Games) which might potentially increase national physical activity levels is greatly required (Bruce, & Katzmarzyk, 2002; Canadian Fitness and Life Style Research Institute, 2008).

The basic tenants of the Modern Olympic Games promote the synergy of a sound mind in a sound body - "sit mens sana in corpore sano." These precepts were first set out by Baron Pierre de Coubertin, who was commissioned by the government of France to organize a universal sports association in the late 1800’s. In 1894, Coubertin held an athletic congress at which he proposed an international level of competition modelled after the ancient Olympic Games. The International Olympic Committee (IOC) was formed later that year with Greece being selected to hold the first modern day Games in 1896. The philosophical foundations for the modern Olympic Games, according to de Coubertin were „D’abord, la culture physique,” or „First the culture of the body” (Roach, 2008). The modern Olympic movement is based in the principles of promoting understanding and friendship among people, and instilling humanitarian values in society as a whole. It was de Coubertin’s conviction that physical activity builds much more than just muscles. The belief was that exercise is a necessary component of developing the whole person including morals, health, and character. One of de Coubertin’s main goals included utilizing the Modern Olympic movement as a vehicle for promoting these values internationally.

Given that an increase in moderately intense physical activity may control or reduce bodyweight, an investigation into whether a correlation exists between national activity levels in Canada and Olympic years is of great interest (McArdle, Katch, & Katch, 2001). The primary purpose of this study was to determine whether the Olympic Games – namely the philosophy and ideals surrounding the Olympic movement – have a positive, reoccurring effect on leisure-time activity levels amongst Canadians. Authors of this investigation hypothesized that baseline leisure-time activity levels in Canada increase during Olympic years. Moreover, if this hypothesis is correct then how might the excitement, motivation and enthusiasm for increased physical activity which encompasses the Olympic Games be harnessed to sustain activity levels amongst the general population?

METHODS

The Federal Government regularly conducts standardized physical activity surveys to determine activity levels of Canadians. Subsequently, data on physical activity patterns amongst Canadians in different provinces and territories during Olympic years was collected from national and provincial surveys of physical activity levels, as well as summary data from published studies and reports. Canadian physical activity patterns, up to 1998, have been analyzed by Bruce and Katzmarzyk (2002). This current enquiry further analyzed data, up to 2007, to determine whether a correlation exists between Olympic years and leisure-time physical activity amongst Canadians. In addition, data was categorized by gender. Analysis of data also attempted to determine whether a difference existed amongst Canadian provinces and territories from West to East as well as North to South. Survey participants’ answers were segregated into “physically active”, “moderately active” and “physically inactive” based on the following criteria: “inactive” was defined as expending less than 1.5 kcal per kg of bodyweight each day; “active” was defined as expending more than 16.7 kcal per kg of bodyweight each day; and “moderately active” was defined as expending energy which fell between these two delimiting values (Bruce, & Katzmarzyk, 2002).

Data was grouped by provinces and territories, as well as within provinces themselves. Provinces across Canada were then divided into regions, namely the Maritimes (Eastern Provinces), Western provinces (BC and Alberta) and Central provinces (all others, excluding the territories). In examining data “within individual provinces,” health regions (as defined by government surveys) were grouped from
East to Central to West as well as from North to Central to South. Prince Edward Island was not analyzed north to south due to its long “east to west” geography. In provinces such as Ontario, which included more than 30 health regions, three or four samples of only the furthest east or west or north or south regions were utilized to test for the “within province” effects. Data were analyzed using an ANOVA with post hoc analysis, chi square tests, a Pearson Product Moment correlation and T Test. Data analysis indicates that Winter Olympic year leisure-time physical activity levels are higher than corresponding Summer Olympic year leisure-time physical activity levels amongst Canadians.

Statistics Canada provides the most valid and reliable source of data for this type of investigation. Consequently, data from the Community Health Survey 2001, 2002, 2003, 2005 and 2007 and Statistics Canada National Population Health Survey 1994 - 1999 were utilized (Statistics Canada, 2008a-b). In addition, data from the Canadian Fitness and Life Style Research Institute (CFLSRI) which summarized information from Statistics Canada, Community Health Survey 2001, 2002, 2003, and 2005 (Canadian Fitness and Life Style Research Institute, 2005a-c, 2006, 2008) was used, along with CFLSRI summarised data from the Statistics Canada National Population Health Survey 1994 - 1999. Their Nunavut and Northwest Territories data from 1994 - 1996 was included, along with data from the 200 and 2005 CFLSRI Physical Activity Monitor. Moreover, regional health survey data were utilized for the purpose of aggregating information within provinces and within territories (i.e., West vs. East and North vs. South from Statistics Canada sources). This facilitated a comparison of the most northern health regions vs. the most southern health regions, and the most western health regions vs. the most eastern health regions in Canada (Government of Nova Scotia, 2009; Government of Saskatchewan, 2009; New Brunswick Travel and Tourism Information Guide, 2006; Statistics Canada, 2009).

RESULTS

Data analysis concluded that Olympic years significantly impact leisure-time activity levels in Canada. Average leisure-time activity for the Winter Olympics in the Western, Central and Eastern provinces is significantly higher ($X^2_{(1)} = 8.52, p < .01$) than during the Summer Olympics. In addition, a positive correlation ($r = + .9878$) exists between Winter and Summer Olympic years in Western, Central and Eastern provinces where leisure-time activity levels rose steadily and significantly ($t_{(7)} = 23.66, p < .01$) from 1994 to 2004. As suggested in previous investigations, there is a considerable west to east effect across Canada which demonstrate a significantly higher leisure-time activity level ($f_{(2,9)} = 5.66, p < .05$) amongst Western vs. Eastern provinces. A Duncan’s post-hoc analysis of variance confirmed a statistically significant pattern ($f_{(2,18)} = 11.02, p < .01$) in the far Northern territories of the Yukon, North West Territories and Nunavut. In addition, significant leisure-time activity differences ($f_{(9,60)} = 6.31, p < .01$) were revealed upon analyzing provinces individually. Moreover, there was a substantial effect ($X^2_{(2)} = 16.36, p < .01$) based on gender, suggesting that males had been either “active” or “moderately active” vs. females who, for the most part, were relatively inactive from 1994 to 2004.

DISCUSSION

The primary finding of this study is that a positive recurrent and significant increase in leisure-time physical activity levels occurs across Canada during Winter Olympic years. Determining the causes of these recurrent increases is warranted. A possible explanation for the observed findings is that Canada is a northern country and as such, Canadians are more heavily influenced by winter sports competitions. One could hypothesize that tropical countries may have similar recurrent increases in leisure-time physical activity levels during Summer Olympic Games.

CONCLUSION

Leisure-time physical activity levels in Canada have steadily increased over the past 30 years - a trend which is consistent within other countries (Bruce & Katzmarzyk, 2002). However, since 2003, these positive national trends have begun to decrease with the greatest reduction occurring in Western
provinces. The rationale for this downward trend must be examined and addressed – particularly since the Federal, Provincial and Territorial Governments of Canada engaged in a cooperative effort (which commenced in 2003) to increase physical activity levels 10% amongst Canadians by the 2010 Olympic Games. What are possible causes for the discontinuance of the 30 year positive trend in leisure-time physical activity? In addition, Canadian males have consistently demonstrated significantly higher leisure-time activity levels than females. The authors suggest that media campaigns be directed specifically at Canadian females in an attempt to increase their leisure-time activity levels.

REFERENCES


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