ROLES, RELATIONSHIPS AND EMOTIONS: KEYS TO EDUCATE GENDER EQUITY THROUGH TRADITIONAL SPORTING GAMES

ROLES, RELACIONES Y EMOCIONES: CLAVES PARA EDUCAR LA EQUIDAD DE GÉNERO A TRAVÉS DE JUEGOS DEPORTIVOS TRADICIONALES

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Abstract

Educating gender equity requires promoting inclusive contexts and dismantling stereotypes. Traditional Sporting Games offer an ideal setting for promoting subversive motor interactions in inclusive socioaffective environments, yet the educational value of sociomotor roles is often overlooked. This study evaluated how sociomotor roles, gender and socioaffective relationships influence emotional and relational experiences in the Traditional Sporting Game Bear, Guardian and Hunter, characterized by aggressive, protective and vulnerable roles. This quasi-experimental mixed-methods study involved 112 undergraduates playing Bear, Guardian and Hunter. Participants completed an emotional and sociometric questionnaire. Data were analyzed using social network analysis, non-parametric tests and mediation analysis. Findings revealed that each gender and role promoted different learning experiences, with feminized and masculinized roles fostering subversive motor conducts when performed similarly by different genders. Male bears expressed anger toward their vulnerability, while female guardians displayed stronger protective opposition. Female hunters matched male motor aggressiveness, defying gender stereotypes. Positive cross-gender relationships fostered social acceptance and well-being, whereas hierarchical rapports reinforced gender segregation and discomfort. This study underscored how sociomotor roles, gender and socioaffective relationships shape game-based learning experiences. Bear, Guardian and Hunter is an effective pedagogical tool to promote gender equity. It enhances well-being, challenges stereotypes and fosters cross-gender interactions.

Keywords: Physical education, sociometry, sport, inclusion, group cohesion.

Resumen

Educar la equidad de género requiere promover contextos inclusivos y desmantelar estereotipos. Los Juegos Deportivos Tradicionales ofrecen un contexto ideal para fomentar interacciones motrices subversivas en entornos socioafectivamente inclusivos, sin embargo, el valor educativo de los roles sociomotores sigue siendo frecuentemente ignorado. Este estudio evaluó cómo los roles sociomotores, el género y las relaciones socioafectivas influyen en las experiencias emocionales y relacionales del Juego Deportivo Tradicional Oso, Guardián y Cazador, caracterizado por roles agresivos, protectores y vulnerables. Este estudio cuasiexperimental de métodos mixtos involucró a 112 estudiantes universitarios que jugaron al Oso, Guardián y Cazador. Los participantes completaron un cuestionario emocional y sociométrico. Los datos fueron analizados mediante análisis de redes sociales, pruebas no paramétricas y análisis de mediación. Los resultados revelaron que cada rol sociomotor promovió experiencias de aprendizaje distintas según el género. Los roles feminizados y masculinizados fomentaron conductas motrices subversivas cuando fueron desempeñados de forma similar por diferentes géneros. Los osos masculinos expresaron rabia ante su vulnerabilidad, mientras que las guardianas mostraron una oposición protectora más intensa. Las cazadoras igualaron la agresividad motriz masculina, desafiando los estereotipos de género. Las relaciones entre géneros favorecieron la aceptación social y el bienestar, mientras que los vínculos jerárquicos reforzaron la segregación de género y el malestar. Este estudio destaca cómo los roles sociomotores, el género y las relaciones socioafectivas impactan en la experiencia de aprendizaje. El Oso, Guardián y Cazador aparece como una herramienta eficaz para promover la equidad de género, desafiando estereotipos y fomentando interacciones entre géneros sintiendo bienestar.

Palabras clave: Educación física, sociometría, deporte, inclusión, cohesión de grupo.

Introduction

Educating Gender Equity

Educating gender equity is a significant contemporary challenge. Hegemonic masculinity and femininity dictate the correct way to be a man or woman, creating a normative framework that judges and sanctions those who do not meet these ideals, perpetuating stereotypes and hindering equity (Barton & Huebner, 2020; Connor et al., 2021; Schippers, 2007). UNESCO (2022) demands an education that subvert gender hegemonies, dismantles stereotypes and adapts to diversity.

Gender hegemonies and socioaffective relationships shape how different genders experience the same situation (Martínez-Abajo et al., 2021; Menéndez-Aller et al., 2022; Sánchez-Alvarez et al., 2019). Educators should foster inclusive learning environments that account for gender differences, particularly in the emotional dimension, acknowledging how gender influences game-based learning processes (Guerrero & Guerrero-Puerta, 2023; Păuțu et al., 2024). Educators must also consider how peer relationships affect learning, as more inclusive environments enhance academic performance, well-being, and equity (Sinchigalo-Martínez et al., 2022). In contrast, negative social dynamics can lead to reduced academic achievement, emotional distress, conflict and discrimination, all of which hinder efforts to educate for gender equity (Mamas & Trautman, 2024; Montecillo et al., 2024).

Moreover, encouraging students to engage in behaviors culturally associated with another gender promotes a subversive performativity that challenges stereotypes (Molina et al., 2025). The performativity theory (Butler, 2009) posits that gender is not an inherent trait but rather a social construct enacted through repeated performative behaviors. Gender identity, influenced by hegemonic masculinity and femininity, is socially constructed and evolves when individuals engage in subversive performative behaviors that defy traditional gender norms. Therefore, educating for gender equity requires creating emotionally inclusive environments that support subversive performative behaviors.

Traditional Sporting Games to Educate Gender Equity

Motor praxeology understands sporting games as social rituals, microsocieties organized through rules or social agreements that regulate coexistence within a playful context (Parlebas, 2020). Thus, playing is not merely a physical or recreational activity, but a way of learning to live with others (Rillo-Albert et al., 2021).

Among all types of sporting games, Traditional Sporting Games (TSG) are particularly well suited for educating gender equity (Alcaraz-Muñoz et al., 2020). Unlike institutionalized sports, whose rules have been globally standardized and have gender stigmas (Martos-García et al., 2020), TSGs are characterized by original rules rooted in local cultures. They constitute a valuable intangible ludic heritage that connects younger generations to tradition and community identity (Etxebeste et al., 2015). The ethnomotricity of TSGs refers to the idea that games are culturally embedded, making them ideal contexts for challenging cultural gender constructs.

According to Parlebas (2020), every sporting game is structured around a set of rules that define the internal logic: the set of relevant features that shape a motor situation. The rules assign one or more sociomotor roles, defined as the set of rights and restrictions attributed to one or more players in a specific motor situation, what a player in that role can and cannot do. Each role promotes a unique array of subroles or decision-making units, which outline concrete forms of interaction with time, materials, space and other players, thereby establishing the expected motor conduct (Lavega-Burgués et al., 2023).

Motor praxeology reconceptualizes movement as motor conduct, defined as the meaningful organization of motor actions, integrating both observable behavior and the subjective meaning that participants attribute to their experience (Parlebas, 2020). Each motor conduct simultaneously activates, in a holistic way, the emotional, relational, cognitive and organic dimensions of the person, and manifests uniquely according to individual personality (Lavega-Burgués, Mallén-Lacambra, et al., 2022; Lavega-Burgués, Rillo-Albert, et al., 2022).

The educational application of motor praxeology leads to the motor conducts education (Lavega-Burgués, 2018). By analyzing the internal logic, educators can select the most appropriate games to promote motor conducts aligned with

desired learning outcomes. This approach allows educators to foster inclusive environments for different genders and to encourage subversive performative motor conducts that support gender equity education (Mallén-Lacambra et al., 2024).

Recent studies showed that sporting games promote relational and emotional development, making them powerful tools for teaching equitable coexistence (Lavega-Burgués et al., 2022a), specifically, TSGs enhance well-being across genders (Alcaraz-Muñoz et al., 2023; Niubò-Solé et al., 2022). However, most studies overlooked the educational impact of sociomotor roles (Lavega-Burgués et al., 2023; Raffi-Menegaldo et al., 2024). Therefore, it remains necessary to confirm whether the positive emotional experiences promoted by TSGs occur across different genders whitin the diverse sociomotor roles (Lorente-Sanz et al., 2023).

Moreover, each motor conduct is shaped by the socioaffective relationships among players, as affectivity is the key of motor conducts (Parlebas, 2020). Research in different educational fields showed that positive relational dynamics enhance learning and well-being, whereas negative rapports hinder them. Nevertheless, no studies evaluated how the relational status of the students shapes their motor conducts, which is highly relevant for adapting educational practice to the specific group dynamics. Consequently, the influence of both gender and socioaffective relationships on the motor conducts experienced in different sociomotor roles remains unexplored.

Finally, motor conduct education allows individuals of different genders to engage in subversive performative motor conducts. Some roles may be associated with traits of hegemonic masculinity, such as aggression, dominance or physical exuberance (Connor et al., 2021). Others may align with hegemonic femininity, emphasizing care, passivity, or vulnerability (Barton & Huebner, 2020). When a non-male player performs masculinized motor conducts or a non-female participant engages in feminized motor conducts, they are subverting hegemonic gender constructs and dismantling stereotypes (Guerrero & Guerrero-Puerta, 2023; Metcalfe, 2018; Molina et al., 2025). To the best of authors' knowledge, within the field of motor praxeology, only Mallén-Lacambra et al. (2024) have explicitly studied performative motor conducts as a tool for gender equity education, although without analyzing their expression at the sociomotor role level.

Bear, Guardian and Hunter: A Traditional Game for Educating Gender Equity

The traditional sporting game Bear, Guardian and Hunter offers an ideal setting for promoting gender equity. In this cooperation-opposition game, there are three main roles: Bear, Guardian and Hunter (Lavega-Burgués et al., 2023). The Bear, in a passive and vulnerable position, sits on the ground and is connected to the Guardian by a rope, without the possibility of defending themselves from the attacks of the Hunters. The Guardian, tied to the Bear, must protect them within the perimeter defined by the rope, striking the Hunters with a handkerchief to keep them at a distance. The Hunters, meanwhile, attempt to hit the Bear with a handkerchief while dodging the strikes of the Guardian. When a Hunter is hit, the roles rotate: the captured Hunter becomes the Bear, the Bear becomes the Guardian and the Guardian becomes the Hunter (Figure 1). The game ends when participants are fatigued, the activity changes, or the teacher decides to conclude the session. To avoid hits during role changes, the last Hunter who strikes either the former or new Bear during the transition will take on the role of Bear.

Figure 1

The Game Bear, Guardian and Hunters (Adapted From Lavega-Burgués et al., 2023)



The Bear and the Guardian are feminized roles, whereas the Hunter is a masculinized role. The frequent rotation of roles ensures that students of different genders perform each role, promoting subversive motor conducts when players engage in situations not associated with their gender. Although each role generates distinct emotional experiences, positive emotions prevail in all of them, positioning the game as an emotionally inclusive context (Lorente-Sanz et al., 2023). In addition, the role-switching network encourages students to constantly interact with different people in diverse roles (Lavega-Burgués et al., 2023; Parlebas, 2000). This constant adaptation creates a rich relational context where previous socioaffective relationships could modulate the emotional and relational experience. For these reasons, Bear, Guardian and Hunter emerges as an ideal context for promoting gender equity from a performative, relational and emotional perspective.

This study aimed to evaluate the effect of gender and socioaffective relationships on the emotional and relational experience within each role of the Traditional Sporting Game Bear, Guardian and Hunter. Revealing these effects will support researchers and educators in adapting their practice to the specificities of their context to promote gender equity, by understanding how each sociomotor role entails unique learning experiences shaped by gender and relational dynamics.

Materials and Methods

Participants and Procedure

This quasi-experimental mixed-method study with a naturalistic and interpretative approach (Krippendorff, 2002) involved 112 undergraduates (36 women and 76 men; M_{age} = 19.8, *SD* = 2.32) enrolled in Physical Activity and Sport Science at the National Institute of Physical Education of Catalonia (INEFC) Lleida campus. Participants were grouped in 12 groups of eight to ten persons and played the Traditional Sporting Game of Bear, Guardian and Hunter for 8 minutes, following the recommendations of the Motor Action Research Group (GIAM). The study was conducted in accordance with the World Medical Association and the Declaration of Helsinki and the IRB/Clinical Research Ethics Committee (CEIC) of the University of Lleida (reference code: 09/CEICGC/2020) approved the study.

Materials and Instruments

Sociometric Questionnaire

Participants completed a sociometric questionnaire to assess socioaffective relationships after the intervention. This questionnaire employed a peer nomination technique with unlimited, directed and weighted nominations, as recommended by the systematic review of Avramidis et al. (2017). Participants were physically separated during the questionnaire to ensure privacy. Students were informed that their responses would be confidential and would influence grouping for a significant non-competitive and leisure-oriented final activity to promote earnest and motivated responses. These strategies were crucial for ensuring quality socioaffective responses, preventing non-affective answers based on instrumental reasons (Mamas et al., 2023; Parlebas, 1992). Participants were asked: *With whom would you like to share the great final activity?* and *With whom would you not like to share the great final activity?*

GES-II Questionnaire

Each participant completed the validated Games and Emotions Scale (GES-II) after the game (Lavega-Burgués et al., 2018), which measured the intensity of five basic emotions (joy, anger, fear, sadness, and rejection) for each role, using a Likert scale from 1 to 7. Participants also described the reason for the emotion felt with the highest intensity and rated the emotional intensity of all possible motor interactions using a Likert scale from 1 to 5.

Data Analysis

A social network analysis evaluated sociometric data at node, group and gender level using UCINET version 6.770 software (Borgatti et al., 2022). Several social network analysis variables were used to evaluate different relationship patterns (Lusher et al., 2013). Group and individual E-I Index measured the relative density of same-gender relationships against cross-gender relationships, evaluating gendered relationship preferences. Group elections density evaluated the overall frequency of acceptance. Group election and rejection connectedness assessed the distribution and influence of acceptance and rejections. Indegree elections measured the number of elections a person received, while outdegree elections assessed the number of elections emitted. Incloseness elections evaluated the position and influence of a person based on directed and undirected received elections, while outcloseness elections and rejections measured position and influence based on directed and undirected emitted elections and rejections. Outdegree group correlation of elections assessed the distribution of elections across the network to evaluate the fragmentation level of the group.

Three experts analyzed the GES-II qualitative data using content analysis to formulate valid inferences (Krippendorff, 2002; Levitt et al., 2018). Data were collected immediately post-game for authenticity. The analysis involved two phases: reduction and separation of socioemotional meaning units. In the reduction phase, following Lavega et al. (2023) comments were transcribed and categorized into units based on motor praxeology, including Role, Motor Interaction, and Motor Aggression. In the separation phase, units were classified by emotion type (positive and negative), aiding in identifying emotional responses for each role.

Basic descriptive statistics, including means and standard deviations, were calculated. Data normality was assessed using the Shapiro–Wilk test. Differences according to gender and group were examined using Kruskal–Wallis tests. Associations between gender and categorical emotional outcomes were examined using chi-square tests of independence. Cramér's *V* was reported as the corresponding effect-size measure, ranging from 0 to 1, with higher values indicating stronger associations between the variables (Cohen, 1988).

A mediation analysis was conducted with the E-I Index, elections incloseness, elections outcloseness, elections indegree, and elections outdegree as independent variables; group elections E-I Index, group rejection connectedness, and group election connectedness as mediators; and negative emotions as the dependent variable (Hayes, 2013). Standard errors and 95% confidence intervals for the indirect, component, direct, and total effects were calculated using the standard delta method. Fully standardized coefficients (β), *z* statistics, and associated *p* values were reported. The analyses were performed using Jamovi.

Results

Socioaffective Relationships From a Gender Perspective

Men displayed significantly higher outcloseness and incloseness in elections and higher outcloseness in rejections, indicating a more central socioaffective role (Table 1). They emitted and received more elections and emitted more rejections, but incloseness for rejections showed no significant difference, suggesting men were not more rejected than women.

Table 1

Socioaffective Relationships of Genders

	Male	Female	χ^2	*p*	ε^2
Out-Closeness of Elections	18.184 ± 6.507	14.528 ± 5.107	7.753	.005**	.070
In-Closeness of Elections	18.342 ± 7.057	14.583 ± 5.823	4.575	.032*	.041
Out-Closeness of Rejections	28.987 ± 1.095	23.806 ± 7.309	6.089	.014*	.055
In-Closeness of Rejections	29.171 ± 12.365	24.556 ± 8.833	3.405	.065	.031

Note. *p < .05. **p < .01.

Mixed-gender groups had higher density and connectedness in elections, with near-zero outdegree correlation, reflecting broader and more horizontal social acceptance (Table 2). Rejection dynamics were similar across genders, as no significant differences were observed.

Table 2

Socioaffective Relationships of Male Groups and Mixed Groups

	Male group	Mixed group	χ^2	*p*	ε^2
Out-degree correlation of Elections	-0.127 ± 0.209	-0.021 ± 0.204	5.694	.017*	.051
Density of Elections	0.460 ± 0.132	0.551 ± 0.153	8.441	.004**	.076
Connectedness of Elections	0.785 ± 0.223	0.910 ± 0.181	9.849	.002**	.089
Out-degree correlation of Rejections	0.123 ± 0.155	0.102 ± 0.193	0.342	.559	.003
Density of Rejections	0.118 ± 0.058	0.146 ± 0.054	3.131	.077	.028
Connectedness of Rejections	0.270 ± 0.215	0.253 ± 0.157	0.427	.513	.004

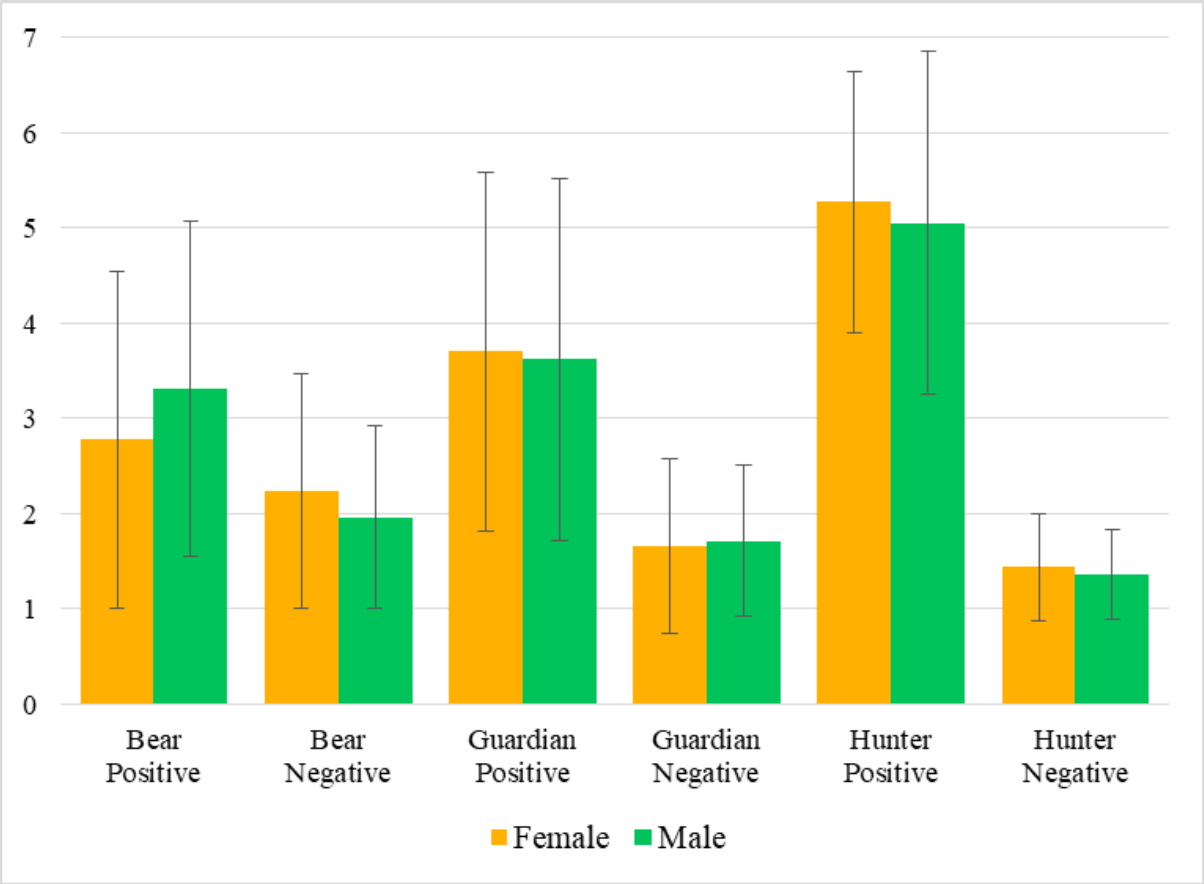
Note. *p < .05. **p < .01.

Emotional Intensity in the Three Roles

Emotional results showed general well-being across all roles (Figure 2). The Hunter role had the most positive and least negative emotions. The Bear showed the least positive and most negative emotions. The Guardian had intermediate emotions.

Figure 2

Roles Positive and Negative Emotional Intensity

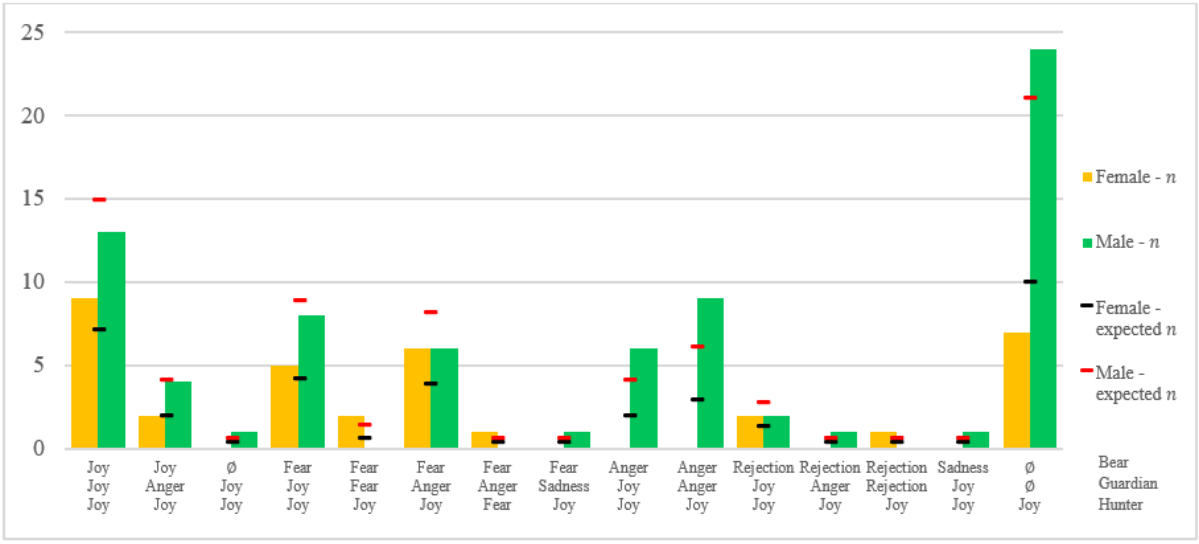


Emotional Triad and Gender

Negative emotions were more frequent for Bears, while positive emotions were more frequent for Guardians and especially Hunters (Figure 3). Positive emotions in the bear role mainly triggered a complete joy triad. Male Bears showed significant gender differences (p = .030; V = .391), being the only ones to feel anger. Male bear negative emotions were mainly fear and anger. Fear primarily triggered the triads Fear-Joy-Joy and Fear-Anger-Joy, while anger triggered Anger-Joy-Joy and Anger-Anger-Joy. "I was angry and scared because I didn't want to be hit by the hunters, and sometimes the hits from the hunters were painful." MC (Male Commentary) 1.

Figure 3

Frequency of Emotional Triads



Note. # = Did not experience the role.

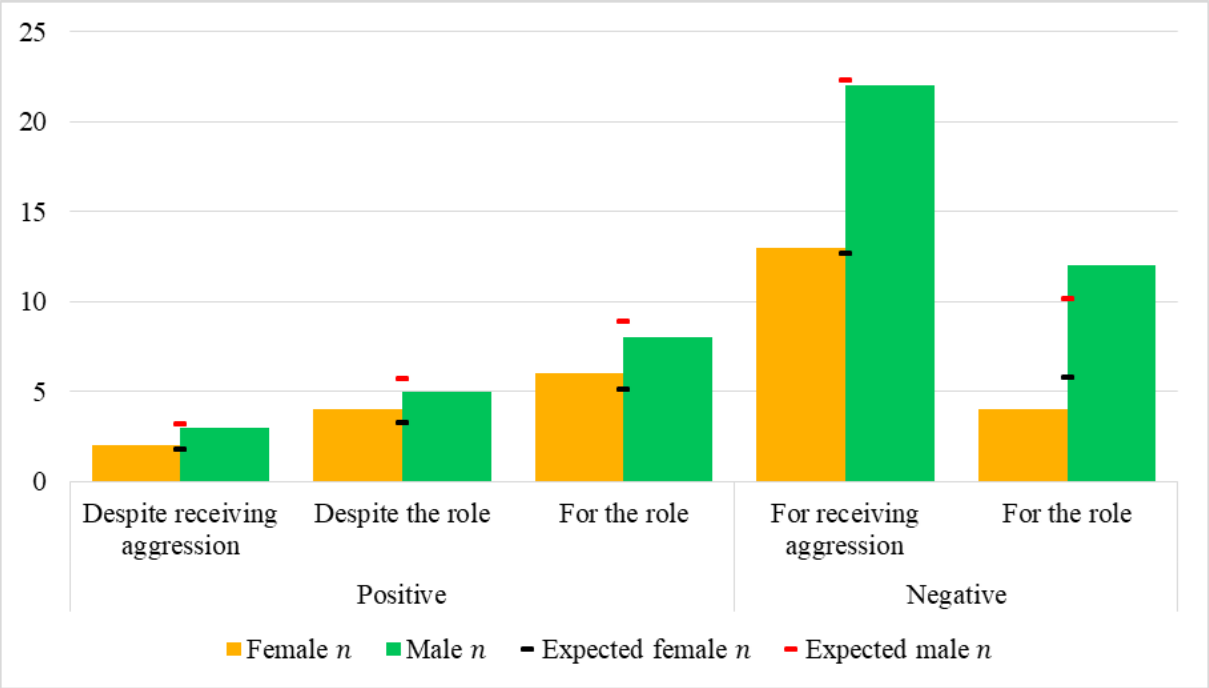
Female Bears oriented their negative emotions mainly towards fear, triggering Fear-Anger-Joy and Fear-Joy-Joy, especially Fear-Anger-Joy. "I felt fear of feeling attacked by the other participants." FC (Female Commentary) 1. Positive emotions were more frequent in the Guardian role. Anger was the most frequent negative emotion, especially in men. "You laugh a lot as a Guardian. You run after everyone, which is what I found fun and cheerful." MC2. "I felt angry because it often became complicated to try to hit one of the Hunters." MC3. Hunter role promoted joy, except for a woman who felt fear. "I felt joy because it is the role where you take the most risks, and at the same time, it is the most beautiful." MC4. "I felt fear for being hunted." FC2. Individuals who did not experience all three roles, mainly men, evidenced only positive emotions. Emotional triads #-#-Joy, Anger-Anger-Joy, and Anger-Joy-Joy were predominantly male triads, while women experienced greater emotional triad diversity.

Emotional Meaning in the Bear Role

The emotional meaning in the Bear role matched expected gender outcomes. As shown in Figure 4, Bears directed their discomfort towards receiving aggression and the role itself. "I felt anger and fear because everyone wanted to hit you and you are unable to do anything, you depend on someone to defend you, and you can't protect yourself." MC5. They directed their well-being for role, despite the role and despite receiving aggression. "I felt joy because it was a game, and if I got hit, it didn't bother me since I would do the same as a Hunter." MC6.

Figure 4

Frequency of the Emotional Meanings of the Main Emotion of the Bears

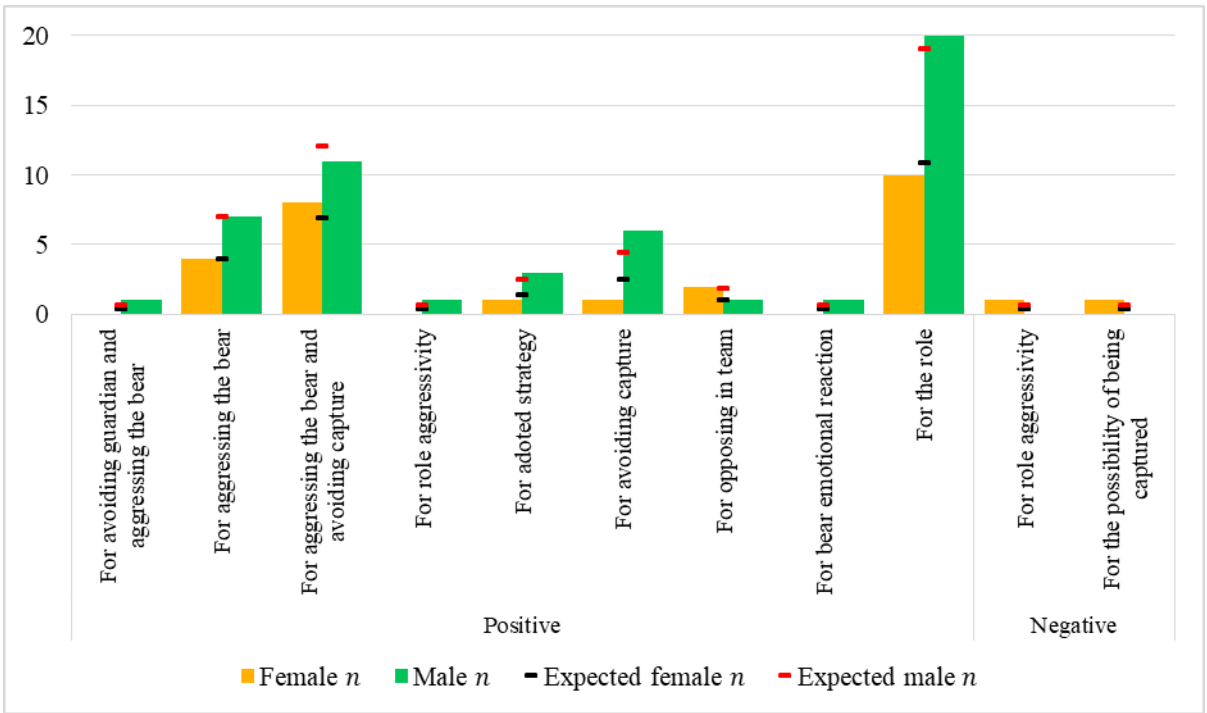


Emotional Meaning in the Guardian Role

Guardians linked their well-being to the role, capturing, and avoiding aggression towards the Bear (Figure 5). "It was fun because you had to run all the time to hit your classmates with the handkerchief and also try to avoid them hitting the Bear." MC7. Women tended to link their well-being with avoiding Bear aggression more than expected. “It was nice to protect the Bear, and we laughed a lot with the classmates." FC3.

Figure 5

Frequency of the Emotional Meanings of the Main Emotion of the Guardians



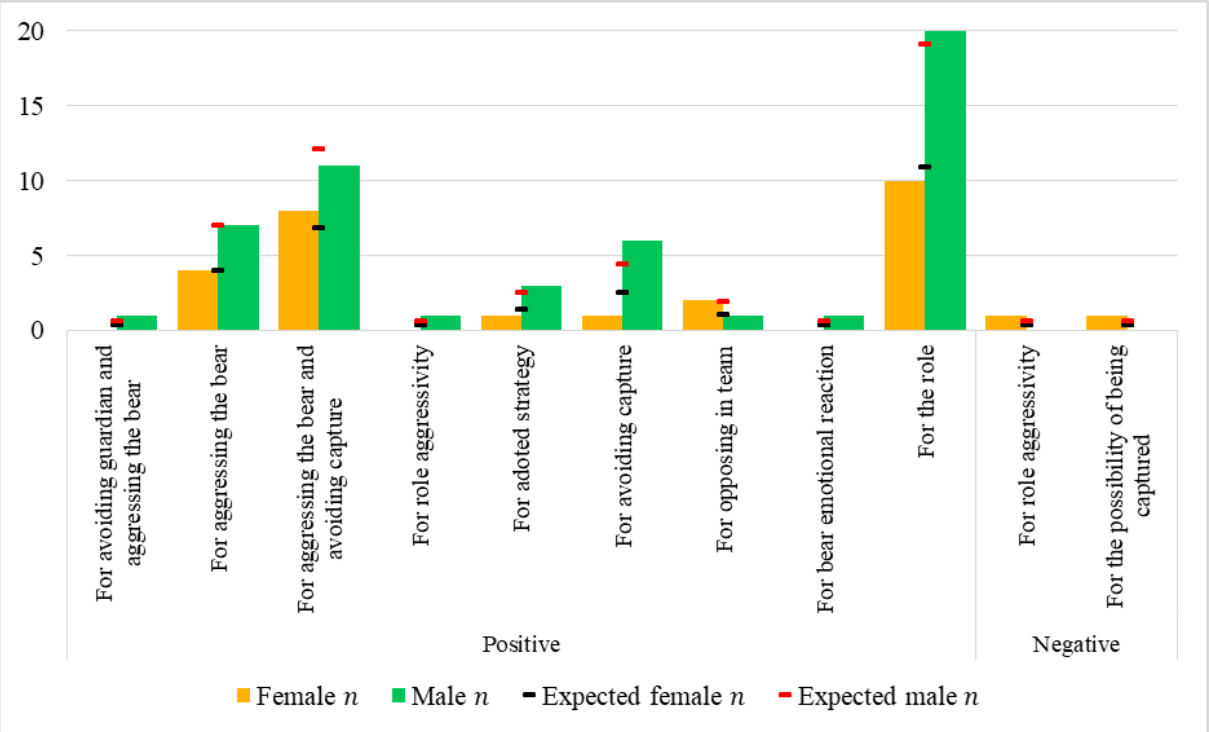
Male Guardians primarily associated discomfort with failing to capture, while women tended to feel discomfort from not avoiding Bear aggression more than expected. "I felt anger when I didn't hit someone with the handkerchief" MC8. "I felt anger because I saw everyone attacking the Bear, and it was difficult for me to catch any Hunter." FC4.

Emotional Meaning in the Hunter Role

Hunters linked positive emotions to the role, aggression towards the Bear, and avoiding capture (Figure 6). "The act of running, going in to hit the Bear, and trying not to get caught gave me a feeling of joy and happiness." MC9. Women showed a slight tendency to associate well-being with both aggression and avoiding capture, while men oriented their well-being more towards avoiding capture and the role. Only a woman exhibited negative emotions. "It was very fun to hit the Bear and try not to get caught." FC5. "The Guardian is the role in which you participate the most, and that is why joy predominates." MC10.

Figure 6

Frequency of the Emotional Meanings of the Main Emotion of the Hunters

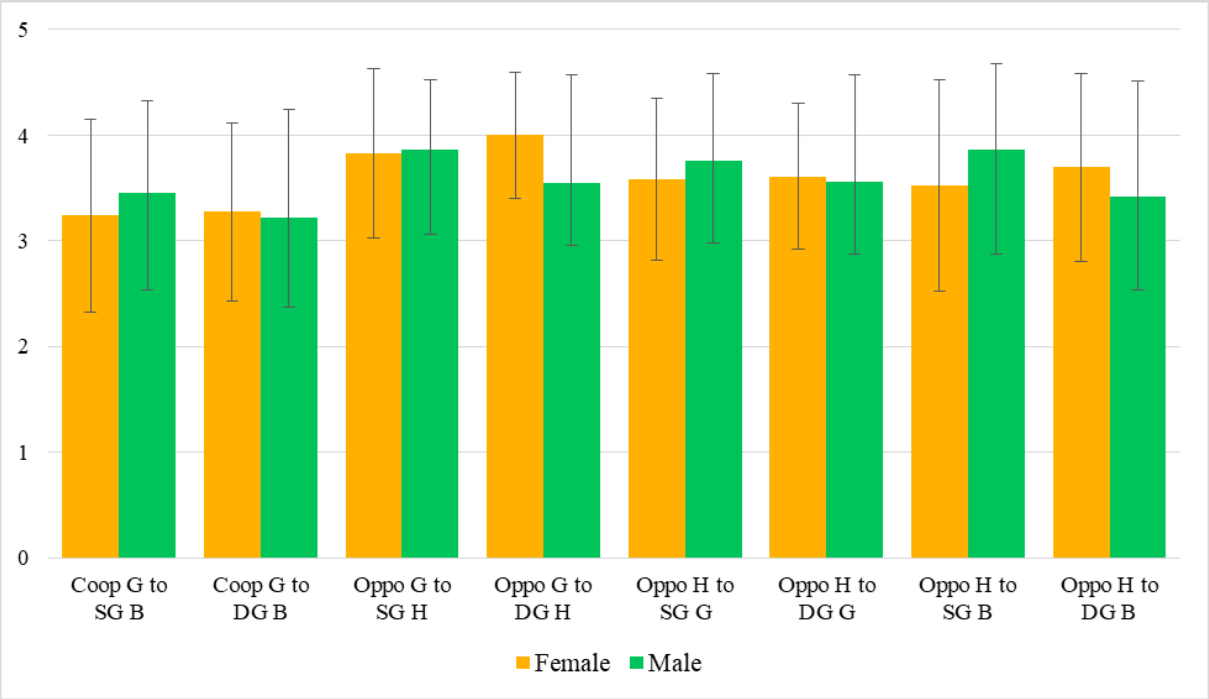


Intensity of Motor Interactions

Opposition was more intense than cooperation (Figure 7). Female Guardians opposed male Hunters significantly more than male Guardians opposed female Hunters (p = .048; ε^2 = .050). Males tended to interact more intensely with each other than with females. Females opposed males more intensely than each other. Men's interactions with women were the least intense.

Figure 7

Intensity of Motor Interactions



Note. Coop = Cooperation; Oppo = Opposition; SG = Same Gender; DG = Different Gender; B = Bear; G = Guardian; H = Hunter.

Mediation Analysis of Emotions, Stereotypes, and Socioaffective Relationships

Six significant component pathways were identified, as shown in Table 3 and Figure 8. Findings revealed a significant total effect from elections E-I Index to negative emotions (E E-I # N Emo; β = -.267, z =-2.833, p = .005). The pathway from outdegree elections to group elections connectedness was significant (E Outdeg # E Gr Conn; β = - .186, z = - 2.635, p = .008), indicating that emitted elections negatively influence election group connectedness. The pathway from elections outcloseness to group elections connectedness was significant (E OutClose # E Gr Conn; β = -.622, z = -6.330, p < .001), evidencing that higher levels of elections outcloseness were associated with lower levels of group elections connectedness. The path from elections outcloseness to group elections E-I Index was significant (E OutClose # E Gr E-I; β = -.199, z = -2.256, p = .024), indicating that higher levels of elections outcloseness were associated with lower levels of election group E-I Index. The pathway from elections incloseness to group election E-I Index was significant (E InClose # E Gr Conn; β = -.264, z = -2.272, p = .023), evidencing that higher levels of elections incloseness were associated with lower levels of Group Elections Connectiveness. The pathway from E-I elections to group rejections connectedness was significant (E E-I # R Gr Conn; β = -.188, z = -1.977, p = .048), showing that higher levels the tendency to choose people of different gender were associated with lower levels of group rejections connectedness.

Table 3

Mediation Analysis Between Emotions, Stereotypes and Socioaffective Relationships 95% CI

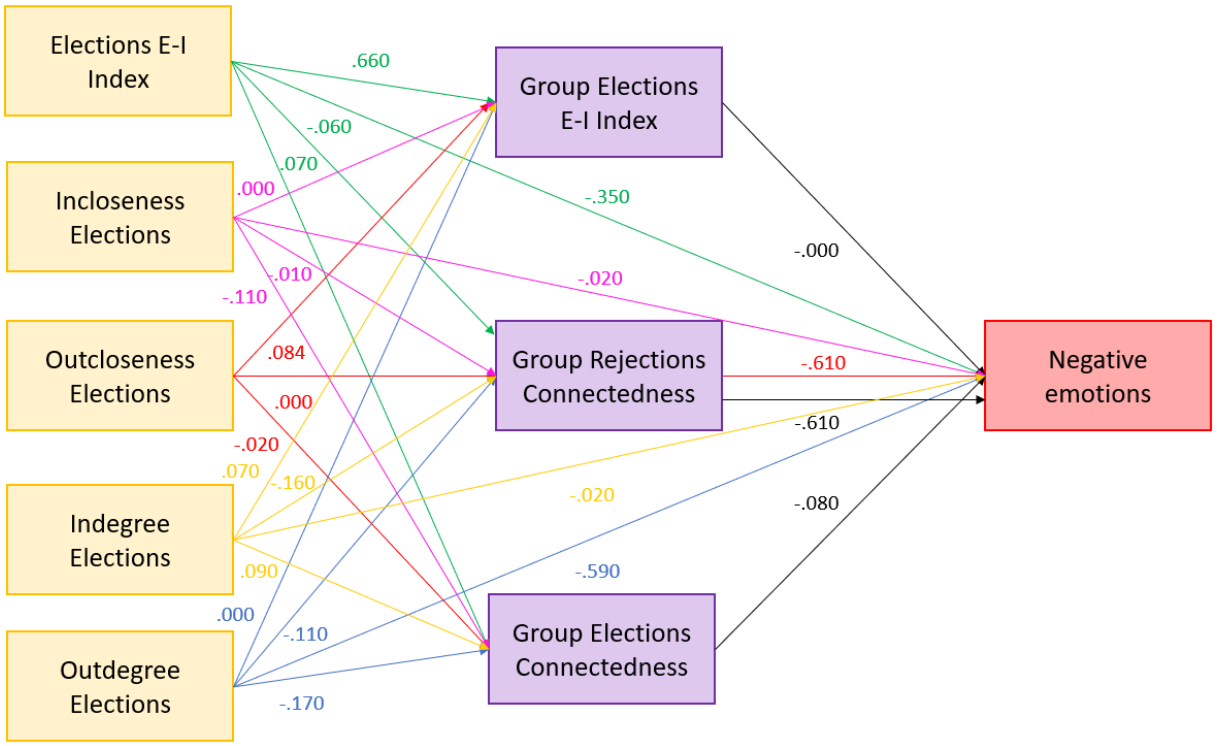
Type	Effect	Estimate	*SE*	Lower	Upper	*β*	*z*	*p*
Indirect	E Outdeg # E Gr Conn # N Emo	0.013	0.081	-0.146	0.172	.005	0.160	.873
Indirect	E Outdeg # R Gr Conn # N Emo	0.068	0.069	-0.067	0.203	.024	0.988	.323
	E Outdeg # E Gr E-I # N Emo	0.000	0.024	-0.046	0.046	.000	0.005	.996
	E Indeg # E Gr Conn # N Emo	-0.007	0.044	-0.094	0.080	-.002	-0.159	.874
	E Indeg # R Gr Conn # N Emo	0.100	0.094	-0.083	0.284	.034	1.070	.285
	E Indeg # E Gr E-I # N Emo	0.000	0.063	-0.124	0.123	.000	-0.005	.996
	E OutClose # E Gr Conn # N Emo	0.002	0.010	-0.019	0.022	.015	0.160	.873
	E OutClose # R Gr Conn # N Emo	0.000	0.003	-0.006	0.006	.000	0.010	.992
	E OutClose # E Gr E-I # N Emo	0.000	0.004	-0.007	0.007	.000	0.005	.996
	E InClose # E Gr Conn # N Emo	0.001	0.004	-0.007	0.009	.007	0.160	.873
	E InClose # R Gr Conn # N Emo	0.003	0.004	-0.004	0.011	.031	0.822	.411

Type	Effect	Estimate	*SE*	Lower	Upper	*β*	*z*	*p*
	E InClose # E Gr E-I # N Emo	0.000	0.001	-0.002	0.002	.000	-0.005	.996
	E E-I # E Gr Conn # N Emo	-0.002	0.010	-0.020	0.017	-.001	-0.158	.874
	E E-I # R Gr Conn # N Emo	0.039	0.028	-0.016	0.094	.034	1.381	.167
	E E-I # E Gr E-I # N Emo	-0.001	0.155	-0.305	0.304	-.001	-0.005	.996
Component	E Outdeg # E Gr Conn	-0.167	0.063	-0.292	-0.043	-.186	-2.635	.008**
	E Gr Conn # N Emo	-0.078	0.483	-1.025	0.870	-.025	-0.160	.873
	E Outdeg # R Gr Conn	-0.111	0.097	-0.300	0.078	-.136	-1.150	.250
	R Gr Conn # N Emo	-0.614	0.319	-1.239	0.010	-.178	-1.929	.054
	E Outdeg # E Gr E-I	-0.099	0.129	-0.353	0.154	-.049	-0.769	.442
	E Gr E-I # N Emo	-0.001	0.237	-0.465	0.463	-.001	-0.005	.996
	E Indeg # E Gr Conn	0.091	0.084	-0.073	0.254	.097	1.086	.277
	E Indeg # R Gr Conn	-0.163	0.127	-0.412	0.086	-.193	-1.286	.198
	E Indeg # E Gr E-I	0.266	0.170	-0.068	0.600	.125	1.561	.119
	E OutClose # E Gr Conn	-0.021	0.003	-0.028	-0.015	-.622	-6.330	< .001***
	E OutClose # R Gr Conn	0.000	0.005	-0.010	0.010	-.002	-0.010	.992
	E OutClose # E Gr E-I	-0.016	0.007	-0.029	-0.002	-.199	-2.256	.024*
	E InClose # E Gr Conn	-0.008	0.004	-0.016	-0.001	-.264	-2.272	.023*
	E InClose # R Gr Conn	-0.005	0.006	-0.016	0.006	-.177	-0.909	.363
	E InClose # E Gr E-I	0.004	0.007	-0.011	0.018	.049	0.474	.635
	E E-I # E Gr Conn	0.019	0.021	-0.022	0.061	.052	0.920	.358
	E E-I # R Gr Conn	-0.063	0.032	-0.126	-0.001	-.188	-1.978	.048*
Direct	E Outdeg # N Emo	-0.589	0.337	-1.250	0.071	-.210	-1.750	.080
	E Indeg # N Emo	-0.019	0.434	-0.870	0.832	-.007	-0.044	.965
	E OutClose # N Emo	-0.002	0.021	-0.042	0.039	-.014	-0.075	.940
	E InClose # N Emo	-0.023	0.019	-0.060	0.015	-.227	-1.171	.241
	E E-I # N Emo	-0.346	0.189	-0.716	0.024	-.299	-1.833	.067
Total	E Outdeg # N Emo	-0.508	0.330	-1.154	0.138	-.181	-1.541	.123
	E Indeg # N Emo	0.074	0.434	-0.776	0.924	.025	0.170	.865
	E OutClose # N Emo	0.000	0.018	-0.034	0.035	.002	0.009	.993
	E InClose # N Emo	-0.019	0.019	-0.056	0.019	-.189	-0.983	.326
	E E-I # N Emo	-0.310	0.109	-0.524	-0.095	-.267	-2.833	.005**

Note. E = Elections; R = Rejections; Gr = Group; N Emo = Negative Emotions; Indeg = Indegree; Outdeg = Outdegree; InClose = Incloseness; OutClose = OutCloseness; E-I = E-I Index; Conn = Connectedness. *p < .05. **p < .01. *** p < .001.

Figure 8

Effects of Acceptance Values on Negative Emotions Mediated by Group Acceptance and Rejection Factors



Discussion

The study aimed to evaluate the effects of sociomotor role, gender and socioaffective relationships on the emotional and relational experience in the Traditional Sporting Game of Bear, Guardian and Hunter to promote gender equity.

The Influence of Gender on Socio-Affective Relationships

Findings indicated that gender significantly shaped relational dynamics within the game, with men displaying higher levels of incloseness and outcloseness for elections and rejections. These results suggest a more central and influential role

in group dynamics for male participants, who exhibited a stronger presence in the socioaffective network. The tendency of men to assume central positions within group structures aligns with the principles of hegemonic masculinity, which emphasizes dominance and competition (Connell & Messerschmidt, 2005; Connor et al., 2021; Messerschmidt, 2018). These traits often position men at the center of social networks, where they wield greater influence over group decisions (Carli, 2009; Üzümçeker, 2023).

In contrast, mixed-gender groups demonstrated a more inclusive and horizontal relational structure, evidenced by an outdegree correlation of elections nearing zero, alongside elevated election density and connectivity. Such dynamics reflected a non-hierarchical scenario where influence is more evenly distributed. Hegemonic femininity, which prioritizes care, empathy and social cohesion (Barton & Huebner, 2020), could have fostered a more cohesive and less hierarchical structure, promoting group cohesion and reducing relational disparities. Understanding these gendered dynamics is crucial for educators, as affectivity is central to motor conduct (Parlebas, 2020). Evaluating how gendered relational patterns impact group interactions allows educators to make informed pedagogical decisions, tailoring interventions to foster learning, wellbeing and gender equity (Mamas & Trautman, 2024).

The Influence of Gender on the Emotional and Relational Experience

Each sociomotor role of Bear, Guardian and Hunter promoted different emotional and relational experiences, although all of them elicited predominantly positive emotions (Lavega-Burgués et al., 2023; Lorente-Sanz et al., 2023). These findings underscored the pedagogical importance of sociomotor roles, as each role determine the learning experience of the students (Parlebas, 2020). One player noted the enjoyment inherent in the Hunter role: "It was good and fun be a Hunter, as you were the one that hit and not the one receiving." MC11. Others described the mixed emotions of the Guardian: “I felt joy when I could protect the Bear, but fear in case I could leave the Bear unprotected” FC6. Players in the Bear role articulated a sense of vulnerability and uncertainty: "At Bear role, you didn't know where or when they would hit you and because of a lack of trust in the Guardian." MC12.

Emotional Dynamics in the Bear Role

The Bear role, which involves passivity and vulnerability, revealed significant emotional differences between male and female participants. These results are consistent with previous evidence that revealed a different emotional experience between man and women, although they did not evaluate it from a sociomotor role approach (Alcaraz-Muñoz et al., 2020; Alcaraz-Muñoz et al., 2023; Niubò-Solé et al., 2022). While both genders associated this role with receiving aggression, hegemonic masculinity and feminity could have modulated the emotional experience of the students (Sánchez-Alvarez et al., 2019). Male participants only expressed anger, an emotion linked to the frustration of occupying a position of limited autonomy. This situation contrasts with the control and dominance promoted by the hegemonic masculinity (Connor et al., 2021), generating anger in man (Menéndez-Aller et al., 2022). One male participant articulated this emotion expressing: “I felt anger because I had been in the role of the bear for quite a while and personally couldn’t do anything to change it. Therefore, I had little interaction with the other participants” (MC13).

In contrast, female Bears experience different types of negative emotions, probably influenced by expectations of care and protection associated with hegemonic femininity (Barton & Huebner, 2020). One participant captured this experience, stating, “I felt fear of feeling attacked by the other participants” (FC7). These responses indicated that gender influenced the educational experience of the Bear, highlighting that educators and researchers should consider how different genders experience the sociomotor roles.

Emotional Dynamics in the Guardian Role

In the Guardian role, which requires protective actions, female participants displayed a significantly more intense opposition to protect the bear compared to man. This aligns with the values of hegemonic femininity, which emphasize care, protection, and social responsibility (Menéndez-Aller et al., 2022). This dynamic suggests that female players approached the Guardian role with a greater sense of duty to protect the Bear, as reflected in the statement, “The most intense emotion was fear because I had to protect another person” (FC8). These findings align with other studies that revealed a female preference for cooperative motor interactions and prosocial conducts (Niubò-Solé et al., 2022).

Male guardians mainly expressed discomfort when they failed to capture hunters, suggesting an alignment with competitive behaviors associated with hegemonic masculinity (Connor et al., 2021). The different emotional meaning within the Guardian role reflects how men and women experience differently a protective role, with women focusing on caring and men on a successful opposition (Sánchez-Alvarez et al., 2019). This divergence highlights the potential of the Guardian role as a pedagogical tool for understanding and challenging gendered expectations related to cooperation and opposition.

Emotional Dynamics in the Hunter Role

The Hunter role, characterized by assertive and aggressive actions, generated predominantly positive emotions among all genders. The absence of significant differences revealed the promotion of masculinized behaviors as risk-taking and aggressiveness in women. One female participant captured this feeling, noting, "I tried not to get caught, but at the same time, I liked taking risks to make the game more dynamic" (FC9). Another player described the excitement of the role: "Playing hunter was very fun and exciting because, while looking for windows of time to hit the bear, you also had to be aware of the position of the guardian, which caused some nervousness" (MC14).

These results suggest that female hunters challenge traditional gender norms, demonstrating that women can comfortably embody characteristics associated with dominance, risk and aggressiveness (Păuțu et al., 2024). Moreover, these subversive motor conducts that promote gender equity were performed in a well-being situation, creating a safe space that limits potential social problems related with this kind of behaviors (Barton & Huebner, 2020; Butler, 2009; Guerrero & Guerrero-Puerta, 2023). These findings underscore the educational potential of the *Bear, Guardian and Hunter* to facilitate exploration and reflection on gendered expectations and emotional responses (Sánchez-Alvarez et al., 2019). Future studies should investigate the subversive potential of other traditional sporting games sociomotor roles to understand how subversive performative motor conducts foster gender equity.

The Influence of Socioaffective Relationships on the Emotional Experience

These findings suggest that socioaffective relationships significantly influence the emotional experiences of students, reinforcing the idea that affectivity shapes motor conduct (Mallén-Lacambra et al., 2024; Parlebas, 2001). Positive cross-gender relationships were associated with a reduction in negative emotions. In contrast, groups characterized by the presence of high-prestige individuals tended to fragment into same-gender subgroups, which worsened group dynamics and hindered learning, well-being, and gender equity (Mamas & Trautman, 2024). This evidence is consistent with previous studies in other educational domains, which underscore that a positive relational context fosters well-being (Sinchigalo-Martínez et al., 2022).

To the best of the authors' knowledge and according the systematic review of Raffi-Menegaldo et al. (2024), this research becomes the first study to reveal that motor conducts elicit more positive emotional experiences when developed in a positive relational context. These findings highlight the importance of conducting comprehensive social network analyses at the node, subgroup and whole-network levels to assess the impact of socioaffectivity on the learning process. Future research should build on these results by further exploring the relationship between group dynamics and the emotional experiences elicited during motor situations.

Conclusions

This study revealed the educational richness of each sociomotor role within the traditional sporting game Bear, Guardian and Hunter, which emerged as an authentic socioemotional laboratory. Each sociomotor role enhanced different motor conducts and learning experiences, shaped by gender and socioaffective relationships. The roles promoted subversive performative motor conducts that challenged gender stereotypes, as participants engaged in actions that deviated from conventional gender expectations. Positive cross-gender relationships improved group dynamics, and both gender and socioaffective rapports influenced the emotional and relational experience triggered by motor conducts. The study, however, is not without limitations. The presence of two all-male groups and an overall predominance of male participants in mixed-gender groups may have influenced the relational dynamics and emotional expressions. Furthermore, the sociometric questionnaire employed a purely quantitative approach; the inclusion of qualitative techniques (e.g., interviews or open-ended sociometric reflections) could have deepened the understanding of relational configurations. Future research should

address these limitations and explore the transferability of the findings to other traditional sporting games with varied sociomotor structures. Expanding the analysis to different cultural contexts and diverse educational levels could reinforce the generalizability of the proposed pedagogical model**.** These findings highlighted how gender, sociomotor roles and socioaffective relationships influenced the emotional and relational experiences of students. This study guides researchers and educators to consider roles, gender and socioaffective dynamics as key elements in promoting gender equity through sporting games.

Ethics Committee Statement

The research was conducted in accordance with the ethical standards of the World Medical Association and the Declaration of Helsinki and received approval from the IRB/Clinical Research Ethics Committee (CEIC) of the University of Lleida (reference code: 09/CEICGC/2020). All participants provided informed consent to take part in the study.

Conflict of Interest Statement

The co-authors: Miguel Pic, Pere Lavega Burgués, Zhaïra Ben Chaâbane, and I, Carlos Mallén Lacambra, declare no conflicts of interest.

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Authors' Contribution

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Data Availability Statement

The dataset used in this study is available in the open access repository *Zenodo* through this link: https://doi.org/10.5281/zenodo.19664616

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