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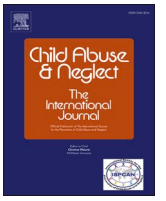

Prevalence of interpersonal violence against children in sport in six European countries☆

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ABSTRACT

Background: Investigating prevalence of child abuse in sport is a relatively new field of research, born from the need for credible data on this phenomenon.
Objective: To establish prevalence rates of interpersonal violence against children in sport in six European countries.
Participants and setting: The sample (N = 10,302) consists of individuals aged 18–30 who had participated in organized sport prior to age 18 (49.3 % male, 50 % female).
Methods: A self-report questionnaire was developed (the *Interpersonal Violence Against Children in Sport Questionnaire or IVACS-Q*) to measure prevalence of five categories of interpersonal violence (neglect, psychological violence, physical violence, non-contact sexual violence, and contact sexual violence) against children who participate in sport. Validation testing (published separately) showed reasonable levels of convergent and divergent validity. Prevalence rates are calculated by national context, whether inside or outside sport, and by sex (male/female).
Results: Prevalence of IVACS *inside* sport differed by category: *psychological* violence (65 %, n = 6679), *physical* violence (44 %, n = 4514), *neglect* (37 %, n = 3796), *non-contact sexual* violence (35 %, n = 3565), and *contact sexual* violence (20 %, n = 2060). Relatively small geographical differences were found. Across all categories, males (79 %, n = 4018) reported significantly more experiences *inside* sport than females (71 %, n = 3653) ($\chi^2(1) = 92.507$, $p < .000$). Strong correlations were found between experiencing violence inside and outside sport.

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Table 1
Selected recent studies of prevalence of child abuse/interpersonal violence in sport.

	Alexander et al. (2011)			Fasting et al. (2015)			Vertommen et al. (2016)			Bermon et al. (2021)			Willson et al. (2022)			Parent and Vaillancourt-Morel (2021)			Pankowiak et al. (2022)		
Data collection (Year)	2009			2015			2014			2020			2019			2016/17			2021		
Sample size (*N*)	6060			526			4043			480			995			1055			886		
Sample age range	18–22 yrs			16 yrs +			18–50 yrs			below 21 yrs			17 yrs +			14–17 yrs			18 yrs +		
Sport inclusion criterion	Organized sport			Athletes & coaches from 8 Olympic sports			Organized sport			Under 20 Athletics World Championships			National-team athletes			Organized sport (recreational & competitive)			Organized sport (recreational & competitive)		
Sport level	Recreational & competitive			Competitive			Recreational & competitive			Elite			Current & retired elite athletes			Any			Community sport		
Country	UK			Zambia			Netherlands & Belgium			International			Canada			Canada			Australia		
Concept(s)	Harm			Harassment & abuse			Interpersonal violence			Abuse			Maltreatment			Interpersonal Violence			Interpersonal Violence		
Prevalence timeframe	0–16			Lifetime			Lifetime before age 18			Lifetime			Lifetime			Lifetime			Lifetime before age 18		
Category of IVACS																					
	Tot. %	M	F	Tot.%	M	F	Tot.%	M	F	Tot. %	M	F	Tot. %	M	F	Tot. %	M	F	Tot. %	M	F
Combined							44						75			85	=	=	82		
Psychological abuse	75	77	74				38	39	36				60			79	75	81	79	74	82
Physical abuse	24	26	23	31			11	14	9	11	12	9	14			40	49	36	66	66	65
Sexual abuse				37			14	11	17	10	12	7	21			28	25	29	38	33	40
Neglect													69			36	29	40	27	18	31
Sexual harassment	29	17	34	69	72	66															
Sexual harm	3	5	2																		

Conclusions: Interpersonal violence against children in sport is widespread. The sector's approach to prevention must recognize the risks to female and male children (and *all* children) and the additional vulnerabilities of abused children. Further comparative and longitudinal research within sport is required.

1. Introduction

Sport is widely acknowledged as an activity that is good for children. However, like other childhood activities and institutions, sport is also a site for the abuse of children. The potential for child abuse in sport was first highlighted in the mid-1980s (Brackenridge & Lyons, 1986), followed by media attention (e.g., Lord, 1995) and public disclosures from high-profile athletes (e.g., Kennedy & Grainger, 2006). The potentially devastating impact of abuse in sport has also been documented by researchers (e.g., Brackenridge, 2001; Hartill, 2014; Rulofs et al., 2020), journalists (e.g., Robinson, 1998), and independent inquiries (e.g., Whyte Review, 2022). Early focus on sexual violence (e.g., Brackenridge & Fasting, 2002) has led to a now rapidly expanding literature across multiple forms of maltreatment (Lang, 2021; Rulofs, 2015).

The need for robust measurement of the scale of the problem was recognized by UNICEF who called for improvements in 'data collection … about violence to children in sport' including 'the prevalence, forms and impact of violence in sports worldwide' (Brackenridge, Fasting, Kirby, & Leahy, 2010: 23). Yet governing bodies have seemingly been uninterested in developing such studies. In the absence of sport-specific data, findings from general prevalence studies may inform policymaking. More likely, the absence of such data supports narratives of denial and minimization within an institutional space that has long guarded its autonomy from wider political intrusion and has been slow to address its responsibilities for child welfare.

Furthermore, countries that do publish national data on child abuse, such as the UK, do not systematically collect data on institutional contexts. Despite the importance of official statistics, the limitations of such data (sometimes referred to as *informant* data) in this area are well known. One meta-review found that self-report studies yielded a rate '30 times higher than the rate of informant studies' (Stoltenborgh, van Jzendoorn, Euser, & Bakermans-Kranenburg, 2011: 87). Self-report studies, however, do not rely on official thresholds or definitions. As such, they are crucial to the development of more precise estimates of prevalence, especially in relation to specific communities or cultural contexts.

The first self-report studies of child abuse in sport appeared in the early 2000s and generally focused on *sexual* harassment and abuse (e.g., Leahy, Pretty, & Tenenbaum, 2002). (See Table 1 for an overview of selected recent studies). Recently, studies have burgeoned, incorporating other forms of abuse. The first study to include multiple forms of abuse (Alexander, Stafford, & Lewis, 2011) utilized a British student population of 18–22 year olds. From 6124 valid responses, 75 % reported experiencing emotional harm in sport, 29 % sexual harassment, 24 % physical harm, and 3 % sexual harm. Further studies have gradually followed, generally examining a single national context (e.g., Parent, Lavoie, Thibodeau, Hébert, & Blais, 2016; Parent & Vaillancourt-Morel, 2021), mostly within the 'global north' but not exclusively (see Fasting, Huffman, & Svela Sand, 2015; Fathynah, Syahirah, Faizal, & Hafizah, 2017) or a comparison between national contexts (e.g., Vertommen et al., 2016). Other studies have focused on elite level sport (e.g., Ohlert, Vertommen, Rulofs, Rau, & Allroggen, 2020; Willson, Kerr, Stirling, & Buono, 2022), sometimes within a specific sport-type (Bermon et al., 2021), or on female-only samples (e.g., Fasting, Chroni, Hervik, & Knorre, 2011). Females athletes have generally been found to be at higher risk for sexual violence and male athletes at higher risk for physical violence; higher levels of competition have repeatedly been associated with higher prevalence of abuse (e.g., Ohlert et al., 2020). Studies differ in important aspects of research design, such as sampling strategy, age-range of respondents, and underpinning concepts (e.g., abuse, maltreatment, harassment, gender-based violence). Such differences make comparison between studies (and national contexts) difficult. Therefore, there is significant value in studying multiple contexts simultaneously.

As Table 1 shows, recent studies, mostly in the 'global north', have found combined prevalence above 80 % in samples inclusive of all levels of sports participation when multiple forms of abuse are considered (Pankowiak et al., 2022; Parent & Vaillancourt-Morel, 2021). This paper reports on a retrospective, self-report study of prevalence of child abuse and neglect in sport across six European countries, within a sample of young adults (18–30 years) who participated in sport before age 18. The concept of *interpersonal violence*, as described by the World Health Organization (WHO; Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002), was utilized to define the focus of the study.

1.1. Interpersonal violence, children, and sport

The UN *Committee on the Rights of the Child* (UN (Committee on the Rights of the Child), 2011: 4) takes 'violence' to encompass 'all forms of physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation, including sexual abuse.' It also notes that 'other terms used to describe types of harm (injury, abuse, neglect or negligent treatment, maltreatment and exploitation) carry equal weight' (UN (Committee on the Rights of the Child), 2011: 4). Krug et al. (2002: 6) describe the nature of violent acts as: 1) *physical;* 2) *sexual;* 3) *psychological;* and 4) *deprivation* or *neglect*. The WHO also separates violence into three distinct categories: *self-directed*, *interpersonal*, and *collective*. *Interpersonal violence* (IV) refers to: a) *family and intimate partner violence* and b) *community violence*. *Family and intimate partner violence* refers to violence 'usually, though not exclusively, taking place in the home'. *Community violence* refers to 'violence between individuals who are unrelated, and who may or may not know each other, generally taking place outside the home' (Krug et al., 2002: 6). Children 'experience violence at the hands of adults, and violence may also occur

among children' (UN (Committee on the Rights of the Child), 2011: 8). Our approach is also guided by the principle that 'all forms of violence against children, however light, are unacceptable [and] … frequency, severity of harm and intent to harm are not pre-requisites for the definitions of violence' (UN (Committee on the Rights of the Child), 2011: 8).

The central aim was to establish a meaningful picture of the interpersonal violence experienced by children who participate in sport. Ignoring non-sport experiences of violence excludes vital data, therefore, it was crucial to capture experiences of violence both inside *and* outside the sport context. Thus, the central research question was: *What is the prevalence of interpersonal violence against children active in organized sport, inside and outside sport, in six European countries?* In this paper we examine overall prevalence of interpersonal violence against children in sport (IVACS). We disaggregate the data according to national context, whether the experience occurred inside or outside sport, and by sex (male/female).

2. Method

2.1. Measure

Prevalence of child abuse is generally measured within a national population (e.g., Mathews et al., 2023) rather than within a distinct sub-population characterised by participation in a specific cultural practice (i.e., sport). Using a generic child abuse instrument is insufficient to measure IV in sport, as these tools do not include IV-behaviors specific to – and frequently normalized within – sport, such as being forced to train while injured or forced to exercise as a form of punishment.

To date, only one validated instrument to measure the prevalence of violence against athletes is available. The *Violence Towards Athletes Questionnaire* (VTAQ, Parent et al., 2019) aims to survey young athletes' (aged 14–17) experiences of IV perpetrated by peer athletes, coaches, and parents in the context of sport. The instrument is designed to survey lifetime prevalence of currently active young athletes and does not allow for reporting IV experiences perpetrated by persons other than athletes, coaches, and parents, such as (para-) medical staff, administrators, managers, and spectators/fans. It was, therefore, appropriate to develop a new measure – the *Interpersonal Violence Against Children in Sport Questionnaire* or IVACS-Q – to facilitate the aim of establishing prevalence of IVAC in sport based on a self-report, retrospective measure for (young) adults. The tool showed reasonable levels of convergent and divergent validity. Due to a lack of space here, psychometric characteristics of the IVACS-Q are published separately (see Vertommen, Demarbaix, & Kampen, 2023).

2.2. Participants

The research company Ipsos MORI provided a convenience sample of adults aged 18–30 years who participated in organized sport before the age of 18. Power considerations led to a sample size of 1472 respondents in each partner country (Austria, Belgium, Germany, Romania, Spain, United Kingdom). Two samples were taken in Belgium: one with Dutch-speaking citizens living in Flanders, and one with French-speaking citizens living in Wallonia or Brussels. Thus, the total sample comprises seven national samples. Two responses (one from UK and one from Romania) had to be deleted. A final sample of 10,302 individuals was achieved. Further demographic details are provided below and in supplementary material.

The study focused on *organized sport,* defined as recreational or competitive sporting activity that is: voluntary within the context of a club or organization outside the school curriculum and involving an element of training or instruction by an adult. Extracurricular school sport was included but Physical Education excluded (as governance for PE falls outside the sport sector). Informal or casual sports-related activities (e.g., jogging) were also excluded.

2.3. Questionnaire

Data was collected via online questionnaire designed for this study within the CASES (*Child Abuse in Sport – European Statistics*) project and informed by previous studies (Alexander et al., 2011; Vertommen et al., 2016). The IVACS-Q is structured around the four main categories of IV: physical, psychological, sexual, and neglect. Sexual violence was further divided into: contact sexual violence (CSV) and non-contact sexual violence (NCSV). A significant challenge was to operationalize the broad definition of interpersonal violence into concrete items to facilitate capture across the range of harm experienced by children, inside *and* outside sport, within a concise questionnaire. To ensure an instrument accessible through a range of internet-connected devices, including mobile phones, questions were gradually pared down to the minimum number of characters prior to final programming. Following testing with a small, purposive sample of young adults, it was agreed that follow-up questions (e.g., perpetrator role, victim age, duration) would only be asked about the 'most serious' experience (in the respondent's opinion) rather than every experience indicated in each category of IVAC. This modification reduced the potential time burden significantly.

The questionnaire was designed to capture not only overtly violent or abusive acts against children, but also behavior and experiences that may be normalized and widely tolerated within sport. The questionnaire sensitized respondents to the nature of the questions, for example, 'the next questions ask about your childhood and experiences that are generally considered to be negative or harmful for young people'. The preamble to each battery of questions then sensitized the respondent to the particular category of IVAC. For example, for sexual violence, respondents were told: 'Sometimes people can do or say negative or harmful things of a sexual nature when we are children. These may have been unwanted at the time, or you may now feel that they were inappropriate.'

A total of 35 items were developed, grouped into five categories: *neglect* (6 items), *psychological violence* (9 items), *physical violence* (5 items), *non-contact sexual violence (NCSV)* (9 items), and *contact sexual violence (CSV)* (6 items). Each item took the form of a

scenario, for example, 'I was caressed or otherwise touched sexually'. The aim was to produce 'behaviourally specific', unambiguous items. These typically yield higher rates of prevalence compared to the use of more generic questions and terms, such as 'sexual abuse' (Depraetere, Vandeviver, Beken, & Keygnaert, 2020). Respondents were then able to indicate whether the experience happened 'within sport', 'outside sport', or 'both within and outside sport' (therefore, some respondents appear in both sport and non-sport data). Further options were 'no, this has not happened to me', 'don't know', 'prefer not to say'. The questionnaire items are provided in Supplementary Materials.

2.4. Procedure

2.4.1. Translation

The original, English and offline version of the questionnaire was pre-tested using the think-out-loud design, with 30 adults in the UK. An online version of the questionnaire was then piloted with 300 UK adults from the target population. After both tests, slight changes in item formulation and structure were made. The questionnaire, invitation, and privacy notice were then translated by the respective partners. Back-translation was performed by two independent individuals: a bilingual person and a native English researcher with experience in the field of child maltreatment. Any adjustments were agreed by the whole team.

2.4.2. Sampling and data collection

Sampling and data collection was performed by IM. Members of IM's panels are regularly invited to complete online surveys in return for small incentives (e.g., shopping coupons). IM screened panel members aged 18–30, for participation in organized sport before age 18. Interlocking quotas were set for males/females and age-groups (18–24 and 25–30 years-old) with the aim of reaching an equal distribution. The questionnaire was deployed between 22 October – 14 December 2020, until the net response of 1472 was achieved in all contexts. The average time for reaching the desired quota was 13 days. Excluding 5 % of respondents who took >45 min to complete the questionnaire, average completion time was 13 min, via computer (35 %), 'smartphone' (63 %), or 'tablet' (2 %).

2.4.3. Data processing and quality control

The production of survey data was an automated process based on the online script which was tested in advance of fieldwork. The final data files for each country were checked by IM and the research team to ensure routing for each question had worked correctly and that respondents answered all relevant questions as intended. All datafiles were labelled, structured logically, and included all relevant sample variables.

2.4.4. Statistical procedure

Descriptive statistics and chi-square tests are used to describe and detect possible differences in prevalence between countries and male and female respondents. For the sake of space and to offer substantive discussion of data, other possible differentiations, such as age group, sexual orientation, ethnic background, or (dis)ability of respondents will be explored separately. Phi coefficients were used to quantify the association of IV experiences in and outside sport. Associations between sex, country, and IV experiences outside sport (independent variables) with IV experiences inside sport were analyzed by binary and multivariate logistic regression models and reported in terms of ORs and CIs. The statistical software SPSS version 27 was used to analyze the data.

2.5. Ethical considerations

All partners received individual approval from their research ethics committee. Respondents could only access the questionnaire after providing consent based on information page explaining that questions covered 'sensitive matters such as abuse'. Participation was voluntary, anonymous, and could be paused or terminated at any point. Respondents were reminded of this throughout the questionnaire. Questions relating to potentially harmful experiences included the option 'prefer not to say'. A list of counselling and support services was provided through a link on every screen and at the end of the survey.

3. Results

3.1. Sample

The final sample consisted of 10,302 adults aged 18–30 (average age: 24.4 years (sd = 3.73)). 49.3 % (n = 5077) of respondents identified as 'male', comprising 50.4 % (n = 2560) aged 18–24 years and 49.6 % (n = 2517) 25–30 years. 50.0 % identified as 'female' (n = 5152 in each age group). 0.3 % (n = 35) stated they identified themselves 'in another way' and 0.4 % (n = 38) stated they would 'prefer not to say'. 11.3 % (n = 1163) belonged to a minority ethnic group. 6.0 % (n = 615) stated they had a disability. Furthermore, 6.7 % of respondents (n = 686) stated they had participated *only* in sports for people with disabilities, 13.7 % (n = 1410) had participated in both non-disabled and disabled sports; 80 % (n = 8206) had not participated in any sports for disabled people. 82.3 % (n = 8477) identified as heterosexual, 7.0 % (n = 721) as bisexual, 2.5 % (n = 254) as gay, 1.7 % (n = 172) as lesbian, 1.7 % as other (n = 176), and 4.9 % (n = 502) 'prefer not to say'.

Respondents were asked to indicate what sports they most frequently played, where, and at what level, before the age of 18 (respondents were allowed to indicate up to five different sports). Nearly two-thirds (61.0 %, n = 6289) identified a second sport, 37.0 % (n = 3808) identified a third sport, 19.2 % (n = 1979) a fourth, and 11.2 % (n = 1157) a fifth. 3.0 % (n = 313) of respondents

declined to name the sport they had participated in. Dance was the most popular sport for women (12.8 %, $n = 1453$), followed by swimming (9.9 %, $n = 1130$), football (7.9 %, $n = 901$), and volleyball (7.1 %, $n = 810$). For men, football was the most popular sport (27.5 %, $n = 3209$), followed by basketball (9.7 %, $n = 1130$), tennis (7.5 %, $n = 870$), and swimming (6.0 %, $n = 702$) (see Supplementary Materials for additional detail).

Respondents identified a range of organizations for their sport participation. Most had played in a sports club (70.6 %, $n = 7278$); 30.4 % ($n = 3133$) in extra-curricular school sports; 20.0 %, ($n = 2058$) in a private setting; 18.2 % ($n = 1871$) at a fitness center; 15.9 % ($n = 1636$) in a sports camp; 9.0 % ($n = 924$) in a non-sports club; and 6.4 % ($n = 658$) in an elite training center.

Respondents were also asked to state their highest level of participation in youth sports, as follows: *recreational*: 40.2 % ($n = 4141$); *local club*: 34.3 % ($n = 3536$); *regional*: 16.2 % ($n = 1670$); *national*: 7.2 % ($n = 740$); and *international*: 2.1 % ($n = 215$). Men were more likely to have participated at a higher level. The sample does not show any characteristics to give reason to suspect it deviates significantly from the general population participating in sport.

3.2. Prevalence data

3.2.1. Category

Based on a low threshold analysis of data (i.e., all experiences counted), 75.0 % ($n = 7731$) of respondents reported at least one experience of any type of IVAC *inside* sport and 81.5 % ($n = 8391$) outside sport (see Table 2). The most common experience of IVAC *inside* sport was *psychological violence* (64.8 %, $n = 6679$), followed by *physical violence* (43.8 %, $n = 4515$), *neglect* (36.8 %, $n = 3796$), *NCSV* (34.6 %, $n = 3565$), and *CSV* (20.0 %, $n = 2060$). The most common IVAC experience *outside* sport was also *psychological* violence (71.8 %, $n = 7350$), followed by *NCSV* (52.0 %, $n = 5362$), *CSV* (41.0 %, $n = 4219$), *physical* violence (36.6 %, $n = 3771$), and *neglect* (33.7 %, $n = 3469$).

Physical violence is more prevalent inside sport (43.8 %, $n = 4514$) than outside (36.6 %, $n = 3771$), as is *neglect* (36.8 %, $n = 3796$ vs 33.7 %, $n = 3469$). Both forms of *sexual violence* are more prevalent outside sport than inside sport (NCSV: 52.0 %, $n = 5362$ vs 34.6 %, $n = 3565$; CSV: 41.0 %, $n = 4219$ vs 20.0 %, $n = 2060$).

3.2.2. National context

Table 3 shows the prevalence of IVAC in each national context. The combined, or overall, prevalence of IVAC *inside sport* is between 70.4 % ($n = 1036$) in Austria and 79.6 % ($n = 1172$) in Belgium (Wallonia-Brussels) ($\chi^2(6) = 57.175$, $p < .000$).

Highest prevalence for *neglect* inside sport was found in Germany (42.1 %, $n = 620$), Romania (41.8 %, $n = 615$), and Wallonia-Brussels (40.2 %, $n = 592$). Highest prevalence for *psychological violence* was found in Germany (70.5 %, $n = 1038$) and Spain (69.4 %, $n = 1021$)). Highest prevalence for *physical violence* was found in both Belgian samples, with Wallonia-Brussels (51.8 %, $n = 762$) and Flanders (50.9 %, $n = 749$). Highest prevalence for *NCSV* was in Wallonia-Brussels (40.6 %, $n = 598$) and Germany (39.1 %, $n = 575$), and highest prevalence for *CSV* was found in Germany (25.5 %, $n = 376$) and Wallonia-Brussels (25.4 %, $n = 374$). There are some differences between countries. Some of these differences are both statistically significant *and* meaningful in real terms: for example, the difference (+10.3 %) in *neglect* between Germany (42.1 %) (similarly Romania) and Austria (31.8 %); the difference (+11.8 %) in *psychological* violence between Germany (70.5 %) (similarly Spain) and Flanders (58.7 %); the difference (+19.7 %) in *physical* violence between Wallonia-Brussels (51.8 %) (similarly Flanders) and Austria (32.1 %); the difference (+10.7 %) in *NCSV* between Wallonia-Brussels (40.6 %) (similarly Germany) and the UK (29.9 %); the difference (+10.0 %) in *CSV* between Germany (25.5 %) (similarly Wallonia-Brussels) and Austria (15.5 %) (similarly the UK and Romania).

3.2.3. Sex/gender

Table 4 shows the type of IVAC experienced by respondents identifying as 'male' and 'female'. Across all categories, men (79.1 %, $n = 4018$) reported significantly more experiences of IVAC *inside* sport than women (70.9 %, $n = 3653$) ($\chi^2(1) = 92.507$, $p < .000$). The gap between men and women is largest (>10 %) in *neglect*, *physical violence*, and *CSV*.

3.3. Inside and outside sport

The phi coefficients showed significant positive associations between all types of IVAC inside and outside sport (see Table 5). Strong correlations were found between neglect outside sport and all forms of IV in sport, except for psychological violence. Experiencing physical violence outside sport was also strongly correlated with physical violence and neglect in sport. Each type of sexual violence,

Table 2
Prevalence of IVAC inside and outside sport.

	Inside sport % (*n*)	Outside sport % (*n*)
Neglect	36.8 (3796)	33.7 (3469)
Psychological violence	64.8 (6679)	71.8 (7401)
Physical violence	43.8 (4514)	36.6 (3771)
Non-contact sexual violence	34.6 (3565)	52.0 (5362)
Contact sexual violence	20.0 (2060)	41.0 (4219)
IVAC (any)	75.0 (7731)	81.5 (8391)

Table 3
Prevalence of IVAC inside sport by national context.

	Total % (*n*)	Austria % (*n*)	Belgium (Flanders) % (*n*)	Belgium (Wallonia-Brussels % (*n*)	Germany % (*n*)	Romania % (*n*)	Spain % (*n*)	UK % (*n*)	Minimal sig dif between countries[a] %
Neglect	36.8 (3796)	31.8 (468)	32.3 (476)	40.2 (592)	42.1 (620)	41.8 (615)	33.9 (499)	35.8 (526)	6.0**
Psych. violence	64.8 (6679)	61.3 (902)	58.7 (864)	67.6 (995)	70.5 (1038)	60.4 (888)	69.4 (1021)	66.0 (971)	4.5*
Physical violence	43.8 (4515)	32.1 (472)	50.9 (749)	51.8 (762)	42.9 (632)	42.2 (621)	42.9 (631)	44.0 (647)	6.9**
NCSV	34.6 (3565)	32.1 (472)	31.5 (464)	40.6 (598)	39.1 (575)	32.9 (484)	36.1 (532)	29.9 (440)	4.6*
CSV	20.0 (2060)	15.5 (228)	20.1 (296)	25.4 (374)	25.5 (376)	16.8 (247)	20.0 (295)	16.6 (244)	4.5**
IVAC (any)	75.0 (7731)	70.4 (1036)	72.0 (1060)	79.6 (1172)	77.9 (1146)	74.0 (1089)	78.1 (1149)	73.4 (1079)	4.5*

** $p \leq .001$.
* $p \leq .01$.
[a] In this column, we list the minimum % difference between countries required to indicate a *significant* difference. For example, for neglect, differences of 6 % or higher between countries are significant. Differences lower than the % indicated in the column cannot be considered as significant.

Table 4
Prevalence of IVAC inside sport by sex.

	Total $n = 10{,}229$ % (*n*)	Women $n = 5152$ % (*n*)	Men $n = 5077$ % (*n*)	$\chi^2(1)$	p
Neglect	36.8 (3769)	30.0 (1547)	43.8 (2222)	207.42	< 0.001
Psychological violence	64.8 (6627)	61.4 (3165)	68.2 (3462)	51.18	< 0.001
Physical violence	43.8 (4481)	36.1 (1859)	51.6 (2622)	251.56	< 0.001
Non-contact sexual violence	34.6 (3539)	31.7 (1634)	37.5 (1905)	38.10	< 0.001
Contact sexual violence	20.0 (2042)	13.7 (708)	26.3 (1334)	251.39	< 0.001
IVAC (any)	75.0 (7671)	70.9 (3653)	79.1 (4018)	92.51	< 0.001

Note: Due to the low number of responses, participants indicating another sex/gender ($n = 35$) or those preferring not to report their sex/gender ($n = 38$) are not included in these analyses.

Table 5
Correlations between IVAC inside and outside sport.

Outside sport / *Inside sport*	Neglect	Psychological violence	Physical violence	Non-contact sexual violence	Contact sexual violence
Neglect	0.666*	0.266*	0.410*	0.303*	0.309*
Psychological violence	0.334*	0.506*	0.313*	0.297*	0.257*
Physical violence	0.412*	0.239*	0.550*	0.287*	0.290*
Non-contact sexual violence	0.441*	0.274*	0.398*	0.559*	0.394*
Contact sexual violence	0.463*	0.193*	0.395*	0.335*	0.523*

* $p < .001$ (Phi coefficient test) - Coefficients >0.400 indicate a strong correlation.

experienced inside and outside sport, was strongly correlated.

3.3.1. Associated factors

Having run simple and multiple logistic regressions (see Table 6), we found that sex/gender, country, and experiences of IV outside sport explain between 35.4 % (psychological violence) to 54.8 % (contact sexual violence) of total variance in IV experiences inside sport.

The strongest predictors in each model are IVAC experiences *outside* sport. Thus, respondents who had experienced neglect *outside* sport were 18 times more likely to also have experienced neglect *inside* sport, compared to respondents who had *not* experienced neglect outside sport. Similarly, respondents who had experienced CSV *outside* sport were 20 times more likely to also experience it *inside* sport, compared to respondents who had *not* experienced CSV outside sport. For *psychological* violence in sport, the OR is 6, for physical violence 8, and for NCSV 9. Overall, respondents who experienced any type of IVAC *outside* sport were much more likely to experience IVAC *inside* sport.

For *neglect*, *physical violence*, and all categories combined, men report significantly more IVAC experiences (see Table 6). Gender was not a significant predictor for *psychological violence* and both forms of *sexual violence*. The regression model also revealed some

Table 6
Results for simple & multiple logistic regressions per type of IVAC (low threshold measure, i.e. at least one experience).

Neglect		Simple logistic regression			Multiple logistic regression		
$R^2_{Nagelkerke} = 0.540$ *(Multiple log reg)*		OR	99 % CI	p	OR	99 % CI	p
Country	Austria°						
	Belgium (Flanders)	0.741	0.562–0.977	0.005	0.736	0.558–0.971	0.004
	Belgium (Wallonia - Brussels)	0.821	0.626–1.077	0.062	0.815	0.621–1.070	0.053
	Germany	1.156	0.883–1.513	0.167	1.149	0.877–1.506	0.185
	Romania	1.230	0.944–1.603	0.044	1.210	0.928–1.577	0.064
	Spain	0.751	0.571–0.989	0.007	0.746	0.566–0.983	0.006
	UK	1.063	0.811–1.394	0.562	1.054	0.803–1.383	0.621
Sex/Gender	Female°						
	Male	1.734	1.494–2.011	<0.001	1.369	1.125–1.664	<0.001
IVAC outside sport	Neglect	17.864	15.193–21.005	<0.001	17.759	15.099–20.889	<0.001
	Psychological violence	1.168	0.966–1.414	0.035	1.166	0.964–1.411	0.037
	Physical violence	1.968	1.672–2.315	<0.001	1.972	1.675–2.321	<0.001
	Non-contact sexual violence	1.248	1.043–1.494	0.001	1.239	1.036–1.482	0.002
	Contact sexual violence	1.279	1.079–1.516	<0.001	0.982	0.786–1.227	0.833

Psychological violence		Simple logistic regression			Multiple logistic regression		
$R^2_{Nagelkerke} = 0.354$ *(Multiple log reg)*		OR	99 % CI	p	OR	99 % CI	p
Country	Austria°						
	Belgium (Flanders)	0.838	0.663–1.060	0.053	0.767	0.591–0.994	0.009
	Belgium (Wallonia - Brussels)	0.937	0.737–1.191	0.483	0.940	0.717–1.232	0.555
	Germany	1.417	1.112–1.807	<0.001	1.368	1.046–1.789	0.003
	Romania	0.720	0.570–0.909	<0.001	0.692	0.531–0.902	<0.001
	Spain	1.219	0.960–1.548	0.033	1.188	0.914–1.546	0.091
	UK	1.288	1.015–1.634	0.006	1.148	0.885–1.487	0.172
Sex/Gender	Female°						
	Male	1.577	1.380–1.803	<0.001	1.153	0.914–1.453	0.114
IVAC outside sport	Neglect	2.370	1.992–2.820	<0.001	1.856	1.201–2.867	<0.001
	Psychological violence	7.171	6.180–8.321	<0.001	6.104	4.970–7.497	<0.001
	Physical violence	1.735	1.475–2.041	<0.001	1.720	1.462–2.025	<0.001
	Non-contact sexual violence	1.279	1.094–1.495	<0.001	1.282	1.096–1.499	<0.001
	Contact sexual violence	1.209	1.033–1.414	0.002	1.059	0.872–1.287	0.446

Physical violence		Simple logistic regression			Multiple logistic regression		
$R^2_{Nagelkerke} = 0.425$ *(Multiple log reg)*		OR	99 % CI	p	OR	99 % CI	p
Country	Austria°						
	Belgium (Flanders)	2.436	1.912–3.103	<0.001	3.471	2.170–5552	<0.001
	Belgium (Wallonia - Brussels)	1.673	1.311–2.134	<0.001	3.120	1.879–5.178	<0.001
	Germany	1.303	1.017–1.668	0.006	1.354	0.789–2.323	0.149
	Romania	1.414	1.109–1.801	<0.001	2.960	1.797–4.873	<0.001
	Spain	1.381	1.080–1.765	<0.001	1.800	1.056–3.070	0.005
	UK	1.779	1.393–2.272	<0.001	2.415	1.475–3.955	<0.001
Sex/Gender	Female°						
	Male	1.895	1.661–2.163	<0.001	1.911	1.673–2.182	<0.001
IVAC outside sport	Neglect	2.486	2.138–2.891	<0.001	2.493	2.141–2.904	<0.001
	Psychological violence	1.058	0.900–1.243	0.367	1.672	1.063–2.629	0.003
	Physical violence	7.699	6.660–8.901	<0.001	7.617	5.145–11.277	<0.001
	Non-contact sexual violence	1.398	1.194–1.636	<0.001	1.405	1.199–1.646	<0.001
	Contact sexual violence	1.345	1.156–1.565	<0.001	1.331	1.142–1.551	<0.001

Non-contact sexual violence		Simple logistic regression			Multiple logistic regression		
$R^2_{Nagelkerke} = 0.498$ *(Multiple log reg)*		OR	99 % CI	p	OR	99 % CI	p
Country	Austria°						
	Belgium (Flanders)	0.743	0.571–0.967	0.004	1.072	0.581–1.976	0.771
	Belgium (Wallonia - Brussels)	0.931	0.720–1.204	0.472	1.750	0.929–3.293	0.023
	Germany	1.113	0.857–1.445	0.292	2.058	1.107–3.828	0.003
	Romania	0.853	0.656–1.108	0.117	1.896	1.011–3.556	0.009
	Spain	0.960	0.741–1.244	0.685	1.688	0.894–3.489	0.034
	UK	0.785	0.600–1.027	0.020	1.097	0.564–2.135	0.720

(*continued on next page*)

Table 6 (*continued*)

Non-contact sexual violence		Simple logistic regression			Multiple logistic regression		
$R^2_{Nagelkerke} = 0.498$ *(Multiple log reg)*		OR	99 % CI	p	OR	99 % CI	p
Sex/Gender	Female°						
	Male	1.698	1.467–1.966	<0.001	0.905	0.671–1.220	0.388
IVAC outside sport	Neglect	2.819	2.411–3.296	<0.001	2.805	2.396–3.283	<0.001
	Psychological violence	0.877	0.717–1.074	0.095	1.599	0.966–2.649	0.016
	Physical violence	2.080	1.780–2.430	<0.001	2.071	1.771–2.421	<0.001
	Non-contact sexual violence	13.513	11.156–16.366	<0.001	8.579	6.609–11.136	<0.001
	Contact sexual violence	1.357	1.163–1.583	<0.001	1.355	1.160–1.583	<0.001

Contact sexual violence		Simple logistic regression			Multiple logistic regression		
$R^2_{Nagelkerke} = 0.548$ *(Multiple log reg)*		OR	99 % CI	p	OR	99 % CI	p
Country	Austria°						
	Belgium (Flanders)	1.225	0.881–1.704	0.112	0.829	0.335–2.049	0.593
	Belgium (Wallonia - Brussels)	1.320	0.962–1.810	0.024	2.799	1.217–6.440	0.001
	Germany	1.563	1.135–2.152	<0.001	2.310	0.995–5.364	0.010
	Romania	1.009	0.723–1.407	0.946	1.704	0.698–4.160	0.124
	Spain	1.344	0.964–1.872	0.022	2.235	0.930–5.371	0.018
	UK	0.968	0.688–1.360	0.803	1.696	0.705–4.084	0.121
Sex/Gender	Female°						
	Male	2.541	2.129–3.032	<0.001	1.255	0.863–1.826	0.118
IVAC outside sport	Neglect	4.686	3.854–5.698	<0.001	4.652	3.820–5.666	<0.001
	Psychological violence	0.537	0.407–0.708	<0.001	0.801	0.395–1.623	0.418
	Physical violence	2.386	1.961–2.903	<0.001	2.380	1.953–2.901	<0.001
	Non-contact sexual violence	1.336	1.049–1.700	0.002	0.760	0.534–1.081	0.045
	Contact sexual violence	19.806	15.338–25.576	<0.001	20.056	15.530–25.902	<0.001

Any violence		Simple logistic regression			Multiple logistic regression		
$R^2_{Nagelkerke} = 0.360$ *(Multiple log reg)*		OR	99 % CI	p	OR	99 % CI	p
Country	Austria°						
	Belgium (Flanders)	1.053	0.823–1.349	0.588	1.291	0.904–1.846	0.065
	Belgium (Wallonia-Brussels)	1.174	0.903–1.526	0.115	1.815	1.223–2.695	<0.001
	Germany	1.343	1.040–1.734	0.003	1.228	0.844–1.787	0.159
	Romania	0.953	0.742–1.224	0.618	1.455	0.993–2.132	0.011
	Spain	1.275	0.989–1.644	0.014	1.212	0.822–1.787	0.201
	UK	1.198	0.989–1.644	0.060	1.252	0.869–1.802	0.113
Sex/Gender	Female°						
	Male	1.874	1.621–2.166	<0.001	1.893	1.637–2.190	<0.001
IVAC outside sport	Neglect	4.090	3.199–5.228	<0.001	4.131	3.230–5.283	<0.001
	Psychological violence	3.813	3.286–4.426	<0.001	4.827	3.383–6.887	<0.001
	Physical violence	3.004	2.432–3.710	<0.001	3.031	2.453–3.744	<0.001
	Non-contact sexual violence	1.790	1.508–2.125	<0.001	1.796	1.513–2.134	<0.001
	Contact sexual violence	1.263	1.056–1.510	<0.001	1.264	1.056–1.512	<0.001

°Indicates the reference category.

significant national differences (Table 6).

For *neglect*, respondents from Flanders and Spain report significantly fewer experiences than those in Austria. For *psychological* violence, respondents from Flanders and Romania report significantly fewer experiences than Austria and respondents from Germany report significantly *more* experiences than Austria. For *physical* violence, respondents from Flanders, Wallonia-Brussels, Romania, Spain and UK report significantly more experiences than Austria. For *NCSV*, respondents from Germany and Romania report significantly more experiences than Austria. For *CSV*, respondents from Wallonia-Brussels and Germany report significantly more experiences than Austria.

4. Discussion

4.1. Prevalence and forms of violence

The data from this retrospective study show that the prevalence of IVACS is high and – notwithstanding differences in definitions and methodology – this is similar to other recent studies. Our overall prevalence of 75 % (inside sport) is the same as that found by Willson et al. (2022) in their sample of current and recently retired Canadian national team athletes (mean age: 28 years) but lower than the 85 % found by Parent and Vaillancourt-Morel (2021) in their Canadian sample of 14–17 year old's, and the 82 % found by

Pankowiak et al. (2022) in their Australian sample of adults (mean age: 42 years). However, we surveyed six different national contexts with a range between 70 % (Austria) and 80 % (Wallonia-Brussels). As we have indicated, and in line with these other studies, these are *low-threshold* measurements – that is, all occurrences reported contribute equally to the overall rate. We will address the issue of 'severity' of experience in future papers, but these consistently high figures offer clear empirical support for what many critical commentators have observed for many years – violence, abuse, harassment, and neglect occur frequently in youth sports. Our study shows that this holds across national contexts and is reinforced by the data for each category of IVAC.

Among all forms of violence studied here, psychological violence has the highest prevalence rate of 65 % inside sport, similar to the rate of 60 % found by Willson et al. (2022) and lower than the rate for 'emotional harm' (75 %) found by Alexander et al. (2011) and the rate for 'psychological violence' (79 %) found by both Parent and Vaillancourt-Morel (2021) and Pankowiak et al. (2022). The national rates for psychological violence in our study ranged from 59 % (Flanders) to 71 % (Germany). Overall, our study confirms that psychological violence is the most common form of IVACS.

Furthermore, our study reveals that *contact sexual violence* is the rarest form of violence in sport with a prevalence rate of 20 %, similar to the results of Leahy et al. (2002) in Australia (27 %) and Vertommen et al. (2016) in Belgium and the Netherlands (14 %). However, comparisons are especially difficult as the distinction between CSV and NCSV was not necessarily made in a comparable way in previous research. Whilst assumptions about severity of harm from SV on the basis of physical contact alone should be avoided, this distinction seems an important one to make in order to more precisely ask about and describe the experience. The present study shows that one-fifth of the respondents experienced CSV in youth sport and over one-third experienced NCSV. Again, country differences need to be considered – in Germany 25.5 % of the sample reported CSV, but this drops to 15.5 % in the Austrian sample.

4.2. Inside/outside sport

Similar to other studies, this study retrospectively surveyed adults who had participated in sport before age 18. Unlike other studies, our questionnaire asked respondents to identify whether a specific experience occurred *inside* or *outside* sport. On average, we found prevalence of IVAC was somewhat lower (−6.5 %) *inside* sport than outside sport. However, differences by category of IVAC are evident. Prevalence for sexual violence *outside* sport is significantly higher than inside sport, both for NCSV (+17.4 %) and CSV (+21.0 %). Prevalence for psychological violence is also somewhat higher *outside* sport (+6.8 %). The findings indicate that children in sport experience intolerable levels of violence, both within and outside the sports context, with the greater risk being outside sport. However, given that even a child who plays sport on a daily basis will still spend most of their time in *non-sport* environments (e.g., school, home, peer-groups, other leisure activities), this difference seems logical.

The differences for psychological and, particularly, sexual violence, then, highlight the finding for *physical violence* where the rate was higher (+7.2 %) *inside* sport than outside sport. This also applies to *neglect* but by a smaller margin. In considering *physical* violence, then, we observe that there is an essential physical dimension to most sporting activities and that this often introduces levels of physical risk in sport that are not found in many other organized childhood spaces. Indeed, it is exactly the *physical* element of sport – perhaps coupled with a rather more *laissez faire* approach to corporeal risk than is often found in other organized childhood settings (for example, school) – that appeals to children and their parents.

Indeed, children's sport has been built on masculinist values that see physical risk and aggression, including physical combat, as a positive feature of athleticism and central to an environment that 'builds character', especially for young boys (Hartill, 2017). This element has perhaps taken on even greater significance in recent decades as young children's education has become a largely female space and one where the neutralization of (physical) risk is a key endeavor. Sport spaces, on the other hand, are often dominated by one or two individuals who build micro-cultures of practices aimed solely at competitive success, within a system that endorses the treatment of children as means-to-ends, and rewards children for treating their own bodies, and those of others, as objects or instruments. If such a description is broadly accurate, then it is perhaps unsurprising that *physical* violence is more prevalent within sport than outside sport. This may also explain why *neglect* of children's basic (physical) needs is more prevalent within sport and confirms other studies in the field of sport which have revealed common practices such as playing hurt and neglecting the need for self-care, rest and breaks (Mayer et al., 2018).

4.3. Re-victimization

The data also showed a strong relationship between experiencing (any type of) IVAC both *outside* and *inside* sport. Whilst sequentiality cannot be established from this data, this finding supports other research that finds abuse in one context increases vulnerability in other contexts. For example, in their meta-analysis of risk factors for child sexual abuse (CSA) victimization, Assink et al. (2019: 459) found the strongest predictor of *sexual* victimization was 'prior victimization of the child and/or its family members'. Similarly, our data support Finkelhor's (2008) notion of *transitivity*, where the risk for victimization is substantially higher for a child who has previously been victimized. This is an important point for safeguarding practitioners within sport. Sport is persistently marketed as a child-friendly, empowering, educational space for children. Such features can appeal to those supporting victimized children into positive and healthy activities and spaces. However, sport practitioners, professionals, and parents must be cognizant of the additional vulnerability of the abused child to further abuse *within* the sport context. Equally, where a child quits sport because of abuse, adults supporting them need to be sensitive to potential vulnerability to further abuse elsewhere.

4.4. National comparisons

While some significant differences were found, rates of IVACS were broadly similar across countries. IV in youth sport is evidently a cross-national problem affecting all European countries. Nevertheless, differentiation between countries is an important feature of our developing international understanding of violence and abuse in sport and prevalence rates should serve as an important indicator of system efficacy. As shown above, this and other recent studies begin to build an evidence baseline for development of policy and further comparative research (both spatial and temporal) in this field.

'Safeguarding' in sport has a short history in all the participating countries, although a national approach to safeguarding in sport in the UK has been in place since 2001. However, very little is known about the efficacy of such systems as they have not been accompanied by robust program evaluation measures. Nevertheless, maturity of national 'safeguarding in sport' systems is likely to be only *one* of a range of factors impacting rates of IVACS. Certainly, any assumptions about a relationship between prevalence and longevity of a prevention system, would seem ill-advised. Child abuse is fundamentally a social and cultural issue (Gil, 1975), therefore, a range of complex socio-cultural factors – such as dominant cultural conceptualizations of childhood and gender within any particular context and the means by which adults socialize (and discipline) children – play a fundamental role in the perpetuation of child abuse and its prevalence. Contextual prevention programs have an essential role in the cultural change required to combat child abuse, but such programs are often focused, in practice, on keeping 'bad people' (or men/'pedophiles') out and limiting reputational risk, rather than attempting to meaningfully change their own cultural practices (Brackenridge, 2001).

The limits of safeguarding policy and its inability to evoke the requisite cultural change within sport, even after decades of policy intervention, becomes clear when appropriate powers are given to independent authorities to investigate athlete claims of abuse (e.g., Whyte Review, 2022). Therefore, the *quality* of policy implementation must be seen as central to reducing prevalence of IVACS, whereas the presence of policy alone is far from sufficient, as our findings demonstrate. The world of sport is slowly beginning to work together to develop common mechanisms for preventing interpersonal violence. Instruments enabling comparison of system efficacy will be increasingly important in this effort.

4.5. Sex/gender

In all categories, prevalence of IVACS was higher in the male sample. Following regression analysis, for *physical* violence, the relationship was significant. This supports earlier findings (e.g., Parent & Vaillancourt-Morel, 2021; Vertommen et al., 2016). Although smaller, this was also the case for *neglect*.

However, gender was *not* a significant predictor for *psychological* violence, *NCSV*, and *CSV*. In relation to *sexual* violence, this contradicts previous research (e.g., Ohlert et al., 2020) and runs contrary to popular discourse on child abuse in sport where the theoretical and policy focus has often been on the heightened risk of sexual violence against girls and women (Hartill, 2005; World Health Organization (WHO), 2016). According to the European Parliament Coordinator on Children's Rights: 'female athletes are more likely to be subjected to sexual harassment in sport than their male counterparts' (Kopacz, 2023: 6). There is certainly evidence for this (e.g., Lang, Mergaert, Arnaut, & Vertommen, 2021; Pankowiak et al., 2022; Schipper-van Veldhoven et al., 2022), but also substantial counter-evidence. For example, in Zambian sport, Fasting et al. (2015: 24) found 'no statistically significant differences between female and male athletes with respect to experiences of the different types of harassment and abuse'. Parent and Vaillancourt-Morel (2021) found 'frequency of sexual violence was similar in boys and girls (respectively, 25% and 29%)' in a sample of 14–17-year-old Canadians. In a study of sexual harassment in Malaysian athletes currently active in competition, prevalence was 19 % in male athletes and 11 % in female athletes (Fathynah et al., 2017). Bermon et al. (2021) found 'no difference between genders for verbal, physical, and sexual abuses' within the *elite* athletics setting, and that sexual abuse involving touch 'represented 35% of all sexual abuses in women and 57% in men.'

Comparisons between studies with differing methodologies must be treated with caution, thus, the key strength of this study is the simultaneous implementation across multiple national contexts. On this basis, the findings indicate boys are at greater risk of physical violence (and possibly neglect) in sport, and that girls and boys in sport should be considered *equally* at risk for psychological and sexual violence. We explore other personal characteristics in future publications.

4.6. Evolution of 'safeguarding in sport'

This study surveyed individuals aged 18–30, in late 2020, regarding their experiences before age 18. Therefore, data *only* relates to a maximum 30-year period, 1990–2020. This timeframe represents a highly significant period within sport in relation to child protection. Organized strategic efforts to prevent abuse in sport did not appear until the mid- to late-1990s at the earliest. For example, the UK established a Child Protection in Sport Task Force in 1999. For most countries (including most countries in this study), such efforts did not occur until much later and are either in the early stages (Austria, Belgium, Germany) or only very recently initiated (Romania, Spain). Therefore, the timeframe of the study represents a period of transition, from a sector that had little or no awareness of the risk of child abuse in sport, to one that can be said to have something resembling a strategic approach to prevention, albeit *highly* variable globally. Where prevention policy is established, it remains mostly unevaluated (and under-resourced) and the desire of (and demand for) administrators to do something, or rather *anything*, has far outweighed the need to also implement measures to assess efficacy that may guide strategy and interventions.

5. Conclusion

This study is the first to examine the occurrence of IVACS using a comparative design implemented simultaneously in multiple European countries. The study shows that violence against children is a common, widespread problem in the field of sport. It shows that boys and girls in sport experience all forms of IV, therefore, prevention policy must be holistic rather than narrowly focused on sexual violence alone and must appropriately acknowledge and address the experience of boys in sport.

This study is the first, with such an extensive data set, to allow comparison of experiences inside and outside of sport. Our study showed that for young people in sport, it is more common to experience *physical* violence inside sport than outside sport. This suggests that the body-centered system of sport bears a higher risk for children and youth to experience physical violence than non-sport activities.

Our findings also show that children who experience violence outside sport are at much higher risk of violence in the field of sport, and vice versa. This finding emphasizes the need to develop a specific sensitivity, in those with responsibility within youth sport, towards children who may be particularly vulnerable. As in the wider sector of children's services, this will require far more 'working together'. That is, for the sport sector to serve in the best interests of children, it will need to engage collaboratively, within and across sports, and engage with statutory and voluntary services far more effectively than it currently does. However, the statutory sector must ensure that sport is not a 'blind-spot', where children's welfare is assumed. Rather, sport may be seen as a significant ally in efforts to protect children from abuse, help children overcome such experiences, and help them thrive. Greater sensitivity to a child's potential vulnerabilities would empower sports personnel to support children, so that they can benefit fully from their sporting activities, avoid further traumatization in sport, and potentially assist them to address trauma.

The introduction of prevention strategy should reduce prevalence of IVACS. This emphasizes the need for national and international studies or mechanisms that provide longitudinal mapping that will both indicate policy success/failure as well as provide vital data to refine and improve strategy. It can no longer be sufficient simply to introduce 'safeguarding' policy in sport – policy should be demonstrably effective. In addition, studies of prevalence in countries that have yet to initiate policy in this area may be particularly valuable for assessing the impact and efficacy of introducing safeguarding into national sport systems.

'Identifying prevention opportunities and informing policy and practice on the basis of research studies and data collection' is a key prevention measure (UN (Committee on the Rights of the Child), 2011: 19). The collection of robust data on the scale and scope of violence against children is 'necessary in order to set priorities, guide programme design, and monitor progress' (Krug et al., 2002: 247). Thus, a key feature of addressing IVACS must be to ensure that prevention strategy is informed, not just by what sport leaders and their organizations see or believe, but also by independent and increasingly robust data. Global leaders must be able to assess progress *between* countries (and international federations), not only *within* countries. The IVACS-Q is a tool that may support these tasks and the efforts of policymakers to improve the experience of sport for all children.

6. Limitations

In order to construct a measure with sufficient granularity whilst not being overly onerous on respondents, especially those who had experienced multiple forms of harm, some behaviors or experiences within the scope of interpersonal violence against children were not specifically referred to. For example, self-harm, financial exploitation, and trafficking.

Using online panels means that groups with no internet access are unlikely to participate. Also, verification of who completed the questionnaire is not possible. Another constraint, here, was that the fieldwork was terminated as soon as the target number of participants was reached, preventing the exact response rate from being determined. Thus, our sample is best described as a *convenience sample* of respondents who have chosen to be panel members and are thus willing and able to fill out an online questionnaire. Therefore, the sample may not be representative for the total population. Taking these restrictions into account, however, we found no evidence that falsifies the claim that our samples are representative of the respective target populations. In the sampling process, quotas for sex (male/female) and age group (18–24, 25–30) were considered in order to achieve comparability of respondents.

The validity of retrospective reports of adverse childhood experiences is frequently debated in the literature (e.g., Hardt & Rutter, 2004) as such reports tend to involve a substantial number of false negatives and measurement errors, whereas false positive reports are considered less probable. Therefore, our estimates potentially underestimate the prevalence of IVACS. In particular, despite the use of behaviorally specific items, the normalization of some abusive practices in sport may still prevent some athletes from seeing their experiences as such.

Declaration of competing interest

None.

Data availability

Data will be made available on request.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.chiabu.2023.106513.

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