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# Factors influencing acceptance of transgender athletes

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## ABSTRACT

This study examined factors influencing acceptance of transgender athletes in sport events. Quantitative data were gathered from 373 Japanese university student-athletes. We investigated contributions of two types of predictors. One is the context in which trans athletes are placed; the other involves survey respondents' psychological constructs that may influence their reaction to the issue. The results show that trans men were more accepted than trans women, trans athletes with hormone treatment were considered more acceptable, and trans athletes were more accepted in unofficial sporting events for children and adults than in official national and international events. The results also revealed that for respondents with weaker athletic identity, higher degrees of belief in a just world were positively associated with attitudes of acceptance. Whereas stronger athletic identity was positively associated with acceptance for men, it was negatively associated with acceptance for women. Considering the different nuances surrounding transgender issues in Japan, our study will add cultural diversity to research literature that has mainly focused on the contexts of North America and Western Europe.

## ARTICLE HISTORY

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## KEYWORDS

transgender; trans; sport; gender; athletic identity; belief in a just world

## 1. Introduction

Acceptance of transgender people's participation in competitive sport has been a controversial issue (Jones et al., 2017). Given the belief that high levels of testosterone create a physical advantage, trans women have often been considered ineligible for participation in the female division in most official sport events. For example, in 1976, Renée Richards, a trans female tennis player, was barred from the US Open Tennis Championship when she attempted to participate as a female competitor (Birrell & Cole, 1990; Buzuvis, 2013; Pieper, 2017). Similarly, in 2003, a trans woman was banned from playing in the US Women's National Ice Hockey Tournament (Cohen & Semerjian, 2008). In 2013, a mixed martial arts fighter, Fallon Fox, was rejected by her fellow female athletes after she came out as a trans woman (MacKinnon, 2017).

Unlike trans women, trans men have rarely been considered to possess an athletic advantage (Jones et al., 2017). However, as Caudwell's (2012) case study shows, trans men have also experienced exclusion and marginalization in the gender binary sport environment. In a high school wrestling tournament in Texas, for example, trans male athlete Mac Beggs was not allowed to compete in the male division because the sex on his birth certificate was female. Consequently, he wrestled in the female division and won the

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championship in both 2017 and 2018. The fact that he was taking “a low-dose of testosterone” (Barnes, 2018, para. 4) sparked a debate about fairness in sport and transgender rights.

Some research regarding trans athletes has been undertaken employing qualitative approaches to examine their experiences (E. Anderson & Travers, 2017; Caudwell, 2006; Lucas-Carr & Krane, 2012). Still, according to Teetzel (2017), “cisgender athletes’ reactions to transgender sport policies, and their attitudes towards inclusive sport” are “relatively unknown” (pp. 68-69). Outside the elite sport environment, cisgender athletes may not even be sufficiently informed about the circumstances and policies relating to trans athletes.

On the other hand, several quantitative studies have examined prejudice towards sexual and gender minorities (e.g., athletes and coaches) in sporting contexts (A. R. Anderson & Mowatt, 2013; Roper & Halloran, 2007; Sartore & Cunningham, 2009). However, these studies have mostly focused on sexual prejudice against gay men and lesbians, and a very limited number have considered trans prejudice (Cunningham & Pickett, 2018). Although gender nonconformity has often been associated with sexual deviation, issues around transgender individuals need to be separated from those of gay men, lesbians, and bisexual individuals, because the former concerns gender identity whereas the latter concerns sexual orientation (Huffaker & Kwon, 2016). Gender studies has shown that attitudes towards transgender individuals are less favourable than attitudes towards gay men, lesbians, and bisexual individuals (Huffaker & Kwon, 2016; Norton & Herek, 2013). In sport, too, trans prejudice is reported to remain strong, whereas prejudice towards lesbian, gay, and bisexual individuals has decreased over time (Cunningham & Pickett, 2018). Nevertheless, quantitative approaches to prejudice against trans athletes are still scarce in the literature, and the complexity of the factors that influence the strength of trans prejudice has not yet been fully explored.

Our aim is to fill this gap by examining factors that might increase or decrease the degree of acceptance of trans athletes in sporting events. These factors might include trans athletes’ gender, hormone treatment, and the type of sport events. The level of prejudice might also be influenced by individual factors related to how people see the world and how they identify themselves. In this study, therefore, we investigated contributions of two types of predictors that may influence the degree of acceptance of trans athletes. One is the context in which trans athletes are placed: whether they are trans men or trans women; presence or absence of hormonal treatment; types of sporting events in which they compete (i.e., international events, national events, adults’ unofficial events, and children’s unofficial events). The other involves survey respondents’ psychological constructs that may influence their reaction to the issue (i.e., belief in a just world, athletic identity, and gender identity).

In this study, we tested samples recruited from Japanese college sport teams that belong to a university’s official athlete association called *Tai’iku-kai*. Because transgender identity in Japan has had “different cultural meanings and history from Western societies” (Itani, 2011, p. 283), our study might be able to bring a different perspective to the research on trans athletes. In Japan, the first legal sex reassignment surgery was performed in 1998 as a treatment for Gender Identity Disorder (GID). Since then, news programmes have gradually come to broadcast GID issues more often. In the 2000s, several TV drama series that featured GID protagonists became popular. Due to this

extensive media attention, GID has become “one of the most well-known mental disorders in Japan” (Itani, 2011, p. 290). Because of this unique background, to refer to the incongruence between sex at birth and self-identified gender, the term GID is used more frequently in Japan than “transgender”, the umbrella term which does not pathologize and is more commonly used outside Japan. Although the concept of GID has pathologized individuals whose gender does not correspond to their sex, this wide-spread term has at least contributed to increased knowledge that biological sex and experienced gender do not always align. Considering these nuances surrounding transgender issues in Japan, our study will add cultural diversity to research literature that has mainly focused on the contexts of North America and Western Europe.

## 2. Background and theoretical framework

The theoretical framework of this study was developed through two different approaches that led to the construction of our five hypotheses. Firstly, by looking at the social and historical background of trans athletes’ inclusion and exclusion in sport, we will examine the context that might influence the degree of acceptance of trans athletes in sport events. Secondly, because this issue has often been discussed from the perspective of justice and injustice, we will explore the interplay of these constructs by looking at the way in which they inform people’s reactions, and the various perspectives from which they are viewed.

### 2.1 Acceptance of transgender athletes in different contexts

In the 1990s, awareness of transgender rights was promoted in North America and Western Europe. Since then, transgender individuals’ desire to live according to their self-identified gender has gradually achieved greater approval as a legitimate human right internationally (Symons & Hemphill, 2006; Wilchins, 2004). Consequently, by the 2000s, legislation to protect the human rights of transgender people had been passed in numerous countries and regions. However, as in the Gender Recognition Act 2004 in the United Kingdom, some of these laws made an exception in the sport participation of transgender people; others required sex reassignment surgery (SRS). Japan was of the latter group, requiring SRS as a precondition for legally changing gender (Seidoitsuseishogaisha, 2003).

Reflecting this worldwide trend, in 2003 in the Stockholm Consensus, the International Olympic Committee (IOC) declared an inclusive policy regarding athletes who had undergone sex reassignment surgery before puberty (International Olympic Committee, 2003). On the other hand, for individuals who had undergone sex reassignment surgery after puberty, opportunities to participate in competitions were restricted by “a narrow set” (Pieper, 2012, p. 684) of rules. As a result, the 2004 IOC ruling based on the Stockholm Consensus excluded “a large proportion of transgender people” (Jones et al., 2017, p. 707).

Since the Stockholm Consensus, the IOC and International Association of Athletics Federations (IAAF) have been working towards inclusiveness in their policies regarding transgender athletes. However, there have been differences between attitudes towards trans men and trans women. For example, in the IAAF 2011 guidelines, whereas trans men needed to submit only “a sex recognition certificate” (International Association of

Athletics Federations, 2011, p. 2) to participate in men's competitions, trans women were required to submit details of their sex reassignment procedure, including surgery and hormone treatment, to be eligible to compete in women's competitions. In 2015, the IOC enacted new guidelines removing the requirement for completion of surgical anatomical change for both trans men and trans women. However, although trans men were allowed to compete in the male category "without restriction" (International Olympic Committee, 2015, p. 2) under the new rules, trans women were still required to reduce their total testosterone level "below 10 nmol/L for at least 12 months prior to" (International Olympic Committee, 2015, p. 2) their first competition. Underlying the different attitudes in elite sport towards trans men and trans women is a presumption that trans women have an unfair physical advantage over cisgender female opponents due to production of testosterone during puberty (Carroll, 2017; MacKinnon, 2017; Pieper, 2017).

Because testosterone is considered to enhance physical performance, trans women's amount of testosterone has been always under scrutiny. On the contrary, trans men's participation in male competition is not restricted "regardless of whether or not they have had any surgery or are taking testosterone" (Cunningham et al., 2018, p. 367), as long as their hormone treatment meets the criteria for a therapeutic use exemption (TUE) (World Anti-Doping Agency, 2016). Clearly, for trans athletes who desire to compete as their self-identified gender, there are more restrictions targeting trans women than trans men. As Sykes (2006) pointed out, trans women's participation is considered "as exceptional, as a sporting crisis, subject to case-by-case evaluation and shrouded in suspicion" (p. 7), whereas trans men are provided more opportunities.

Based on these background circumstances surrounding trans athletes and their hormone treatment, we hypothesized that trans men are more accepted than trans women in sport (Hypothesis 1). We also hypothesized that trans athletes who have undergone hormone treatment are more accepted than those who have not and that this trend is more notable in the case of trans women than trans men (Hypothesis 2).

The history of the IOC and IAAF eligibility rules shows that international sport organizations have required trans athletes (especially, trans women) to follow strict regulations. Individual sport organizations mostly adopt IOC rules for athletes who compete internationally (Jones et al., 2017). However, some of these organizations apply different policies for those who participate in nationwide competitions, including national championships. For example, US Sailing (2019) permits sailors under the age of 18 to compete as the gender that "s/he identifies with in his/her 'everyday life'" unless "it is, or is a qualifier for, an event" (US Sailing, 2019) sanctioned by the IOC or other organizations that have their own transgender policies. Transgender policies in nationwide competitions thus vary between countries, between states, and between sporting bodies.

Within the Japanese sporting context, however, the need to develop policies regarding trans athletes has not been recognized or thoroughly discussed until recently (Matsumiya, 2018). Masaoka's 2008 and 2010 studies conducted among 58 sport organizations reported only two cases in which trans athletes were permitted to compete in accordance with their reassigned gender (Masaoka, 2013). The results suggested that Japanese trans athletes had remained virtually invisible and marginalized in the highly competitive sport events sanctioned by these sport organizations. On the other hand, the Ministry of Education, Culture, Sports, Science and Technology, Japan (2015) issued a policy document "On Providing Detailed Support for Pupils and Students with Gender Identity

Disorder”, referring to sport as one of the contexts that required special attention. The document states that students with GID should be permitted to participate in extracurricular sport activities in accordance with their self-identified gender. This policy suggests that trans athletes in Japan are likely to be accepted in recreational sport whereas they are still marginalized at the elite level.

Given these conditions, we assumed that the degree of acceptance is influenced by the competitiveness of the events in which trans athletes participate. Therefore, we measured the degree of acceptance of trans athletes in four different types of events which are presumed to have different levels of competitiveness: children’s unofficial sport events, as the least competitive; adults’ unofficial events, as the second least competitive; national events, as the second most competitive; international events, as the most competitive. Based on this classification, we hypothesized that the degree of acceptance of trans athletes would be highest in children’s events, followed by adults’ unofficial events, national events, and international events (Hypothesis 3). Because trans athletes’ eligibility – particularly that of trans female athletes – has been more intensely sensationalized in elite sport, we also tested whether event levels affect trans women and trans men differently.

## ***2.2 Belief in a just world and athletic identity***

Although maintaining fairness is one of the most important concerns in the management of sport competition (Loland, 2002), this value has functioned as a double-edged sword for issues of trans athletes’ participation in sport competition. Namely, sport policies that restrict trans athletes to ensure fair competition have been inconsistent with societal trends advocating fair treatment of transgender individuals. For example, when Richards entered women’s tennis, the media defined fairness within the framework of human rights by producing the image of a heroic trans woman confronting the tennis organizations that tried to exclude her (Birrell & Cole, 1990). The United States Tennis Association (USTA) required all female players including Richards to take a sex chromosome test, but the New York Supreme Court ruled that the sex test was unfair and violated her human rights (Birrell & Cole, 1990; Pieper, 2012). On the contrary, opposition to Richards’s entry into women’s tennis was “framed in terms of the issues of competitive equality” (Birrell & Cole, 1990, p. 15). The USTA considered that Richards’s entry was unfair to cis female players (Birrell & Cole, 1990); some cis female tennis players pointed out Richards’s inherent biological advantage as “unfair assets in tennis” (Pieper, 2012, p. 682). Later on, Richards herself justified sport segregation by biological sex, and opposed other trans women competing against cisgender women by insisting that transgender inclusion was “not a level playing field” (Pieper, 2012, p. 685). These situations surrounding trans athletes indicate that there are two different notions of fairness: from the perspective of sport, fairness refers to a level playing field; from a broader perspective, it refers to human rights. Therefore, we draw from literature related to belief in a just world and identity theory to formulate our final hypotheses. Specifically, we explore how belief in a just world might inform perceptions of justice or injustice, and how one’s identity might inform perceptions related to fairness.

### 2.2.1 *Belief in a just world*

The concept of belief in a just world asserts that people get what they deserve (Lerner & Miller, 1978). The belief that the world is just motivates people to pursue long range goals and regulate their own behaviour (Lerner & Miller, 1978). Early research literature associated belief in a just world with victim derogation by focusing on its negative aspect: people with this belief are reluctant to give up the idea that bad things will never happen to good people, so they are likely to blame victims when they see injustice (Furnham, 2003). Around the turn of this century, however, researchers came to view it as a healthy coping mechanism and started emphasizing its positive psychological benefits (Furnham, 2003). From this perspective, belief in a just world encourages a person to perceive the world as “orderly and fair” (Lench & Chang, 2007, p. 126) and thus to “strive for justice” (Dalbert et al., 2001, p. 562).

How can these positive and negative aspects of belief in a just world account for transgender issues in sport? Originally, belief in a just world was associated with minority prejudice. However, as the idea of political correctness has been shared in a growing number of countries including Japan, we might need to modify our interpretation of belief in a just world; it might not be necessarily associated with the idea that trans persons should deserve derogation. Rather, in the context of today’s society, we assume that belief in a just world might also be associated with minority inclusion and derogation of those with minority prejudice. Therefore, outside sport, developing an inclusive environment for trans athletes will be considered as a matter of social justice; ensuring the human rights of transgender individuals will be viewed as promoting social well-being.

In our study, it might be expected that those with strong belief in a just world will be more likely to accept trans athletes. Their tendency towards victim derogation will lead them to underestimate the unfairness of a situation in which a trans athlete has a physical advantage over cisgender counterparts. Within sport, the situation is likely reversed, as the concept of fairness may be more readily applied to ensuring a level playing field than to ensuring broader human rights. Therefore, within sport those with a strong belief in justice will be unwilling to accept trans athletes and will believe that because of their nonconformity they deserve exclusion. This ingroup/outgroup dichotomy is due to how people perceive the world; they are basically concerned with their own world, so that perceived injustice within their own world represents a greater threat than that in another world (Lerner & Miller, 1978). However, people in sport also exist in the broader world of human rights. This informed our decision not to divide our participants into athletes and non-athletes. By recruiting all our participants from Japanese college sport teams, our aim was to measure how strongly the participants identified themselves as an athlete, and how the strength of their athletic identity interacts with belief in a just world.

### 2.2.2 *Athletic identity*

In a sense, being an athlete may be conceived as contributing to social identity. Tajfel (1972) defined social identity as an individual’s knowledge that they belong to a certain social category or group (as cited in Hogg & Abrams, 1988). Turner (1982) defined a social group as “two or more individuals who share a common social identification of themselves or ... perceive themselves to be members of the same social category” (Turner, 1982, p. 15). Thus, social identity refers to a feeling of group belongingness, with which

one comes to know who they are and acquire group behaviours (Hogg & Abrams, 1988). Because categorization of oneself in terms of a group involves differentiation of one group from others, it leads to intra- and intergroup behaviour (Turner, 1982). An ingroup's desire to maintain a positive social identity for the group members accounts for intergroup conflict and discrimination (Turner, 1982). At this point, social identity theory converges with the concept of belief in a just world in that they both share the ingroup/outgroup dichotomy.

However, because social identity is a collective identity, it entails depersonalization of the self (M. B. Brewer & Gardner, 1996). As a result, while focusing on group behaviour and intergroup relations, it has not paid enough attention either to interpersonal differences within a group or more importantly to the intensity of the belongingness that each member feels towards his or her own group. In contrast, unlike social identity theory, identity theory, or role identity theory, has given due weight to intragroup relationships by observing roles that individuals play within a group to which they belong. Despite this difference, however, Stets and Burke (2000) emphasized the overlap of identity theory and social identity theory: "We point out that one always and simultaneously occupies a role and belongs to a group, so that role identities and social identities are always and simultaneously relevant to, and influential on, perceptions, affect, and behavior" (p. 228).

Athletic identity, indicating the degree to which an individual identifies with an athletic role (B. W. Brewer et al., 1993), can be defined as role identity. In this regard, it draws on identity theory rather than social identity theory. When B. W. Brewer and Cornelius (2001) remodelled the original athletic identity measurement scale, they confirmed that athletic identity is a multidimensional concept consisting of three factors constituting an integrated notion of athletic identity: social identity, exclusivity, and negative affectivity. Most importantly, athletic identity is not reducible to a simple dichotomy in which one is or is not an athlete; rather, it refers to the degree to which one defines oneself as an athlete. In this sense, if it is applied to differentiate the degree of identification among ingroup members, it refers to intragroup difference.

In this study, respondents were predominantly engaged in certain kinds of sporting activities as members of college sport teams. The university they belonged to does not have a sport department and basically it was during leisure time that they participated in sport. They were mostly non-elite amateur athletes and their degree of commitment to sport was assumed to vary. For this reason, this study falls into a framework of identity theory that focuses on intragroup differences. With this in mind, when we examined the effect of the interaction of athletic identity and belief in a just world, we did not apply the ingroup/outgroup dichotomy on which belief in a just world originally relied. Rather, we developed our hypothesis based on the presumption that the more respondents identify themselves with athletes, the more they view sport as their own world. This approach is reasonable considering the complexity of the issue. How respondents accept trans athletes is not conceivable within the whether-or-not dichotomy. Degrees of acceptance might vary depending on the context of trans athletes as well as respondents' perspectives.

Given these, we predicted that for those with weaker athletic identity, strong belief in a just world would be positively associated with acceptance of trans athletes. On the contrary, for those who strongly identify themselves as athletes, we assume that the concept of fairness more readily accounts for ensuring a level playing field than it does for



ensuring human rights. Therefore, we predicted that for those with stronger athletic identity, a strong belief in a just world would be negatively associated with acceptance (Hypothesis 4).

Finally, because gender was also one of our primary concerns, we examined how respondents' gender identity affected their attitudes towards trans athletes. In the previous literature, women were observed to express less prejudice against sexual and gender minorities (Lee & Cunningham, 2016; Sartore & Cunningham, 2009). However, gender may be closely associated with other factors. Because problems regarding the participation of trans athletes have been more overtly discussed in women's competition than in men's competition, how women react to this issue might be influenced by how strongly they commit themselves to sport. Therefore, we predicted that women with strong athletic identity were less likely to accept trans athletes than those with weak athletic identity (Hypothesis 5).

### 3. Method

#### 3.1 Participants

Quantitative data were gathered from participants in college sport teams at a university in the Tokai area of Japan. We took paper questionnaires to the university's athlete association office; the association included 48 teams with approximately 1,300 registered student-athletes at the time of the survey. The association approved its team members' participation in our study in their monthly meeting held on 9 May 2018. Twenty-three teams decided to participate in the survey, and 548 questionnaires were distributed on the same day.

From the 548 questionnaires distributed, 377 responses were collected by 9 June 2018, resulting in a 68.8% response rate. One respondent was not a university student, and three respondents did not complete the questionnaire. Responses from these participants were removed from the quantitative data. Among the remaining 373 participants, 251 were men, 118 were women, three reported their gender identities as "other" and one did not respond; mean age = 20 years ( $SD = 1.16$ , range 18 to 27 years). Participants' sexual identities varied from heterosexual ( $n = 366$ ) to lesbian/gay ( $n = 2$ ), bisexual ( $n = 3$ ), and other ( $n = 2$ ). Their nationalities were Japanese ( $n = 372$ ) and other ( $n = 1$ ). Their commitment to sport included professionally oriented ( $n = 3$ ), elite amateur ( $n = 2$ ), amateur ( $n = 273$ ), recreational ( $n = 51$ ), no commitment ( $n = 17$ ), and no response ( $n = 27$ ). All participants ( $n = 373$ ) were undergraduate students. A small number of participants reported that they had personal contact with transgender individuals ( $n = 25$ ), and the majority of participants reported otherwise (no personal contact,  $n = 347$ ; no response,  $n = 1$ ). For participants who might not be familiar with the terminology, we asked them to read the following passage before they answered the questions on their acceptance of transgender athletes:

The term "transgender" describes people who live as members of a gender that differs from their sex assigned at birth. A person who was assigned as male at birth but is now living as a woman is described as a male-to-female (MtF) transgender, and a person who was assigned as female at birth but is now living as a man is described as a female-to-male (FtM) transgender. Some transgender individuals choose to undergo sex reassignment surgery

and/or hormone therapy to align their bodies with their identified gender, whereas others do not. As an umbrella term, transgender includes individuals with Gender Identity Disorder (Gender Dysphoria), but not all transgender individuals are diagnosed with Gender Identity Disorder. (See Appendix A for the original Japanese text.)

### 3.2 Compliance with ethical standards

For the survey, we followed the ethical principles for research involving human subjects stated in the Declaration of Helsinki (World Medical Association, 2013). Each student-athlete was free to withdraw from participation at any stage of the survey. On the front page of the survey questionnaire, participants were informed that they would answer the survey questionnaire anonymously and that all the data would be published. The participants consented to this policy before answering the survey questions. Foreseeing future publication of our data, we did not designate to which sport team each individual belonged in order to protect their personal information.

### 3.3 Measures

#### 3.3.1 Acceptance of transgender athletes' participation

We measured the dependent variable, *Acceptance*, by asking the participants to choose the gender divisions (men or women) in which it is most suitable for trans athletes to compete. Each question used a 10-point scale ranging from 1 (e.g., MtF [male-to-female] transgender athletes should participate according to their sex at birth [i.e., male]) to 10 (e.g., MtF transgender athletes should participate according to their current gender identity [i.e., women]), with a higher score indicating a more accepting attitude towards transgender athletes' participation in sport events. The option 0 (e.g., MtF transgender athletes should not be allowed to participate in any events) was also available. The same question was repeated for 16 patterns: the two categories of transgender athletes (the *Transgender Athletes* factor with two levels: *Trans Men* and *Trans Women*), two states of hormone treatment (the *Treatment* factor with two levels: *With* and *Without*), and four event categories for different competitive levels (the *Event* factor with four levels: *Int'l* [international sport events], *Nat'l* [official sport events at the national and/or regional level], *Unofficial* [unofficial sport events for adults], and *Children* [unofficial sport events for children]). To avoid missing values, when a participant circled two numbers or the blank space between two numbers on a scale, we coded the response as the average of the two points.

#### 3.3.2 Belief in a just world scale

We used a general Just World Scale (6 items; e.g., "I am confident that justice always prevails over injustice") derived from Dalbert et al. (2001). The respondents rated each of the ten items on a 6-point Likert scale ranging from 1 (*Totally disagree*) to 6 (*Totally agree*). We translated each item from English into Japanese and our peer Japanese researchers checked the translation. Responses for each scale were averaged to yield separate scores wherein higher scores indicated stronger beliefs. Cronbach's alpha was .81.

#### 3.3.3 Athletic identity measurement scale

To measure athletic identity, we used B. W. Brewer and Cornelius (2001) 7-item Athletic Identity Measurement Scale measuring the extent to which one identifies as an athlete

(e.g., “I consider myself an athlete”). Each item was scaled from 1 (*Strongly disagree*) to 7 (*Strongly agree*). We translated each item from English into Japanese and our peer Japanese researchers checked the translation. Responses were averaged across items so that higher scores indicate stronger athletic identity. Cronbach’s alpha for this measure was .90, indicating strong internal consistency.

### 3.3.4 Transphobia scale

Participants’ degree of transphobia should influence their responses. To mathematically control for this expected noise, we considered participants’ degree of transphobia as a covariate in the regression model. Nagoshi et al.’s (2008) transphobia scale was used. It helps to predict prejudice against transgender individuals (e.g., “I don’t like it when someone is flirting with me, and I can’t tell if they are a man or a woman”). Each of the nine items was measured on a 7-point Likert scale ranging from 1 (*Completely disagree*) to 7 (*Completely agree*). We translated each item from English into Japanese and our peer Japanese researchers checked the translation. Responses were averaged across items to yield an overall score such that higher scores indicated stronger transphobia. Cronbach’s alpha was .86.

## 3.4 Analysis plan

In the analysis, we tested the abovementioned predictors to assess whether they are associated with the degree of acceptance of trans athletes’ participation in sporting events (coded as *Acceptance*) and if so, to what extent. To account for the fact that each participant provided multiple *Acceptance* ratings, we opted for linear mixed-effects modelling with the participants as a random effect factor (Baayen, 2008). This approach allowed us to statistically control for baseline differences in *Acceptance* scores across individual participants by setting random intercepts for participants. In addition, by-participant random slopes/contrasts allowed us to include within-participant variations explicitly in the model formula (e.g., in the case of the present study, the magnitude and direction of effects of *Transgender Athletes* and *Treatment* varied across participants). All numerical predictors were standardized, and all categorical predictors were deviation-coded. The data were analysed with R version 3.5.1 (R Core Team, 2018). The linear mixed-effects modelling was performed with *lme4* package version 1.1-17 (Bates et al., 2015). The *p*-values in the mixed-effects models were calculated using *lmerTest* package version 3.0-1 with Satterwaite’s degrees of freedom method (Kuznetsova et al., 2017). Post hoc pairwise comparisons were performed with *lsmeans* package (Lenth, 2016). The results were visualized with package *effects* version 4.0-2 (Fox, 2003).

## 4. Results

### 4.1 Preliminary analysis

#### 4.1.1 Preparation of predictors

To explore and summarize the correlational structure among the numerical predictors (22 items introduced in section 3.3), we conducted an unsupervised hierarchical cluster analysis with individual items (see Appendix B). Because the individual measures resulted

in three clusters corresponding to the three predictors of interest, we averaged all the rating scores within each measure into new predictors (e.g., items *Transphobia\_1* to *\_9* were averaged to *Transphobia*). Cronbach's alpha values were acceptably high for all 3 predictors, ranging from .81 to .90 (see Table 1). The descriptive statistics for the predictors considered in this study are summarized in Table 1. Table 2 summarizes the correlation structure of all the numerical predictors. It is clear that there is no harmful correlation for the purpose of regression modelling.

#### 4.1.2 Understanding “acceptance = 0” responses

When providing *Acceptance* scores, participants could select an “Acceptance = 0” option indicating that trans athletes should not be allowed to participate in any events. Prior to the regression analysis, we decided to explore what motivated participants to respond in this extreme manner. Importantly, these 153 data points (2.6% of the data) came from 25 participants (6.8% of all participants), indicating that the vast majority of participants did not select the “Acceptance = 0” option. We opted for generalized linear mixed-effects modelling with a logit link function to explore whether any particular predictors motivated these participants to provide “Acceptance = 0” responses instead of “Acceptance  $\neq$  0” responses. Interestingly, the factor *Event* was found to be an important predictor, with significantly less “Acceptance  $\neq$  0” responses for the *Unofficial* and *Children* events ( $p < .001$  for both *Unofficial* and *Children* but  $p = .31$  for *Nat'l* compared to the reference level *Int'l*; 69 responses for *Int'l*, 64 responses for *Nat'l*, 13 responses for *Unofficial*, and 7 responses for *Children's* events). No other predictors reached significance.

## 4.2 Hypothesis testing with mixed-effects regression modelling

We started with 5,968 data points. Of these data points, 153 had *Acceptance* values of zero (i.e., transgender athletes should not be allowed to participate in any events). We

**Table 1.** Descriptive statistics for the numerical and categorical predictors.

Numerical predictors <sup>a</sup>	Min.	Max.	Median	Mean	SD	Cronbach's alpha
Just Belief	1	6	3.17	3.14	0.89	.81
Athletic Identity	1	7	4.86	4.70	1.27	.90
Transphobia	1	7	3.89	3.71	1.09	.86
Categorical predictors	Levels (number of participants if between-participant variable) <sup>b</sup>					
Transgender Athletes Treatment	Trans Men, Trans Women With, Without					
Event	Int'l, Nat'l, Unofficial, Children					
Gender Identity	Male (251), Female (118), Other (3), No response (1)					

<sup>a</sup>The descriptive statistics were calculated before the standardization procedure.

<sup>b</sup>The abbreviations are as follows: Int'l = international, Nat'l = national.

**Table 2.** Pearson correlation matrix for the numerical predictors considered in this study.<sup>a</sup>

	Just Belief	Athletic Identity	Transphobia
Just Belief	1.00 ***		
Athletic Identity	0.16 **	1.00 ***	
Transphobia	0.27 ***	0.17 ***	1.00 ***

<sup>a</sup>The asterisks represent varying degrees of significance (\* for  $p < .05$ , \*\* for  $p < .01$ , \*\*\* for  $p < .001$ ).

excluded these responses from the following regression analysis. We also excluded responses from participants whose gender identity was not man or woman, which constituted one percent of the data. These removed participants' responses did not show visibly clear deviation from responses of the other participants' (mean *Acceptance* scores 5.48 vs. 5.86, *SDs* 2.85 vs. 2.77). After the trimming procedure, 5,719 data points were available for the following linear mixed-effects regression analysis, with a mean *Acceptance* rating of 5.86 (*SD* = 2.77). The *R*-squared for the final model was .67, calculated using the *MuMIn* package (Bartoń, 2018). The residuals were normally distributed based on a visual inspection of a Q-Q normality plot.

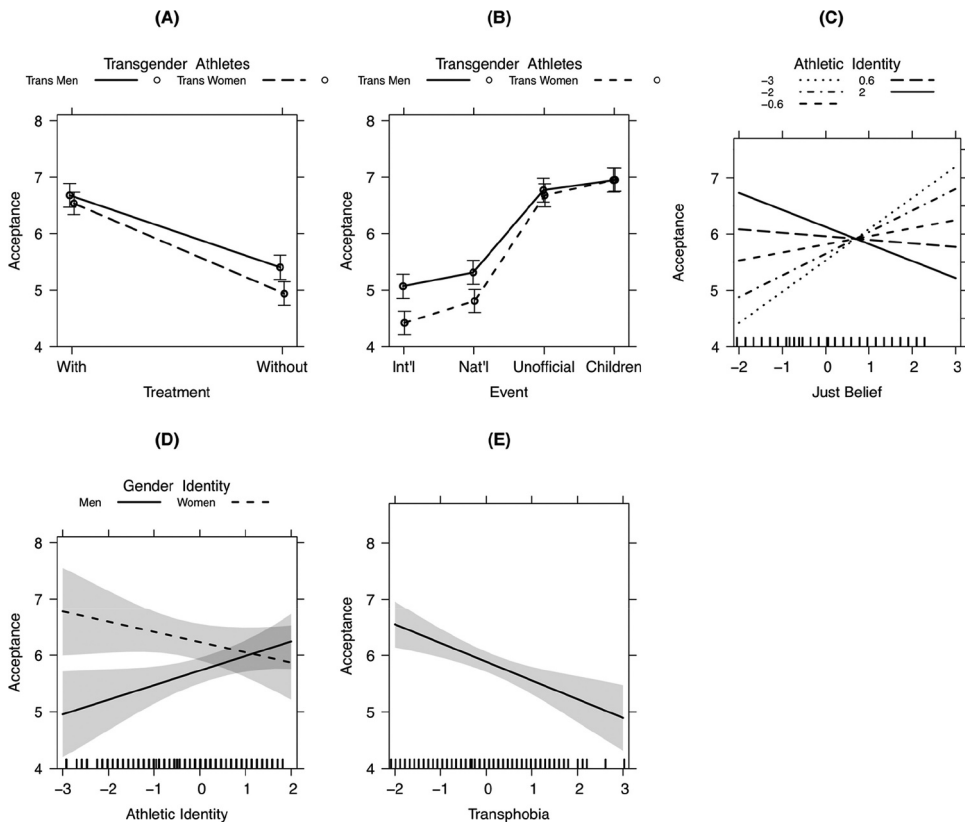
We opted for forward fitting of the random effects. The fixed-effects structure was similarly forward-fit in a hypothesis-driven manner. Only significant parameters were retained in the final model. The random- and fixed-effect structures of our final model are summarized in Table 3, and the significant partial effects are visualized in Figure 1. These effects are explained one by one below in detail. In the model, the dependent variable *Acceptance* ranges from 1 to 10, and a higher score indicates a participant's greater acceptance of trans athletes' participation in sporting events.

First, Hypothesis 1 predicted that trans men would be more accepted than trans women. In our final model, the significant main effect of *Transgender Athletes* supported our prediction. The model further indicates that people also consider trans men and trans women differently depending on other factors. The following shows how the effect of *Transgender Athletes* was associated with *Treatment* and *Event*.

Hypothesis 2 predicted that the trans athletes who had undergone hormone treatment would be considered more acceptable than those who had not and that treatment or lack thereof would be a more significant concern for trans women than for trans men. In line with our predictions, whether trans athletes received hormone treatment was associated with participants' *Acceptance* scores (Panel A, Figure 1), with lower *Acceptance* ratings observed for trans athletes without hormone treatment (*Treatment* = *Without*). In line with

**Table 3.** The random-effect and fixed-effect structures of the final mixed-effects model.

Random effects	Groups	SD	Corr			
Participants	(Intercept)	1.58				
	Transgender Athletes (Trans Men)	0.44	0.11			
	Treatment (With)	0.81	-0.06	0.07		
	Residual	1.59				
		Estimate	SE	t-value	p-value	Figure 1
(Intercept)		5.961	0.094	63.151	< .001	
Transgender Athletes (Trans Men)		0.155	0.031	4.929	< .001	A, B
Treatment (With)		0.717	0.048	15.070	< .001	A
Event (Int'l)		-1.125	0.037	-30.626	< .001	B
Event (Nat'l)		-0.809	0.037	-22.069	< .001	B
Event (Unofficial)		0.854	0.036	23.566	< .001	B
Just Belief		0.041	0.090	0.450	0.653	C
Athletic Identity		0.039	0.089	0.440	0.660	C, D
Gender Identity (Men)		-0.252	0.098	-2.563	0.011	D
Transphobia		-0.331	0.095	-3.499	< .001	E
Treatment (With) × Transgender Athletes (Trans Men)		-0.080	0.021	-3.806	< .001	A
Event (Int'l) × Transgender Athletes (Trans Men)		0.169	0.037	4.622	< .001	B
Event (Nat'l) × Transgender Athletes (Trans Men)		0.098	0.037	2.672	0.008	B
Event (Unofficial) × Transgender Athletes (Trans Men)		-0.110	0.036	-3.032	0.002	B
Just Belief × Athletic Identity		-0.172	0.077	-2.221	0.027	C
Athletic Identity × Gender Identity (Men)		0.219	0.089	2.470	0.014	D



**Figure 1.** Partial effects of the linear mixed-effects regression model. The bars and bands reflect 95% confidence intervals. The bars and bands reflect 95% confidence intervals. The rugs along the x-axis for the numerical predictors reflect the distribution of the data points.

Hypothesis 2, the magnitude of the effect of *Treatment* was greater when trans women were under consideration than when trans men were considered. Thus, Hypothesis 2 was supported. However, as can be seen in Panel A, Figure 1, the contribution of *Transgender Athletes* was relatively small in terms of its magnitude of effect (see also Panel B, Figure 1 for a similarly small effect of *Transgender Athletes*).

Hypothesis 3 predicted that the degree of acceptance of trans athletes would be highest for children's sporting events, followed by adults' unofficial events, national events, and international events. Because the magnitude of the *Event* effect was predicted to depend on the gender of trans athletes, we also tested this possibility by examining an interaction between *Event* and *Transgender Athletes*. The result is visualized in Panel B in Figure 1. Clearly, participants' *Acceptance* scores were higher for *Unofficial* and *Children's* events than for *Int'l* and *Nat'l* events for both trans men and trans women, with a dramatic increase from *Nat'l* events to *Unofficial* events. Thus, Hypothesis 3 was supported. Yet, post hoc pairwise comparisons indicated that while the difference between trans men and trans women was significant for *Int'l* and *Nat'l* events ( $p < .001$ ), it was not significant for *Unofficial* and *Children's* events ( $p_s = .344$  and  $.955$ , respectively). In addition, we observed a significant difference between

*Int'l* and *Nat'l* for both trans men ( $p = .021$ ) and trans women ( $p < .001$ ). Because the issue of trans athletes' eligibility has been more intensely sensationalized in elite sport (such as the Olympics) than in recreational sport (such as children's athletic meets) and because there is a widely shared assumption that trans women possess an unfair physical advantage over cisgender women, this pattern is perhaps not surprising.

Hypothesis 4 was concerned with the interaction between *Athletic Identity* and *Just Belief*. For those with weaker athletic identity, we predicted that strong belief in a just world would be positively associated with acceptance of trans athletes. This is evident in the dotted line in the crossover interaction we found (Panel C, [Figure 1](#)). For participants with stronger athletic identity (the dashed and solid lines), the positive effect of *Just Belief* was attenuated and even reversed. Whether trans athletes should be accepted into sport competitions has been a controversial topic because there is no single understanding of what "just" is. The interaction between *Just Belief* and *Athletic Identity* is a direct reflection of such difficulties associated with this topic.

Hypothesis 5 predicted that women with strong athletic identity were less likely to accept trans athletes than those with weak athletic identity. Notably, the pattern of the *Athletic Identity* effect depended on the respondents' *Gender Identity* (Panel D, [Figure 1](#)). It is clear that the *Athletic Identity* effects moved in opposite directions according to gender. Higher *Athletic Identity* was associated with higher *Acceptance* ratings for men but lower *Acceptance* ratings for women.

Finally, we also visualized the effect of *Transphobia* (Panel E, [Figure 1](#)). Although this effect was fully expected, what is noteworthy is that the magnitude of effect for all the above-mentioned predictors is very much comparable to that of *Transphobia*. Importantly, with this predictor included in the regression model, the general transphobia level of the participants was mathematically held constant in assessing the independent contributions of all the other predictors.

## 5. Discussion

Firstly, in our survey, trans men were more accepted than trans women in sport, supporting Hypothesis 1. However, albeit the great media attention on trans women, the magnitude of effect of *Transgender Athletes* was rather small. This result was similar to that of previous studies on transgender individuals' access to bathrooms, locker rooms and campus housing. Literature has shown that people often justify denying trans women's access to women's spaces by emphasizing the necessity to protect cisgender women (Browne, 2004; Seelman, 2014). However, actually, both trans men and trans women experienced difficulty in accessing locker rooms of their self-identified gender (Pirics, 2017), and trans men were not reported to experience less denial of access to gender-appropriate housing or bathrooms on campus than trans women (Seelman, 2014). As Browne (2004) mentioned, difficulties that individuals experience when accessing gendered places are not necessarily connected with their gender identity; rather, they are often caused by how they look. Interestingly, Browne (2004) reported that cisgender women with masculine features also experienced abusive reactions in women-only bathrooms. Seelman (2014) suggests that people are likely to accept or reject a person's access to gendered space primarily based on appearances. The fact that hormone treatment helps change transgender individuals' appearance to "pass" as their

self-identified gender might explain part of the reasons why our second hypothesis about hormone treatment was supported.

With Hypothesis 2, we predicted that trans athletes who have undergone hormone treatment are more accepted than those who have not and that this trend is more notable in the case of trans women than trans men. The result supported this hypothesis. There might be several reasons for this, and these might include one possibility: generally, with hormone treatment, transgender individuals are more likely to pass as their self-identified gender in their appearance. It can be said the more the trans athletes pass as their self-identified gender, the more likely they are accepted in sport. However, another more important reason was rooted in the sport context. Not surprisingly, trans women found more acceptance when they had undergone hormone treatment in our study. This result was aligned with the present transgender policies adopted by most of the elite sport organizations. Like the sport officials, many of our respondents might have shared the assumption that the difference in physical abilities between sexes is caused by the amount of testosterone.

When comparing the four different event levels, the degree of acceptance of trans athletes was highest for children's sport events and lowest for international sporting competitions such as the Olympics, supporting Hypothesis 3. To explain the very large gap between recreational events (unofficial and children) and elite events (international and national), we offer two possibilities: the importance of winning and the importance of a level playing field. First, motivations might be different between recreational sport and elite sport: perhaps recreational athletes may participate in sport events for enjoyment, commitment, health promotion, personal achievement, etc. On the contrary, for elite athletes, whose major motivation is to improve their sport performance, enjoyment may have "a lower priority" (Russell, 2014, p. 288). They need to engage in large amounts of extensive training, which may not always be enjoyable. Winning in an elite sport event is considered a product of such effort and self-devotion. This is why winning is highly evaluated and it elevates the winner's social status as a consequence. As the value of winning increases, so does the importance of a level playing field, the second explanation. Unlike elite sport, recreational sport puts more emphasis on participation than winning, thus is inclusionary.

For the respondents with stronger athletic identity in our study, belief in a just world was negatively associated with acceptance, supporting Hypothesis 4. Athletic identity is associated with the evaluation of achievement in sport and when it relates to the desire for justice, it promotes the requirement of a level playing field. Therefore, for those with strong athletic identity, trans athletes' perceived difference in physical ability seems to threaten their idea of a fair playing field. When strong athletic identity and strong belief in a just world were combined in participants, they choose to exclude trans athletes and justified their decision by blaming trans athletes (believing they had an unfair physical advantage) to restore the just belief. On the contrary, for those with weak athletic identity, transgender inclusion seemed to relate to a form of social justice. In other words, to achieve social justice, they did not view trans athletes as having a physical advantage, and viewed sport as unjust if it did not include all athletes – irrespective of gender identity.

Interestingly, however, *Just Belief* was not significant in isolation. In the past, belief in a just world was associated with minority prejudice. Given the situation of today's society, we assumed that it might rather be associated with minority inclusion. The result did not



support one conclusion over the other. It is perhaps because while the belief in a just world refers to how people react to justice, the definition of justice is inconsistent within this belief system. Some research on this belief system has employed binary concepts of justice, such as general vs. personal, conscious vs. preconscious, immanent vs. ultimate, and distributive vs. procedural justice (Donat et al., 2018; Furnham, 2003; Lucas et al., 2007; Maes, 1998; Maes & Schmitt, 1999), to explain the contradictory behaviours that involve morality seeking and victim blaming. Because of this dual-faced characteristic, the belief in a just world is not sufficient to explain controversial issues like the acceptance of trans athletes when it is tested in isolation. On the contrary, it is most effective when it is used in an interaction with some other variable.

The result also showed that women with strong athletic identity were less likely to accept trans athletes than those with weak athletic identity, supporting Hypothesis 5. Although women were observed to express less prejudice in the literature (Lee & Cunningham, 2016; Sartore & Cunningham, 2009) and were more accepting than men in our study ( $p = 0.01$  for the main effect of *Gender Identity*), this trend was only prominent in our study among those with weaker *Athletic Identity*. As Renée Richards was opposed by her peer female tennis players but supported by the predominantly male-centred media (Birrell & Cole, 1990), possibly, women with strong athletic identity considered it unfair for trans women to compete with cisgender women. Whereas higher *Athletic Identity* was negatively associated with *Acceptance* for women, however, it was positively associated with *Acceptance* for men. This indicates that the role of an athlete does not necessarily affect stigmatization of transgender individuals. Unlike the research literature that has related stigmatization of transgender individuals to sport culture (Cunningham et al., 2018; Cunningham & Pickett, 2018), our study conducted in a Japanese context did not find the influence of such culture.

Finally, the magnitude of effect of *Transphobia* was comparable to or even smaller than that of other predictors. This indicates that respondents evaluated acceptance of transgender athletes not solely based on stigmatization but also by considering contextual factors. Influence of contextual factors observed in this study may reflect cognitive characteristics of East Asian culture. It has been well replicated in cultural psychological research that East Asians process information holistically and Westerners process information analytically (Masuda et al., 2008; Masuda & Nisbett, 2001; Nisbett & Masuda, 2003). When evaluating the central figure's emotion surrounded by several people, for example, East Asians' responses were affected by the emotion of the peripheral figures (Masuda et al., 2008). Westerners, on the other hand, focused more on the central figure's emotion. In this study, too, Japanese participants might have focused more on the context within which trans athletes are situated. This might explain why the magnitude of effect of the factor *Event* was relatively large. It is possible that in Western cultures the contribution of *Transphobia* is more than *Event*, but we will leave this to future research.

### 5.1 Limitations and future research directions

Although this study has reported numerous new findings, there are some limitations. First, when we looked at athletic advantages of transgender individuals, we only considered implications of trans women. However, future research should also focus on trans men and their perceived advantages in specific sport. For example, while sports

associated with aggressiveness and violence, such as American football, are more likely to be seen as masculine, some other sports, such as figure skating, are more likely to be seen as feminine (Lee & Cunningham, 2016). Feminization of certain sports has implications for the issue of perceived advantages for trans men. Future studies should therefore specify types of sport as an additional predictor to make a more thorough discussion of trans athletes.

Replicability of results also depends on the target population. Our survey targeted university student-athletes in Japan. The acceptance scores might be lower in demographics where transgender individuals are subject to greater stigmatization. Conversely, acceptance scores might be higher in countries where transgender individuals are more visible and less marginalized. In both cases, effects of some predictors may become less observable while effects of some other predictors persist. We would like to leave identification of such universal trends to future research.

As this study demonstrated, multivariate statistical modelling is an effective approach, given the presence of intersectional forms of discrimination based on gender and other identities. We specifically used mixed-effects linear regression modelling to apply mathematical adjustments to individual participants' baseline levels of acceptance. This allowed us to provide optimal estimates for different predictors. Like Cunningham and Melton (2012), future research should explore orchestration of many other potentially important predictors co-determining people's attitude towards trans athletes: for example, race, ethnicity, class, religion, culture, and language.

## 5.2 Implications

In sport, where sex segregation has been implemented, transgender individuals are considered to be outliers because they are often believed to undermine the binary gender system. Changing policies adopted by sport officials have affected the athletic careers of many transgender individuals, both trans men and trans women. However, our study revealed that trans athletes are far more accepted in unofficial events for adults and children than in elite international and national competitions. People who participate in international competitions are limited in number; the majority of the world's population participate in recreational sport or unofficial sport events. In addition, among those with weak athletic identity, human rights carry more ethical weight than the concept of a level playing field. Our study could encourage organizers of recreational sport to increase the number of the sporting opportunities in which transgender people can participate and enjoy competition. Furthermore, in countries like Japan where policies for trans athletes have not been thoroughly developed, sport organizations and coaches can draw from our study to create guidelines for trans athletes and provide necessary information.

A frequently debated conflict between human rights and fairness in sport is seen specifically in a certain type of sport: female competition. Thus, it is a matter of feminism in a sense. Historically, feminism has been making progress by criticizing the binary system of gender in which femininity is considered to be inferior to masculinity. Therefore, differentiation of socially constructed gender from biological sex has been widely accepted in contemporary feminist theory, and it has thus been integrated into queer theory (Butler, 1990; Fuss, 1989). Although the promotion of transgender rights is an important part of contemporary feminist and queer studies, in sport, fairness for transgender women and that

for cisgender women are sometimes exclusive to each other. This contradiction may result from the binary categorization based on biological sex, which is deeply inscribed on the athletes' bodies. Our study will encourage feminist and queer scholars to pay more attention to sport and will also encourage scholars of sport management to employ feminist and queer perspectives. Sport involves physical activity to a quite considerable extent; therefore, bodies still matter in sport.

Finally, the result of the interaction between *Athletic Identity* and *Just Belief* indicated that as for the issues of trans athletes there are two notions of justice, linked to a level playing field and human rights. The effect of the event level also indicates that the importance of fairness varies between elite and nonelite sport events. These might support the constructionist view of fairness: if the definition of fairness differs depending on the context and the viewpoint, ultimately "fairness" in sport should not be conceived as concrete, although it is often considered to be so. Rather, because the notion of "fairness" is without essence and is constantly redefined, it cannot be easily achieved by any categorization, whether it be male/female divisions or inclusive/exclusive policies. Our study can draw scholars of sport management and sport ethics into a more extensive debate on fairness in sport.

### 5.3 Conclusion

To the best of our knowledge, the present survey is the first quantitative study to simultaneously assess the independent contributions of multiple predictors to student-athletes' attitudes towards the acceptance of transgender individuals in sport. The result revealed that trans men were more accepted than trans women, trans athletes with hormone treatment were considered more acceptable, and trans athletes were more accepted in unofficial sporting events for children and adults than official national and international events. It also revealed that for respondents with weaker athletic identity, higher degrees of belief in a just world were positively associated with accepting attitudes. Regarding the gender difference of respondents, whereas stronger athletic identity was positively associated with acceptance for men, it was negatively associated with acceptance for women. Although the results may evoke different interpretations, we hope that this study will contribute to enhanced understanding of the situation of trans athletes, increasing opportunities for transgender people to participate in sport without feeling marginalized, and facilitating informed decision-making by sporting bodies that support trans individuals.

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## Appendix A. Japanese text for the definition of the term “transgender”

「トランスジェンダー」とは、生まれたときの性別とは違う性別で生活しているひとたちのことです。男性として生まれ、女性として生活している人を、MtFトランスジェンダー (Male to Female)、女性として生まれ、男性として生活している人を、FtMトランスジェンダー (Female to Male) といいます。そのなかには、手術やホルモン治療をうけて、身体を自分の望む性に合わせている人もいれば、そうでない人もいます。性同一性障害 (性別違和) もトランスジェンダーと言えますが、トランスジェンダーの全員が性同一性障害というわけではありません。

## Appendix B. Hierarchical cluster dendrogram for the individual questions presented in the survey

To explore and summarize the correlational structure among the numerical predictors (22 items introduced in section 3.3), we conducted an unsupervised hierarchical cluster analysis with individual items. We expected individual questions to quantify qualitatively comparable cognitive constructs within the same measures and not across different measures. We first constructed a correlation matrix for standardized *Acceptance* scores for the individual items using squared Spearman correlations as the distance measure. We then input the matrix into unsupervised agglomerative hierarchical clustering with the complete method. As shown in the figure, the individual measures resulted in three clusters corresponding to the three predictors of interest, as indicated by the grey rectangles.

