

SOCIOLOGY

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The limits of the boxing ring: Respect for sexual diversity in combat vs. non-combat sports in Spain

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Abstract

Background. Tolerance towards sexual diversity is a key topic for contemporary research among sport studies scholars. This builds on decades of research which has consistently shown sports – and in particular, those with strong links to traditional ideals of masculinity – to be areas where gender and sexual minorities are excluded.

Problem and aim. This paper aims to analyse attitudes towards sexual diversity among sportspeople in Spain, specifically investigating possible differences between practitioners of combat sports versus those practising other sports.

Material and methods. The present study followed a transversal and descriptive design, where a survey technique was used to collect data on a sample consisting of 766 athletes (516 men and 250 women). The survey employed was the Attitudes towards Sexual Diversity in Sport scale, which measures levels of rejection of sexual diversity in sport, allowing for comparative analyses across populations.

Results. Statistical analysis revealed that attitudes towards sexual diversity differed significantly according to age, sex, and participation in combat sports versus other sporting disciplines. Specifically, the highest degrees of rejection of sexual diversity are observed among males, people under 22 years of age, and sportspeople who do not practice combat sports.

Conclusions. It appears that more open-minded and tolerant attitudes exist among combat sports practitioners than those of other sports, which contrasts with social stereotypes which suggest these sports are bastions of orthodox masculinity, homophobia, and exclusion. Further research into why this is the case is advocated, particularly given the observation that such tolerance is less well pronounced among younger sportspeople and males in particular.

Introduction

During the 21st century, topics related to sexual diversity within sport have been studied from multiple academic perspectives, although it is in the field of high-level competition where this issue has had the greatest media exposure and seen the majority of scientific investigation in recent years. This can be seen through the increasing number of works on this subject developed throughout a range of scientific and academic institutions. Examples of this trend can be observed in the North American continent [Anderson 2010; Cunningham 2015; Lenskyj 2013], through Europe [Anderson, Bullingham 2015; Caudwell 2017; Edwards, Jones 2009], Africa [Hamdi, Lachheb, Anderson 2017], Oceania [Shaw 2019; Symons, O'Sullivan, Polman 2017], and Asia [Baljinder, Kanwaljeet, Sharma 2010; Mitra 2014]. Thus, sexual diversity in sport is considered a vibrant and growing research area, from a holistic sociocultural, ethical, and scientific perspective.

In Spain, several researchers have begun to develop studies on perceptions, attitudes, or stereotypes regarding sexual diversity in sports. However, the research trajectory on such phenomena, as indicated by Piedra [2019], is very limited and recent. One of the first works specifically on this subject is that of Piedra [2015] undertaken with university students, which identified social changes underway in Spain regarding attitudes towards gays and lesbians in general, and within sports in particular, highlighting frequent circumstances of rejection of sexual diversity in sporting contexts. Subsequent studies by Piedra, Garcia-Perez and Channon [2017], and Vilanova, Soler and Anderson [2020] offer comparative insight with other countries, specifically indicating that Spanish sports culture has not yet reached levels of inclusiveness that occur in certain English-speaking countries [cf. Anderson, Magrath, Bullingham, 2016]. However, similar to these other contexts, the rejection of sexual and gender minority groups in sport is at its most acute when transgender people are considered [cf. Anderson, Travers 2017]; the studies developed with this group in Spain demonstrate this to be the case, as it often is elsewhere [Devis *et al.* 2017; Perez-Samaniego *et al.* 2017; Vicente-Pedraz, Brozas-Polo 2017].

When it comes to sexual and gender majority groups in this context (that is, cisgender heterosexuals), the limits of socially acceptable, orthodox masculinity and femininity are often framed specifically by sexual orientation [Silva, Botelho-Gomes, Goellner 2012]. Thus, people who do not comply with prevailing gender norms are typically designated as gays or lesbians. In sports, the traditional division into men's and women's sports implied the stigmatization of those who did not adhere to what was socially established [cf. Kimmel 1994]. This topic is of recurrent interest from the perspective of the philosophy of sport, with in-depth approaches to

the existing advantages or disadvantages in the current male vs. female classification in sporting competition [Devine, Lopez Frias 2020; English 1978; Morgan 2007] or the challenge posed by the practice of sport by women as opposed to the male identity in sport, as well as the female identity itself in a traditionally masculine context: "It is a commonplace that there are no gays in men's hockey. This is because it is 'obvious' that you can't play hockey unless you are a 'real' man. The reasoning goes like this. To be a man is to be untainted by effeminate qualities, and all gays are effeminate." [Howe 2007: 338]. As Barbero [2003] points out, physical, recreational and sports activity becomes a control mechanism, a pedagogical device that legitimizes and ensures the survival of the gender order premised upon "natural and complementary" differentiation [Barbero 2003: 357] of male and female roles. In this sense, sport settings in Spain are known to amplify both traditional gender role expectations, as well as homophobic and transphobic norms regarding gender and sexual propriety.

In Spain, several published works have analysed the situation of men and women in sports traditionally considered apt for the opposite gender [Martin 2006; Munoz-Gonzalez, Rivero-Jimenez, Fondon 2013; Piedra 2017]. In her study on feminism in sport, Martin [2006] highlights the situation of women's rugby, not only in the fight against female stereotypes but also as a tool to legitimize female experiences and construct female identities outside of binary representations typical within sport. On the other hand, the work of Piedra [2017], with boys who practice rhythmic gymnastics, reveals the difficult experiences of these boys who have to fight against family prejudices, institutional boundaries and social canons and practices of masculinity whilst participating in a feminised sport. As Alvarinas-Villaverde, Lopez-Villar, Fernandez-Villarino and Alvarez-Esteban [2017] point out, this struggle is more complicated and marked in the case of men/boys where there is greater resistance to breaking the molds that define traditional sports models. As such, these studies highlight a somewhat ambiguous situation, with some examples of good experiences as well as evidence of persistent barriers in Spanish sports with respect to accepting sexual and gender diversity.

The concept of homophobia

It is clear from this research that gender identities (male and female) are constructed and developed in close relationship with sexual orientation. As such, understanding sexual diversity typically necessitates engaging with gender expression, and in particular the relationship between these phenomena that exists in any given society. In this sense, the concept of *homophobia*, generated within Anderson's *Inclusive Masculinity Theory* [2009], can be

helpful. The term homohysteria is defined as “the fear of being socially perceived as gay” [Anderson, McCormack 2018: 548], and serves as a useful explanatory device for understanding the interplay between homophobia and gender expression, as well as the propensity for this relationship to change over time. Although homohysteria is distinct from homophobia, the two are interrelated, typically dependent upon institutional and cultural structures in any given society. For Anderson and McCormack [2018], homohysteria can be seen to exist in cultures defined by antipathy towards homosexuals (i.e., which are overtly homophobic), coupled with a mass awareness that gay people exist in large numbers (i.e., wherein anyone could be gay), and where gender and sexuality are typically conflated (i.e., one’s sexuality can be inferred from one’s gender expression). In such environments, individuals are under pressure “neither to be nor seem to be” homosexual [Vidiella *et al.* 2010: 106], adjusting their gender performance to either hide or ward off suspicion regarding their sexuality.

Anderson [2009] theorizes the phenomenon of homohysteria in terms of distinct phases of social development regarding prevailing attitudes towards homosexuality, and the impact these have on policing gender expression. In the first stage, *homoerasure*, there is a high level of homophobia in societies, coupled with a low level of awareness of homosexuals. As such, gender behaviours themselves are not clearly regulated by homophobia, because there is little fear of being considered gay; as such, men could have close relationships and emotional contact with other men, without fear of being singled out or denounced as gay. In the second stage, *homohysteria*, high levels of homophobia exist, but are coupled with a wide awareness of homosexuality as a prevalent and stable sexual identity. As such, individuals feel pressured to prove their ‘straight’ credentials, meaning men will avoid feminised or homosexualised behaviours, such as emotional openness and physical tactility with other men, to avoid being labelled as gay. In such societies, homohysteria effectively polices gender behaviour. Thirdly, in the stage of *inclusivity*, legislative and social change undermines and delegitimizes overt discrimination against homosexuals, such that being gay is no longer widely condemned (even if homophobia persists in subtle or less widespread forms). As this happens, homohysteria decreases – no longer afraid of being stigmatized as gay, men in inclusive societies are able to engage in a wider range of gendered behaviours than those in homohysterical ones.

Initially, Anderson’s [2009] theory focused on the experiences of gay men in North America and the United Kingdom. Nonetheless, as Anderson, Magrath and Bullingham [2016] more recently affirmed, this situation is valid for both men and women, with its specific manifestations dependent upon the macro-cultural norms and structures of each country. Indeed, in the Span-

ish context, recent research on sexual diversity [Piedra 2015; Piedra, Garcia-Perez, Channon 2017; Vilanova, Soler, Anderson 2020] has put forward the possibility of a fourth stage, intermediate between the second and third, called pseudo-inclusivity. Here, Spanish culture has manifested some social changes indicative of a shift from the homohysterical to the inclusive perspective, reflected principally in the legislative system. Yet in general, most people continue to be ambiguously tolerant of homosexuality, accepting the social consensus around homophobia as something that is now ‘politically incorrect’, but feel little affinity with pro-LGBTIQ causes and take no proactive measures to fight residual discrimination or challenge straight, cisgender social privileges. This echoes, perhaps, the phenomenon described by Brodyn and Ghaziani [2018] as ‘performative progressiveness’. Each of the Spanish studies noted here contends specifically with how such social dynamics play out in sports contexts, to which we now turn.

Combat sports, masculinity, and sexual minorities

As highlighted in the previous section, sports are implicated with broad and historical patriarchal baggage, typically generating great controversy in relation to gender issues. This controversy is even greater if we focus on certain physical practices or sports modalities traditionally and historically considered masculine or masculinizing, as can be found in most team sports, as well as sports which involve heavy physical contact [Bruce, Hovden, Markula 2010; Jones 2011; Lallana 2012]. The scientific literature on the subject [Alvarinas-Villaverde *et al.* 2017; Calvo, Perrino 2017; Koivula 2001] suggests that the physical requirements of different sporting practices, when viewed through the lens of gender, correspond precisely to gender stereotypes that are present and strongly rooted in modern (Western) societies. That is to say, certain sports are coded masculine, such as Rugby, Football or Weightlifting, and others feminine, such as Gymnastics, Netball or Volleyball [Bevan *et al.* 2020; Hardin, Greer 2009]. These sports and the type of physicality typically involved within them, have corresponding implications for constructing beliefs about sexuality within homohysterical societies, as outlined above.

The interest of this present study lies in combat sports, which we define for our present purposes as those sports premised upon direct, interpersonal, one-on-one combat, as typified by sports such as boxing, judo, mixed martial arts (MMA), taekwondo, wrestling, etc. The practice of martial arts has also been considered in this study. Martial arts are the substratum of many combat sports (the motor corpus of these sports is usually derived from one or more martial arts), although they do not usually have sporting regulations governing their unique confrontation. Nevertheless, Green and Svinth [2010: 331]

define them as follows: “Systematic bodies of knowledge, belief, and practice that are associated with methods of attack and defense against human adversaries and their extrahuman allies”. Such activities may traditionally be considered as among the most ‘masculine’ forms of sport given their close approximation of physical violence – itself generally considered the preserve of men [Channon, Matthews 2015a; Matthews, 2015]. Thus, combat sports, with associated characteristics of strength, aggressiveness, stoicism, and so on, have been linked to idealized models of masculinity [Hirose, Pih 2010; Spencer 2012; Woodward 2007]. In some settings, this masculinity has been articulated around homophobic, transphobic, and/or misogynistic exclusion of women and sexual minority groups [Matthews 2014; McClearen 2015]. Indeed, at various points in recent history throughout the Western world, women have either been banned from participating in these sports, or offered virtually no opportunities to participate as competitors [Channon, Matthews 2015a; Jennings 2015]. Further, those women who did (and some who still do) participate were (and possibly still are) seen as unfeminine or overly-masculinized. This phenomenon creates pressures to perform an overtly feminine identity to counter doubts about their sexuality accrued through participating in a quintessentially masculine sport [Mennesson 2000] – a process indicative of homophobia, as outlined above.

However, in recent years, some studies point out that the situation in some contexts is beginning to be more open and respectful of gender and sexual diversity. For example, in spite of the long history of exclusion, women are increasingly visible in a range of elite-level combat sports competitions [Jennings 2015; Tjonndal 2019], and generally participate in combat sports in what would appear to be growing numbers [Channon, Matthews 2015a]. In some settings this has involved a process of re-articulating what it means to be feminine, incorporating feminine aesthetics into fighting in ways which can be seen to instigate change in gender stereotypes as well as the notion that combat sports themselves are, indeed, ‘masculine’ [Channon, Phipps 2017]. Meanwhile, the inclusion of sexual minorities in combat sports has been highlighted in some studies; McGannon *et al.* [2019] found lesbian and queer women felt included and welcomed in boxing, and Channon and Matthews [2015b] highlighted that overtly inclusive discourses around male homosexuality circulated within dedicated media outlets covering MMA. Further, the existence of ‘gay boxing clubs’ in several large European and North American cities is indicative of an active interest in combat sports among sexual minority groups.

Thus, with emergent (and almost exclusively small-scale, qualitative) research findings suggesting an ambivalent situation with respect to gender and sexual diversity within such sports, it seems appropriate to inquire into the perceptions and attitudes of those who

practice combat sports in a wider sense, in order to gauge levels of inclusivity that exist among their practitioners relative to those of other sports. Given that gender behaviour and perceptions about sexuality are seen to overlap in societies where homophobia is a prevailing cultural force (including pseudo-inclusive contexts such as Spain); that sports are traditionally seen as sites where such issues manifest in overt ways; and that combat sports, in particular, are stereotypically portrayed as among the most exclusively masculine sports, exploring the attitudes of combat sport participants towards such issues is an interesting prospect. As such, the purpose of this research is to determine whether prevailing stereotypes around these sports regarding the high likelihood of prejudices towards sexual and gender diversity are present in these disciplines [Ayvazo, Sutherland 2009; Davis-Delano 2014; Dowling 2013; O’Brien, Shovelton, Latner 2013]; or if, on the contrary, more open and inclusive leanings are evidenced [Channon, Matthews 2015b; Murray, White 2017].

Material and methods

Design and research tools

To answer our research question, we draw on data from a larger study of attitudes towards sexual diversity in sport in Spain. This descriptive research follows a survey approach, using questionnaires for data collection [Leedy, Ormrod 2016].

For this research, the Survey of Attitudes towards Sexual Diversity in Sport was used, validated by Piedra [2016] and used in other works subsequently [Piedra, Garcia-Perez, Channon 2017; Velez, Piedra 2020]. It uses a Likert-type scale with 18 items, to measure attitudes of rejection / tolerance towards sexual diversity in sports contexts. The response ranges from 1 to 5 (1 = greater agreement, 5 = lower agreement).

For the classification of the average score obtained by the answers to the questionnaire (Boone, Boone 2012; Harpe 2015), the scale proposed by Piedra [2016] was followed, based on the categories of homophobia previously described by Anderson [2009] and Anderson, Magrath and Bullingham [2016]: Low levels (1 - 2 points) of rejection of sexual minorities, medium levels (2.01 - 3 points), and high levels (3.01 - 5 points) of rejection. In this sense and because the questionnaire presents several items whose response in relation to the scale of agreement (1 = greater agreement, 5 = lower agreement) is opposite to the level of rejection raised by these authors, being the value 1 that presents greater rejection and 5 the least, these scores have been inverted to be able to perform the average frequencies. As such, after taking the inversion of some items into account, in what follows a higher score within the analysis is indicative of greater levels of rejection of sexual minorities, such that

a lower score is indicative of more inclusive attitudes.

The preliminary validation studies showed adequate internal consistency and content validity evaluated by experts. For the present investigation, Cronbach's α reached .908 points.

Table 1. Survey of Attitudes Towards Sexual Diversity in Sport

Item	Direct or inverted item formulation
I don't mind people watching me shaking my hand with a homosexual rival after a match	Direct
I would feel at ease in my team with a transsexual teammate	Direct
It seems logical to me that sports fans would laugh at an effeminate player during a game	Inverted
If I had a child, I would enjoy watching them practicing rhythmic gymnastics	Direct
I would not mind taking part in a homosexual, bisexual or transsexual sports club	Direct
A girl can remain feminine if she practices a combat sport, like boxing	Direct
I think that boys are not genetically suited for 'artistic' sports such as figure skating, rhythmic gymnastics or aerobics	Inverted
If I had children, I would not like their coach to be transsexual	Inverted
I would not like to get changed in the same changing room with a transsexual person	Inverted
If I had a daughter, I would not feel comfortable if she competed in rugby	Inverted
I wouldn't like my child's coach to be gay or lesbian	Inverted
I would not like to hear the word 'faggot' used as an insult in stadiums	Direct
I would not feel at ease if it is known that my teammate is not heterosexual	Inverted
If I had a son, I would not feel at ease if he wanted to practice rhythmic gymnastics or any other mostly 'feminine' sports	Inverted
I would not like to get changed in the same changing room with a homosexual person	Inverted
Girls who practice contact sports, like rugby, lose part of their femininity	Inverted
I would not feel comfortable hugging a homosexual rival after a match	Inverted
If I were a coach, I would not feel comfortable knowing that there is a homosexual person on my team	Inverted

Note. For directly asked item, a score of 1 means the highest degree of tolerance and 5 means the highest degree of rejection. Items considered inverted are items whose score on the Likert scale is the opposite of the measurement proposed in Piedra [2016]: 1 is the highest level of rejection and 5 is the lowest. [Source: Piedra, 2016]

In addition, a record of sociodemographic data was provided with the questionnaire, consisting of the age, sex, sexual orientation, nationality, and educational level of the people. The survey stated that the responses would be anonymous and that no identifying information about participants or the sports clubs and organizations they are part of would be shared.

Data collection and sampling

The data collection began in February 2015 and concluded in May 2017. In the first stage of the study, the questionnaire was passed to sports practitioners of different sports and different levels of practice. 821 people were surveyed, following a snowball sampling strategy [Robson, McCartan 2016: 281]. Following the criteria of types of sport practised (i.e., general or combat sports), contacts were made with specific sports clubs who were asked to share the survey. Once missing data for the variables analysed were excluded, the sample was reduced to 766 valid responses.

This first phase was carried out both in pencil and paper format, as well as through an online questionnaire disseminated via email and the social network pages of Spanish sports clubs and federations. In the second phase of the study, we specifically contacted clubs and federations linked to combat sports in Spain, requesting their collaboration, disseminating the online questionnaire among their federated members and clubs. In any of the cases, completing the questionnaire took no more than 10 minutes; participation was always voluntary; and the anonymity and confidentiality of the participants' responses were guaranteed, as per the requirements of this study's ethical clearance.

People aged between 13 and 65 were part of the research ($M = 24.6$, $Mdn = 22$, $SD = 9.07$). Of all of them, 67.4% were men and 32.6% women. The level of educational attainment of the participants was predominantly university (48.9%), followed by secondary education (29.3%) and professional training (19.5%), with the remaining (2.2%) falling into the category of primary education. While the prevailing nationality is Spanish, there was a small percentage of the sample (1.7%) that came from different countries in America and Europe, although all were living in Spain at the time of the survey. The study involved heterosexuals (91.8% of the overall sample; 71.7% of these being male and 28.3% female), gays and lesbians (2.9% of the sample; 13.6% of which were male and 86.4% female), and other sexual orientations (5.4% of the sample; 22% of these being male and 78% female). This data on sexual orientation is close to the most recent demographic data in Spain in the general population (12% non-heterosexual population according to Ipsos data, 2021). Of the total number of participants, 31.9% practised some type of combat sport, 63.2% practised other types of sports, and 5% practised both. In relation to the combat sports and martial arts identified in the sample, the following figure is attached:

Data analysis

Initially, a descriptive statistical study of the data obtained was carried out, using the variables obtained in the sociodemographic part of the survey. For the inferential statistical analysis, sex, age, sexual orientation and the practice of combat sports were identified as independent variables, constituting the score of the different items

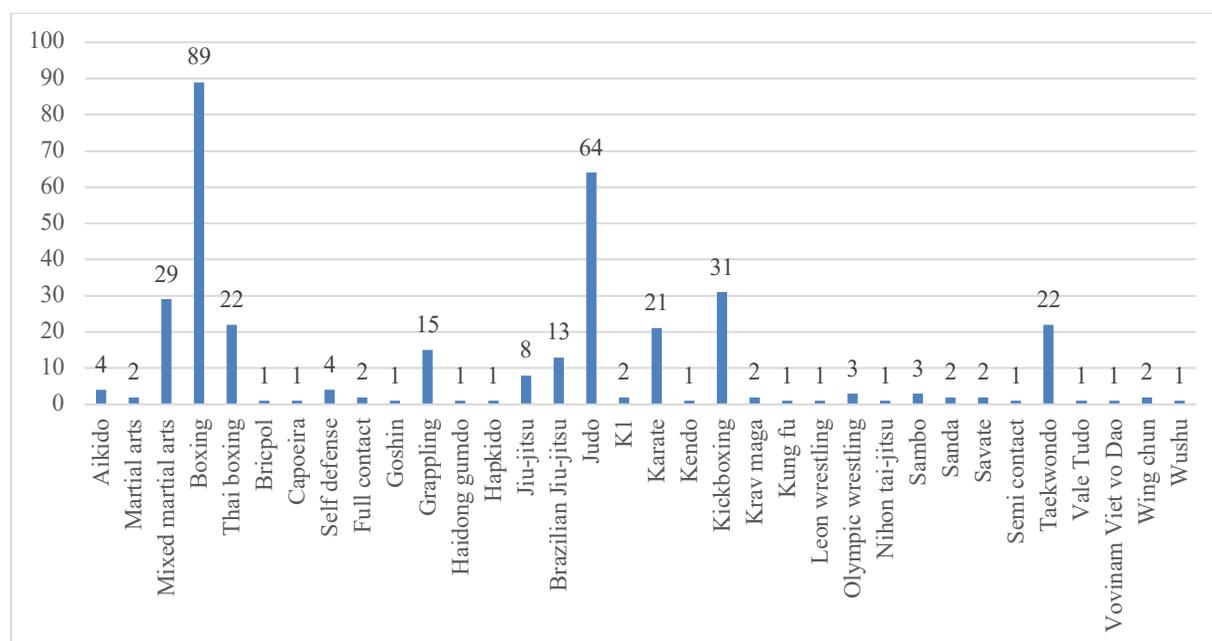


Fig. 1. Combat sports and martial arts identified in the sample

that make up the questionnaire as a dependent variable. With respect to the continuous variable age, the median was identified as 22 years, so a grouped age variable was created, with a categorical cut-off with two values (< 22 years and >= 22 years) to be applied in the analysis tests.

Assuming a 95% confidence interval for all sample analyses, the Shapiro-Wilks statistic was used for normality tests.

For comparison tests, the Mann-Whitney U test was used for nonparametric comparisons. The effect size of this test was tested using Glass' rank biserial correlation statistic. The effect measure was carried out following the guidelines of Tomczak & Tomczak [2014], who state that it can be measured as the Pearson correlation coefficient, so the guidelines established by Cohen [1988] in this regard were followed, being .1 low effect, .3 medium effect and large effect .5 or greater.

The chi-square statistic was also used to study the dependence between variables, using Cramer's V as a statistic to determine the size of the effect. In this sense, the criterion established by Cohen [1988] was adopted, which indicates that an increase in the degrees of freedom of the data analysed increases the sensitivity of the size of the effect. In the case at hand, with 2 degrees of freedom in the chi-square test applied to the study, the scale corresponds to .07 is considered small, .21 medium, and .35 large.

For the linear regression, the general linear model was applied, providing the confidence intervals and the β -value (standardised coefficient). For all operations, Jamovi [The jamovi project, 2021] statistical analysis software version 1.6.16 was used.

Results

Descriptive

The exploratory analysis showed the frequencies in the different profiles generated by the independent variables used, as can be seen in Table 2.

Table 2. Table of Frequencies Observed in the Sample

Sex	Grouped age	Martial arts/ combat sports practice	Sexual orientation			Total
			Heterosexual	Homosexual	Others	
Male	< 22 years	No	189	1	5	195
		Yes	37	0	0	37
	>= 22 years	No	131	2	1	134
		Yes	147	0	3	150
Female	< 22 years	No	58	5	10	73
		Yes	30	3	5	38
	>= 22 years	No	63	8	11	82
		Yes	48	3	6	57
	Total		703	22	41	766

Due to the low representativeness of the sample of non-heterosexual groups, sexual orientation was not included as an independent variable in the statistical inference, although Table 3, below, shows the descriptive data based on the total mean score obtained in each questionnaire, following the proposal of Piedra [2016].

Table 3. Descriptive statistics according to sexual orientation

	Sexual orientation	Total Mean
N	Heterosexual	703
	Homosexual	22
	Others	41
Mean	Heterosexual	2.12
	Homosexual	1.55
	Others	1.57
Std. error mean	Heterosexual	0.0278
	Homosexual	0.132
	Others	0.121
Standard deviation	Heterosexual	0.738
	Homosexual	0.618
	Others	0.778
Variance	Heterosexual	0.544
	Homosexual	0.382
	Others	0.605

Table 4. Complete Descriptive Statistics of the Sample

	Martial arts/ combat sports practice	Grouped age	Sex	Total Mean
N	No	< 22 years	Male	195
			Female	73
		>= 22 years	Male	134
	Female	82		
	Yes	< 22 years	Male	37
		>= 22 years	Male	150
Mean	No	< 22 years	Male	2.57
			Female	1.81
		>= 22 years	Male	2.38
	Female	1.71		
	Yes	< 22 years	Male	2.02
		>= 22 years	Male	1.90
Std. error mean	No	< 22 years	Male	0.0465
			Female	0.0726
		>= 22 years	Male	0.0666
	Female	0.0679		
	Yes	< 22 years	Male	0.116
		>= 22 years	Male	0.0473
Standard deviation	No	< 22 years	Male	0.650
			Female	0.620
		>= 22 years	Male	0.771
	Female	0.615		
	Yes	< 22 years	Male	0.708
		>= 22 years	Male	0.579
Variance	No	< 22 years	Male	0.422
			Female	0.385
		>= 22 years	Male	0.594
	Female	0.378		
	Yes	< 22 years	Male	0.502
		>= 22 years	Male	0.336
		Female	0.265	

To allow for the replicability of this work, we include the complete descriptive data of the sample, classified by the independent variables.

As can be seen in the histogram and density analysis of the total means in Figure 2, the distributions point to a greater centrality of the data in the male group compared to the female group, which requires a detailed analysis using inferential statistics.

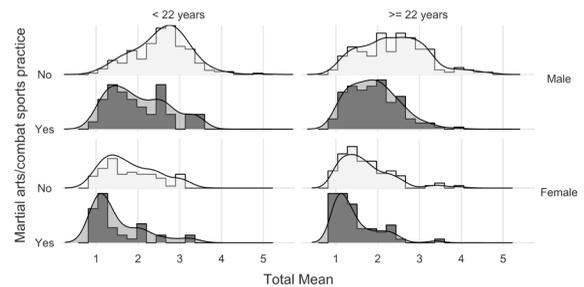


Fig. 2. Histogram and Density of Mean Responses According to Piedra [2016] Scale

To summarize this last analytical point, our data show that females, practitioners of martial arts, and older people scored less on the average of the questionnaire than did all other groups; that is, they demonstrated the lowest levels of rejection of sexual minority groups among the entire sample. On the other hand, young males who did not practice combat sports appeared to demonstrate the highest levels of rejection.

Inferential statistics

Based on the data shown in Figure 1 and in accordance with the object of this study, the total mean scores obtained in the questionnaire were analysed, taking into account the practice, or not, of martial arts and combat sports as an independent variable. For this purpose, the sample was filtered according to the grouped variables age and sex, obtaining four mean comparison tests, the data for which are shown in Table 5.

Since the sample distributions do not conform to normality ($p < .05$), non-parametric tests were performed using the Mann-Whitney U statistic. Significant differences and medium effect size ($U = 2050, p < .001$, Glass rank biserial correlation .432) were observed between males under 22 years of age who play competitive sports ($M = 2.02, Mdn = 1.83$) and those who do not ($M = 2.57, Mdn = 2.67$). Further significant difference and medium effect size ($U = 6261, p < .001$, Glass rank biserial correlation .377) exists between males over 22 years of age who practice combat sports ($M = 1.90, Mdn = 1.86$) and those who do not ($M = 2.38, Mdn = 2.39$). In both cases, lower scores – i.e., evidence of less rejection of sexual minorities – are observed among males who practice combat sports.

In the case of females under 22 years of age, there are also significant differences and medium effect size ($U =$

902, $p < .001$, Glass rank biserial correlation .350) between the score of the results of combat sports practitioners ($M = 1.50$, $Mdn = 1.22$) and others ($M = 1.81$, $Mdn = 1.67$), while among females older than 22 years, there are also significant differences and medium effect size ($U = 1618$, $p < .001$, Glass rank biserial correlation .308) between those who practice combat sports ($M = 1.44$, $Mdn = 1.28$) and those who do not ($M = 1.71$, $Mdn = 1.56$). Again, in both instances combat sports practitioners demonstrate lower levels of rejection of sexual minorities.

Table 5. Comparison Tests of Total Means by Sex

Sex	Grouped age	Martial arts/ combat sports practice		Shapiro- Wilk	Test type	p value	Effect Size (Glass rank biserial correlation)
		No	Yes				
Male	< 22 years	195	37	< .05	Mann-Whitney U	< .001	0.432
	>= 22 years	134	150	< .05	Mann-Whitney U	< .001	0.377
Female	< 22 years	73	38	< .05	Mann-Whitney U	< .001	0.350
	>= 22 years	82	57	< .05	Mann-Whitney U	< .001	0.308

In addition, and to complement these data, two additional comparisons were carried out using sex as an independent variable, using in this case only the groups of martial arts/combat sports practitioners.

Significant differences and medium effect size, very close to large ($U = 356$, $p < .001$, Glass rank biserial correlation .494) are observed when comparing the scores of martial arts/combat sports practitioners under 22 years of age for males ($M = 2.02$, $Mdn = 1.83$) versus females ($M = 1.50$, $Mdn = 1.22$), while in those over 22 years of age, the male score ($M = 1.90$, $Mdn = 1.86$) is significantly higher, with a mean effect size, very close to a large one, as well ($U = 2016$, $p < .001$, Glass rank biserial correlation .495) than that of females ($M = 1.44$, $Mdn = 1.28$).

To complete this data, we also compared the data according to the sex of the combat sports participants, to see if there was also a difference within the participants in the mean score. The independence of the total mean scaled was also studied with the classification proposed by Piedra (2016), using the practice of martial arts/combat sports as an independent variable, and classifying the sample according to age group and sex. The results can be observed in Table 6.

From these data it is clear that there is a dependence with medium effect sizes ($df = 2$, $.21 < \text{Cramer's } V < .35$) between the levels of expressed rejection and the practice of martial arts/combat sports, both in males under 22 years of age ($\chi^2 = 15.56$, $df = 2$, $p < .001$, Cramer's $V = .259$) and in males over 22 years of age ($\chi^2 = 29.98$, $df = 2$, $p < .001$, Cramer's $V = .324$). An important fact to consider in this statistical test is the low frequency in some categories measured, which is why the dependence relationship has been consolidated using Fisher's exact test.

Thus, the study of martial arts/combat sports practitioners has also been carried out by adopting sex as an independent variable to be able to measure the level of rejection of sexual minorities among male and female respondents.

In this case, no dependence between sex and reported levels of rejection was observed for martial arts/combat sports practitioners under 22 years of age (χ^2

Table 6. Test of Independence of Variables (χ^2) of Total Mean Scaled and Martial Arts/Combat Sports Practice

Sex	Grouped age	Martial arts/combat sports practice	Total Mean Scaled [Piedra 2016]			χ^2	df	p	Effect size (Cramer's V)	Fisher's exact test
			Low level of rejection	Medium level of rejection	High level of rejection					
Male	< 22 years	No	44	108	43	15.56	2	< .001	.259	< .001
		Yes	20	13	4					
Male	>= 22 years	No	44	64	26	29.88	2	< .001	.324	< .001
		Yes	92	52	6					
Female	< 22 years	No	49	20	4	1.93	2	0.381	.131	0.395
		Yes	30	6	2					
		No	62	16	4					
Yes	47	9	1							

Table 7. Fixed Effects Parameter Estimates of linear regression modelling

Names	Effect	Estimate	SE	95% Confidence Interval		β	df	t	p
				Lower	Upper				
(Intercept)	(Intercept)	219.564	0.08524	202.831	236.297	0.0000	758	25.759	< .001
Age	Age	-0.01229	0.00325	-0.01868	-0.00590	-0.1482	758	-3.777	< .001
Sex	Female - Male	-0.64305	0.17047	-0.97771	-0.30839	-0.7571	758	-3.772	< .001
Martial arts/combat sports practice	Yes - No	-0.64129	0.17047	-0.97595	-0.30663	-0.4938	758	-3.762	< .001

= 5.23, $df = 2$, $p = .073$, Cramer's $V = .264$), but dependence was observed, with an effect size close to medium, for those over 22 years of age ($\chi^2 = 8.36$, $df = 2$, $p = .015$, Cramer's $V = .201$). Fisher's exact test ($p < .001$) was also applied in this second case, with the same dependence result as the chi-square test.

The data have also been subjected to linear regression modelling, using total mean as the dependent variable, sex and martial arts/combat sports practice as independent variables and age (in its expression as a continuous variable) as a covariate, assuming an R^2 of .285. The data obtained reflect, as shown in Table 7, that sex, martial arts/combat sports practice and age have a linear effect ($p < .001$), with lower scores on the total mean for female (-0.643 vs. male), combat sports practice (-0.641 vs. non-practitioner) and older age (-0.012 for each additional year).

Discussion

Historically, sports in general been linked to prejudices against sexual and gender diversity, identified in numerous contexts as social spaces where gender-conservative attitudes are culturally normalized, or even institutionally mandated [Ayvazo, Sutherland 2009; Davis-Delano 2014; Dowling 2013; O'Brien, Shovelton, Latner 2013]. Meanwhile, of all sporting endeavors, combat sports are arguably those with the greatest social tradition of being conceptualized as exclusively male and masculine spaces [Matthews 2015; Scott 2020], with histories of gender exclusivity and in some cases, overt homophobia. This is perhaps unsurprising when considering that their practice aligns most closely with ideological constructions of masculinity and the development of a supposedly masculine virility [Klomsten, Marsh, Skaalvik 2005]. Thus, the findings of this study point in an intriguing direction: the results of the inferential and regression statistics indicate that those who practice martial arts and combat sports show scores that are significantly more respectful of sexual diversity than those demonstrated by people who practice other sports. Thus, the findings of this research support the results of a few other recently published studies [Abbassi-Pena 2016; Channon, Matthews 2015b; Murray, White 2017] that indicated greater openness and tolerance of sexual diversity in sporting disciplines previously identified as gender-exclusive and/or overtly homophobic.

In explaining this, Channon [2014] and Maclean [2016] highlight that martial arts and combat sports can serve as contexts wherein particularly men's intolerance, prejudices, or negative stereotypes towards women can be effectively challenged, owing to the typically *mixed-sex nature* of such environments and the opportunity this affords men to learn about women's capabilities, as well as form meaningful friendships with them. Further,

as Channon and Matthews [2015b] argued with respect to attitudes towards male homosexuality in MMA, a discursive norm exists stressing the primary importance of fighting ability, and shared experience as fighters, over and above gender, sexual or other identities, as a mechanism for constructing an overarching sense of inclusiveness within an oft-stigmatized sport. Therefore, the debate on gender segregation in sport may give rise to another, deeper debate with regard to considerations of sporting competition [Knox *et al.* 2018; Tamburrini 2000; Tannsjo 2000]: "...which involves discrimination against women as well as complex questions concerning the proper categorization of intersex, trans, and non-gendered athletes, we should eliminate sex segregation altogether ... or segregated along dimensions other than sex such as weight, height, haemoglobin level, or testosterone level" [Devine, Lopez Frias 2020]. Such findings could help explain the results obtained in the present study, opening a glimpse to an optimistic horizon for overcoming certain barriers and ideological stereotypes pertaining to gender within otherwise stereotypically gender-conservative sports: As the debate on the physiological benefits of testosterone in sport seems to have been overcome [Camporesi 2016; Devine 2019], the questioning of sporting stereotypes derived from the very structure of competition leads to debates that go beyond performance in these sports [Camporesi, Maugeri 2016]. It is interesting that such phenomena seem to be consistent across cultural boundaries between what have been characterized as 'inclusive' and 'pseudo-inclusive' societies [Piedra *et al.* 2017].

Another interesting finding is the differences in attitudes observed between men and women. The findings are consistent with other studies [Bury 2012; Denison *et al.* 2021; Eng 2006] that indicate that women show more respectful attitudes towards sexual diversity in sport than men. In this research, this aspect is again emphasized: the highest levels of tolerance are observed among women, more than among men. Although there may be multiple explanations for this fact, Anderson [2011] argues that the basis of these differences may lie in the social distribution and dynamics of homophobia. Although men and women are both affected by this phenomenon, in the case of men, presenting homophobic attitudes or behaviour allows them to strengthen their manhood within homosocial groups; a phenomenon less well-evidenced among women. That is to say, while homophobia plays an important role in shoring up men's heterosexual status within homophobic (and also, perhaps, pseudo-inclusive) societies, this dynamic may not be as evident among women, meaning their sexual and gender identities are less likely to be bolstered by endorsing or performing overtly intolerant ideals. This may help to explain why, as with previous studies, our present data differ significantly by sex regarding degrees of tolerance for sexual diversity.

Equally interesting are the results obtained in relation to the age of the survey respondents. It is observed that,

despite the social advances experienced in Spain in recent years with respect to women and the LGBTIQ community, younger generations seem not to have assimilated these changes, even amongst LGBTIQ people [Wickham *et al.* 2021]. The reports of some LGBTIQ associations [*cf.* Arcopoli 2019] and research [Ramirez-Diaz, Cabeza-Ruiz 2020] in Spain point to a resurgence of intolerant attitudes among the youngest generations, aligning well with the evidence we have presented here. This situation may lead us to wonder whether the new generations are losing sensitivity and respect for diversity, especially when we talk about transgender people [Anderson, Piedra 2021]. It is necessary to point out the observations of some works in Spain [Devis *et al.* 2018; Soler, 2009] that reveal school physical education as one of the educational areas where sexism and the reproduction of traditional gender stereotypes become more visible [Soler 2009: 31]. However, they raise the possibility that this also constitutes a place of creation for new models of masculinity and femininity, that are non-traditional, non-dichotomous, and not sexist. Such an issue could also challenge the binary gender segregation approach of sport itself, beyond the established distinction between men's versus women's competition, setting up the debate by intersex, trans, and non-gendered athletes who do not fit into either category [Devine, Lopez Frias 2020], or like Vicente-Pedraz and Brozas-Polo [2017] propose: to transform the sport in a multigender practice. Significantly, we find examples in Spain of successful educational activities [Camacho-Minano, Girela 2017; Devis *et al.* 2018; Sanchez-Hernandez *et al.* 2018] aimed at eliminating discriminations identified in other social strata. The present study would suggest that such educational initiatives may be usefully employed within Spanish combat sports settings – or, perhaps, draw on martial arts and combat sports activities within their educational curricula elsewhere – if, as we have argued, these sports are potentially fertile grounds for challenging discriminatory attitudes that seem to prevail among Spanish youth.

Conclusions

This work was intended to report on the attitudes towards sexual diversity among practitioners of combat sports, compared to those who practice other sports more generally, in the pseudo-inclusive cultural context of Spain [Piedra *et al.* 2017]. Although the data discussed are drawn from a larger study, we wanted to give special attention to those who practice combat sports and martial arts since these are social practices that are traditionally linked in Spain to orthodox masculinity. In this sense, it has been shown that people who practice these sports show better levels of tolerance towards diversity than those who practice other sports. Following the theoretical trajectory outlined in several studies noted previously, traditional stereotypes linked to combat sports practices

are questioned, where historically (and even nowadays) they have been associated with orthodox masculinity, machismo, and different forms of discrimination.

While the extant literature on combat sports, gender, and sexuality offers some insights that align with and help to explain these observations, further research to specifically explore why – and perhaps most importantly, how – such differences come about is warranted. This is particularly the case when we consider the evidence regarding age ranges, which demonstrate that the relative intolerance of younger Spanish people towards sexual diversity is also evidenced within combat sports, a setting which we have shown to be less intolerant, on the whole, than other sports in Spain. If future studies that explore this relationship are able to identify mechanisms through which any given sporting environment establishes and promotes tolerance towards sexual diversity, this should become a valuable resource for educationalists, coaches, governing bodies, and broader advocacy groups who seek to capitalize on the potential of sport for fostering greater inclusivity and tackling discrimination.

Finally, despite the original results obtained and the interesting avenues for further work that they indicate, we must recognize the limitations that the design of this study assumes. Despite the large sample size, the non-random, incidental sampling technique prevents extrapolation of the results to the entire study population. Similarly, the quantitative design selected for the study may generate methodological doubts when taking into account the research object. In Spain, sexual diversity is still a controversial topic for some people, and they might tend towards not answering sincerely. Lastly, the plurality and diversity of activities that are here subsumed within the category of 'martial arts and combat sports' is not well reflected by our method, which may obscure some important differences between styles and/or specific schools, clubs and gyms with respect to our research question [*cf.* Channon 2012; Jimenez-Landazuri *et al.* 2016]. Thus, we propose as a prospective measure the use of qualitative research techniques, such as interviews or discussion groups, to delve into the topic of tolerance towards sexual diversity across different sports settings in ways that allow for deeper, contextually specific investigation of this intriguing phenomenon.

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Ograniczenia ringu bokserskiego: Poszanowanie różnorodności seksualnej w sportach walki a w sportach nie związanych z walką w Hiszpanii

Słowa kluczowe: tożsamość płciowa, homohysteria, homofobia, sztuki walki, LGBTIQ

Streszczenie

Tło. Tolerancja wobec różnorodności seksualnej jest kluczowym tematem współczesnych badań wśród naukowców zajmujących się studiami nad sportem, opierając się na dziesięcioleciach badań, które konsekwentnie pokazują, że sporty – a w szczególności te, które mają silne powiązania z tradycyjnymi ideałami męskości – są miejscami, w których wykluczane są mniejszości płciowe i genderowe. Problem i cel. Celem niniejszej pracy była analiza postaw wobec różnorodności seksualnej wśród sportowców w Hiszpanii, a w szczególności zbadanie ewentualnych różnic między osobami uprawiającymi sporty walki a osobami uprawiającymi inne dyscypliny.

Materiał i metody. W niniejszym badaniu zastosowano projekt przekrojowy i opisowy, w którym wykorzystano technikę ankietową do zebrania danych na próbie składającej się z 766 sportowców (516 mężczyzn, 250 kobiet). Zastosowano skalę *Attitudes towards Sexual Diversity in Sport*, która mierzy poziom odrzucenia różnorodności seksualnej w sporcie, co pozwala na analizy porównawcze w różnych populacjach.

Wyniki. Analiza statystyczna wykazała, że postawy wobec różnorodności seksualnej różniły się istotnie w zależności od wieku, płci oraz uczestnictwa w sportach walki i innych dyscyplinach sportowych. W szczególności, najwyższy stopień odrzucenia różnorodności seksualnej obserwuje się wśród mężczyzn, osób poniżej 22 roku życia oraz sportowców nie uprawiających sportów walki. Wnioski. Wydaje się, że wśród osób uprawiających sporty walki panują bardziej otwarte i tolerancyjne postawy niż wśród osób uprawiających inne dyscypliny, co kontrastuje ze stereotypami społecznymi sugerującymi, że sporty te są bastionami ortodoksyjnej męskości, homofobii i wykluczenia. Zalecane są dalsze badania nad przyczynami takiego stanu rzeczy, zwłaszcza biorąc pod uwagę obserwację, że tolerancja ta jest mniejsza wśród młodszych sportowców, a w szczególności mężczyzn.