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DIFFERENTIATION OF THE SOCIODEMOGRAPHIC FACTORS ASSOCIATED WITH PARTICIPATION IN OLYMPIC AQUATIC AND WATER SPORTS: CROSS-SECTIONAL ANALYSIS IN CHILDREN AND YOUTH

RAZLIKOVANJE SOCIODEMOGRAFSKIH DEJAVNIKOV POVEZANIH S SODELOVANJEM V OLIMPIJSKIH VODNIH IN PLAVALNIH ŠPORTIH: PRESEČNA ANALIZA PRI OTROCIH IN MLADOSTNIKI

ABSTRACT

Aquatic and water sports are traditionally and historically important in regions located along sea coasts, but studies rarely have examined factors associated with involvement in those sports in children and youth. The aim of this study was to identify the sociodemographic factors associated with participation in Olympic aquatic and water sports among children and youth from coastal cities in Croatia. We observed 256 participants from coastal cities in southern Croatia (10-16 years of age; 101 girls) who were actively involved in Olympic water sports (i.e., rowing, sailing; $n = 95$, 24 girls) and Olympic aquatic sports (i.e., swimming, water polo, artistic swimming, $n = 161$, 77 girls). The study variables included sociodemographic indices (i.e., age, gender, familial tradition in a specific sport, parental education, and socioeconomic status), whereas participation in Olympic water vs. aquatic sports was observed as an outcome/criterion. Girls were more likely to be involved in Olympic aquatic sports than in Olympic water sports (Chi square = 12.73, $p < 0.001$), whereas familial tradition in aquatic sports was an important factor contributing to involvement in these sports among children (Chi square = 4.69, $p = 0.03$). Logistic regressions revealed strong associations between male gender (OR = 2.0, 95% CI: 1.3-2.7), better socioeconomic status (OR = 2.2, 95% CI: 1.9-2.6), and familial tradition in water sports (OR = 2.9, 95% CI: 1.3-3.4) with involvement in Olympic water sports.

Since involvement in sports should be based on a child's interest and talent, by recognizing established connections, sport authorities can work toward creating a more inclusive and equitable environment.

Keywords: child; adolescent; logistic models; family tradition; sports

IZVLEČEK

Vodni in plavalni športi imajo tradicionalno in zgodovinsko velik pomen v regijah obmorskih območij, vendar pa študije redko preučujejo dejavnike, povezane z vključevanjem otrok in mladostnikov v te športe. Namen te študije je bil ugotoviti socialno-demografske dejavnike, ki so povezani s sodelovanjem otrok in mladostnikov iz obmorskih mest na Hrvaškem v olimpijskih vodnih in plavalnih športih. V raziskavi je sodelovalo 256 udeležencev iz obmorskih mest južne Hrvaške (starih 10–16 let; 101 deklic), ki so bili aktivno vključeni v olimpijske vodne športe (npr. veslanje, jadranje; $n = 95$, 24 deklic) in olimpijske plavalne športe (npr. plavanje, vaterpolo, umetnostno plavanje; $n = 161$, 77 deklic). Spremenljivke študije so vključevale socialno-demografske kazalnike (npr. starost, spol, družinsko tradicijo v določenem športu, izobrazbo staršev in socialno-ekonomski status), medtem ko je bilo sodelovanje na olimpijskih vodnih ali plavalnih športih obravnavano kot izid/merilo. Dekleta so bila pogostejše vključena v olimpijske plavalne športe kot v olimpijske vodne športe (hi-kvadrat = 12,73, $p < 0,001$), medtem ko je bila družinska tradicija v plavalnih športih pomemben dejavnik, ki je prispeval k vključevanju otrok v te športe (hi-kvadrat = 4,69, $p = 0,03$). Logistične regresije so pokazale močne povezave med moškim spolom (OR = 2,0, 95 % CI: 1,3–2,7), boljšim socialno-ekonomskim statusom (OR = 2,2, 95 % CI: 1,9–2,6) in družinsko tradicijo v vodnih športih (OR = 2,9, 95 % CI: 1,3–3,4) z vključevanjem v olimpijske vodne športe. Ker bi morala biti vključenost v šport osnovana na zanimanju in talentu otrok, lahko športne oblasti z upoštevanjem ugotovljenih povezav delujejo v smeri ustvarjanja bolj vključujočega in pravičnega okolja.

Ključne besede: otrok, mladostnik, logistični modeli, družinska tradicija, športi

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INTRODUCTION

Aquatic and water sports (A&WS) are a diverse group of activities that take place on or in water. They can be broadly categorized on the basis of the level of immersion (surface sports and subsurface sports), the equipment used (human powered, motor powered, and wind powered), and the type of activity involved (racing, recreation, exploration, and stunts/acrobatic). However, given the characteristics of competitive sports in general, in the fields of kinesiology and sport science, Olympic A&WS are particularly interesting. Currently, Olympic A&WS includes swimming, open water swimming, artistic swimming, water polo, diving, surfing, rowing, canoeing/kayaking, and sailing (Millet et al., 2021; Jennings, 2007; Lanser, 2017).

There are several factors that distinguish Olympic A&WSs from other Olympic sports. For example, some Olympic A&WSs are directly influenced by weather patterns, currents, and waves, adding an element of unpredictability and requiring athletes to adapt quickly, which is unlikely in other types of sports (Shephard, 1990; Sjøgaard et al., 2015). These sports require specific venues, such as swimming pools, open water courses, or whitewater channels. These venues often involve complex infrastructure and technology to ensure fair competition and athlete safety. Furthermore, water provides both buoyancy and resistance, creating a unique set of physical challenges, and athletes need to overcome water resistance while utilizing buoyancy for propulsion and maneuvering (Sajber et al., 2013; Sekulic et al., 2016).

Additionally, Olympic A&WS often involves complex techniques that are specific to the water environment. For example, swimmers need to master different strokes, divers require precise body control, and sailors need to harness wind power effectively (Barbosa et al., 2023; Sjøgaard et al., 2015). These sports often involve specialized equipment such as boats, boards, or paddles. Athletes need to develop skills in handling and maneuvering this equipment in conjunction with their body movements (Sjøgaard et al., 2015).

Finally, and probably the most important, some Olympic A&WSs are specific because of safety issues. These sports present inherent risks such as drowning, collisions, and exposure to elements, whereas open water sports can have an impact on the environment. The most recent problems with the organization of some events during Olympic games in Paris 2024 are probably the most figurative expression of some of the problems and specifics related to A&WS (Mougin et al., 2024). These factors make Olympic A&WS sports distinct from other sports,

demanding a unique combination of physical prowess, technical mastery, and mental resilience from the athletes who compete in them.

As a result of these specifics, characteristics of athletes involved in A&WS sports are generally known. For example, athletes involved in water sports should have specific technical knowledge and skills, due to boat handling, and maintaining the equipment. Also, they may benefit from environmental awareness (weather conditions play significant role), navigation and safety (Sekulic et al. 2006). Meanwhile, athletes involved in aquatic sports are oriented toward developing specific conditioning capacities, improving their technical skills, while in aquatic team sports (i.e. water polo, artistic swimming in teams), adaptability and team work are important determinants of success (Sajber et al. 2013; Sekulic et al. 2016). As a results, there are certain differences in the age of initiation in aquatic and water sports, with former ones being involved in sports at earlier age then later ones (5-7, and 10-12 years of age, respectively).

Together with previously presented characteristics, Olympic A&WSs are specific from a sociocultural perspective. Specifically, water is often considered sacred and purifying in many cultures, playing a central role in religious ceremonies, rituals, and myths. Water holds diverse symbolic meanings across cultures, representing life, fertility, purity, power, and the “unknown”. It can be seen as a source of both life and danger, reflecting the duality of its nature (Shaw & Francis, 2014). This is additionally aggravated by the fact that water has been a crucial medium for travel, trade, and exploration throughout history. Seafaring traditions, navigation skills, and shipbuilding techniques have shaped cultures and connected people across vast distances. Both water sports and aquatic sports provide opportunities to connect with the natural world, fostering an appreciation for water environments and promoting environmental awareness.

From the previous overview, it is clear that different Olympic A&WSs share similar sociocultural backgrounds and are naturally connected in their origin and development. This is particularly evident in regions where these sports are popular and traditionally important (i.e., coastal regions by seas, rivers and/or lakes). Therefore, it is not even uncommon that different Olympic A&WSs (swimming, water polo, sailing, rowing) are organized by the same sport organization (i.e., sport society, team, club) (Flander, 1984). However, the necessity of a specific orientation toward certain types of training and competition results in early sport specialization, and children regularly choose one sport from the beginning of their sport career; this choice of sport is at least partially influenced by the specific sociocultural environment,

where family and tradition play important roles (Strandbu et al., 2020). On the other hand, there is no doubt that the choice of sport should be primarily based on the child's interest and talent, which will allow each individual to reach their full potential. Therefore, it would be important to highlight correlates of involvement in specific Olympic A&WSs and to identify those that should eventually be controlled because of possible bias in the selection of sports for children and youth.

This study aimed to evaluate certain sociodemographic factors associated with participation in Olympic A&WS, with an emphasis on differences in participation between Olympic-aquatic and Olympic-water-sports. We believe that this would be particularly important to evaluate in regions where these sports are traditionally important and have a long history. Therefore, we specifically targeted coastal regions in southern Croatia. The main hypothesis of the study was that sociodemographic variables would be differentially correlated with participation in Olympic-water- and Olympic-aquatic-sports.

METHODS

Participants and sampling

In this study, we observed 256 children and youth (101 girls, 10-16 years of age) from three southern (coastal) regions in Croatia, Sibenik, Knin County; Split, Dalmatia County; and Dubrovnik, Neretva County. Over the course of the study, participants were involved either in Olympic water sports (i.e., sailing, windsurfing, rowing; $n = 95$, 24 girls; 12-16 years of age) or Olympic water sports (swimming, water polo, artistic swimming, diving; $n = 161$, 77 girls; 10-16 years of age). All participants were recruited one-to-two months before the study. In the first phase, the authors contacted coaches on local sport teams and explained the purpose and idea of the investigation. Coaches were introduced to the questionnaire (please see variables for details), and if they agreed to involve their athletes in the investigation, they were asked to send the online questionnaire to parents of the children they were coaching. In the next phase, parents were asked to check the questionnaire and, if they agreed, to provide consent for their children's participation. The parents who provided consent for the inclusion of their children in the study forwarded questionnaires to their children who individually and personally completed the questionnaire, which was considered their consent for study participation. Coaches, parents, and children were informed that participation is voluntary and anonymous and that they can refuse to participate (i.e., refuse to forward the questionnaire to parents and/or children,

depending on the study phase). The study was approved by the ethical committee of the corresponding author's institution.

Variables

The variables in this study were the sociodemographic characteristics of the participants and the type of sport they were involved in. Involvement in sport was asked on a nominal scale consisting of two possible answers (Olympic water sport vs. Olympic aquatic sport), whereas specific sports were grouped accordingly (water sports: sailing, windsurfing, rowing, kayaking, canoeing; and aquatic sports: diving, swimming, water polo, artistic swimming). Owing to the necessity of anonymous surveying, the participants did not specifically define the sport they were involved in but only the group (e.g., Olympic aquatic or water sports), but they were able to target their specific sport (swimming, water polo, sailing, etc.) since it was specified in the brackets after each group of sports. Sociodemographic variables included gender (male, female, none), age (in years), school (elementary school, high school), county of residence (Sibenik-Knin, Split-Dalmatia, Dubrovnik-Neretva), socioeconomic status of the family (below average, average, above average), familial tradition in water sports (e.g., did your parent/parents practice and/or have been involved in water sports? Yes/No), familial tradition in aquatic sports (e.g., did your parent/parents practice and/or have been involved in aquatic sports? Yes/No), maternal educational level, and paternal education level (both responded on a scale consisting of three responses: elementary school, high school, and college/university degree).

Statistics

Following the check of the normality of the distributions via the Kolmogorov–Smirnov test, descriptive statistics included calculations of the counts (frequencies) and percentages for all variables except for participant age (where means and standard deviations were calculated). Comparisons of sociodemographic characteristics between Olympic aquatic sports and Olympic water sports were performed via t tests for independent samples (for age) and chi-square tests (for the remaining variables). To analyze the associations between sociodemographic variables and participation in specific sports, we used logistic regression calculations. In the first phase, each sociodemographic variable was observed as a univariate predictor of participation in Olympic aquatic/water sports, with participation in aquatic sports coded as “1” and participation in water sports coded as “2”. In the second phase, all significant univariate predictors were simultaneously included in the calculation of the multivariate (multivariable) logistic regression model to control for possible confounding effects. Odds

ratios (ORs) and 95% confidence intervals (95% CIs) are reported, and the Hosmer–Lemeshow test was used to analyze the goodness of fit of the significant logistic regression models.

Statistica version 23.5 (Tibco Inc. Palo Alto, CA, USA) was used for all calculations, and a p-level of 95% was applied.

RESULTS

When the participants involved in Olympic water sports and Olympic aquatic sports were compared in terms of age (14.11 ± 2.56 and 14.45 ± 3.23 for aquatic and water sports, respectively), no significant difference was found between the groups (t test = 0.11, $p > 0.05$). Also, no significant difference was found within each gender (t test = 0.21, and 0.23, both $p > 0.05$, for boys and girls, respectively).

The results of the descriptive statistics and differences in sociodemographic variables between participants involved in aquatic and those involved in water sports are presented in Table 1. Significant differences between groups were found in gender (Chi square = 12.73, $p < 0.001$), with more males involved in Olympic water sports than in Olympic aquatic sports. With respect to the county of residence, residence in Dubrovnik Neretva County had relatively highest participation in Olympic-water sports (Chi square = 8.35, $p = 0.02$). However, this result was probably due to the chance and number of tested participants in regions. A significant difference between sports was evidenced in self-perceived socioeconomic status, with more participants involved in water sports reporting higher socioeconomic status (Chi square = 40.01, $p < 0.001$). Familial tradition is associated with participation in water sports (Chi square = 76.01, $p < 0.001$) and aquatic sports (Chi square = 4.69, $p = 0.03$).

Table 1. Descriptive statistics (frequencies—F, percentages—%) and differences in sociodemographic variables between participants involved in Olympic water sports and those involved in Olympic aquatic sports (Chi square test).

	Aquatic sports		Water sports		Chi square	
	F	%	F	%	Chi square	p-level
Gender					12.73	0.001
Female	77	47.8	24	25.3		
Male	84	52.2	71	74.7		
School					0.12	0.71
Elementary school	80	49.7	45	47.4		
High school	81	50.3	50	52.6		
County of residence					8.35	0.02

Sibenik Knin	30	18.6	14	14.7		
Split Dalmatia	101	62.7	48	50.5		
Dubrovnik Neretva	30	18.6	33	34.7		
Socioeconomic status					40.01	0.001
Below average	27	16.8	7	7.4		
Average	109	67.7	38	40.0		
Above average	25	15.5	50	52.6		
Familial tradition in water sports					76.01	0.001
Yes	31	19.3	71	74.7		
No	130	80.7	24	25.3		
Familial tradition in aquatic sports					4.69	0.03
Yes	91	56.5	40	42.1		
No	70	43.5	55	57.9		
Maternal education level					0.88	0.64
Elementary school	4	2.5	2	2.1		
High school	43	26.7	20	21.1		
College/University degree	118	73.3	73	76.8		
Paternal education level					3.18	0.21
Elementary school	9	5.6	7	7.4		
High school	61	37.9	25	26.3		
College/University degree	95	59.0	63	66.3		

The associations between sociodemographic variables and participation in specific sports are presented in Figure 1. Notably, the county of residence was not included in the logistic regressions because of the possible bias in the selection of participants with respect to the type of sport in each region (please see results of the Chi square test). Significant univariate positive associations were detected between male gender (OR = 2.11, 95% CI: 1.50--2.65), higher socioeconomic status (OR = 2.41, 95% CI: 2.10--2.59), and familial tradition in water sports (OR = 3.01, 95% CI: 2.2--3.78) and the outcome variable – involvement in Olympic water sports. In other words, being male, coming from a family with better socioeconomic status, and being raised in a family with a history of involvement in water sports significantly increases the likelihood of being involved in Olympic water sports. When significant univariate predictors were simultaneously included in the multivariate regression model, all three significant univariate predictors remained significantly associated with outcome/participation in Olympic water sports, with negligible differences in the numerical parameters of regression (male gender: OR = 2.03, 95% CI: 1.3--2.7; socioeconomic status: OR = 2.21, 95% CI: 1.9--2.58; familial tradition in water sports: OR = 2.91, 95% CI: 2.32--3.41) (Figure 1B). The Hosmer–Lemeshov test indicated appropriate model fit.

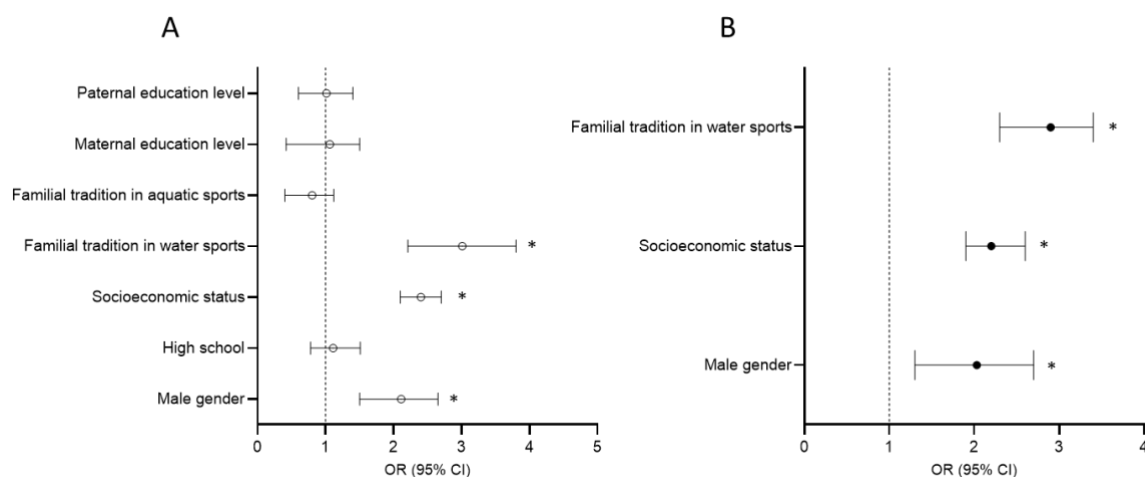


Figure 1. Results of the univariate (A) and multivariate (B) logistic regression calculations for the binarized criterion “participation in Olympic aquatic sports and Olympic water sports” with “participation in Olympic water sports” as the reference value (* denote statistical significance of $p < 0.05$).

DISCUSSION

There are several important findings of this study. First, gender was a significant predictor of participation in Olympic aquatic vs. water-sports, with girls being more oriented toward Olympic aquatic sports, and boys being more oriented toward Olympic water sports. Second, the significant predictor of participation in specific sports was familial tradition in these sports. Finally, better socioeconomic status was associated with participation in Olympic water sports. Therefore, our initial study hypothesis could be accepted.

Why are girls more often involved in Olympic aquatic sports?

Swimming is often seen as a highly acceptable activity for women, as it is perceived as graceful and noncontact (Csizma et al., 1988). Even historical papers revealed that in the 19th century, swimming was considered an “ideal sport for British women due to its health benefits, safety, and aquatic environment” (Parker, 2010). This societal perception is likely to encourage female participation, which also contributed to our results. However, some objective reasons related to biological, psychological, and societal issues are briefly discussed to highlight the logic behind the established correlation between female gender and participation in aquatic sports.

The first set of reasons is related to specifics of water as a medium where athletes perform. Women generally have a greater percentage of body fat than men do, which can provide greater

buoyancy in water, and to some extent improve performance (Sajber et al., 2013). This characteristic makes swimming feel less strenuous and more enjoyable for women than other sports do. Additionally, aquatic sports are often seen as more accessible and inclusive than some land-based activities. It can be adapted to different abilities and fitness levels, making it appealing to a wide range of women. In other words, while specific body dimensions and body composition are highly important in most on-land sports, the variety of playing positions (in water polo), different swimming styles and disciplines (in swimming), and roles (in artistic swimming) allow women with different physiques to find their niches and participate successfully in aquatic sports. Finally, some aquatic sports, such as artistic swimming, often emphasize flexibility, grace, and artistry. Women may be drawn to these sports owing to their natural flexibility and ability to express themselves through fluid movements in the water (Laski et al., 2024).

Social and psychological factors also contribute to the popularity of aquatic sports in females. Specifically, water polo and synchronized swimming require teamwork, camaraderie, synchronization, and cooperation. This can appeal to women who enjoy collaborative environments and build strong bonds with teammates. Aquatic sports can provide a positive environment for body image and self-expression, and a focus on athleticism and skill rather than appearance can be empowering for women and girls. Finally, all these factors contributed to increased media coverage of women's aquatic sports. In brief, while research consistently shows that female athletes are underrepresented and inadequately portrayed in sports media coverage, studies of Olympic coverage reveal that women receive increased attention in swimming (Vincent et al., 2003). Together, these findings have helped increase the profile of successful female aquatic athletes and have almost certainly encouraged female participation in these activities.

Why are boys more often involved in Olympic water sports?

While sailing is becoming increasingly inclusive, there are several interconnected reasons why males have historically been more involved in water sports, such as sailing. Most likely, the most important ones are traditional gender roles. Sailing and seafaring were historically often associated with masculinity, adventure, and physical strength. These activities were seen as a way for men to demonstrate their courage, leadership, and navigational skills. Additionally, these activities are often linked to maritime professions such as fishing, naval service, and trade, which are traditionally male-dominated fields (Grimett, 2024). This logically created an

environment for men to develop sailing skills and pursue careers related to the sea, which was logically translated into sports as well.

Despite these historical and societal factors, sports such as sailing and rowing are physically demanding and impose special requirements on the conditioning capacities of athletes (Sekulic et al., 2006). Additionally, athletes involved in these sports often face unpredictable weather and, in some cases, take calculated risks. This adventurous aspect may appeal more to men who are socialized to embrace risk-taking behaviors. While this is less of a factor in modern sailing with advanced technology, it may have played a role in the past, and the experiences of older athletes are still vivid in sport communities. However, irrespective of the improved security of athletes, water sports are definitively associated with certain risks, with even fatal consequences, which is to some extent inappropriate for women.

Although some of the previously specified factors could be judged as irrelevant today, because of overall social changes and technological advancements, it is clear that they together create certain “male-dominated networks” in water sports. (Bricknell, 1999). Logically, the lack of female role models and mentors in water sports also discourages women from pursuing this type of sport. While the authors of the study are familiar with situations in these sports in the region where the study was conducted, they can witness that less than 10% of coaches in water sports are women. Logically, the background of such a situation is associated with all of the above, and consequently, women may have less exposure to water sports and fewer opportunities to learn and develop sport-specific skills than men do.

Financial status and participation in Olympic water sports

The connection between (better) financial status and participation in water sports is multifaceted, stemming from several key factors. First, a widely known factor is associated with the necessity of high initial investment. Many water sports require specialized and often expensive equipment, such as boats, boards, sails, diving gear, and safety equipment (Henriksen et al., 2010). Individuals with higher financial status can more easily afford these upfront costs. This is followed by ongoing expenses, since water sports require maintenance of the boats and equipment, storage, club membership, travel to suitable locations, and competition fees. Although sport clubs often cover most training and competition expenses, there is no doubt that the overall costs of practicing water sports are considerably higher than the costs related to other types of sport activities, including aquatic sports, which we compared in this research. These costs can be prohibitive for those with limited financial resources.

In addition to the direct financial requirements explained previously, Olympic water sports require time commitments. Indeed, training and competition in water sports require a significant time commitment for training, practice, and travel (Henriksen et al., 2010). Individuals with more flexible work schedules and greater disposable time are more likely to participate. In other words, people with better finances are more likely to have free time and devote it to participation in water sports. This is related not only to one's current situation as an athlete already involved in water sports but also to exposure and early introduction, which is logically connected to the "history" of familial finances and socioeconomic status in general. Specifically, there is no doubt that early exposure to water sports through family activities, vacations, or school programs can foster lifelong interest. Therefore, those from affluent backgrounds may have more opportunities for such experiences during childhood, which will increase their interest and positively influence their later involvement in water sports.

Social networks and so-called "cultural capital" also play important roles in participation in water sports (Gemar, 2021). Since these sports can be embedded in social networks and communities, with participation influenced by friends, family, and colleagues, those in higher socioeconomic circles may have greater exposure to and encouragement for water sports. The marketing and branding of water sports often target affluent consumers, reinforcing the perception of exclusivity and an aspirational lifestyle. Finally, it cannot be ignored that some water sports can be associated with wealth, prestige, and exclusivity. Participation in these sports can be a way to signal social status and belonging to a certain social group.

Familial tradition and participation in sports

Familial tradition plays a significant role in shaping a child's choice of sport, influencing their preferences, opportunities, and, ultimately, athletic pursuits (Lassalle et al., 2018). Our results highlight the influence of familial tradition on participation in both Olympic aquatic sport and Olympic water sports. More precisely, it seems that this factor was the most influential of all the variables studied here; therefore, a discussion of the possible mechanisms of such associations is particularly interesting. Since we could not find any studies where these associations were studied specifically for A&WS, the following discussion is based on theoretical knowledge from other sports. In general, the literature suggests that the connection between familial tradition and choice of sport stems from several factors, including early exposure (and socialization), access and resources, cultural and identity formation, and psychological and emotional factors.

Early exposure to any activity, including exposure to specific types of sports, has been repeatedly confirmed to positively influence later participation in this activity/sport (Horton, 2013). This is regularly associated with social support and parental influence, since parents who are passionate about a particular sport are more likely to introduce their children to it at a young age (Akgül & Karafil, 2022; Baxter-Jones & Maffulli, 2003). Early exposure creates familiarity and builds positive associations, which is particularly important in those sports that are not highly accessible (i.e., skiing, automoto sports, and water sports). In regard to water sports, these sports are characteristic because families often engage in sport-related activities together. Together, it creates opportunities for bonding, learning, and developing skills. Naturally, parents and older siblings who participate in a sport can serve as role models, inspiring younger children to follow in their footsteps.

Furthermore, families who value water sports are more likely to invest in equipment, training, and travel expenses, making it easier for children to participate and excel. Additionally, while some specific types of technical knowledge and skills are highly important factors of success in water sports, parents with experience can provide important guidance, coaching, and support in this manner. When families are involved in sports, this can provide connections within the sporting community, providing children with access to coaches, teams, and competitions (Henriksen et al., 2010). In water sports, this is also valuable because of the frequent situations in which children are out of home because of training and competition in small groups. In such situations, familial support and trust in support personnel (i.e., coaches, physicians) could be critical factors.

Sports can be deeply intertwined with family traditions and cultural identity. This connection in water sports is additionally possible in regions where maritime professions are traditional and historically rooted. In families residing in coastal communities, the legacy of maritime professions often runs deep. Skills and knowledge related to the sea are passed down through generations, creating a strong sense of identity and connection to the sea. This inheritance shapes not only their livelihoods but also their traditions, customs, and social structures. Therefore, passing down a love for a water sport is often observed as an inseparable part of the “educational process”, since it can reinforce family values and create a sense of continuity across generations. Specifically, if participating in a (water-) sport is valued by the family, active involvement in this type of sport will certainly foster a sense of belonging and shared identity (Vermeulen & Verweel, 2019). This can be particularly important for children who are

seeking to establish their place within the family and community, such as for children raising in families with a long maritime culture and identity.

All of these factors are transferred even to psychological and emotional factors. Children and youth who receive encouragement and support from their family are more likely to enjoy and persist in specific sports (Strandbu et al., 2020). This positive reinforcement can increase confidence and self-esteem. Finally, it must not be neglected that shared experiences in sports can create strong emotional bonds between family members. These positive memories and associations can further strengthen a child's attachment to a specific sport. While most of the previously explained “familial mechanisms of influence” are characteristic of practically all types of sports, there is no doubt that the influence is even stronger in sports where specific boundaries of participation exist (i.e., financial, organizational), such as water sports. This probably explains the stronger association between familial tradition and involvement in Olympic–water–sports than the same association for Olympic–aquatic sports.

Strengths and limitations

The most important limitation of this study is its cross-sectional nature. Therefore, although some causalities may be intuitively interpreted (i.e., gender is certainly the cause of participation in a specific sport and not vice versa), in some cases, it is possible that relationships are interchangeable. Therefore, for a more in-depth analysis, prospective and longitudinal studies are needed. Additionally, this study explored the problem in one specific environment and regions where Olympic A&WSs are traditionally important. Therefore, it is possible that the characteristics of the studied sample of participants indirectly or directly influenced the findings. For that reason, generalization is possible only for similar samples.

This is one of the rare studies in which sociodemographic correlates of sport participation were specifically investigated with respect to participation in two similar but also specific types of sports (i.e., Olympic aquatic vs. water sports). The specific correlations established herein will therefore allow more precise analyses of the problem in the future, where specific mechanisms of influence will be targeted and interpreted. Finally, we must highlight that our sample consisted of athletes from the regions where Olympic A&WSs are traditionally and culturally very important. More specifically, athletes from clubs (teams) we observed in this study competed and succeeded at highest level competitions for more than a century, winning the medals at top-competitions, which is certainly important strength of the investigation.

CONCLUSION

The relationship between better financial status and participation in Olympic water sports is complex and influenced by various factors. By recognizing these connections, sport authorities can work toward creating a more inclusive and equitable environment where everyone has the opportunity to enjoy the benefits of these activities. To increase participation in water sports, authorities could offer scholarships, subsidized equipment rentals, and transportation assistance for athletes from lower socioeconomic backgrounds. They could also partner with community organizations to provide access to affordable training facilities and programs.

The connection between familial tradition and a child's choice of sport involves a complex interplay of social, cultural, psychological, and even genetic factors. Understanding these influences will allow the creation of a nurturing environment where children can develop a lifelong love for sports and reap the physical, emotional, and social benefits of athletic participation. However, it is crucial to respect a child's individual preferences and allow them to explore different sports. Parents can encourage children to explore various aquatic sports without pressure, fostering a positive association with physical activity and healthy competition.

Gender-specific participation in Olympic, aquatic, and water sports is likely rooted in a combination of factors, including physiological differences, social norms, and historical traditions. Although in some cases can be reasonable and logical, it can also raise questions about fairness, inclusivity, and evolving gender identities in sports. Decreasing gender separation in aquatic and water sports requires a multipronged approach that addresses both practical and cultural aspects. Fostering a culture of respect is probably one of the most important pillars of these efforts. Also, sports organizations can promote mixed-gender events and competitions where appropriate, challenging traditional norms and fostering inclusivity. They can also implement education and awareness programs to combat gender stereotypes and promote respect for all athletes, regardless of gender identity.

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