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REVIEW ARTICLE

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The 20th Century Cold War in Terms of Life Expectancy of Former Olympic Medallists

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ABSTRACT

This study investigates whether prolonged exposure to intense physical demands, stress, and post-career lifestyle impacts survival. A cohort study analysed survival data from 2,922 Olympic medallists who competed between 1952 and 1980 (the peak of the Cold War era), including athletes from the USSR (n =1,387) and four Western English-speaking countries (n = 1,535) representing the same "sports culture". The data was collected from the official website of the IOC and from the medallists' personal websites. Log-rank tests and Cox regression were used to compare survival rates. Results indicated that Soviet male athletes' first quartile mortality occurred at 38 years post-career, compared to 51 years for Western peers. For women, the figures were 49 and 64 years, respectively. Women, irrespective of their belonging, demonstrate a hazard rate that is 50% lower than that of men. The hazard ratio for Soviet Olympians averaged 1.86 compared to their Western counterparts.

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Introduction

The exploration of life expectancy, survival rates, and mortality risks among elite athletes worldwide serves multifaceted purposes. Drawing upon a comprehensive analysis of prior research, including four substantial reviews and meta-analyses we've delineated three principal domains within cohort epidemiological studies in this realm [1-4].

• The domain of general medical research have enriched academic understanding in this sphere, affirming that elite athletes, categorically and by sex, exhibit an extended life expectancy (ranging from 5 to 6.5 additional years) compared to the general population in regions where such investigations have been executed [5,6]. Nonetheless, the specific causes of mortality within this cohort are diverse. Certain studies pinpoint cardiovascular disease as the chief cause, while others underscore a notable incidence of premature deaths among former athletes due to accidents and suicide. The quest to comprehend the statistical variances in the lifestyles of erstwhile athletes is encapsulated within the societal dimension [7-9].

• The domain of sports medicine includes epidemiological inquiries that juxtapose mortality rates with the nuances of sustained involvement across various sports professions. Certain investigations home in on the physical exigencies of competition, classifying elite athletes into three main categories based on the nature of their sports activities: (1) endurance-focused, characterized by extended aerobic exertion, (2) strength-oriented, entailing forceful movements (including combative martial arts, dynamic athletic jumps and throws, and weightlifting), and (3) mixed efforts, which don't pivot around a singular core component (such as team sports and gymnastics) [4,10,11]. In this context, Zwiers et al. discovered that Olympians involved in high-contact sports exhibited a higher mortality rate in later life compared to other Olympians [12]. Conversely, Keller's specific examination of the life expectancy of Olympic wrestling champions reveals "that they lived on average 19.1 ± 19.1 years longer than their general population counterparts from their respective countries of origin" [13].

Further research delves into mortality rates among elite athletes in particular sports, shedding light on the unique cultural contexts of various nations [14]. For instance, several studies focus on the American sports culture, investigating mortality among former athletes in American football, baseball, and basketball, and highlighting the intense nature of competitive stress [15,16].

• The domain of societal exploration of mortality has made a limited impression on cohorts of elite sportsmen. Various lifestyles and risk factors, such as obesity, smoking, alcohol consumption, and lower social status, are scrutinized as pivotal mortality causes [17,18].

Our review of existing research indicates that studies on the life expectancy of elite athletes primarily focus on two key factors: the impact of their sport activity itself and the influence of their lifestyle outside of sports.

Various methods can be used to compare the relative importance of these factors. In our study, we focused on three distinctive characteristics of elite athletes: their exceptional abilities, the extreme physical and psychological demands they face, and the contrasting aspects of their lifestyles. Therefore, we examined these characteristics by comparing the survival rates of Olympic medallists from the capitalist West and the socialist East after their athletic careers, spanning several decades of the Cold War. While this topic is explored in contemporary sociological research

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our study builds upon these considerations to address a central question: Did the Cold War era has a disproportionately negative impact on the physical and mental health of former elite athletes, resulting in decreased life expectancy and survival on both sides of the Iron Curtain? Or are social conditions and lifestyle the primary determinants of their mortality? [19,20].

Materials and Methods

Design

This study employs a retrospective cohort design to examine former Olympic medallists (individual medals were counted independently of the official team standings) during the peak of the Cold War period (1952–1980) . The contrast between the two blocs can be analysed in several ways. For example, the number of countries on each side could be compared. However, we have chosen to simplify the analysis by forming two broad cohorts of Olympic medallists to study the West–East divide. The "West" is represented exclusively by English-speaking countries (USA, UK, Canada, and Australia), while the "East" is represented by the former USSR. This comparative approach is intended to underscore the differences between the two groups. On the one hand, the "Eng-West" boasts a long-standing tradition and rich sporting culture (e.g., Witherspoon) [21]. In contrast, the relatively brief history of the USSR is characterized by the rapid and intense development of elite sports as an ideological "weapon" against the West from the 1940s to the 1980s.

An additional and significant reason for such a comparison is also the similar size of the studied cohorts (N Eng-West = 1534; N USSR = 1387; N = 2921), which facilitates a balanced analysis.

Data collection and processing occurred from July 2022 to January 2023. Initially, athletes (medallists only) from the selected cohorts were identified through The International Olympic Committee's website (https://olympics.com/en/olympic-games), where primary data was sourced. These data were verified using athletes' personal Wikipedia pages and at least one additional online biographical source. For Soviet athletes, biographical information available in Russian was also reviewed. We treated the full list of eligible sportsmen and thus we had no missing data.

Data Collected

The primary outcome was the survival time from the athlete's last participation in the Olympic Games until death or the censoring date of December 31, 2022. The study focused on specific factors that could influence the athlete's survival after retirement. These included the living-dead ratio, age at first Olympic participation ("Age-start"), age at last Olympic participation ("Age-out"), and the number of Olympic Games participated in ("Number of Olympic Participations" - NOP).

Statistical Analysis

Data was presented through frequencies, percentages for categorical variables, and means, medians, and standard deviations for continuous variables. Categorical variables were compared using the Pearson Chi-Square test, while continuous variables were analysed with the Student t-test and Mann-Whitney test, confirming the robustness of conclusions across statistical methods. Survival time was calculated from the last Olympic participation to death or the study's conclusion. Survival comparisons utilized the log-rank test, and multiple Cox regression assessed various variables' impact on survival. The concise model included only significant variables. We compared the likelihood of concise model versus the full model using the LR test to check that the exclusion of the non-significant terms did not harm the likelihood. We also used Harrel C-statistic to evaluate the predictive power of the final model.

P-values below 0.05 were deemed significant, with no adjustments for multiple comparisons. All analyses were performed using STATA SE 16 software.

Results

Descriptive Statistics Analysis

The dataset presented in Table 1 illustrates a marginal predominance of male athletes over female athletes in the Eng-West cohort, contrasting with the data from the USSR where female Olympic medallists from 1952 to 1980 outnumbered their Western counterparts by nearly 7% ($P < 0.001$).

The survival status of the cohorts reveals a statistically significant advantage for the Eng-West. Specifically, as of the onset of 2023, 54.49% of male medallists from the former Soviet Union had passed away, compared to 46.45% from the Eng-West, marking an 8% difference ($P < 0.000$). Among female medallists, (Table 1), 27.27% from the USSR and 19.87% from the Eng-West had died, presenting a 7.4% discrepancy ($P < 0.028$).

The Number of Olympic Participations (NOP) metric showcases a pronounced sex disparity. From the Eng-West, 15.35% of 1,011 male athletes participated in two, and 3% in three Olympic Games. In contrast, 20% of Soviet male athletes competed in two, and 6.45% (68 men) in three Games, highlighting a significant difference ($P < 0.000$). However, this distinction was not observed within the female cohorts, where NOP differences were not statistically significant (Table 1).

Table 1: Comparative Analysis of Principal Factors Between Eng-West and USSR Cohorts

Parameter	Category	Eng-West		USSR		P-value
		N	%	N	%	
Sex	Males	1,237	54.40	1,046	45.60	0.001**
	Females	297	46.55	341	53.45	
Life status (males)	Alive	663	53.55	476	45.51	0.000**
	Died	575	46.45	570	54.49	
Life status (females)	Alive	238	80.13	248	72.73	0.028*
	Died	59	19.87	93	27.27	
NOP (males)	1	1,011	81.66	769	73.52	0.000**
	2	190	15.35	209	19.98	
	3+	37	2.99	68	6.50	
NOP (females)	1	234	78.79	267	78.30	0.843
	2	47	15.82	52	15.25	
	3+	16	5.39	22	6.45	

Additionally, the initiation ("age-start") and conclusion ("age-out") of Olympic careers reveal significant variations between the cohorts (Table 2). These differences are both substantial and statistically significant. On average, athletes from the USSR embarked on and concluded their Olympic journeys at later ages compared to their Eng-West counterparts.

Table 2: Comparative Distribution and Analysis of "Age-Start" and "Age-Out" Between Cohorts

Parameter	Cohort	N	Mean	SD	[95% Conf. Interval]		P-value t-test	P-value MW
Age start (males)	Eng-West	1238	24.21	4.96	23.93201	24.48479		
	USSR	1046	25.36	3.98	25.12382	25.60658		
	Difference		-1.16		-.7900372	-1.523563	<0.0001**	<0.0001**
Age start (females)	Eng-West	297	19.87	4.34	19.3693	20.36134		
	USSR	341	23.89	4.11	23.44803	24.32323		
	Difference		-4.02		-3.360095	-4.680526	<0.0001**	<0.0001**
Age out (males)	Eng-West	1237	25.07	5.23	24.77929	25.36287		
	USSR	1046	26.68	4.37	26.41919	26.94983		
	Difference		-1.61		-1.219258	-2.007602	<0.0001**	<0.0001**
Age out (females)	Eng-West	297	20.93	4.82	20.37916	21.47942		
	USSR	341	25.01	4.64	24.51716	25.5063		
	Difference		-4.08		-3.344077	-4.820797	<0.0001**	<0.0001**

Survival Analysis Post-Olympic Career

Regression analysis revealed that two potential factors, Number of Olympic Participations (NOP), and age at first Olympic participation ("age-start")—did not significantly influence the survival of the studied cohorts. The focus of the discussion is on the comparison of sex and ideological affiliations (Eng-West vs. USSR), where clear distinctions were observed (Table 2).

Analysis of survival data for medallists from the USSR and the Eng-West (Table 3 and Figure 1) showed that 25% of male athletes from the USSR had a post-career lifespan of less than 38 years. In contrast, fewer than 10% of the medallists from the Eng-West passed away within the same 38-year period, with 25% living up to 51 years, indicating a 13-year gap between the cohorts. Median analysis (50% survival) narrowed this gap to 10 years, and upon reaching the 75th percentile, the gap further reduced to 8 years.

Table 3: Survival of Olympic Medalists from the Cold War Era (1952-1980) Post-Olympic Career

Cohort		№ of subjects	Events observed	Events expected	Years of life after "Age-out"			Prob.*
					25%	50%	75%	
Eng-West	males	1237	574	770.7	51	60	68	0.0000**
USSR		1046	570	373.3	38	50	60	
Eng-West	females	297	59	91.1	64	69	-	0.0000**
USSR		341	93	60.9	49	62	70	

- Log-rank test

A comparison between female athletes from the Eng-West and USSR (Table 3) revealed that 25% of Soviet medallists lived up to 49 years post-career, whereas their Eng-West counterparts reached 64 years, marking a significant 15-year difference in favour of the Eng-West athletes. At the median survival point (50%), this disparity shrinks to 7 years, and after 75% mortality, the difference between the cohorts vanishes ($\chi 2 = 30.4$; $P > 0.0000$).

The sex analysis highlights a variance in survival rates, with Soviet athletes facing earlier mortality. Over time, the gap between the cohorts from the Eng-West and USSR diminishes but remains significant (Figures 1A, 1B).

These discrepancies are not accounted for by the slight difference in age at retirement ("age-out") between Soviet and Western athletes, which is less than 2 years for males and 4 years for females, necessitating a multivariate analysis to explore age-out differences further.

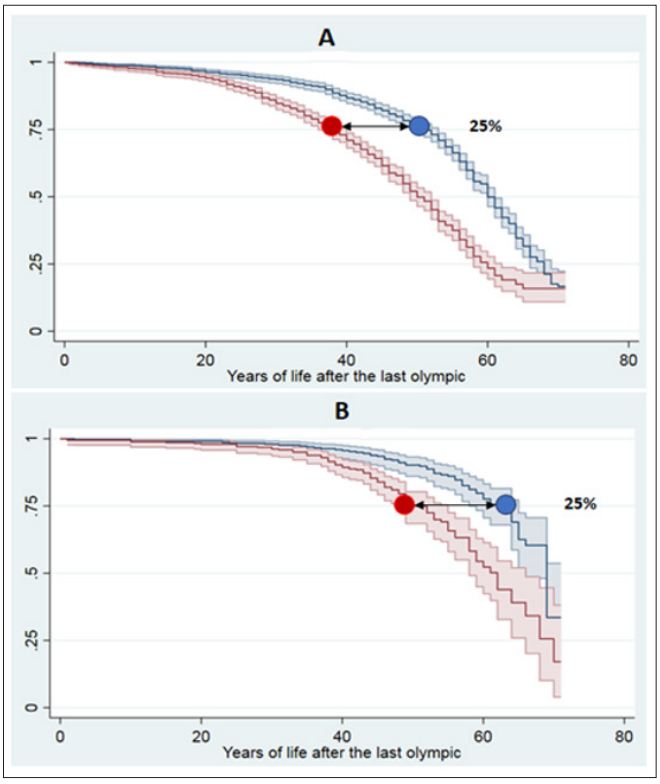


Figure 1: Survival Data for Medallists (Males -A and Females – B) from the USSR (Red Colour) and the Eng-West Countries (Blue Colour)

Factors Affecting Survival: Cox Regression Analysis

The analysis presented below (Table 4) outlines the primary, variation-independent factors influencing survival. Three main determinants emerge from this analysis, each stemming from different origins:

- Political, socio-economic, and cultural divergences between the contrasting camps, as seen in male athletes;
- The athletes' sex, with female athletes from both cohorts showing a survival advantage;
- The age at which athletes retire from the Olympic Games.

Table 4: Determinants of Survival Among Studied Cohorts

Cohort/ Parameter	Haz. Ratio	P>|z|	[95% Conf. Interval]	
Eng-West*males*				
USSR	1.79	0.000***	1.59	2.02
Females	1.24	0.537	0.63	2.44
Age out	1.09	0.000***	1.08	1.11

We conducted multiple Cox regression analyses to adjust for potential confounders, such as sex, age at the start of the career, performance (NOP=number of Olympic Games = 1, 2, 3+), and age at last participation, while examining the cohort effect (Eng-West/USSR). The reference group was Eng-West*males*. The hazard ratio (HR) between the USSR and Eng-West emerged as a crucial factor in survival, significantly favouring Eng-West with a ratio of 1.79 (Table 4), indicating a disadvantage for athletes from the former USSR. The HR also showed that female athletes had approximately half the mortality risk of male athletes.

As expected, aging (age-out) negatively impacted all regression models, contributing to approximately a 10% increase in hazards each year. Strong and highly significant hazard ratios ($P > |z| < 0.0001$**) were observed, with the former USSR being at a distinct disadvantage.

The Cox regression estimated the effects of covariates on the one-year risk of death, expressed in terms of HR. We hypothesized that the cohort effect might vary across sex and number of Olympic Games, so we included interactions between these variables and the cohort variable, as well as among themselves.

The main finding that athletes from the USSR had a risk 1.79 times higher than those from English-speaking countries, in subgroups with the same values for other covariates (sex, sport type, and "age-out").

Discussion

The contrasting differences between cohorts from "Eng-West" nations and the USSR, necessitating the consideration of a complex array of factors, taken together could be considered as "a national lifestyle" (e.g., Witherspoon; Eberstadt) [21,22]. These factors include:

- Cultural practices in the USSR, including the normalization of excessive alcohol consumption, widespread smoking, and an unhealthy, cholesterol- and fat-rich diet, contributed to a high predisposition in the population for cardiovascular diseases, heart attacks, and strokes [23-27]. In contrast, sports held a more elevated status within Western cultures (e.g., Witherspoon) [21].
- Socio-economic factors, including differences in income levels, standard of living, elderly social security, and access to high-quality medical care (33), and (4) contrasting sports cultures, which differ in their stance on doping practices, training intensities, competitive stress levels, and the impact of aggressive coaching, political responsibilities, and ideological pressures [28].

In further exploring the realm of women's Olympic sports, we uncovered new, previously unpublished data regarding the survival of athletes post their Olympic careers.

While general Cox regressions (Table 4) show that being female reduces mortality risk by half, a "Place" comparison reveals a significant survival advantage for male athletes from the Eng-West, particularly noticeable in the statistics reflecting the death of the first 25% (refer to Table 3). Sex differences emerge more pronouncedly in subsequent analyses. Median analysis indicates that for women, the survival advantage of Eng-West athletes is more than halved after 50% mortality, whereas for men, it is reduced by just over a third. This could suggest that, following the initial cohort (25%) succumbing to acute fatal causes (e.g., depression and suicide, alcohol, cancer, heart attack, stroke, violence), the inherently better survival capability due to biological factors in females becomes more pronounced. Indeed, by the point where 75% of deaths have occurred, there is no discernible difference between female athletes from the Eng-West and the USSR.

In conclusion, while the survival of elite athletes on both sides of the Iron Curtain was influenced by professional factors affecting their physical and mental health, the age at which they ended their careers was a more significant factor. However, as Soviet athletes' first quartile mortality was the most conspicuous factor of survival after the end of their career, we hypothesize that lifestyle, rather than physical demands and stress, explains the significant survival difference between Soviet and Western athletes.

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References

[1] Teramoto M, Bungum TJ. Mortality and longevity of elite athletes. Journal of Science and Medicine in Sport. 201013, 410-416.

[2] Garatachea N, Sanchis-Gomar F, Pareja-Galeano H, & Lucia, A. Elite athletes live longer than the general population: A meta-analysis. Mayo Clinic Proceedings. 2014 ;89: 1195-1200.

[3] Lemez S, Baker, J Do elite athletes live longer? A systematic review of mortality and longevity in elite athletes. Sports Medicine. 2015; 1:16.

[4] Runacres A, Mackintosh KA, McNarry MA. Health consequences of an elite sporting career: Long-term detriment or long-term gain? A meta-analysis of 165,000 former athletes. Sports Medicine. 2021; 51: 289-301.

[5] Antero-Jacquemin J, Rey G, Marc A, Frédéric Dor, Amal Haïda, et al. Mortality in female and male French Olympians: A 1948-2013 cohort study. American Journal of Sports Medicine. 2015;43, 1505-1512.

[6] Antero-Jacquemin J, Tanaka H, De Larochelambert, Q, Pohar-Perme M, et al. Female and male US Olympic athletes live 5 years longer than their general population counterparts: a study of 8124 former US Olympians. British Journal of Sports Medicine. 2021;55: 206-212.

[7] Takeuchi T, Kitamura Y, Sado J, Satoshi Hattori, Yumiko Kanemura, et al. Mortality of Japanese Olympic athletes: 1952–2017 cohort study. BMJ Open Sport & Exercise Medicine. 2019; 5(e000653), 1-7.

[8] Zhou H, Han X, Ding N, Dai H. Comment on "Health consequences of an elite sporting career: Long term detriment or longterm gain? A meta-analysis of 165,000 former athletes". Sports Medicine 2021; 51: 2231-2232.

[9] Lindqvist A. S, Moberg T, Ehrnborg C, et al. Increased mortality rate and suicide in Swedish former elite male athletes in power sports. Scandinavian Journal of Medicine & Science in Sports. 2014; 24: 1000-1005.

[10] Sarna S, Sahi T, Koskenvuo M, Kaprio J. Increased life expectancy of world class male athletes. Medicine and Science in Sports and Exercise.1993; 25: 237-244.

[11] Kettunen JA, Kujala UM, Kaprio J, Heli Bäckmand, Markku Peltonen, et al. All-cause and disease-specific mortality among male, former elite athletes: an average 50-year follow-up. British Journal of Sports Medicine. 2014; 49: 1-5.

[12] Zwiers R., Zantvoord, F. W. A., Engelaer F. M., van Bodegom D, van der Ouderaa, F. J. G., & Westendorp, R. G. J. Mortality in former Olympic athletes: retrospective cohort analysis. BMJ. . 2012; 345: e7456.

[13] Keller K. Life expectancy of Olympic wrestling champions in comparison to the general population. Journal of Community Health. 2019; 44: 61-67.

[14] Goldschmied N, Lambrecht J, Castro A (2023) Fighting to the death: Does hockey fighting in the NHL affect players' longevity? Scandinavian Journal of Medicine & Science in Sports. Advance online publication. 2023; 33: 1874-1880. 14

[15] Lemez S, Wattie N, Baker J. The end game: Mortality outcomes in North American professional athletes. Scandinavian Journal of Medicine & Science in Sports. 2018; 28, 1722-1730.

[16] Nguyen VT, Zafonte RD, Chen JT, et al. Mortality among professional American-style football players and professional American baseball players. JAMA Network Open. 2019; 2: e194223.

[17] Bobak M, Marmot M. East-West mortality divide and its potential explanations: proposed research agenda. BMJ. 1996; 312 :421-425.

[18] Stringhini S, Carmeli C, Jokela M, Mauricio Avendaño,

Peter Muennig, et al. Socioeconomic status and the 25 × 25 risk factors as determinants of premature mortality: a multicohort study and meta-analysis of 1.7 million men and women. The Lancet. 2017; 389: 1229-1237.

[19] Blutstein H. Cold War Olympics: A new battlefront in psychological warfare, 1948-1956. McFarland & Co 2020.

[20] Lebed F, Morgulev E. Stamps don't lie: Sport, military, and national identity postage stamps as a mirror of Soviet and Russian aggressive propaganda. Physical Culture and Sport. Studies and Research. 2024; 105: 1-13.

[21] Witherspoon KB (2018) Defending the American Way of Life: Sport, Culture, and the Cold War. University of Arkansas Press.

[22] Eberstadt N (2022) Russian Power in Decline: A Demographic and Human Resource Perspective. American Enterprise Institute. Articles & Op-Eds. https://www.aei.org/articles-op-eds/.

[23] Brainerd E, Cutler DM. Autopsy on an Empire: Understanding Mortality in Russia and the Former Soviet Union. Journal of Economic Perspectives; 2005; 19: 107-130.

[24] Grigoriev P, Jasilionis D, Klüsener, S, Sergey Timonin, Evgeny Andreev, et al. Spatial patterns of male alcohol-related mortality in Belarus, Lithuania, Poland and Russia. Drug and Alcohol Review. 2020 :39: 835-845.

[25] Treml VG (1997) Soviet and Russian statistics on alcohol consumption and abuse. In J. L. Bobadilla, C. A. Costello, & F. Mitchell (Eds.), Premature Death in the New Independent States (Ch. 7: 220-238). National Academy Press.

[26] Popkin B, Zohoori N, Kohlmeier L, Baturin A, Martinchik A, Deev A (1997) Nutritional risk factors in the former Soviet Union. In J. L. Bobadilla, C. A. Costello, & F. Mitchell (Eds.), Premature Death in the New Independent States (Ch. 12: 314-334). National Academy Press.

[27] Cockerham WC, Snead MC, Derek F, De Waal DF. Health lifestyles in Russia and the Socialist heritage. Journal of Health and Social Behavior. 2002; 43: 42-55.

[28] Hunt TM, Dimeo P, Hemme F, Mueller A. The Health Risks of Doping during the Cold War: A Comparative Analysis of the Two Sides of the Iron Curtain. The International Journal of the History of Sport. 2014; 31: 2230-2244.