

TESIS DOCTORAL



ESCUELA INTERNACIONAL DE DOCTORADO

Programa de Doctorado en Ciencias del Deporte

GENDER STEREOTYPES IN PHYSICAL EDUCATION

Autor/a:

Maria Luigia Salvatori

Directores/as:

Prof. Dr. Domenico Cherubini

Murcia, Octubre de 2025

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AUTHORIZATION OF THE DIRECTORS OF THE THESIS FOR SUBMISSION

Prof. Dr. Domenico Cherubini as Director of the Doctoral Thesis "GENDER STEREOTYPES IN PHYSICAL EDUCATION" by Dr. Maria Luigia Salvatori in the Programa de Doctorado en Ciencias del Deporte, **authorize for submission** since it has the conditions necessary for its defense.

Lo que firmo, para dar cumplimiento al Real Decreto 99/2011 de 28 de enero, en Murcia a 17 Octubre de 2025.

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⁽¹⁾ Si la Tesis está dirigida por más de un Director tienen que constar y firmar ambos



RESUMEN

A pesar de los avances significativos en el ámbito educativo, las desigualdades de género siguen presentes, especialmente en la educación física escolar (EF). Los estereotipos de género (EG) continúan siendo construcciones sociales persistentes que influyen en las percepciones, actitudes, comportamientos socio-relacionales y motivación hacia la actividad física en la infancia. Dichos estereotipos comienzan a configurarse incluso antes del nacimiento y se consolidan a través de procesos tempranos de socialización, condicionando lo que se considera “apropiado” para niños y niñas en términos de habilidades motoras, actitudes corporales y participación deportiva. Como consecuencia, los EG pueden limitar el acceso a oportunidades de aprendizaje motor, desincentivar la participación activa y afectar la continuidad de la práctica física a largo plazo. Esta problemática se vincula directamente con los objetivos de la Agenda 2030 para el Desarrollo Sostenible (Objetivos 4 y 5), que promueven una educación inclusiva, equitativa y la igualdad de género. La EF, al integrar componentes motores, actitudinales y sociales, representa un espacio privilegiado para prevenir la reproducción de desigualdades, fomentar la inclusión y promover el respeto a la diversidad. En Italia, la Reforma Deportiva de 2021 introdujo docentes especialistas de EF en cuarto y quinto grado de primaria, reforzando el valor educativo del movimiento y subrayando la necesidad de investigar la persistencia de estereotipos en este nivel educativo.

El presente estudio tuvo como objetivo analizar la presencia y el impacto de los EG en estudiantes de educación primaria del cuarto y quinto grado del sur de Italia, con especial atención a la motivación y a las dinámicas coeducativas. Se formularon cuatro hipótesis: (H₁) los EG siguen presentes en la infancia; (H₂) los EG varían en función del género; (H₃) los EG influyen en la motivación del alumnado para participar en actividades físicas y deportivas; y (H₄) los EG afectan las actitudes socio-relacionales hacia la coeducación, prediciendo menor cooperación y apertura en contextos mixtos. Participaron 401 estudiantes. Los datos fueron recogidos mediante instrumentos estandarizados (PAAPEQ, CMEF-EP, CEFGAD) y analizados mediante pruebas t, Chi-cuadrado, correlaciones y

regresiones lineales. Los resultados mostraron ausencia de diferencias significativas en creencias explícitas, aunque las niñas manifestaron mayor conciencia respecto a la categorización estereotipada del deporte. Los niños presentaron mayor motivación intrínseca e identificada, mientras que las niñas mostraron mayor motivación externa y falta de motivación. Se observaron diferencias significativas en las actitudes relacionales hacia la coeducación, siendo los niños quienes mostraron comportamientos más adaptativos. El análisis de regresión confirmó que una mayor adhesión a los EG predijo menor motivación y actitudes relacionales menos adaptativas, aunque con tamaño de efecto moderado.

En conjunto, estos hallazgos subrayan la importancia de intervenciones pedagógicas tempranas dirigidas a la reducción explícita de estereotipos, la promoción de prácticas coeducativas inclusivas y el fortalecimiento de la motivación intrínseca mediante metodologías de apoyo a la autonomía y la exposición a modelos diversos. La construcción de entornos de EF libres de estereotipos puede favorecer una participación equitativa, un compromiso físico sostenible y una igualdad de género más amplia en los contextos educativos.

PALABRAS CLAVE

Procesos de percepción; coeducación; diferencias; inclusion.

TÉRMINOS TESAURO

Estudio psicológico de cuestiones sociales; Procesos perceptuales.

ABSTRACT

Despite considerable progress in the field of education, gender disparities continue to persist, particularly in school-based physical education (PE). Gender stereotypes (GS) remain pervasive social constructs that influence children's perceptions, attitudes, socio-relational behaviours, and motivation toward physical activity. These stereotypes begin shaping expectations before birth and become embedded through early socialization processes, gradually influencing beliefs about what behaviours or competencies are deemed "appropriate" for boys and girls. Consequently, GS can significantly affect children's engagement in movement activities, access to skill development, and long-term participation in sports. This issue directly aligns with the objectives of the United Nations 2030 Agenda for Sustainable Development (Goals 4 and 5), which call for inclusive, equitable education and gender equality. PE, as a curricular discipline integrating both motor and social learning, represents a key context for dismantling inequalities, promoting inclusion, and encouraging respect for diversity. In Italy, the 2021 Sports Reform introduced specialist PE teachers in the fourth and fifth grades, reinforcing the educational value of movement and highlighting the need to investigate whether stereotypes are still present in primary school PE.

The present study therefore aimed to examine the presence and impact of GS among primary school students attending fourth and fifth grades in southern Italy, with a specific focus on motivation and coeducational dynamics. Four hypotheses were investigated: (H₁) GS are still present among primary school children; (H₂) GS vary according to gender; (H₃) GS influence students' motivation to participate in sports and PE activities; and (H₄) GS affect socio-relational attitudes toward coeducation, predicting reduced cooperation and openness in mixed-gender learning contexts. A total of 401 students participated in the research. Data were collected using standardized instruments (PAAPEQ, CMEF-EP, CEFQAD) and analysed through t-tests, Chi-square tests, correlations and linear regressions. Results revealed no significant gender differences in explicit beliefs, although girls

showed slightly higher awareness of gendered sport categories. Boys demonstrated higher intrinsic and identified motivation, whereas girls displayed greater external motivation and amotivation. Significant gender differences emerged in relational attitudes toward coeducation, with boys showing more adaptive behaviours. Regression analysis confirmed that stronger endorsement of GS predicted lower motivation and less adaptive relational attitudes, although the effect size was modest.

Overall, these findings highlight the importance of early pedagogical interventions aimed at dismantling stereotypical beliefs, promoting inclusive coeducational practices, and enhancing intrinsic motivation through autonomy-supportive teaching and diverse role models. Developing stereotype-free PE environments can foster equitable participation, long-term physical engagement, and broader gender equality within educational contexts.

KEYWORDS

Perceptual processes; coeducation; differences; inclusion.

TESAURO TERMS

Psychological study of social issues; Perceptual processes.

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To all of you, my sincerest thanks. This milestone is as much yours as it is mine.

“Gender equality means that women and men enjoy the same rights and opportunities in all areas of society. Gender equality is a fundamental human right.”
United Nations Population Fund

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ABBREVIATIONS

ANOVA, Analysis of Variance

ASK, Active School Kids

CA, Correlation analysis

CI, Confidence Interval

CEGAFD, Beliefs and Gender Stereotypes towards Physical Activity and Sport Questionnaire

CMEF-EP, Motivation in physical education in Primary Education Questionnaire

CONI, Comitato Olimpico Nazionale Italiano

DF, degree of freedom

ES(s), Effect Size(s)

F, Females

G, Gender

GS, Gender Stereotypes

IV, Independent Variable

MI, Males

M, Mean

PE, Physical Education

PAAPEQ, Pre-Adolescent Attitude towards Physical Education Questionnaire

SD, Standard Deviation

SDT, Self Determination Theory

SEL, Social-emotional learning

SPSS, Statistical Package for Social Sciences

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I – INTRODUCTION

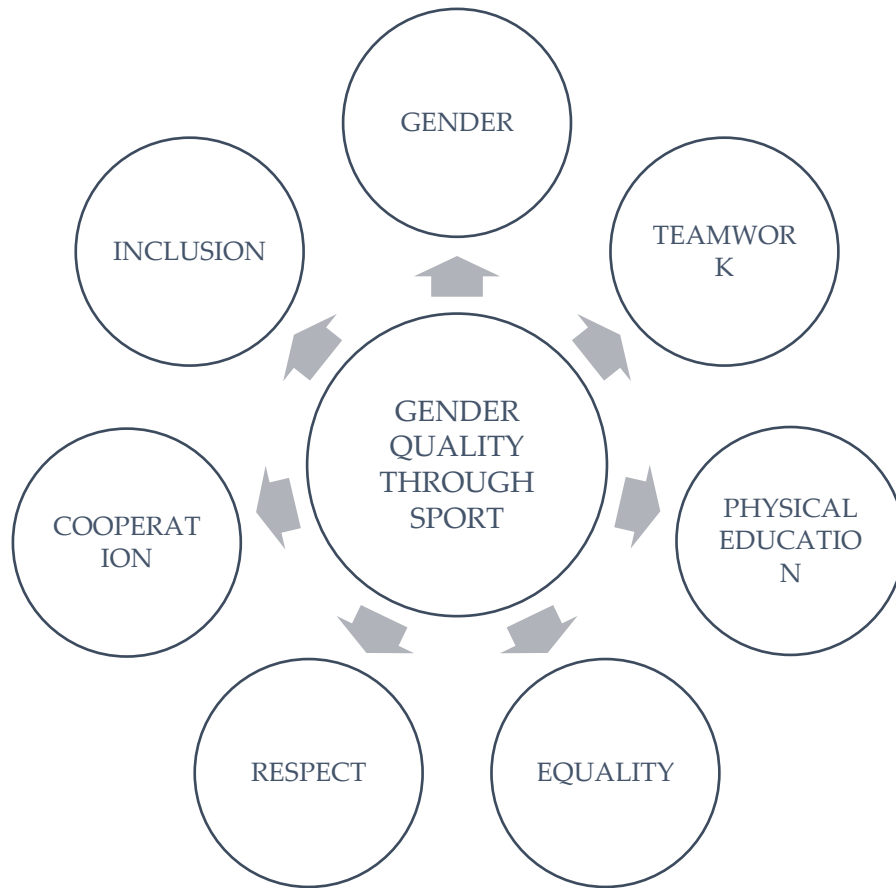
I - INTRODUCTION

1.1. GENDER EQUALITY: AN OVERVIEW

Gender equality represents one of the fundamental objectives of contemporary education, aiming to ensure equal opportunities and respect for all individuals. Promoting awareness of gender roles starting from an early age is essential to prevent discrimination and create an inclusive school environment. Education, in all its forms, helps to shape values and behaviours that reflect equality and mutual respect. Sport can play a crucial role in gender education and the promotion of equal opportunities in primary schools. A question that is not easy to answer is whether children are able to recognize and address gender stereotypes (GS) in sport. Reflections and research on this question help to recognize physical activity, carried out in all classes, as a catalyst for breaking down entrenched stereotypes, encouraging mutual respect, and promoting more equitable social relationships between children of different genders. In this sense, sport is not exclusively a motor performance domain, but a socializing context through which children build meanings, hierarchies and value attributions linked to gender identity. The school context therefore becomes a critical space in which GS are not only reproduced but can also be deconstructed, depending on the pedagogical approach implemented by teachers (Flintoff et al., 2021). In many countries, physical education has historically operated within models that implicitly valorized male competitiveness and physical dominance, reinforcing hegemonic masculinity and contributing to the marginalization of female participation (Azzarito et al., 2017). These hidden curricula explain why PE may continue to reflect unequal expectations if not explicitly addressed through transformative pedagogical interventions. To address this issue, it is necessary to construct a clear framework, starting with the keywords gender, stereotypes, equality. This conceptual framework is shown in the diagram below (Figure 1), which represents the interconnection between the main ideas. At the centre of the diagram there is the concept of gender equality through sport, highlighting the

crucial role that PE plays in fostering inclusion. Surrounding it are key components that interact to shape this process, such as *gender*, referring to the social and cultural roles traditionally assigned to boys and girls; *stereotypes*, which often limit individual potential and reinforce unequal expectations; *equality*, representing the ultimate goal of ensuring that every child has the same opportunities regardless of gender; *respect & inclusion*, emphasizing the importance of cooperation, empathy, and fair participation; *PE*, serving as the practical and educational context in which these values are learned and experienced; *teamwork & cooperation*, illustrating how collaborative activities can help children challenge bias and build mutual understanding. Understanding these constructs also allows us to identify the main variables of interest in this doctoral study: (a) gender beliefs, understood as socially inherited perceptions that attribute different motor abilities to boys and girls; (b) motivation toward PE, as a psychological factor that regulates engagement and persistence in movement; and (c) relational attitudes toward coeducation, as a determinant of participation quality in mixed-gender contexts. Together, they demonstrate that sport is a powerful educational tool capable of promoting gender awareness and social inclusion (see Figure 1).

Figure 1. Relationship between gender, stereotypes, and equality in the context of school sports.



Source: Edited by the author.

Furthermore, it is important to analyze the historical and cultural contexts that have influenced them, to find a link between the past and the present. The Latin saying "*Mens sana in corpore sano*" captures perfectly the connection between physical and mental well-being. This expression, originally written by Juvenal in his Satire X as "*Orandum est ut sit mens sana in corpore sano*", remains strikingly relevant because it reminds us that balance between body and mind is fundamental to human growth and fulfilment. From the past to the present, physical activity has been considered beneficial not only for maintaining physical health, but also as a path to intellectual and emotional development (Bailey et al., 2022). The harmony between a strong body and a disciplined mind reflects the holistic nature of human potential, which sport can help cultivate in every child, regardless of gender. Given

the dualism of body and mind, PE should be seen as more than just a school subject, but rather as a cross-curricular and interdisciplinary learning unit. Sport, understood as a universal language, has the power to unite people, break down barriers, and challenge prejudices, going beyond the playing field, where values such as teamwork, perseverance, resilience, and mutual respect can be cultivated. Several concrete initiatives have been taken to break down gender barriers through sport, such as the UNESCO's Quality PE Guidelines for Policymakers (2017), that supports inclusive PE policies that foster gender equality, emphasising the role of sports participation on changing GS. Another project called the Youth Sport Trust's Girls Active programme, performed in the United Kingdom, has encouraged girls to participate in sport by addressing gender-specific barriers, increasing self-confidence and motivation among participants who had previously disengaged due to societal expectations (Gorely et al., 2019). Norway was a pioneer in integrating gender awareness into its PE program. In fact, studies conducted by Moen et al. (2018) showed that mixed activities promote cooperation, break down stereotypes, and foster respect between boys and girls. Sport England's "This Girl Can" campaign has also broken-down gender norms through media representation, inspiring millions of women and girls to overcome barriers to physical activity (Sport England, 2020). Globally, the International Olympic Committee is constantly working to achieve gender equality, with the Tokyo 2020 Olympics being the most gender-equal in history, characterized by equal participation of men and women (IOC, 2021). In summary, all these initiatives have demonstrated that institutional and political interventions can lead to clear results (see Table 1).

Table 1. Key international initiatives for gender equality in sport.

Year	Initiative	Country	Main Objective
2017	UNESCO Quality PE Guidelines	UNESCO	Promote inclusive and gender-equal PE
2018	Gender Awareness in PE	Norway	Mixed activities fostering cooperation and respect
2019	Girls Active	UK Youth Sport Trust	Increase female participation in sports

2020	This Girl Can	Sport England	Challenge stereotypes through media campaigns
2021	Tokyo 2020 Olympics	IOC	Achieve gender equality in Olympic participation

In the third millennium, gender equality is no longer a distant goal, but the necessary foundation for equitable societies. However, this goal requires specific interventions, especially in environments where certain attitudes and behaviours are internalized, particularly in schools. Physical activity, with its dynamic and engaging nature, offers the opportunity to challenge these conventions and beliefs through shared participation. Thanks to movement activities, boys and girls can learn to appreciate each other's strengths and abilities, thereby breaking down the barriers of stereotypes. In fact, when a girl excels at a sport traditionally played by boys, or conversely when a boy demonstrates competence in a stereotypically feminine activity, gender-related biases are challenged. Mixed teams, cooperative games, and explicit discussions about fairness and equality reinforce the message that everyone, regardless of gender, has equal value and potential, promoting gender equality and contributing to a healthier school environment.

Empirical studies support these observations, starting from Guerrero and Guerrero Puerta (2023) that conducted a systematic review demonstrating how inclusive PE and teacher training advance gender equality in schools. Furthermore, Martinez et al. (2023) analysed the impact of co-educational PE interventions on gender beliefs, showing reductions in inequalities and an increase in girls' participation. Then, Hermassi et al. (2023) provided important data on gender differences in physical activity, sedentary behaviour, and academic performance among students in Qatar. Ribeiro et al. (2024) showed how targeted pedagogical interventions reduce gender disparities in engagement and promote inclusivity in play interactions. Finally, Frühauf et al. (2022) offered valuable insights into the different experiences of students and teachers in single gender versus co-educational PE lessons. These findings highlighted the importance of implementing educational strategies that address gender equality through sport and PE, contributing to the development of a more equitable and inclusive society.

Nowadays, schools are increasingly responsible for preparing future generations not only academically but also socially and morally. The globalised

and diversified nature of today's world requires citizens who are not only knowledgeable but also empathetic, adaptable, and committed to equality. This challenge necessitates a reimagining of traditional education models to create learning environments that are engaging, inclusive, and formative. Sport and PE have a critical role to play in this transformation. By integrating gender equality into curricula and activities, schools can instil values extend far beyond the gymnasium or playing field (Clark et al., 2021). These values form the foundation for broader social change, shaping children into advocates for equality in all professional, cultural, and civic domains. Health, too, must be recognised as a priority in this equation. Today, physical fitness is understood as essential not only for individual well-being but also for societal productivity. Sport contributes to this by promoting healthy lifestyles, countering sedentary behaviours, and instilling discipline and resilience. When combined with lessons on gender equality, sport becomes a multifaceted tool for equipping children with the skills and mindsets they need to navigate an increasingly complex world.

Although the summit of gender equality in sport remains distant, the progress achieved thus far is encouraging. The climb, though steep, is one worth undertaking. By embedding equality into the fabric of PE, schools can play a pivotal role in challenging stereotypes and shaping a future where opportunities are truly equal. As educators, policymakers, and community leaders, it is imperative to explore innovative ways to leverage sport as a force for social good. This includes investing in teacher training, developing inclusive curricula, and ensuring that all children—regardless of gender—have access to the resources and opportunities they need to thrive. The journey toward gender equality is long and challenging, but it is also deeply rewarding. With every step forward, we move closer to a world where boys and girls can grow up free from the constraints of stereotypes, empowered to reach their full potential, and contribute meaningfully to society.

Despite substantial efforts at the institutional level, research indicates that the mere introduction of policies promoting gender equity does not automatically translate into inclusive practices in school settings (Hills & Croston, 2012). PE teachers, when not specifically trained in gender-sensitive pedagogy, may unintentionally reproduce inequality by reproducing habitual practices such as selecting boys as team leaders, prioritizing performance over collaboration, or allowing boys to monopolize spaces during team games (Preece & Bullingham,

2022). Furthermore, contradictions persist between the objectives formally stated in educational curricula and the everyday reality observed in classrooms. While policy documents emphasise inclusion, PE continues to orient students towards stereotypically gendered activities (e.g., football for boys, dance for girls), reinforcing not only different skill expectations but also different motivational profiles (Azzarito & Solomon, 2009). Such contradictions justify the need for empirical studies that analyse how stereotypes influence both beliefs and motivation in PE, especially in primary education, where attitudes are shaped more durably (Carcamo et al., 2021). The present doctoral research therefore responds to an unresolved gap: although previous studies have documented GS manifestations in older students, little evidence specifically examines how GS influence motivation and coeducational attitudes among children in primary school, particularly within the Italian context, where specialist PE teachers have only recently been introduced (Gazzetta Ufficiale, 2021). This context offers a unique opportunity to evaluate whether an emerging professional profile (specialist teacher) can help dismantle stereotypes at their earliest stage of formation.

1.2. THE ROLE OF PHYSICAL EDUCATION IN THE SCHOOL CONTEXT

PE represents an essential pillar of school curricula, designed not only to nurture physical health but also to contribute to the holistic development of students. Traditionally viewed as a recreational or athletic discipline, PE has evolved into an indispensable subject that integrates motor, expressive, sporting, and health-related competencies under the broader umbrella of the Sport and Health Department. This multidimensional approach reflects a recognition of the interconnectedness of physical, cognitive, and emotional well-being, reinforcing the role of PE as a cornerstone in the comprehensive education of young learners. At its core, PE fosters the integral formation of the individual, encompassing physical fitness, emotional expression, social interaction, and the cultivation of lifelong health and well-being. These competencies not only enhance a child's immediate academic performance and physical development but also prepare them for the challenges of adulthood by promoting resilience, discipline, and empathy (Bailey et al., 2022). The relevance of PE becomes particularly pronounced when considering how early movement experiences shape children's self-perceptions regarding competence, ability and gender identity. Research shows that stereotyped expectations influence how children evaluate their own potential

and participation, leading boys to perceive themselves as ‘naturally’ skilled and girls as ‘less suited’ to motor tasks that emphasize competition or strength (Azzarito et al., 2017). These implicit beliefs form the basis of the variable ‘gender beliefs’ investigated in the present research.

Schools are uniquely positioned as the primary environments where children’s gender identities and personalities are shaped. Within this context, PE serves as a powerful medium for addressing GS and promoting equality. It is the responsibility of educators to design and implement curricula that actively encourage exploration of gender identity, appreciation of diversity, and equitable interactions among students. Educational institutions must prioritise the integration of gender-related themes across all subjects, including PE (UNESCO, 2015). By doing so, they lay the foundation for the development of engaged and empathetic citizens capable of contributing positively to society, family life, and the workforce. From a motivational perspective, PE can either stimulate intrinsic engagement (through enjoyment, curiosity and personal mastery) or generate external and avoidant motivation when activities are perceived as threatening, gendered or exclusionary (Ryan & Deci, 2020). Therefore, motivation represents a crucial variable in understanding how GS influence participation, as explored in this doctoral research. The urgency of this mission cannot be overstated, especially considering the persistence of gender-based discrimination and violence in contemporary societies. Addressing these issues at their root provides a crucial opportunity to instil values of respect, empathy, and mutual understanding. A further key dimension concerns coeducation. When mixed-gender activities are not adequately structured, boys tend to dominate game space, ball possession, and decision-making, resulting in a less participatory environment for girls (Preece & Bullingham, 2022). Conversely, cooperative and mixed pedagogies have been shown to reduce gender asymmetries by distributing responsibilities and roles equitably (Martinez et al., 2023). Hence, relational attitudes toward coeducation constitute the third core variable of the present research.

Schools, therefore, have a dual mandate: to foster individual growth and to combat social inequities through education (Lounsbery & McKenzie, 2015). In the primary school context, physical activity and sport are integral to children’s cognitive, emotional, and social development. Beyond developing motor skills, these activities encourage students to explore their own identities, strengthen critical thinking, and form positive relationships with peers. By engaging in diverse activities, children are exposed to scenarios that challenge their assumptions, build

resilience, and encourage collaboration. Research has highlighted the transformative impact of physical activity on personal and social development, particularly in promoting gender equality and breaking stereotypes (Casey & Goodyear, 2015; Martins et al., 2021). These benefits include improved physical health, enhanced cognitive function, better emotional regulation, and greater social adaptability. For instance, students who engage in regular exercise are better equipped to manage stress, maintain focus, and perform academically (Singh et al., 2019). Furthermore, the habits and attitudes cultivated through PE can establish a lifelong commitment to health and well-being, reducing the risk of chronic illnesses and fostering a sense of purpose and fulfilment (World Health Organization [WHO], 2020). PE also serves as a platform for promoting intercultural understanding and inclusion. Through sports and games, children learn to appreciate cultural diversity, build interpersonal skills, and develop a sense of belonging. These experiences are especially relevant in today's increasingly globalised societies, where the ability to navigate cultural differences represents a critical competence (Karimova et al., 2024). PE, therefore, is far more than an hour of activity: it is a transformative experience that equips children with the tools to navigate the complexities of the modern world. One of its most powerful dimensions is the ability to challenge and deconstruct GS. For example, when boys and girls participate together in a soccer game or a gymnastics session, they gain first-hand experience of each other's strengths and capabilities. Such interactions can dissolve preconceived notions about what boys and girls are supposed to excel in, paving the way for greater mutual respect and understanding. Moreover, PE provides educators with the opportunity to address societal prejudices head-on. Teachers can design activities that highlight the importance of teamwork, fairness, and respect, using sport as a metaphor for broader social dynamics. By fostering open discussions on topics such as gender bias, discrimination, and the value of diversity, schools can empower students to become agents of change (Vijayan, 2024). The values promoted through sport, such as solidarity, loyalty, respect for others, and adherence to rules, are foundational to any healthy society. These principles are not confined to the playing field: they are transferable to every aspect of life, from academic pursuits to professional endeavours and personal relationships. For instance, the discipline required to train for a competition can translate into stronger study habits, while the teamwork developed in sports can enhance collaboration in the workplace. Moreover, sport and play are critical tools for developing socio-emotional skills such as empathy, resilience, and conflict resolution. These competencies are particularly valuable in addressing the social

and emotional challenges children face in their personal and academic lives. By engaging in sports, students learn to navigate victories and defeats, communicate effectively with teammates, and resolve conflicts constructively - skills that will serve them well into adulthood (Eime et al., 2013). A summary of all these benefits is shown in Table 2.

Table 2. Multifaceted role of sport in education.

Dimension	Description	Educational outcomes	Examples in school context
Physical	Enhances motor skills, coordination, and health	Improved fitness, reduced risk of disease	Exercise routines, skill-based games
Cognitive	Stimulates focus, memory, and problem-solving	Better academic performance and attention	Strategy games, team planning activities
Emotional	Encourages self-confidence and resilience	Greater self-esteem and emotional regulation	Managing wins and losses constructively
Social	Builds cooperation and communication skills	Enhanced teamwork and empathy	Group games, peer support systems
Moral / Ethical	Promotes fairness, respect, and responsibility	Stronger sense of justice and integrity	Fair play, respect for rules and opponents
Cultural	Fosters inclusion and intercultural understanding	Appreciation of diversity and global citizenship	Intercultural sports festivals, mixed teams

The school's role as an educational institution extends beyond imparting academic knowledge to shaping the moral and social fabric of future generations. Inclusion, respect, and appreciation of diversity must be central to its mission. PE, with its emphasis on teamwork and shared goals, offers a powerful platform for cultivating these values. By providing methodologies for overcoming prejudice, schools can create environments where all students feel valued and empowered. Prevention, information, and awareness-raising strategies within the PE curriculum can equip students with the knowledge and attitudes needed to challenge stereotypes and advocate for equality. In sum, PE in schools is far more

than a recreational activity; it is a vital component of a child's education and personal development. By promoting physical health, cognitive growth, and social-emotional learning, PE lays the foundation for a balanced and fulfilling life. Increasingly, PE is recognised as a key tool for fostering inclusive and equitable learning environments, promoting diversity, and dismantling entrenched stereotypes (Flintoff et al., 2021; Watson et al., 2021). As we look toward the future, it is essential to continue leveraging the power of PE to inspire and empower the next generation. By prioritising inclusivity, respect, and the positive values of sport, schools can prepare students not only to succeed academically but also to thrive as compassionate, informed, and active members of society.

1.3. THE ITALIAN CONSTITUTION ON GENDER EQUALITY

The Italian Constitution is a pillar for the promotion and protection of gender equality, asserting equal social and professional dignity for all individuals, irrespective of gender. This foundational principle reflects a commitment to transforming gender equality from a theoretical ideal into a tangible reality within all sectors of society. Legislative measures such as Law 128 of 2013 underscore the importance of schools as environments where these ideals can be nurtured. By prioritizing education on diversity, equal opportunity, and the deconstruction of GS, schools become powerful agents for social transformation. However, the presence of such legislation has not been sufficient to overcome deeply ingrained gender norms. Although the law promotes principles of equality, it does not prescribe pedagogical models or specific practices to counteract the implicit reproduction of stereotypes within schools (Biemmi, 2015). This structural gap creates a discrepancy between what is legally affirmed and what is educationally implemented.

Education aimed at gender equality is essential for addressing deeply entrenched societal stereotypes and dismantling discriminatory hierarchies. It provides the tools to combat the culture of violence and systemic biases that perpetuate inequality. The National Guidelines derived from Article 1 of Law 107 of 2015 further emphasize this mission, requiring schools to embed gender-sensitive principles in their educational curricula. Nevertheless, the absence of operational guidelines means that each teacher autonomously interprets how to 'promote equality', leading to inconsistent practices. This is particularly

problematic in PE, where teachers' beliefs about gender often influence how they organize activities, distribute roles, and evaluate 'competence' (D'Isanto, 2019). In other words, the lack of pedagogical training translates legal equality into educational ambiguity.

Gender equality is not only a cornerstone of Italian legislation but also a strategic priority across the European Union (EU). The EU recognizes that achieving gender parity is instrumental to the region's social and economic advancement. Yet, without specific teacher training in gender-inclusive motor pedagogy, formal equality risks becoming symbolic. Teachers may unconsciously adopt practices that reinforce gendered expectations, such as privileging competitive sports, selecting boys as team leaders, or interpreting mistakes differently depending on gender (Preece & Bullingham, 2022). These behaviours become curricular messages that contradict legislative intentions. Research reveals that societal norms, cultural stereotypes, and biased media portrayals shape girls' perceptions of their own abilities, often discouraging them from pursuing excellence in traditionally male-dominated areas. Such barriers erode confidence early in life, perpetuating gender disparities in aspirations and achievements (Levental et al., 2023). The influence of these stereotypes extends to PE, where GS are increasingly studied for their effects on student participation and engagement. Scholars have identified that GS can inhibit both boys and girls from fully exploring their potential in PE classes. These influences often manifest in reduced participation rates and limited enthusiasm for movement education, particularly among primary school students (Griggs, 2022; Pickup & Randall, 2022).

Italy has taken critical steps to address these challenges through systemic reforms, including the recent introduction of specialist PE teachers in fourth and fifth grades. This initiative requires appropriate professional qualifications and represents an effort to improve educational quality. However, the reform does not explicitly address the need to prepare specialists to tackle GS, nor does it include evaluation tools to measure whether PE lessons actually promote equity. The introduction of specialists risks improving motor competence without necessarily improving gender equity. This highlights the need to understand whether more specialized instruction correlates with more inclusive pedagogical practices. By prioritizing movement education and incorporating it into the official curriculum, the Italian education system aims to position PE as a vital element of the learning

experience. Such reforms are designed to do more than just improve physical fitness; they represent a broader effort to challenge GS and foster inclusivity from an early age. Movement education encourages children to embrace diversity, appreciate teamwork, and develop a positive self-image, free from the constraints of societal expectations. By integrating gender-sensitive pedagogy into PE, schools can actively contribute to breaking down stereotypes that limit both boys' and girls' aspirations and abilities.

The convergence of education, legal frameworks, and cultural norms creates a powerful platform for advancing gender equality. While legislative mandates such as Laws 128 and 107 provide a strong foundation, their success depends on schools' proactive efforts to translate these policies into meaningful educational practices. It is essential for educators to adopt curricula that challenge stereotypes, promote equity, and celebrate diversity. However, achieving this vision requires sustained effort and collaboration among policymakers, educators, families, and communities. The recent reforms in movement education represent a step in the right direction, but their potential will only be fully realized through a long-term commitment to these principles. Schools must continue to serve as inclusive environments that prepare students to navigate and contribute positively to an increasingly diverse and interconnected world. The Italian Constitution and accompanying legislation offer a robust framework for gender equality, emphasizing the importance of education in realizing these ideals. By reforming PE and embedding gender-sensitive policies into the curriculum, Italy is making significant strides toward dismantling stereotypes and fostering an inclusive culture. While progress has been made, the journey toward true gender equality requires unwavering dedication from all stakeholders, ensuring that every child has the opportunity to realize their full potential in a society that values and respects diversity.

In conclusion, Italian legislation provides a robust normative framework for gender equality, but lacks pedagogical instruments to ensure its implementation in primary schools. The present doctoral research responds to this gap by empirically investigating how GS, motivation, and relational attitudes toward coeducation manifest within a newly reformed Italian PE context. This allows for an evaluation not only of children's beliefs, but also of the educational consequences of recent policy changes.

1.4. THE BENEFITS OF PHYSICAL EDUCATION IN PRIMARY SCHOOL: SOME EVIDENCES

Physical activity offers multiple benefits to people of all ages, but its importance in childhood is unmatched. Research shows that regular physical activity during childhood not only promotes immediate health benefits but also lays the foundation for long-term well-being (Tomprowski et al., 2011) in physical, psychological, social, and cognitive areas, making PE in primary schools an indispensable component of children's holistic development. The physical benefits of PE relate to both growth and health. For children, regular physical activity ensures the harmonious development of the musculoskeletal and cardiovascular systems, promoting good posture, balance, and endurance. Evidence indicates that children who participate in structured PE programs show higher motor coordination, muscle strength, and aerobic capacity compared to those engaged in unstructured free play only (Ortega et al., 2020). A lack of adequate motor stimulation during primary school is associated with delayed fundamental motor skills, which influence later engagement in sport and physical activity. According to WHO guidelines, children and adolescents between the ages of 5 and 17 should engage in an average of 60 minutes per day of moderate to vigorous physical activity, mostly aerobic, incorporating muscle-strengthening exercises at least three times a week. Being physically active is necessary, given the emerging trends in obesity. In Italy, statistics show that over 21% of children are overweight and more than 9% are obese, highlighting the importance of integrating PE into daily routines to combat sedentary lifestyles. Unfortunately, spontaneous opportunities for children to exercise are decreasing, making structured physical activity through school programs necessary. PE offers an introduction to sports and physical activities that can spark a lasting interest in maintaining a healthy lifestyle. PE introduces sport and physical activity that can spark a lifelong interest in maintaining a healthy lifestyle, while also conveying the importance of an active lifestyle and helping to combat obesity and the associated health risks, such as diabetes and cardiovascular disease. In addition, regular physical activity promotes the development of fine and gross motor skills, which are essential for children's overall physical competence. The psychological benefits of physical activity are deeply intertwined with its physical effects. Exercise stimulates the release of endorphins, commonly referred to as "happy hormones," which induce feelings of relaxation and well-being. For children, this can alleviate stress and

anxiety, a burden that is not exclusive to adults. Releasing tension through physical activity provides a constructive outlet for emotional challenges, promoting mental health and resilience. Engaging in physical activity also builds self-esteem and self-confidence. By setting and achieving incremental goals, children experience a sense of accomplishment that improves their self-perception. Success in physical activities, regardless of their scale, reinforces the belief in one's capabilities and fosters a growth mindset.

PE classes further contribute to social-emotional learning by teaching perseverance, teamwork, and empathy, as children collaborate and compete in group activities. This emotional empowerment is particularly relevant to preventing gender disparities: girls with low self-efficacy in sport are less likely to develop lifelong active habits (Ridgers et al., 2021). Emotional benefits therefore align directly with the motivational variable investigated in this study. Physical activity provides an inclusive platform for social interaction, fostering friendships and collaboration. In group sports or team-based exercises, children learn essential skills like communication, cooperation, and mutual respect. For shy or inhibited students, non-verbal interaction through movement can become a comfortable way to connect with peers. These social interactions play a crucial role in developing interpersonal skills and a sense of belonging within the school environment.

PE also impacts cognitive development, improving executive functions such as attention, planning, and working memory. These effects are mediated by increased brain blood flow and improved neuroplasticity (Donnelly et al., 2016). Notably, schools that implement daily PE show significantly higher academic performance, especially in children with concentration difficulties or low self-regulation (Singh et al., 2019). Thus, PE is not a competing subject but a facilitator of learning. The impact of physical activity on cognitive development and academic performance is increasingly recognized. Studies have demonstrated that regular exercise enhances cognitive functions such as attention, memory, and problem-solving. Physical activity also improves neural connectivity, which contributes to better concentration and learning outcomes. These benefits are particularly significant in primary school, where children are building foundational skills for lifelong learning. PE also aligns with Howard Gardner's theory of multiple intelligences, which challenges the traditional focus on linguistic and logical-mathematical intelligence. Gardner identifies bodily kinaesthetic

intelligence as a distinct and valuable form of intelligence, emphasizing the importance of movement and physical expression in learning (Gardner, 1995). Given its profound benefits, movement education deserves to be prioritized and integrated seamlessly into the broader educational framework, resuming in Table 3.

Table 3. Benefits of physical education on children.

Dimension	Benefit	Examples	Impact on child
Physical	Musculoskeletal and cardiovascular development	Running, jumping, ball games	Improved posture, endurance, reduced obesity
Cognitive	Attention, memory, executive function	Strategy games, movement-based learning	Better focus, learning performance
Emotional	Stress relief, self-esteem, resilience	Goal-setting, cooperative games	Enhanced confidence, emotional regulation
Social	Teamwork, communication, empathy	Team sports, group activities	Improved peer relationships, social inclusion
Health & Lifestyle	Active habits, obesity prevention	Daily PE sessions, structured movement	Lifelong healthy habits

The benefits of PE, however, are not automatically guaranteed. Research shows that the positive impact depends largely on pedagogical quality rather than mere exposure to physical activity (Casey & Goodyear, 2015). Poorly structured lessons may perpetuate competition, gender roles, and selective participation, amplifying inequalities instead of reducing them. This confirms that PE can either reinforce or challenge GS depending on teacher practices, directly linking educational benefits to the variables of motivation, gender beliefs and coeducation examined in the present study.

1.5. QUALITY EDUCATION: THE SUSTAINABLE DEVELOPEMENT GOALS

The fifth point promulgated in the United Nations' 17 Sustainable Development Goals of the 2030 Agenda aims to "achieve gender equality and empower all women and girls" in all aspects of civil, political and social life. Within this framework, education and sport constitute strategic domains for the advancement of equality. SDG 4 promotes "inclusive, equitable and quality education," while SDG 5 seeks to dismantle persistent barriers that prevent equal participation and opportunities. Although these objectives establish a transformative and universal vision, their practical implementation within educational systems reveals a substantial gap between international policy and everyday school experience. The Agenda 2030 provides strategic direction, but does not offer operational guidelines that translate these principles into pedagogical practices. Consequently, teachers are left to interpret how to 'promote equity,' often without specific training or tools, especially in physical education (Flintoff et al., 2021). The sporting environment mirrors societal trends, often highlighting gender disparities. In Italy, ISTAT data underline a persistent imbalance in participation between males and females in both competitive and recreational physical activity. However, policies that merely aim to increase female participation fail to consider the underlying psychosocial mechanisms that contribute to girls' disengagement, such as motivational profiles shaped by stereotypes, fear of failure, and historically masculine sport cultures (Azzarito et al., 2017). Increasing access without addressing these beliefs risks reinforcing the very inequalities the Agenda seeks to eliminate. Going deeper into the numbers, however, we can realise that the reality is instead more complex, and the problem is much more systemic than it seems. The ISTAT statistics tell of a strong male prevalence in the practice of sport, both continuously and occasionally. It should be noted that the difference is nil in the 3-5 age group and tends to narrow again beyond 44. In the middle, however, the gap is clear, with 58.4% of males and 42.6% of females in the 15-17 age group practising continuously. Across age ranges, there are 29.5% males and 15.9% females among those who practise continuously and 11.7% against 8.1% among those who dabble occasionally. On the other hand, the figure is reversed among those who say they do physical activity daily, such as walking or cycling, gardening and other similar exercises, where 28.6% are women against 24.4% men. It should be noted that the percentage rises with a higher level

of education. More specifically, of all the federations regularly affiliated with CONI, only about 28% are women. The figures for the other figures in the world of sport do not improve, beyond athletes, where there are 19.8% of technicians, 15.4% of headmasters and only 12.4% among the federal benches themselves of pink quotas.

Numbers in hand, what can be deduced is that sport in Italy is still a non-exclusive, but certainly predominantly male prerogative. It is encouraging, however, to note that the institutions seem to have reached a certain awareness of the issue and are consequently beginning to act in the opposite direction. In the law of 8 August 2019 reforming sporting protections, the Italian government has set itself the goal, by spring of this year, of breaking down numerous gender barriers, making it easier for female athletes to obtain professional status. From the 2022/2023 season, for example, the women's football Serie A will become a professional league, thus equalling the other major leagues in Europe. It is precisely from football that one can see an improvement in the trend of women's membership, which is increasing significantly year after year. Volleyball remains the pink sport par excellence, counting 77% of the total membership of the Federation (pre-pandemic numbers). It is followed by tennis, which counts 33% women. Tennis, however, holds the record as the discipline that pays its female representatives the most, with the top nine highest paid sportswomen in the world all belonging to the WTA circuits. However, when one considers that Naomi Osaka was considered the highest paid sportswoman in the world in 2021 with 37.4 million per annum, it becomes clear just how much difference there is compared to her male colleagues, who rank tenth, worth more than 20 million. Gender differences in sport are, in short, a worldwide problem and, as is often the case, Italy is no exception. There are, however, encouraging data in our country, which underline the social will to give sport a proper place in the lives of our fellow citizens. Apart from the clear benefits in terms of well-being, both mental and physical, and the effects that sporting activity can have on an individual's health and on his or her sociality, investing in women's sport is also a matter of merit. It should be remembered, in fact, that although smaller in number, Italian female athletes are almost always more successful in percentage terms than their male counterparts. The Olympics are the best example of this, and the winter Olympics even more so, where the medal table is coloured pink even in absolute terms. At

Beijing 2022, for example, Italy qualified 13th, with 2 gold, 7 silver and 8 bronze medals to its credit. Of these, 9 medals were brought home by female athletes and 3 by mixed groups, against only 5 won by male colleagues. Sport, in Italy, still cannot be said to be gender-equal, but its victories are often coloured pink. Let us start from this awareness to go beyond sporting successes and play sports a societal victory in the climb against the gender gap. The summit is far away, but the climb has already begun. As teachers, we have a duty to pass on and bring to life to future generations the principles of a sporting culture that carries with it respect for oneself and one's opponent, loyalty, a sense of belonging, and the denial of any form of violence. The values of sport are the same as those of life: if we respect the rules of the game, we are always capable of knowing how to win and how to lose.

From the perspective of school PE, these contradictions become even more evident. The introduction of specialist PE teachers in 2022 has been widely celebrated as a step toward quality education. Yet, specialization alone does not guarantee inclusion. A teacher may possess high motor expertise but lack gender-sensitive pedagogical skills, resulting in technically rich lessons that nonetheless reproduce inequities. Agenda 2030 emphasizes equality, but without mandatory training in inclusive motor pedagogy, specialist teachers may inadvertently reinforce traditional gender roles through their methodologies (D'Isanto, 2019). Thus, the promise of Agenda 2030 remains largely aspirational within physical education: policies define what should be achieved, but not how it should be constructed pedagogically. This doctoral research aligns with this gap, by empirically examining whether beliefs, motivation and coeducational attitudes among children are consistent with the equality objectives of the Agenda. Identifying discrepancies between international goals and classroom realities is essential for designing interventions that transform PE from a neutral space into an equitable and empowering educational context.

1.6. THE CONTEXT OF PHYSICAL EDUCATION IN ITALIAN PRIMARY SCHOOL WITH THE 2021 REFORM

Starting from these reflections on the social and educational value of sport, it is essential to analyse how PE is structured within Italian schools. Achieving real gender equality in sport also depends on how children are introduced to physical

activity from the earliest stages of schooling. In Italy, the training of preschool and primary school teachers has long followed a generalist educational model. Access to the teaching profession requires completing the five-year master's degree in Primary Education Sciences, which combines coursework, workshops, and internship activities. However, this program dedicates only a marginal space to specialist subjects, including PE. This structural choice reflects an institutional assumption that motor education is secondary compared to cognitive or linguistic domains, reproducing a historical hierarchy in which PE is conceptually associated with play rather than education (Raiola, 2021). Consequently, the system has long undervalued the pedagogical potential of movement, limiting its development as an inclusive and formative discipline capable of challenging stereotypes. As a result, PE has historically been entrusted to generalist teachers, who often lack specific expertise in motor and sport sciences. While this arrangement reflected the idea of a polyvalent teacher capable of covering all disciplines, it also produced clear limitations. Literature shown that the absence of specialized training led to a reductive and fragmented approach to PE, often confined to playful or recreational activities rather than a structured educational process promoting health, coordination, and social development. This imbalance became even more evident when compared to secondary education, where PE is taught exclusively by specialist teachers holding a Master's Degree in Sport Science and an additional professional qualification. The discontinuity between school levels hindered the creation of a coherent educational path in motor development from childhood onward. Awareness of these shortcomings gradually prompted the Italian government to strengthen motor education in primary schools. A significant milestone came with Law No. 107/2015 (art. 1, paragraph 20), which allowed secondary school PE teachers to work also in primary schools. However, this measure had only a limited impact: it was a temporary fix rather than a structural reform, failing to resolve the systemic lack of specialized staff. Meanwhile, several national projects were launched to enhance PE teaching quality. Among the most relevant were the "Physical Literacy" project (2009/2010), later developed into "Sport Class" and finally the national program "Sport di Classe". These initiatives, promoted by the Ministry of Education in collaboration with CONI and Sport e Salute S.p.A., introduced the figure of the school sports tutor — a graduate in Sport Science — who supported the generalist teacher in designing and delivering PE

lessons. Although these projects improved awareness of the educational value of movement, they did not alter the institutional framework: PE remained the responsibility of generalist teachers, with the tutor acting as an external consultant rather than as a classroom teacher.

The government gradually acknowledged this gap and attempted to strengthen motor education through projects such as Sport di Classe and Active School Kids (ASK). These initiatives introduced sport tutors to support generalist teachers. Although these programs improved awareness of the educational value of movement, they did not structurally change the system, since tutors operated as external support rather than curricular teachers. The ASK project acted as a bridge toward the introduction of specialist PE teachers, testing collaborative models and mentoring strategies. Its objectives were to improve children’s motor competence and health awareness, and to train and empower generalist teachers, helping them integrate movement into the broader educational process. From an institutional standpoint, many of these initiatives had a compensatory rather than transformative function: they aimed to ‘patch’ a structural deficiency without modifying teacher training or the curricular regime. As a result, PE continued to depend on teachers without motor competence, and therefore without training in gender-sensitive pedagogies.

A significant transition occurred with the 2022 Budget Law, which formally introduced specialist PE teachers in grade IV and V. Starting from the 2022/2023 academic year, PE became mandatory in fifth grades, and from 2023/2024 also in fourth grades, with two weekly hours taught by specialist teachers. These specialists must hold one of the three Master’s Degrees in Sport and Exercise Sciences and 24 university credits in pedagogy and didactics. This reform represented a historic shift, finally aligning Italy with other European countries where PE specialists are standard in all school levels. It also responded to the World Health Organization (WHO, 2020) recommendations promoting daily physical activity (at least 60 minutes of moderate/vigorous exercise) as essential for children’s health and well-being (see Table 4 for a summary).

Table 4. Historical Framework of physical education in Italian primary schools.

Period	Key	Teacher profile	Educational approach
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Pre-2010	PE marginal within generalist training; focus on pedagogy over movement	Generalist teacher (Primary Education degree)	Recreational, unstructured activities; limited educational goals
2010–2015	National pilot projects (“Physical Literacy”, “Sport Class”)	Generalist teacher with support from external sport tutors	Introduction of structured activities, early collaboration with sport professionals
2015	Law No. 107/2015 allows secondary PE teachers in primary schools	Secondary PE specialists temporarily assigned	Partial solution; no permanent PE specialist
2015–2021	Expansion of national projects	Generalist + sports tutor collaboration	Mentoring model; focus on healthy lifestyles
2021–2022	“Active School Kids” project	Sports tutor + generalist teacher	Experimental introduction of specialist-led PE
From 2022/2023	2022 Budget Law: PE becomes curricular	PE specialist (Sport Science graduate, LM47–67–68 + pedagogy credits)	Structured, inclusive, and educationally integrated PE curriculum

However, the reform prioritizes technical competence in sport sciences without making inclusive motor pedagogy a mandatory area of training. This suggests that the institutional goal is to raise athletic quality, not to promote equality, revealing a misalignment between the reform and the principles of Agenda 2030. The presence of specialists will likely improve motor literacy, but may not change the pedagogical climate. Without explicit training on gender dynamics, self-efficacy, motivation, and coeducation, specialist teachers can inadvertently reinforce male-dominated models, selecting sports in ways that disadvantage girls, rewarding performance over participation, and interpreting mistakes according to gendered expectations (Preece & Bullingham, 2022). Thus, specialization does not automatically generate inclusion. This raises urgent questions about whether the reform will reduce stereotypes, improve motivational

equity, or encourage democratic coeducation. The present doctoral research therefore investigates a pivotal issue: Do children's gender beliefs and motivational profiles reflect the equality objectives expected from the reform, or do they continue to mirror traditional gender norms? Answering this question is fundamental to evaluating whether the reform is merely technical or genuinely transformative.

The introduction of PE specialists has redefined the educational mission of the discipline. No longer seen merely as "sport" or "recreation," PE now serves as a holistic learning environment that contributes to cognitive, emotional, and social development. Through movement, children learn to know themselves, understand their bodies, cooperate, manage emotions, and solve problems — all key components of soft skills such as leadership, time management, communication, and decision-making (Opstoel et al., 2020). These skills are not only essential for school success but also for lifelong well-being and citizenship. Moreover, the presence of a specialist teacher allows for inclusive teaching strategies, ensuring that every child can participate meaningfully. Properly delivered PE is a powerful tool for inclusion, especially for children with disabilities, social difficulties, or emotional fragility (Aliberti et al., 2022). At the same time, structured PE plays a critical public health role. Data show that most children worldwide do not meet WHO's physical activity recommendations, spending much of their day sitting (Guthold et al., 2020). In Italy, sedentary lifestyles have worsened after the COVID-19 pandemic (Aliberti & Raiola, 2021) contributing to declining motor coordination. Introducing specialist-led PE classes thus represents both an educational and preventive measure, encouraging active lifestyles from an early age.

With the 2021 reform fully implemented, the presence of the PE specialist in primary schools opens a new frontier: the need to address GS through movement education. For decades, the lack of structured PE teaching has unintentionally perpetuated gendered perceptions of physical activity: boys were encouraged toward competition, strength, and team sports, while girls were often steered toward expressive or aesthetic activities such as dance or rhythm-based games. These early distinctions influence not only participation but also self-perception, confidence, and motivation in both genders. Today, with qualified PE specialists in classrooms, schools have the opportunity to question and deconstruct these stereotypes from the very beginning of schooling. PE can become a safe and

empowering space where all children explore movement, teamwork, and self-expression freely. Educating beyond gender bias in PE means promoting an inclusive culture, where diversity is valued and equal opportunities in sport and physical activity are guaranteed. Through carefully designed activities, reflective discussions, and varied teaching methods, the PE specialist can guide children toward cooperation, respect, and empathy, which are essential foundations for democratic citizenship (see Table 5).

Table 5. Key Features of the 2021 Reform (Budget Law 2022).

Aspect	Before the reform	After the reform (from 2022/23)
Legal Framework	PE not formally curricular; supported by temporary projects	PE included in the national curriculum
Teaching Staff	Generalist teachers, assisted by tutors	Specialist PE teachers with master's degree (LM47/67/68)
Target Grades	All grades taught by generalists	2022/23: 5th grade; 2023/24: 4th grade (progressive implementation)
Weekly Hours	Flexible or optional (based on teacher initiative)	2 mandatory hours per week
Pedagogical Focus	Play-based, recreational	Educational, inclusive, and health-oriented
Professional Qualification	No specific PE certification	Master's in Sport Science + 60 ECTS in pedagogy/didactics
Main Goals	Promote movement and play	Promote health, inclusion, soft skills, and active lifestyles

Despite these promising developments, the presence of GS in PE remains a complex and persistent issue. Understanding how these dynamics continue to manifest in primary school contexts requires an examination of the most recent research on the topic, as discussed in the following section.

1.7. GENDER STEREOTYPES: ACTUAL ISSUES IN PRIMARY SCHOOLS AND FUTURE ORIENTATIONS

For years, there have been global efforts to achieve gender equality, particularly in the school and education system, which is approached with dedication and methodical commitment in order to achieve this goal. At the moment, in our education system, we still find many gender differences, even though a lot of progress has been made. Fortunately, education policies have prioritized and recognized the importance of the results and learning of our boys and girls, acknowledging this gap (Openpolis, 2023). The 2030 Agenda for Sustainable Development also focused on two goals in particular, numbers 4 and 5 of the United Nations 2030 Global Agenda, which highlight the importance of providing quality, inclusive, and equitable education in order to bridge and overcome this gap. Remaining focused on goals 4.1 and 4.5, we see that they refer to the elimination of gender disparities in education by 2030, ensuring, as we said earlier, that every child has access to quality, equitable, and inclusive education. Similarly, goal 5.1 examines the end of discrimination against boys and girls as a key element towards gender equality. However, the attainment of these objectives faces significant challenges, exacerbated by the COVID-19 pandemic, which has adversely affected educational systems and widened existing inequalities (Raiola et al., 2020; Raiola & Aliberti, 2021). This background forms the basis for a critical examination of GS in PE in primary schools, highlighting both the current situation and the prospects for gender equality in education.

We know that gender stereotypes significantly influence the perceptions and behaviours of every person, which we unfortunately inherit from early childhood, even before the birth of a boy or girl, as is well known, for example, in our parents' habit of assigning the color pink or blue at birth based on the sex of the unborn child. It is clear that in this way, boys and girls internalize gender differences in this stage of socialization, forming their new gender identity at this point (Preece & Bullingham, 2022). This process influences all future aspects of their lives, including their educational experiences. This is why the difference in height is particularly important during physical education activities. PE has contributed to perpetuating the characteristics of the traditional male dominant model (Simon et al., 2021), often marginalizing girls both directly and by excluding them from physical activities. It is easy to see that physical education was initially introduced

in all educational institutions as “gymnastics,” exclusively for boys, so that they could be disciplined and trained for military service. Only later was it made accessible to girls as well, and it gradually took on a more inclusive and educational orientation (Raiola et al., 2018; D’Elia, 2019). This is because, in ancient times, sports were only for men and considered unsuitable for women, who were traditionally seen as caregivers, dedicated to the home. Fortunately, despite this, an increasing number of courageous women have shown more and more interest in sports over the years. Nevertheless, the world of sport continues to be characterized by significant gender inequalities, with greater male participation to such an extent that men’s sports receive greater economic and cultural recognition. In fact, according to the World Health Organization (2018) and other research (Cárcamo et al., 2021), women tend to be more sedentary and less active than men. As a rule, women are more likely to engage in non-competitive, health-oriented activities such as gym training, group walking, and gentle aerobics. What the change hoped to achieve was the possibility of mitigating gender disparities by combining traditionally masculine traits with traditionally feminine ones. To date, however, schools, as institutions, often seem inadequate in countering the mechanisms that promote gender inequality (Lentillon et al., 2006). They are often criticized for producing and systematically reinforcing disparities (Sadker & Sadker, 1986). One of the most evident manifestations of this phenomenon in education and schools is the persistence of stereotypical gender roles, particularly through misleading language in textbooks. Such content often emphasizes traditional roles, defining women primarily as mothers and caregivers and men as heads of households (Biemmi, 2015). Furthermore, even teachers may unintentionally propagate gender stereotypes through their activities in the gym or through lessons with educational content, which in turn influence the quality of teaching in the subject of physical education. In the past, it has been found that physical education teaching has disproportionately favoured boys, to the detriment of girls, who often report a decline in interest during physical activities. In the past, it has been found that physical education teaching has disproportionately favoured boys at the expense of girls, who often report a decline in interest and enjoyment in school lessons during physical activities. (Sadker & Sadker, 1986).

This disparity is evident not only in the school environment but also in everyday life, where women, despite their daily activities, ultimately end up being

less physically active than men. Returning to the habits and attitudes acquired during childhood, it is clear that they significantly influence choices in adulthood. It is therefore essential to take appropriate measures to combat gender stereotypes in physical education, starting with the very first motor skills and continuing throughout school hours. By doing so, we can begin to remove the entrenched prejudices that contribute to gender disparities in physical activity and in many other fields. This is demonstrated by the fact that in primary schools throughout Italy, until the 2021/2022 school year, physical education was taught by teachers of general subjects. According to several studies conducted in recent years (D'Elia, 2020; D'Isanto, 2019), these teachers did not feel adequately prepared to teach physical education to boys and girls but called for greater attention to be paid to supporting them with specialized staff and figures to deal with gender policies in a more professional and technical manner. Fortunately, starting in the 2023/2024 school year, for grades 5 and 4 only, physical education will be taught by specialized teachers with a master's degree in motor sciences (Gazzetta Ufficiale, 2021).

The reform was introduced following the realization that this subject should be taught by trained, competent, and qualified teachers in order to address the insufficient competence of generalist teachers who attempted to promote the health and well-being of children through physical activity. The assumption was that gender stereotypes unfortunately continued to prevail in the school and educational context, manifesting themselves clearly during physical education classes. This assumption was based on the observation that physical education was important for the overall development of children and that, until then, this had not been fully recognized. It should be remembered that, historically, physical education was considered a subject of minor importance, taught by general classroom teachers who received comprehensive training in all subjects and therefore did not have specific expertise in physical education. Furthermore, recent research suggests that motivation can be a protective factor against the limitations of gender stereotypes. Salvatori and Cherubini (2024a) argue that enjoyment can significantly influence the relationship between gender stereotypes, perceptions of one's own abilities, and students' participation in physical activities, especially among primary school children (ANEXO I). In their experimental project, an educational intervention based on playfulness and fun led to a marked

improvement in motor engagement, self-confidence, and willingness to participate among girls. These results reinforce the perspective that children's disengagement from certain sports is not based on differences in ability, but emerges from socially constructed expectations, which can be reduced through motivating and inclusive pedagogies.

1.8. THE SYSTEMATIC REVIEW ON GENDER STEREOTYPES IN PHYSICAL EDUCATION

The purpose of this review (Salvatori & Cherubini 2024b, ANEXO II) was to gather scientific evidence demonstrating the persistence of the gender gap in physical education classes and to identify the barriers that particularly hinder female participation in physical activities. In addition, an attempt was made to identify the variables to be evaluated in order to combat the phenomenon and provide concrete guidance to both general and specialized physical education teachers in all primary schools.

The PRISMA 2020 guidelines for systematic reviews was followed, used Web of Science, Pubmed, Scholar and Scopus as databases, to collect the articles. The search strategy employed Mesh terms/text words combined with AND/OR operators: "GS" OR "gender gap", "PE" OR "school" OR "children". The selection process was guided by the PRISMA 2020 flowchart to decide whether a study met the inclusion criteria. This involved screening each record and retrieved report for eligibility, with details of the process to be further specified. Article screening was carried out in three successive phases: title review, abstract review, and full-text review. Table 6 presents the results of the review based on the progressive application of the inclusion criteria.

Table 6. Study Selection Process (PRISMA 2020).

Pase	Description	Number of Records (n)	Results
Identification	Records identified through main databases	Web of Science (n = 35); Scopus (n = 26)	Total records identified = 61
Duplicate removal	Duplicate records removed before screening	n = 19	42 unique records remained

Screening	Titles and abstracts screened for relevance	n = 42	20 records excluded for irrelevance
Reports sought for retrieval	Full-text reports considered for further analysis	n = 22	10 reports not retrieved
Eligibility	Full-text reports assessed for eligibility	n = 12	2 studies excluded (did not meet inclusion criteria)
Included	Studies included in the final review	n = 10 + 3 from manual search	Total studies included = 13

In Table 7 an overview of the study characteristics was presented. This table summarizes key features of various studies conducted on the influence and presence of GS in educational settings, including sample sizes, methodologies, and key findings.

Table 7. Gender stereotypes during physical education classes.

Sources	Aim	Design	Sample	Tools and Interventions	Results
Cárcamo et al.	To understand the gender beliefs, value and participation of Colombian boys and girls in PE	Qualitative	30 pupils (50% M; 50% F; age 8-10) of primary school	Interview	GS were still present in PE. Topics were beliefs on sports ability, intrinsic and extrinsic motivation, kind of sports, kind of activities preferred.

Gubby	To understand if mixed-sports such as korfball could provide an opportunity for successful mixed PE	Qualitative	Junior korfball players (aged 11-13) of primary school	Interview	Korfball seemed to reduce the gender gap.
Lopez-Morales et al.	To investigate how teachers perceived their teaching on gender equality during their PE	Qualitative	191 PE secondary teachers in Spain	12 questions	PE teachers considered they had proper co-educational behaviour (regarding gender equality).
Martin et al.	To investigate the barriers girls face during PE classes and the benefits of an activist approach on gender issue	Experimental	20 girls and 28 boys (age 10-12) and PE teachers of primary school	Focus group, interviews, specific activities	Several barriers were identified; focus on male dominance in games. The programme led to an improvement in the girls' participation.
Martínez et al.	To test the effects of co-educational PE in improving students' gender beliefs	Quasi-experimental	91 primary school pupils (age 11.5 $\pm$ 0.7)	Didactic intervention of 4-Colpobol sessions, 2	The intervention was useful to promote gender

				questionnaire	equality in PE.
Mateo-Orcajada et al.	To establish GS in sport among teachers and trainers	Qualitative	127 PE teachers and trainers	CEGAFD	The GS in trainers and teachers were still present.
Moya-Mata et al.	To analyze the link between gender issue and textbooks of PE in primary school	Qualitative	34 PE textbooks (Spain)	SAIMEF	PE textbooks reflected GS.
Moya-Mata et al.	To analyze the existence of GS in PE Brazilian textbooks	Qualitative	10 PE books containing 1327 images (Brazilian)	SAIMEF	PE textbooks reflected GS.
O'Reilly et al.	To investigate the effect of a Girls Active program on girls during PE classes	Experimental	46 (EXP) and 58 (CON) girls (age 12-15) from secondary school	Focus group and interviews, Girls Active program	Girls Active was useful to promote PE.
Peterson et al.	To assess physical educators' (N = 162) ability and performance expectations, attributions, and attitudes toward overweight	Qualitative	162 PE teachers	Students' photos, questions on ability and performance expectations, Fat Phobia Scale	PE teachers had lower ability expectations for overweight students than for non-overweight.

	and non-overweight students				
Preece and Bullingham	To explore GS and their impact upon perceived roles and practice of PE teachers	Qualitative	21 PE teachers	An online story	Teachers' perceptions largely conformed to typical GS.
Vera et al.	To design a Spanish instrument to measure gender stereotypes in PE.	Qualitative	73 primary school students	An ad-hoc questionnaire (24 items + 5 dimensions)	There were prejudice and stereotypes in PE classes related to gender. The tool was valid and reliable.
Xiang et al.	To investigate the presence of GS about running during PE	Qualitative	32 boys and 114 girls of primary school	Ad hoc questions; Run for Your Life program	Running was perceived to be a gender-neutral activity.

1.8.1. Discussion on the presence of gender stereotypes in physical education

The results of this review demonstrated the persistence of GS in the school and educational context during physical education classes. GS originate mainly from students' personal beliefs about sports activities. Cárcamo et al. (2021), through qualitative research, sought to explore the gender beliefs, values, and participation of Colombian boys and girls in physical education classes, concluding that GS were still present. The study highlights data revealing a prevailing perception of male superiority in sport, with most students attributing higher

performance to males, except for a minority who believe that skills depend more on individual characteristics and the complexity of the task. In addition, the study reveals different motivations between the sexes, with girls attributing greater value to the psychological well-being and relaxation derived from physical education.

Sports preferences and choices were also influenced by gender, with traditional “male” and “female” categorizations for activities such as soccer and volleyball, respectively aimed at males and females. The research highlights the need for educational strategies that promote gender equality, suggesting adjustments in the selection of activities and use of spaces to provide balanced experiences for all students. A further aspect analysed and discussed was the barriers to participation in physical education classes, as clearly perceived by girls.

These barriers included a perception of lack of ability, particularly regarding invasion games, where boys dominate activities as opposed to the assignment of passive roles to girls; the prominence of male sports in the media, as opposed to the pressure felt by girls when they make mistakes, resulting in a lack of self-criticism among boys (Martin et al., 2022). To address these perceptions, Martin et al. (2022) devised a protocol incorporating two teaching units focused on volleyball and colpbol— comprising six volleyball sessions to explore the barriers, interests, and motivations of girls in PE, followed by nine colpbol sessions implementing an ‘activist phase’ with reflective spaces aimed at enhancing girls’ empowerment and fostering communication between teachers and pupils. For effective application of these strategies, teachers should consider selecting and adapting game content to reduce the emphasis on physical contact or activities requiring prior knowledge, thereby making participation less daunting and creating opportunities for creative discussions. For all these reasons, teacher training is essential for the effective implementation of this new approach. Adopting these best practices can help schools move away from continuing to tolerate masculinity-based practices, ultimately ensuring a safer and more positive learning environment for all students. The third aspect concerns the perceptions and beliefs of primary and secondary school teachers regarding GS in physical education, as well as the adequacy of their training to address this issue in practice. On the one hand, some teachers believe they use teaching methods that avoid reproducing these stereotypes. Many say they do not have higher expectations of male students but use inclusive language and provide examples of both male and female athletes in

their school lessons (Lopez-Morales et al. 2023). On the other hand, a significant number of teachers expressed a lack of confidence in their training regarding the most effective technical and teaching methodologies to combat gender inequality in physical education. This highlights the crucial need to improve training programs, especially considering that many trainers rely on self-learning to fill these gaps. The REFLECT program, highlighted in the literature, was designed to enhance secondary school teachers' competences in reflective co-education (Kollmayer et al., 2020). However, research by Mateo-Orcajada et al. (2021) indicated that GS persist among PE teachers, particularly among the older cohort.

This finding is consistent with the study by Preece & Bullingham (2022), which observed that physical education classes often reflect prevailing stereotypes: female teachers believed that males received preferential treatment in sports, to the detriment of females, while male teachers pointed to developmental differences as the basis for this disparity. A recent narrative review (Arenas et al., 2022) highlighted the profound influence of teachers on female students' dissatisfaction with physical education, particularly in courses that mainly involve traditional sports. Similarly, Vera et al. (2018), validating a questionnaire designed to explore the existence of GS in physical education classes, affirmed the persistence of such stereotypes. They also emphasized the fundamental need to challenge and change discriminatory attitudes among teachers.

Furthermore, Peterson et al. (2012) studied the expectations, attitudes, and behaviours of physical education teachers, with a particular focus on how these are influenced by the gender and weight of students. Their research revealed that teachers generally have lower expectations of overweight students' abilities, with a more pronounced bias towards female students. This body of evidence calls for immediate action to address and correct the misconceptions prevalent among physical education teachers. A significant obstacle in the fight against GS in sport and physical education is their representation in school textbooks. Moya-Mata et al. (2019) revealed that textbooks used in Spanish primary schools describe a stereotypical representation of sport, characterized by a predominance of male sports figures. Activities such as orienteering were predominantly associated with males, while climbing was associated with females. The study suggests that textbooks need to present role models that challenge these gender expectations. Reflecting on the content of textbooks could promote more egalitarian and

coeducational practices among students. In a subsequent study, Moya-Mata et al. (2023) found similar trends in Brazilian textbooks, where combat sports were typically intended for males and individual practices such as gentle gymnastics for females.

The findings underscore the importance of educators actively working to counteract the promotion of hegemonic male sports models in both primary and secondary education. Various innovative protocols have been used successfully to address GS in physical education, achieving positive results in reducing the gender gap. These include korfbal, colpbol, "girl active," and "run for your life" sessions. Gubby (2019) highlighted korfbal, a sport akin to basketball originating from the Netherlands, known for promoting gender equality through its mixed gender teams and gameplay that ensures a balanced competition between genders. Martinez et al. (2023) found that a coeducational intervention using colpbol effectively shifted students' gender perceptions, promoting more equitable views. O'Reilly et al. (2023) introduced the "girl active" initiative in secondary schools, emphasizing the importance of teachers engaging with the perspectives of adolescent girls to dismantle prevailing GS, including the myth that girls are uninterested in sports. This requires schools to strengthen support for teachers in facilitating such discussions. Xiang et al. (2004) reported on the "Run for Your Life" program, a running activity in physical education that was considered gender-neutral by both boys and girls, promoting greater interest and participation among students. Teachers are crucial in spreading or dismantling gender culture in physical education. The effectiveness of teaching and their role depends on the teaching approach and careful selection of content to promote an inclusive, high-quality educational environment. It is essential that teachers practice active listening and seek creative alternatives, including adaptations or variations in content, to promote inclusive educational practices.

The introduction of professional and specialized physical education teachers, with targeted university training in motor sciences, represents a significant step forward compared to the more generalized approach of general teachers. However, since generalist teachers are still responsible for teaching physical education in the early years of primary school (grades 1, 2, and 3), there is a clear need to improve training and awareness initiatives for these teachers. Future research should aim to explore teachers' perceptions of gender equality and the extent to which their

teaching practices in physical education reflect GS. This includes comparing the approaches of generalist and specialized teachers in primary schools and examining children's perceptions of their teachers' methods and their views on gender equality in physical education classes.

Therefore, many studies have highlighted the persistent presence of GS in physical education in both primary and secondary education. Among the main obstacles are the personal beliefs of male and female students towards sports activities, with particular attention to the perceptions of female students, the attitude of teachers, and the perpetuation of similar stereotypes in physical education textbooks. In particular, the implementation of different protocols, such as colpbol, korfbal, and running programs, has proven effective in promoting a more inclusive environment. These sports, by virtue of their rules and adaptations, do not adhere to traditional gender norms and therefore promote inclusivity. However, a significant challenge remains: many educators report a lack of adequate training to effectively address GS in PE in order to promote gender equality. For this reason, we emphasize the urgent need for schools to offer comprehensive resources and materials to support teachers in this sensitive area. The results of the studies reviewed suggest that coeducation is the most effective strategy for overcoming gender bias and promoting a fair and inclusive physical education environment.

II – HYPOTHESIS

II - HYPOTHESIS

GS play a key role in shaping children's approach to physical activity in primary schools, as they influence both the perception of which activities are considered appropriate and the motivation to participate. These stereotypes reinforce different expectations for boys and girls, affecting not only performance but also participation, enjoyment and relational behaviour within coeducational activities. Empirical studies conducted in primary schools indicate that stereotypes are formed before puberty and can affect self-efficacy, sport preference and emotional response to motor tasks (Carcamo et al., 2021; Azzarito et al., 2017). Consequently, motivation toward PE may vary according to children's beliefs about gender and sport ability, even when both genders are exposed to the same educational environment. In this context, PE has often reinforced models of male dominance in sports (Simon et al., 2021), which has led to the exclusion of girls and the marginalization of those who do not conform to traditional expectations. This phenomenon has had global repercussions, as evidenced by data from the World Health Organization (WHO, 2018) and other studies (Carcamo et al., 2021; Reimers et al., 2019), which highlighted higher levels of inactivity and sedentary behaviour among girls compared to boys. Since the attitudes and lifestyles acquired during childhood strongly influence behaviour in adulthood, it is crucial to address GS in PE from the earliest stages of schooling. With the introduction of specialist PE teachers in Italian schools, it becomes relevant to investigate whether stereotypes still influence motivational and relational dimensions during PE lessons. Since the reform does not directly address gender pedagogies, it remains unclear whether the presence of specialists can mitigate bias or whether children's beliefs will continue to reflect historically gendered models of sport. Examining these variables in the context of the reform provides an opportunity to understand whether institutional change is accompanied by pedagogical transformation. These stereotypes not only condition girls' participation but can also reduce opportunities for developing both motor and social skills, thus perpetuating a cycle of exclusion and inequality with long-term effects on girls' physical and mental health. Moreover, the perception of physical activities as "appropriate" for one gender

reinforces psychological barriers, limiting girls' exploration of a wider range of sports. For this reason, PE teachers must be aware of GS and adopt inclusive teaching strategies that encourage active participation for all students. Examples include privileging cooperation and personal improvement over competition, offering both female and male role models, and creating a learning environment that values diversity. Based on this framework, the following hypotheses were formulated:

(H₁) GS are still present among primary school children despite the recent educational reforms and exposure to specialist PE teachers. The expected direction is that boys will attribute greater value and competence to sports perceived as "masculine"; girls will show more stereotype-driven caution or disengagement. Despite significant societal progress in promoting gender equality, GS persist in various domains, including education and sports. Primary school children are particularly susceptible to internalizing these stereotypes, as they are in a formative stage of cognitive and social development. According to Salvatori and Cherubini (2024b), GS in PE continue to be reinforced through explicit and implicit messaging in schools, shaping students' perceptions of what is considered "appropriate" for boys and girls. Boys are often encouraged to participate in more physically demanding and competitive activities, while girls are steered toward cooperative or less physically intense exercises. This early exposure to gendered expectations can have a lasting impact, influencing children's attitudes toward physical activity and sports well into adolescence and adulthood. Moreover, teachers and peers play a critical role in reinforcing or challenging these stereotypes. Research has shown that when teachers unconsciously favour boys in certain sports or use gendered language in their instructions, they contribute to the persistence of these biases (Reimers et al., 2019).

(H₂) The endorsement of GS varies according to gender, with boys showing higher agreement with traditional gendered beliefs compared to girls. In fact, previous research indicates stronger masculine identity pressure in boys' sport participation (Martínez et al., 2023). Boys are more likely to perceive sports and PE as central to their identity, reinforcing notions of physical strength, competitiveness, and dominance (Simon et al., 2021). This dynamic reflects the

pressure to conform to dominant ideals of male athleticism. Conversely, girls are frequently socialized to view sports as secondary to other interests, often associating physical activity with aesthetic or health-related benefits rather than competition or personal achievement (Carcamo et al., 2021). These differences explain higher participation rates among boys (WHO, 2018) and the social disapproval faced by girls who engage in traditionally “masculine” sports.

(H₃) The level of GS influences students’ motivation toward PE, with higher stereotyped beliefs predicting lower intrinsic motivation and potentially greater external motivation or amotivation. The rationale is that stereotype threat reduces self-efficacy and intrinsic value of physical activity (Ryan & Deci, 2020). Motivation is crucial for sustained engagement in physical activity. Boys often show higher intrinsic motivation, supported by social reinforcement of athleticism (Simon et al., 2021). Girls, however, are more dependent on extrinsic motivators, such as approval from teachers or parents (Reimers et al., 2019). The belief that certain sports are “not for them” reduces their self-efficacy and willingness to persist. Girls who deviate from gender norms may also face exclusion or lack role models (Salvatori & Cherubini, 2024b). These barriers highlight the need for interventions that dismantle stereotypes and foster an inclusive environment, where all students feel supported in exploring and developing their abilities.

(H₄) Beliefs on gender also affect relational attitudes toward coeducation, with stronger stereotypes predicting reduced cooperation and openness toward mixed-gender activities. Coeducational acceptance emerges as relational motivation, influenced by perceived threat or collaboration (Preece & Bullingham, 2022). Children who internalize GS tend to perceive mixed-gender contexts as unequal, competitive or socially threatening, particularly when sports are labelled as ‘masculine’ or ‘feminine’. Research shows that, during team activities, boys often assume leadership roles and dominate spatial and decision-making dynamics, while girls prefer cooperative and supportive roles, not because of biological inclinations, but due to socially constructed expectations (Preece & Bullingham, 2022; Carcamo et al., 2021). These asymmetries reduce girls’ willingness to actively engage in mixed tasks, influencing their motivation and relational behaviour.

Furthermore, coeducational discomfort increases when stereotypes imply that one gender is 'naturally superior' in specific motor tasks, generating avoidance behaviours, compensatory passivity, or 'self-limiting participation'. The relational climate can therefore become a mediator of motivation, shaping whether coeducation promotes empowerment or exclusion. This implies that attitudes toward coeducation are not neutral but emerge as relational forms of motivation influenced by perceived equity, collaboration and vulnerability. Consequently, if GS are strong, coeducational activities are likely to accentuate inequality instead of reducing it. This hypothesis is particularly relevant in the Italian context, where coeducation is promoted through policy, but not accompanied by pedagogical training. Assessing whether stereotypes predict relational discomfort in coeducation allows this study to investigate whether specialist-led PE is capable of transforming gender dynamics or whether such dynamics persist independently of curricular reform.

III – OBJECTIVES

III - OBJECTIVES

This study aimed to investigate the presence and impact of GS in the context of PE among students in the fourth and fifth grades of primary school. GS, as pervasive social constructs, shape the children's perceptions of what activities are considered appropriate and influence their motivation to actively participate in PE lessons and sports activities. Such beliefs are not merely spontaneous opinions, but internalized cultural models transmitted through family dynamics, media influences and school practices themselves, which may implicitly legitimize different expectations for boys and girls in movement contexts (Azzarito et al., 2017). The general objective is to analyse the presence and impact of GS on primary school children's motivation and relational attitudes toward coeducational physical education in Italian fourth and fifth grades, in order to evaluate whether the recent introduction of specialist PE teachers contributes to more equitable participation, collaboration and motivation in PE. Specifically, the study sought to analyse differences in how GS are perceived by males and females, recognizing that these stereotypes may affect each gender differently. Understanding these variances is crucial to identifying the extent to which GS contribute to disparities in participation and engagement during PE lessons. Primary school represents a developmental window in which children's identities remain flexible and highly influenced by social interaction. Therefore, investigating stereotypes at this stage offers valuable insight into how school sport practices may reinforce or challenge gender bias. The specific objectives were:

(O1): To identify whether GS are present among primary school students in Southern Italy and to describe the nature of these beliefs regarding motor competence, sport suitability and gendered expectations (corresponding to H₁). By focusing on these critical early years of schooling, the study aimed to shed light on how GS manifest and persist in activities intended to promote motor development, cooperation, and self-expression. Since stereotypes can reduce opportunities for skill acquisition and discourage active participation—particularly among girls—the research assessed whether they act as psychological barriers or social barriers in physical activity contexts.

O2: To examine whether GS differ between boys and girls, analysing whether children attribute different performance expectations, preferences or emotional attitudes depending on gender (corresponding to H₂). Moreover, stereotypes may also produce relational consequences in coeducational settings, influencing how boys and girls negotiate space, assume leadership roles, or withdraw from participation entirely. This adds a social dimension to the motivational impact of stereotypes, expanding their effect from individual perceptions to classroom interaction patterns. Moreover, the study aimed to provide a nuanced understanding of how children's gender identities intersect with their attitudes towards PE and sports activities. This intersection is vital for revealing the broader implications of GS on overall participation, as well as on the quality of educational and social experiences during PE.

O3: To investigate whether GS influence students' motivational regulation toward PE (intrinsic, identified, external or amotivation), assessing whether higher stereotyped beliefs predict reduced intrinsic motivation and greater avoidance or externally regulated participation (corresponding to H₃). This perspective becomes particularly relevant within the Italian educational reform introducing specialist PE teachers from 2022 onward. While the reform seeks to improve motor expertise, it does not explicitly address inclusive pedagogies, leaving uncertain whether specialist instruction alone can modify stereotyped gender beliefs. By identifying these patterns, the research hoped to contribute to the development of more inclusive and equitable PE teaching strategies that could mitigate the effects of GS, encourage greater participation among all students, and promote a positive attitude towards physical activity irrespective of gender.

O4: To evaluate whether GS affect relational attitudes toward coeducation, examining whether stronger stereotyped beliefs predict reduced cooperation, discomfort, passive participation or dominance behaviours during mixed-gender activities (corresponding to H₄). Ultimately, these findings can inform teacher training and educational policy, helping educators adopt evidence-based practices capable of challenging gender assumptions, supporting mixed-gender collaboration, and aligning PE with the equality principles promoted by Agenda 2030 and the recent Italian curricular reforms.

IV - MATERIAL AND METHODS

IV -MATERIAL AND METHODS

4.1. DESIGN AND PARTICIPANTS

The present research used a quantitative, cross-sectional, correlational design, aimed at analysing the relationship between GS, motivation toward PE, and attitudes toward coeducation among primary school children enrolled in fourth and fifth grades. This design allows for the simultaneous examination of different variables in a defined temporal framework, providing a snapshot of students' beliefs and behaviours within the current educational context. The adoption of this design responds to the lack of empirical data concerning the effects of stereotyped beliefs in primary school PE, particularly in Italy, where the recent introduction of specialist PE teachers (2022–2023) offers a unique opportunity to investigate whether institutional reform corresponds to pedagogical change. Examining children's beliefs at this transitional stage is therefore crucial to determine whether motor specialization alone can foster equality or whether explicit pedagogical training is required.

The sample consisted of 401 students ($N = 401$) aged 9 to 11, attending fourth and fifth grades in primary schools located in Southern Italy. Participants were recruited from public schools that agreed to collaborate with the research team. The inclusion of two geographically and culturally distinct regions allowed for a broader examination of potential variations in the prevalence and perception of GS. The sample included 190 boys ($M = 8.9$, $SD = 0.78$ years) and 211 girls ($M = 8.8$, $SD = 0.64$ years), recruited through convenience sampling based on school availability and willingness to participate. The choice of this age group is pedagogically meaningful, since late childhood corresponds to a developmental phase in which gender identity becomes socially consolidated and differences in motor participation begin to emerge more markedly (Carcamo et al., 2021). Thus, surveying this age range enables the detection of stereotypes before they solidify further in adolescence. Inclusion criteria required that students attended PE regularly and had parental consent. Students with documented severe cognitive disabilities were excluded to avoid confounding variables affecting comprehension of questionnaire items. To ensure ethical compliance, informed consent was

obtained from parents or legal guardians of all participants. Anonymity and confidentiality of the data were maintained throughout the research process, in accordance with ethical standards for studies involving minors. The study received ethical approval from the Catholic University of Murcia (CE072314, Murcia, Spain, ANEXO III).

4.2. DATA COLLECTION

In this study, three core variables were examined in order to understand how children engage with PE and how their beliefs may influence both their motivation and relational behaviour within coeducational contexts. These variables were selected because they represent distinct but interconnected dimensions of the student experience in PE, each contributing to the understanding of how gendered social expectations shape participation and interaction. Specifically, the research focused on:

1)GS, defined as socially constructed beliefs concerning perceived appropriateness of sports, motor abilities, and behavioural expectations associated with boys and girls. These beliefs may distort students' self-perception of competence, influence which activities they consider suitable, and structure how they interpret others' skills and roles.

2) Motivation toward PE, referring to students' motivational regulation during physical activity, including intrinsic motivation, identified regulation, external regulation, and amotivation. Motivation was analysed to determine whether stereotyped beliefs reinforce avoidance, reduce enjoyment, or restrict participation to activities matching gender expectations.

3) Attitudes toward coeducation, defined as students' willingness to participate, collaborate and interact with peers of a different gender in shared PE tasks. This variable explores whether stereotypes affect relational comfort, cooperation, role negotiation and leadership dynamics during mixed-gender activities.

Investigating these three dimensions together allows the research to determine whether children's beliefs influence both individual motivation and

social dynamics, providing evidence of whether PE functions as an inclusive context or reproduces gendered inequalities.

The three variables described above were assessed through validated instruments specifically designed to measure beliefs, motivation and relational attitudes in the context of PE. The questionnaires were selected based on their suitability for primary school populations, their theoretical alignment with Self-Determination Theory (SDT) and gender socialisation frameworks, and their ability to provide quantitative measures that respond to the aims and hypotheses of this research. The questionnaires were administered during school hours under the supervision of trained researchers (Figure 2 and ANEXO IV). These instruments were selected to provide a comprehensive assessment of students' attitudes, motivation, and beliefs related to PE and sports:

- Pre-Adolescent Attitude towards PE Questionnaire (PAAPEQ): assessed general attitudes towards PE, including perceptions of physical activities, teachers, and the perceived role of physical activity in daily life. This tool established a baseline understanding of children's engagement with PE lessons. This instrument was selected because it investigates gendered beliefs at the level of motor competence attribution and sport suitability, allowing the identification of biased expectations that may influence participation, especially for activities perceived as "masculine" or "feminine". PAAPEQ therefore directly supports the operationalisation of H₁ and H₂, measuring how children internalise social expectations about boys' and girls' roles in PE.
- Motivation in PE in Primary Education Questionnaire (CMEF-EP): measured multiple dimensions of student's motivation towards PE, allowing for a detailed analysis of factors influencing engagement and participation. This instrument was selected because it allows the analysis of whether motivation varies according to stereotyped beliefs (H₃) and whether motivational profiles are linked to relational dynamics in coeducation (H₄). By identifying differences in motivational orientation, CMEF-EP provides empirical evidence on whether stereotypes encourage intrinsic engagement, avoidance, or

dependent participation, offering pedagogical implications for curriculum design and inclusive PE instruction.

- Beliefs and GS towards Physical Activity and Sport Questionnaire (CEGAFD): examined the prevalence of GS among students, focusing on beliefs about gender-appropriate sports and the influence of such stereotypes on participation and motivation. CEGAFD was chosen to complement PAAPEQ by providing a refined and domain-specific analysis of gendered activity interpretation. It helps detect how strongly children classify sports or motor tasks through gender categories, enabling the evaluation of explicit stereotype presence and gender differences with greater precision. This tool is therefore instrumental in validating H₁ and H₂

Figure 2. Classroom work and explanation of the project.



Source: Photo by the author.

4.2.1. Physical Education Motivation Questionnaire (CMEF-EP)

The importance of motivational processes within the Self-Determination Theory framework is supported by recent empirical studies. Salvatori and Cherubini (2024a) highlighted that educational environments that emphasize enjoyment foster autonomy, competence, and relatedness, resulting in greater student involvement in PE. Their findings indicate that enhancing enjoyment can counterbalance stereotypical beliefs, particularly those internalized by girls regarding their suitability for sport. Therefore, motivation should not be regarded solely as a psychological dimension but as a pedagogical strategy capable of reducing the impact of GS in PE contexts, reinforcing the rationale for its inclusion in the present research. The CMEF-EP (Sánchez-Oliva et al., 2012; Miguel Leo et al., 2012) as used to evaluate students' motivation in PE. The questionnaire begins with the sentence 'I participate in PE classes...' and includes 20 items divided into 5 factors:

- intrinsic motivation (Items 1, 6, 11, 16, e.g. 'Because PE is fun')
- identified regulation (Items 2, 7, 12, 17, 4; e.g., 'Because this subject gives me knowledge and skills that I consider important')
- introjected regulation (Items 3, 8, 13, 18, e.g. 'Because I see it as necessary to feel good about myself')
- external regulation (Items 4, 9, 14, 19, e.g. 'To prove to the teacher that I can do it')
- demotivation (Items 5, 10, 15, 20, 4, e.g. 'I really feel that I am wasting my time with this subject'). A detailed description is shown in Table 8.

Table 8. CMEF-EF Items.

I participate in PE classes...	
1.	Because PE is fun
2.	Because I can learn skills that I can use in other areas of my life
3.	Because I feel bad if I don't participate in the activities
4.	Because it is well regarded by the teacher and peers
5.	But I don't understand why we should have PE.

-
6. Because I find this subject enjoyable and interesting
 7. Because I value the benefits that this subject can have for my personal development
 8. Because I feel bad about myself if I miss classes
 9. Because I want the teacher to think that I am a good student
 10. But I really feel that I am wasting my time with this subject
 11. Because I enjoy doing the activities
 12. Because, for me, it is one of the best ways to get useful skills for my future
 13. Because I want my colleagues to value what I do
 14. I don't know; I have the impression that it is useless to go on attending classes
 15. Because of the satisfaction I get from practicing
 16. Because this subject provides me with knowledge and skills that I consider important
 17. To demonstrate my interest in the subject to the teacher and classmates
 18. I don't know clearly, because I don't like it at all
-

4.2.2. Pre-Adolescent Attitude towards PE Questionnaire (PAAPEQ)

The PAAPEQ was used to evaluate co-educational attitudes among students, with particular focus on perceptions of gender roles and stereotypes across different aspects of daily life and education. The scale is divided into three subscales (10 items each), which assess distinct dimensions of gender-related attitudes:

- 1) Sociocultural plan: examines beliefs related to traditional gender roles in family responsibilities, domestic tasks, and societal expectations. It also addresses the presence of GS in domains such as clothing, sports, and general social behaviour.

- 2) Relational level: explores interpersonal dynamics in teacher-student, peer-to-peer, and student-parent relationships. Items probe beliefs related to decision-making, authority, and behaviours associated with gender roles.
- 3) Personal level: focuses on personal beliefs, preferences, and aspirations shaped by gender norms, including views on family roles, career choices, and tolerance towards non-conformity. This dimension highlights internalized stereotypes that may affect future goals and role acceptance.

Responses are scored on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Higher scores on progressive items reflect more inclusive attitudes, while higher scores on traditional items indicate stronger adherence to GS. As detailed in Table 9, the PAAPEQ provided a comprehensive picture of how gender attitudes manifest in sociocultural, relational, and personal domains. These insights are critical for identifying intervention areas to foster equality and inclusivity, particularly in the domain of PE.

Table 9. PAAPEQ Items.

Socio-cultural plan	1.	Housework is best done by women
	2.	Pink clothes and things are more for girls than for boys
	3.	Football is a boys' sport
	4.	It is normal for a boy and a girl to play the same game
	5.	A girl alone should be afraid if she meets a group of boys
	6.	Mothers are the ones who should take care of their sons and daughters
	7.	Housework can be done well by both men and women
	8.	Boys drive better than girls
	9.	Football is a boys' and girls' sport
	10.	Homosexuals are as normal and respectable as I am
Relational level	1.	It is impossible to get along with a girl
	2.	Boys are always stronger than girls

	3.	A girl should not go out with a guy other than her boyfriend
	4.	Girls who don't go out with boys are narrow-minded
	5.	In teamwork, it's usually a guy who calls the shots
	6.	It is normal for boyfriends to take revenge on their girlfriends if they put them on the spot
	7.	Homosexual girls are less trustworthy than a girl
	8.	Guys who cheat on their girlfriends are more macho
	9.	With a partner it is better to pretend to agree so as not to argue
	10.	10. It is easier to insult a homosexual than a man

Personal level	1.	I would be ashamed to admit or say that my father does the dishes at home
	2.	I believe that women should not be bullfighters or footballers
	3.	Girls who dress like men bother me
	4.	I like that it's only my father who works outside the house
	5.	I prefer girl to work at home
	6.	I think a girl should get married and be a mother
	7.	I think a kitchenette, or a doll is a boy's and a girl's game
	8.	It is understandable to be ashamed of homosexual friends and brothers or sisters
	9.	I believe that being a man is preferable to being a woman, it has its advantages
	10.	I believe that girls can be firemen, policemen, bullfighters or footballers...

4.2.3. Questionnaire on Gender Beliefs and Stereotypes towards Physical Activity and Sport (CEFGAD)

The CEFAD assessed students' perceptions of gender roles and stereotypes specifically in the context of PE, physical activity, and sports. The instrument included 24 items, grouped into five thematic sections that capture different dimensions of gender-related beliefs. Responses were collected on a 5-point Likert

scale (1 = strongly disagree, 5 = strongly agree), allowing students to express their level of agreement with stereotype-related statements (see Table 10). The scale provided a nuanced understanding of the prevalence and strength of GS, their influence on participation, and their role in shaping motivational dynamics. By examining these domains, the CEFGAD offered a detailed framework for analysing the impact of stereotypes on attitudes, perceptions, and behaviours. Findings from this questionnaire were essential for addressing the study's hypotheses, particularly the relationship between stereotypes, gender, and motivation in PE.

Table 10. CEFGAD Items.

Differences associated with gender and its relationship with physical activity and sport	1. Generally speaking, girls are clumsier in sport 2. Boys tend to be more interested in physical activity than girls because they are better at them 3. Males are superior to females in any sport thanks to their physical capacity 4. Generally speaking, boys are more able than girls to perform physical activity 5. Females are lacking the drive to win in sports 6. Girls tend to have more problems than boys if they want to do physical activities 7. Boys tend to participate more in competitive physical activities and sports than girls
Sport and gender	1. Female athletes have more difficulties carving a niche for themselves in sport than males 2. It is difficult for females to enter the world of sport 3. Generally speaking, boys receive more encouragement from their families for engaging in physical activity than girls 4. Males get more benefits from their effort in sport

Stereotypes about physical activity and sport associated with gender	1. There are physical activities that are more appropriate for females and others for males 2. There are activities that girls tend not to practice because they are more typical of boys 3. Contact sports (like boxing, rugby, karate, etc.) are for boys and should not be practiced by girls 4. Even if a girl likes bodybuilding activities, it is difficult for them to engage in because there tend not to be groups of females for them to practice with 5. Boys are better than girls at any physical activity involving strength or aggressiveness
Beliefs about physical activity and sport and gender	1. Girls can develop their physical capacities as much as boys 2. Girls can play football as well as boys 3. Generally speaking, girls are weaker than boys 4. Females are physically weaker than males
PE classes and gender	1. The PE teacher tends to require more of boys than girls 2. In physical activities classes, the teacher usually requires more of boys than girls 3. In PE classes, if groups have to be made, the boys are chosen first because they are better than the girls 4. Most activities done in PE classes are designed more for the boys than the girls

4.3. STATISTICAL ANALYSIS

Descriptive statistics were calculated to summarize the data, including measures of central tendency such as mean (M) and measures of variability such as standard deviation (SD). The normality of the data was verified to ensure the appropriateness of parametric statistical tests. This verification involved examining the skewness, kurtosis, and other indicators of distribution symmetry to determine whether the data conformed to normal distribution assumptions. To guarantee robust methodological alignment with the research objectives, each statistical test

was selected according to the level of measurement of the variables (categorical vs. continuous), the theoretical structure of the instruments used and the directional nature of the hypotheses. In addition, when testing predictive relationships (H_3 and H_4), regressions were preferred over simple correlations to examine whether GS exerted a significant influence on motivational and relational outcomes rather than merely co-occurring with them. The t-test for independent samples was applied to assess differences between males and females across quantitative variables, such as motivational factors and GS-related beliefs. This test allowed for the determination of statistically significant gender differences, providing evidence for or against the study's second hypothesis. Chi-Square test was employed to analyze differences in categorical variables, particularly in qualitative data related to attitudes and beliefs about gender and sport. Correlation analysis (CA) was performed to measure the strength and direction of relationships among key variables, such as motivation, GS, and attitudes toward coeducation. To examine the impact of GS on motivation to participate in physical activity, linear regression analysis was utilized. This method assessed the extent to which GS scores predicted motivational outcomes, offering a detailed understanding of the relationship between stereotypes and engagement in PE. Regression coefficients were interpreted to understand the magnitude and direction of these effects, supporting the evaluation of the third hypothesis. The threshold for statistical significance was set at $p < 0.05$. This standard ensured that findings were unlikely to have occurred by chance and met rigorous scientific criteria for reliability. All statistical analyses were conducted using the Statistical Package for Social Sciences (SPSS) software, version 26.0. Data analysis was carried out using SPSS software version 26.0 (IBM, Armonk, NY, USA).

V – RESULTS

V - RESULTS

5.1. DESCRIPTIVE STATISTICS

The descriptive analysis provided an overview of participants' responses across the three questionnaires. The sample consisted of 401 children from fourth and fifth grades, with 190 boys, 211 girls. The descriptive analysis of the CEFGAD questionnaire provided insights into gender-related beliefs and stereotypes regarding physical activity, sports, and PE classes among male and female participants. Overall, no significant gender differences were found in most CEFGAD subscales. Both boys and girls reported similar beliefs regarding gender-related differences in physical activity, sports, and PE classes. Females scored slightly higher than males on subscales related to differences associated with gender and sports, as well as the perception of sport-related gender roles, but these differences did not reach statistical significance ($p > 0.05$). The total CEFGAD score also showed no significant disparity between genders, suggesting a generally shared perception of GS in physical activity contexts within the sample (see Table 11).

Table 11. Descriptive statistics for CEFGAD.

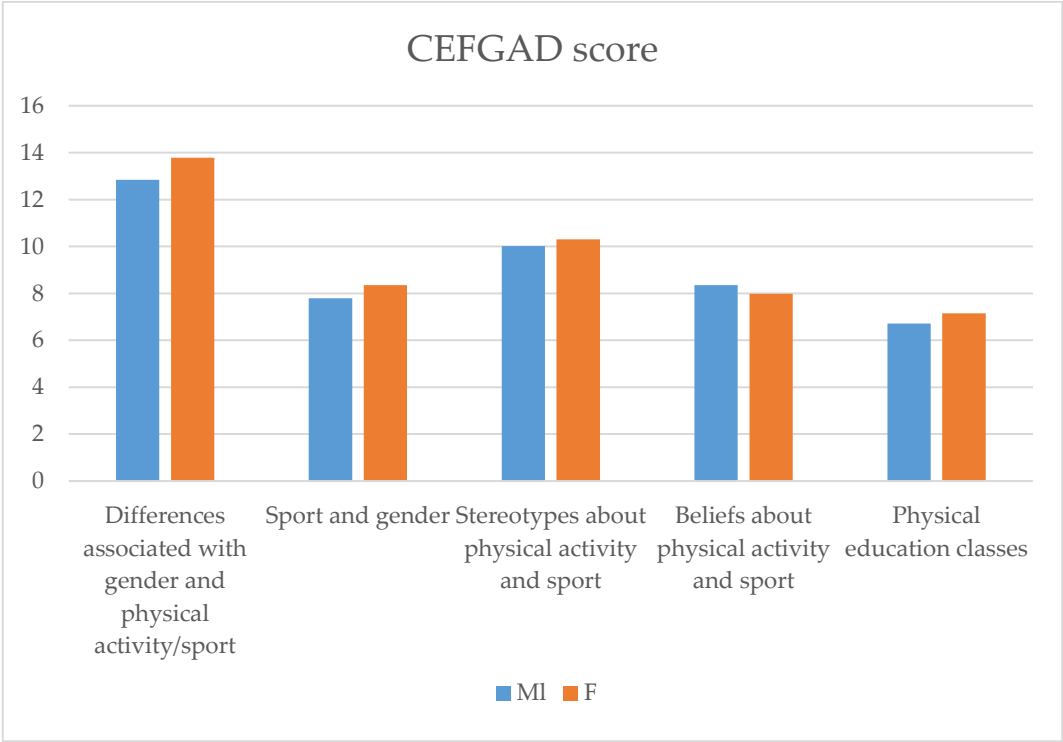
Variable	G	N	M	SD	t	df	Sig.
Age	MI	190	8.97	0.78	1.44	399	0.15
	F	211	8.83				
Differences associated with gender and physical activity/sport	MI	190	12.84	4.43	-2.0	399	0.046
	F	211	13.78	4.84			
	MI	190	7.79	2.81	-1.9	399	0.058

Sport and gender	F	211	8.35	2.96			
Stereotypes about physical activity and sport	MI	190	10.02	3.01	-0.9	399	0.35
	F	211	10.30	3.71			
Beliefs about physical activity and sport	MI	190	8.35	2.45	1.2	399	0.23
	F	211	7.99	2.21			
PE classes	MI	190	6.72	1.80	-1.9	399	0.058
	F	211	7.15	2.01			
CEFGAD total	MI	190	45.72	10.96	-1.6	399	0.11
	F	211	47.58	11.89			

Note. G, Gender; MI, males; F, Females; df, degree of freedom.

The graph (Figure 3) illustrates the differences in mean scores obtained by males and females across the various item of the CEFGAD. As shown, the values reported by both groups are generally similar, confirming the absence of statistically significant differences in most of the dimensions analyzed ($p > .05$). However, girls tend to report slightly higher scores than boys on the subscales "Differences associated with gender and physical activity/sport," "Sport and gender," and "PE classes," suggesting a slightly greater perception of gender differences or roles in the motor domain. Conversely, boys showed marginally higher values in the factor related to "Beliefs about physical activity and sport."

Figure 3. CEFGAD score differences among males and females.



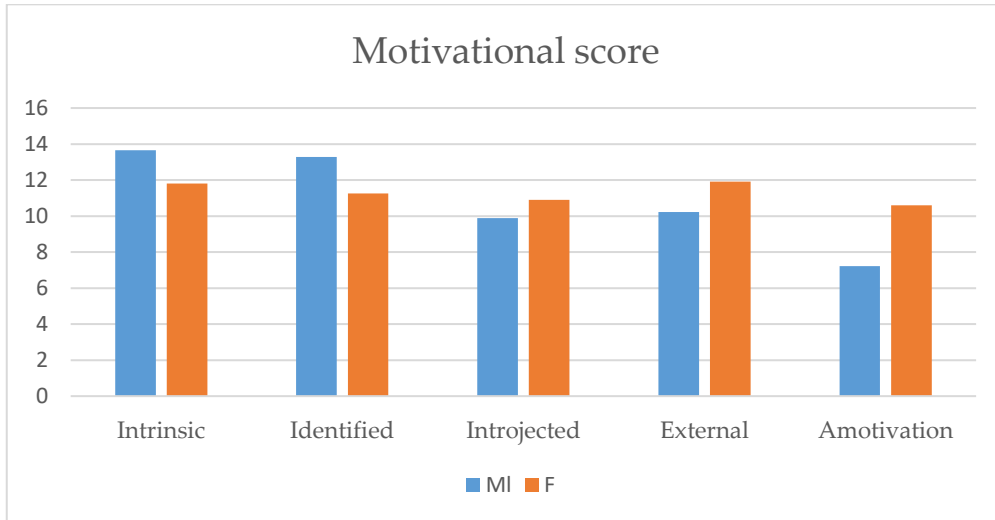
The analysis of the Motivation questionnaire revealed significant gender differences across multiple motivational dimensions related to PE. Boys reported higher intrinsic and identified motivation, indicating they engage in PE both for enjoyment and perceived personal value. Conversely, girls showed higher levels of introjected and external motivation, reflecting greater reliance on internal pressures and external factors. Additionally, girls exhibited higher amotivation scores, suggesting lower perceived benefits or enthusiasm for PE participation. Overall, total motivation scores were significantly higher for boys than girls, highlighting gendered patterns in engagement (see Table 12).

Table 12. Descriptive statistics of questionnaire on motivation.

Dimension	Gender	N	M	SD	t	df	Sig. (2-tailed)
Intrinsic	M	190	13.66	5.29	3.2	399	0.002
	F	211	11.80	6.33			
Identified	MI	190	13.29	4.57	4.4	399	0.000
	F	211	11.26	4.68			
Introjected	MI	190	9.89	3.08	-3.2	399	0.002
	F	211	10.91	2.70			
External	MI	190	10.22	3.11	-4.9	399	0.000
	F	211	11.92	3.21			
Amotivation	MI	190	7.22	3.10	-8.3	399	0.000
	F	211	10.60	4.36			
Total motivation	MI	190	39.84	12.94	3.5	399	0.001
	F	211	35.30	14.05			

The bar graph (see Figure 4) showed that males scored higher than females in intrinsic ($M = 13.66$, $F = 11.80$) and identified ($M = 13.29$, $F = 11.26$), indicating stronger self-determined motivation in males. Conversely, females scored higher in introjected ($M = 9.89$, $F = 10.91$), external ($M = 10.22$, $F = 11.92$), and amotivation ($M = 7.22$, $F = 10.60$), reflecting greater controlled motivation and lower engagement in males for these dimensions. Statistical analysis confirms these differences, with significant t-values observed in all dimensions ($p < 0.05$), indicating that the gender differences in motivation are not due to chance.

Figure 4. Significant differences in motivation among gender.



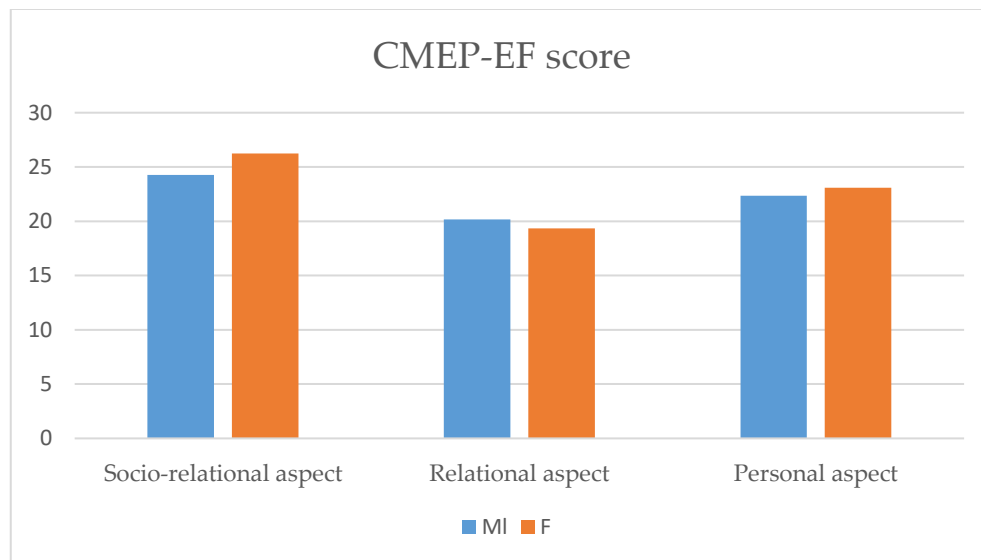
The descriptive analysis of the CMEP-EF questionnaire revealed significant gender differences in the socio-relational subscale, with girls scoring higher than boys, suggesting more positive perceptions of co-educational interactions or greater engagement with gender-related social dynamics. No significant differences were observed in the relational, personal, or global subscales, indicating largely similar views across genders in these domains (see Table 13).

Table 13. Descriptive statistics of CMEP-EF.

Dimension	Gender	N	M	SD	t	Sig. (2-tailed)
Socio-relational aspect	MI	190	24.27	7.56	-2.9	0.004
	F	211	26.24	6.09		
Relational aspect	MI	190	20.18	6.84	1.5	0.13
	F	211	19.33	5.75		
Personal aspect	MI	190	22.34	6.74	-1.2	0.23
	F	211	23.10	6.37		
Global aspects	MI	190	66.79	14.04	-1.5	0.14
	F	211	68.66	10.73		

The bar chart (see Figure 5) showed that females scored higher than males in socio-relational aspect ($F = 26.24$, $M = 24.27$), showing a stronger engagement in social relationships. Similarly, females slightly outperformed males in personal aspect ($F = 23.10$, $M = 22.34$), although this difference was not statistically significant. Conversely, males scored slightly higher in the relational aspect ($M = 20.18$, $F = 19.33$), but again without reaching statistical significance.

Figure 5. Differences in mean scores by boys and girls across the CMEP-EF questionnaire.



5.2. DIFFERENCES IN GENDER TOWARDS COEDUCATION

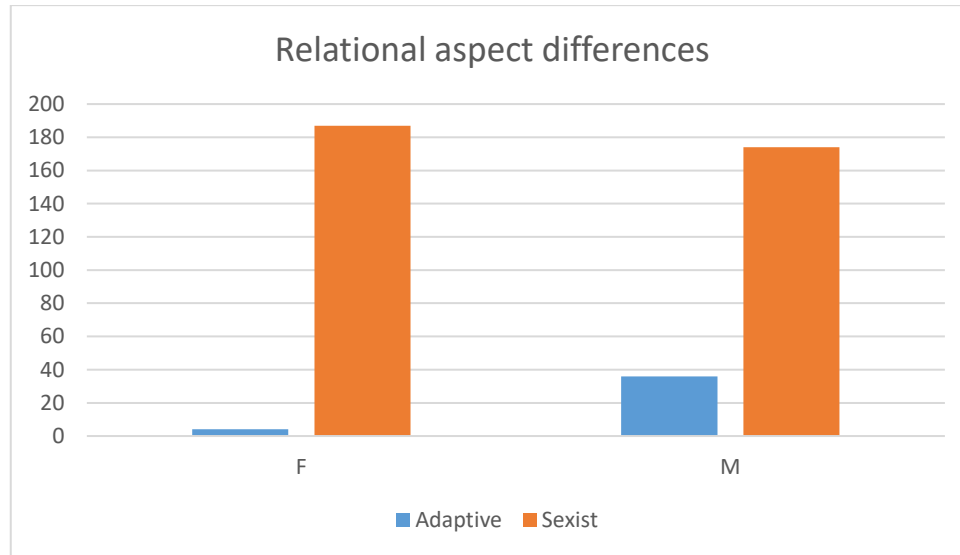
Chi-Square analysis (see Table 14) revealed significant gender differences only in relational attitudes towards coeducation. Specifically, boys and girls differed in how they perceive gender roles in interpersonal interactions ($p < .05$). In contrast, no significant gender differences were observed in sociocultural, personal, or global attitude subscales, suggesting largely aligned views between genders in these domains.

Table 14. Gender differences towards coeducation using Chi Square analysis.

Attitude	Category	F	MI	Total	Chi-Square	df	Sig (p)
Sociocultural	Adaptive	60	65	125	0.096	1	.757
	Sexist	151	160	311			
Relational	Adaptive	4	36	40	11.450	1	.001
	Sexist	187	174	361			
Personal	Adaptive	28	38	66	0.178	1	.673
	Sexist	183	172	355			
Global	Adaptive	12	18	30	0.218	1	.641
	Sexist	199	192	391			

The Chi-Square analysis (see Figure 6) revealed a significant association between gender and relational attitudes towards coeducation ($\chi^2 = 11.45$, $p = .001$), indicating that boys and girls differed in how they perceive and interpret gender roles within interpersonal and cooperative contexts. A higher proportion of boys expressed adaptive relational attitudes, showing greater openness and positive perceptions towards mixed-gender interactions, compared to girls, who were more likely to express traditional or gender-segregated views in this domain.

Figure 6. Association between gender and relational attitudes towards coeducation.



5.3. CORRELATION BETWEEN MOTIVATION TO PHYSICAL EDUCATION AND BELIEFS ON GENDER STEREOTYPES

A negative correlation was observed between motivation to participate in PE and GS beliefs ($r = -.208$, $p < .001$), indicating that stronger adherence to GS is associated with lower motivation. Global attitudes towards coeducation did not show significant correlations with either motivation or GS beliefs (see Table 15).

Table 15. Negative correlation between motivation to physical education and beliefs on gender stereotypes.

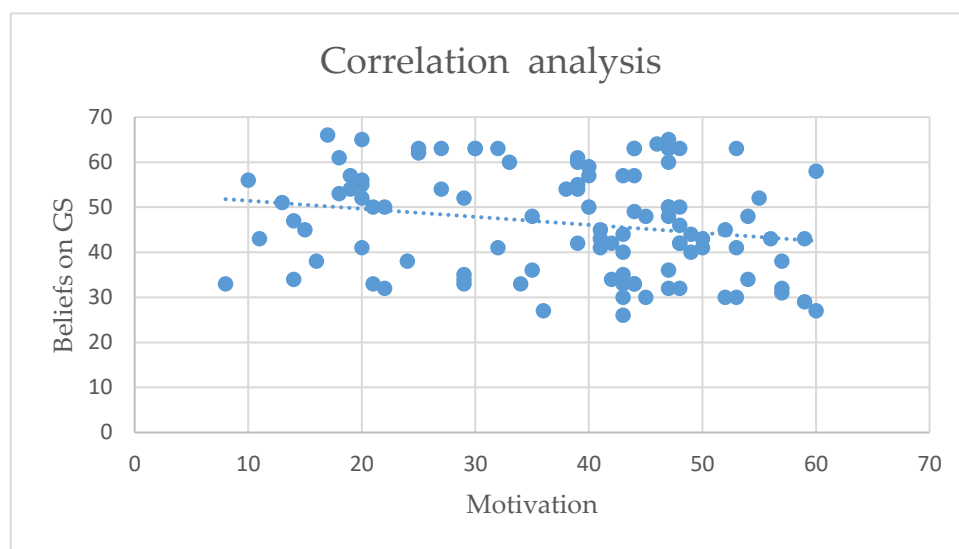
Variable	1	2	3
1. CEFGAD (Beliefs on GS)	1		
2. Motivation to PE	-.208** (<.001)	1	
3. Global attitudes towards coeducation	-.038 (.592)	.103 (.142)	1

**two tails

The dispersion graph (see Figure 7) showed the negative relationships among gender-related beliefs and motivation towards PE ($r = -.208$, $p < .001$), indicating

that stronger endorsement of GS was associated with lower motivation in PE. This suggested that gender-related beliefs may influence students' motivation in PE contexts.

Figure 7. Negative correlation among beliefs on gender stereotypes and motivation to movement.



5.4. THE IMPACT OF GS ON MOTIVATION TO PE

Linear regression analysis was conducted to examine whether students' beliefs in GS (measured by the CEFHAD scale) significantly predicted their motivation to participate in PE. The results indicate that stereotype beliefs had a meaningful effect on students' motivation (see Table 16). The model explained a modest but statistically significant proportion of variance in motivation ($R^2 = .043$, Adjusted $R^2 = .040$, $p = .002$, suggesting that students' adherence to GS accounts for about 4% of differences in motivation levels. Specifically, higher adherence to GS was associated with lower motivation to participate in PE ($B = -0.248$, Beta = -0.208 , $t = -3.14$, $p = .002$). This negative relationship confirmed that GS can act as barriers to engagement in physical activity.

Table 16. Model summary: gender beliefs and motivation.

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.208	.043	.040	12.98

The ANOVA results indicated that the regression model was statistically significant ($F = 9.85$, $p = .002$), supporting the predictive value of GS beliefs on motivation. The negative B and Beta values emphasized that as students' stereotype beliefs increased, their motivation decreased (see Table 17).

Table 17. ANOVA for the regression model predicting motivation from gender stereotypes beliefs.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.599,56	1	1.599,56	9.85	.002
Residual	72.054,32	399	180,35		
Total	73.653,88	400			

The negative regression coefficient ($B = -0.248$, $\beta = -0.208$) showed that higher adherence to GS was associated with lower motivation in PE, suggesting that students who hold stronger gender-related beliefs tend to report less enthusiasm or engagement in PE (see Table 18).

Table 18. Regression coefficients predicting motivation towards physical education from gender stereotype beliefs (CEFGAD).

Model	Non- standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	49.318	3.56		13.87	.000
CEFGAD	-0.248	0.079	-0.208	-3.14	.002

VI – DISCUSSION

VI -DISCUSSION

The findings provided a comprehensive overview of gender differences in beliefs, motivation, and co-educational attitudes among primary school students. Overall, the analyses revealed minimal gender differences in beliefs and stereotypes related to physical activity and sport, with both boys and girls demonstrating similar perceptions across most CEFAD subscales. Females scored slightly higher in areas related to gender differences in sport, although these differences were not statistically significant. This outcome appears to indicate that explicit gendered beliefs may not yet be fully crystallized at this developmental stage. In childhood, stereotypes are often implicit and situationally activated rather than rigidly internalized, aligning with early social cognitive perspectives suggesting that children “explore” rather than “fix” gender categories between ages 9–11 (Martin & Ruble, 2010). Thus, explicit measurement tools may not fully capture emerging stereotype mechanisms that are still fluid and context-dependent.

In contrast, significant gender differences emerged in motivational dimensions. Boys reported higher intrinsic and identified motivation, reflecting engagement driven by personal enjoyment and perceived value of PE. Girls, on the other hand, exhibited higher introjected and external regulation and greater amotivation, suggesting that their participation was influenced by social pressures or a lack of perceived competence. These results are in line with previous research, particularly the study by Salvatori and Cherubini (2024a), which found that a playful and enjoyable PE programme produced significant increases in students’ participation, motivation, and perceived competence. Similarly, the present findings reveal that stronger adherence to GS predicts lower motivation, especially among girls, suggesting that motivational strategies play a critical role in fostering participation. As both studies indicate, reducing competitive pressure alone is insufficient; it is the intentional creation of motivating and inclusive learning environments that enables students to feel competent and equally valued regardless of gender. Consequently, designing supportive pedagogies appears to

be a crucial pathway for preventing stereotype-driven disparities in motor engagement. These differences highlight that, even in the absence of strong explicit stereotypes, PE contexts may fail to create equitable motivational climates. According to Self-Determination Theory (Deci & Ryan, 2000), controlled motivation rises when students feel they must “perform correctly” to avoid judgment or gain approval. The higher external and introjected motivation observed among girls suggests that PE remains an evaluative rather than empowering space for them, reflecting hidden norms that reward boys’ performance and view girls’ participation as conditional or secondary (Cowley et al., 2021).

Regarding co-educational attitudes, girls showed higher scores in the socio-relational dimension, indicating more positive perceptions of interpersonal dynamics in coeducational settings. However, no significant gender differences were found in relational, personal, or global attitudes, suggesting that overall perspectives toward coeducation were largely shared between genders. Chi-Square analysis highlighted a significant gender difference specifically in relational attitudes, with boys demonstrating more adaptive and fewer sexist attitudes than girls. Although counterintuitive, this finding suggests that girls may perceive coeducation as a source of vulnerability rather than equality. Research shows that girls often experience male-dominated interactions, reduced ball possession time, and subtle exclusion in invasion games (Casey & Goodyear, 2015; Cárcamo et al., 2021). Consequently, less adaptive relational attitudes may reflect protective behavioural strategies, not resistance to coeducation. In other words, girls may defend themselves from unequal participation rather than oppose collaboration.

Correlation analyses further indicated a weak but significant negative relationship between motivation to PE and beliefs about GS, suggesting that students with stronger motivation tended to hold less stereotypical views of gender in sport. Finally, regression analyses confirmed that GS beliefs had a small but significant negative impact on students' motivation to engage in PE. The negative correlation between motivation and GS, as well as regression results confirming GS as predictors of motivational decline, show that even low-intensity stereotypes undermine intrinsic engagement in PE. These findings align with studies showing that stereotyped expectations act as “motivational inhibitors,” limiting perceived

competence and increasing anxiety in performance settings (Reeves, 2012; O'Reilly et al., 2023).

PE can unintentionally reproduce gendered hierarchies through teacher expectations, peer leadership, and game selection (Pickup & Randall, 2022). The results obtained offer a complex but coherent picture of the relationships between gender, stereotypical beliefs, motivation towards PE, and attitudes towards co-education in primary school. Although there are few marked differences in explicit beliefs about gender in sport, motivational differences and some elements of socio-relational attitudes suggest that gender dynamics operate on multiple levels. The evidence that males have higher levels of intrinsic motivation than females, who show higher levels of introjected or extrinsic motivation, is rooted in specific theoretical frameworks, including Deci & Ryan's Self-Determination Theory, which distinguishes between autonomous (intrinsic, identified) and controlled (introjected, external) and predicts that contexts that support autonomy, competence, and relatedness promote intrinsic motivation. If girls reported more controlled motivation and amotivation, it may indicate that PE lessons do not fully meet these needs. Another explanation could be that girls tend to internalize social norms that make participation more conditioned by social approval. Similarly, Eagly's theories of gender socialization and social roles suggest that cultural attitudes, family models, and media representations influence self-perceptions of competence and behavioral expectations from early childhood, with effects on the choice, commitment, and sustainability of sports participation. The following model illustrates how gender-related beliefs and stereotypes influence students' perceptions of competence and autonomy, which in turn affect motivational patterns and coeducational attitudes in PE contexts (see Figure 8).

The analyses of the CEFGAD questionnaire indicated that, overall, male and female students held similar beliefs regarding gender roles in sports and physical activity, with no statistically significant differences across most subscales. For example, beliefs concerning the relationship between gender and sport showed only minor differences between boys and girls, which were not statistically significant. The apparent absence of strong explicit stereotypes cannot be interpreted as an indicator of equity. On the contrary, the neutrality of responses may reveal an early normalization of gendered sport norms so embedded in school PE that students no longer question them. In this sense, the 'similarity' between

boys and girls may be a symptom of cultural assimilation rather than equality. When educational environments reproduce the same practices, sports, language, expectations, and leadership models for years, stereotypes become invisible—no longer expressed explicitly, but silently embodied through unchallenged routines (Biemmi, 2015; Azzarito et al., 2017). Thus, uniformity in responses may suggest conformity, not liberation. These findings suggest a shared perception of GS in physical activity contexts within the sample. This pattern aligns with previous research indicating that primary school children often internalize societal norms regarding gender and sport, yet explicit gendered differences in attitudes may not always emerge in self-reported measures. For instance, boys and girls recognize gendered differences in sports participation, their personal beliefs about abilities and interests were often comparable in early childhood. Nevertheless, slight tendencies emerged in the present sample, with girls scoring marginally higher on subscales addressing gender differences in sport. This may reflect increasing awareness among girls of traditional gender roles, as well as a gradual shift in engagement with non-traditional sports. Recent studies in European contexts indicate that girls are progressively participating in sports historically considered male-dominated, such as football or basketball, which may contribute to more egalitarian beliefs (Lütkevitte, 2023). The absence of significant gender differences does not necessarily imply the absence of stereotypes but rather indicates that both boys and girls in the sample are equally exposed to societal norms shaping expectations regarding physical activity. This finding underscores the importance of early educational interventions that challenge traditional gender norms in sports, promoting inclusivity and encouraging all children to engage in diverse physical activities regardless of gender.

The analysis of co-educational attitudes among participants, assessed using the CMEP-EF questionnaire, revealed notable gender differences specifically in the socio-relational aspect, with female students reporting higher scores than males. This suggests that girls perceive co-educational interactions more positively and are more engaged in gender-related social dynamics within the school environment. No significant gender differences were observed in the relational, personal, or global aspects, indicating that boys and girls share similar perceptions in these domains. These findings align with existing research suggesting that girls tend to exhibit stronger social competencies and perceive greater social support in

educational settings (Rose & Rudolph, 2006; Eagly & Wood, 2012). Socialization patterns from early childhood often encourage girls to prioritize interpersonal relationships, empathy, and collaboration, which may explain their higher socio-relational scores. Conversely, boys are frequently socialized to emphasize independence, competition, and task-oriented behaviors, potentially contributing to lower scores in socio-relational dimensions (Eagly & Wood, 2012; Fabes et al., 2012). The results of the Chi-Square analysis further highlight gender differences in relational attitudes towards co-education. Males were more likely to exhibit adaptive relational attitudes, whereas females showed a higher prevalence of sexist attitudes within this subscale. This pattern may appear counterintuitive but can be understood in the context of social pressures and internalized gender norms. Previous studies indicate that girls, despite being more socially engaged, may internalize societal expectations that perpetuate GS, particularly in competitive or mixed-gender contexts (Jackson et al., 2022). This could explain the higher frequency of sexist relational attitudes among female participants in the present study. Overall, these findings suggest that while general attitudes toward co-education are largely similar between genders, socio-relational and relational dynamics are areas where gender-specific interventions may be warranted. Educational programs aimed at promoting gender equality should focus on enhancing boys' social engagement and challenging internalized GS among girls, thereby fostering a more equitable and inclusive school environment. At first glance, the fact that boys showed more adaptive attitudes toward coeducation might be interpreted as positive. However, a critical reading suggests the opposite: boys feel more 'at ease' in coeducation because the game already belongs to them. They dominate space, rules, intensity and ball possession, making coeducation a reproduction of their privilege rather than a space of negotiation. Girls' more cautious attitudes are therefore not resistance to collaboration, but defence against unequal participation. Coeducation, without pedagogical mediation, risks functioning as a microcosm of gender hierarchy, where inclusion is granted but not experienced.

The analysis of motivation to participate in PE revealed clear gender differences across multiple dimensions. Male students reported higher levels of intrinsic and identified motivation, suggesting that they engage in physical activity both for enjoyment and because they perceive personal value in participation. In

contrast, female students scored higher in introjected and external motivation, indicating that their participation is more influenced by internal pressures, such as guilt, or by external factors, such as teacher or peer approval. Moreover, females exhibited higher levels of amotivation, reflecting a lack of enthusiasm or perceived competence in PE activities. These findings are consistent with previous research demonstrating that boys often engage in physical activity for enjoyment and challenge, whereas girls' motivation is more contingent upon social expectations and perceived competence (Deci & Ryan, 2000; Ntoumanis, 2005; Gao et al., 2008). The stronger intrinsic and identified motivation in boys indicates that PE is still culturally designed around their comfort zones: sports coded as masculine, centred on power, speed, competitiveness and spatial dominance. Girls' higher external regulation and amotivation suggest that PE continues to position their participation as conditional—acceptable when 'polite', 'supportive' or 'appropriate', but marginal if assertive or disruptive. This reproduces a moral expectation: boys should compete, girls should comply (Flintoff et al., 2021). Such dynamics demonstrate how PE can function as a disciplinary institution shaping gendered behaviours, rather than as a democratic space promoting freedom, autonomy and bodily expression.

Correlation analyses further revealed a negative relationship between motivation to participate in PE and beliefs in GS ($r = -0.208$, $p = .003$). Although the correlation was weak, it was statistically significant, indicating that students holding more stereotypical beliefs about gender and sport tend to have lower motivation for physical activity. This aligns with literature suggesting that rigid gender norms can limit participation and decrease intrinsic motivation, particularly among girls (Eccles & Harold, 1991; Davison & Jago, 2009; Davis, 2003; Kilpatrick et al., 2005). Notably, no significant correlations were found between global attitudes toward co-education and either motivation or gender stereotype beliefs, suggesting that overarching co-educational perspectives may be influenced by other factors beyond individual motivation or sport-related stereotypes. The negative association between stereotypes and motivation demonstrates that inequality operates not through explicit discrimination, but by eroding desire. When children internalize assumptions about who is 'naturally good' or 'allowed' to excel, their willingness to participate declines—not because they lack skill, but because they anticipate judgement. In this way, motivation becomes a social

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product, manufactured by the hidden curriculum of PE, rather than an intrinsic trait of the learner (Ryan & Deci, 2020). Schools therefore do not merely teach movement; they authorize bodies differently.

The integrated findings highlight the complex interplay between gender, motivation, and stereotypes in PE contexts. Students who are more intrinsically motivated are likely less influenced by traditional gender norms, reinforcing the importance of fostering autonomy-supportive and inclusive learning environments. Interventions targeting GS reduction, alongside strategies to enhance intrinsic motivation, such as providing diverse activity options, positive feedback, and female role models, may be particularly effective in increasing participation and engagement among girls (see Table 19).

Table 19. Summary of descriptive results by variable and gender.

Dimension	Tool	Main Findings
Gender beliefs and stereotypes	CEFGAD	Boys and girls showed similar beliefs; small, non-significant differences. Girls scored slightly higher on “gender differences in sport.”
Intrinsic & identified motivation	Motivation Scale	Boys scored higher on both intrinsic and identified motivation.
Introjected & external motivation	Motivation Scale	Girls scored higher; motivation linked to social approval and external pressures.
Amotivation	Motivation Scale	Higher among girls.
Socio-relational attitudes	CMEP-EF	Girls scored higher; more positive perception of social dynamics in co-ed settings.
Relational attitudes	CMEP-EF	Boys more adaptive; girls more sexist.
Global attitudes	CMEP-EF	No gender differences.

The summary table above provides important guidance for structuring inclusive PE programs in elementary schools. The minimal gender differences

observed in explicit beliefs about gender and sport suggest that children in grades 4 and 5 may not yet have fully internalized the rigid GS prevalent in sports society, creating an important opportunity for teachers to promote inclusive values. The gender differences that emerged indicate that the current learning environment may not equally support autonomy, competence, and relatedness. The fact that boys showed higher intrinsic and identified motivation implies that PE classes are more in line with their sense of enjoyment and their perception of competence. Conversely, girls' higher scores in introjected, external, and amotivation highlight that their participation may be more socially conditioned or driven by external expectations. It becomes useful to promote pedagogical strategies that reduce social comparison, emphasize personal improvement, and recognize individual progress over performance outcomes. Some strategies may include the use of cooperative games, peer mentoring, and task-oriented feedback to strengthen girls' sense of competence and autonomy. Ntoumanis (2005) and Standage et al. (2012) confirm that teaching that promotes autonomy and perceived competence are strong predictors of intrinsic motivation in PE. Regarding gender differences observed in social-relational attitudes, girls' higher social-relational scores suggest a stronger orientation toward interpersonal relationships, empathy, and collaboration. PE programs can capitalize on this by promoting group and cooperative learning. Boys' lower socio-relational scores highlight the need to promote social-emotional learning (SEL) and communication skills in co-educational activities, encouraging boys to appreciate teamwork and empathy alongside competition (Rose & Rudolph, 2006; Durlak et al., 2011). Interestingly, while girls were more socio-relational, boys showed more adaptive relational attitudes and fewer sexist tendencies in co-educational settings. This asymmetry suggests that even when social engagement is higher among girls, internalized social norms may still influence their perception of gender roles. To address this issue, teachers should create structured discussions and reflection sessions on gender equality, sportsmanship, and respect, helping students critically examine implicit stereotypes. Integrating such discussions into PE programs is in line with current recommendations for gender-sensitive pedagogy.

The linear regression analysis further examined the predictive role of gender stereotype beliefs on students' motivation to participate in PE. The model indicated that beliefs about gender and sport significantly predicted motivation, explaining

4.3% of the variance in total motivation scores ($R^2 = 0.043$, $F = 8.973$, $p = .003$). The standardized coefficient ($Beta = -0.208$) demonstrated a negative relationship, suggesting that stronger adherence to traditional GS is associated with lower motivation to engage in physical activity. Specifically, for each unit increase in the GS belief score, motivation decreased by approximately 0.248 units. Although the proportion of explained variance is modest, the results underscore the meaningful influence of gendered beliefs on engagement in PE. These findings are consistent with previous studies showing that internalized GS can constrain participation and reduce intrinsic motivation, particularly among girls (Eccles & Harold, 1991; Davison & Jago, 2009). The negative predictive effect reinforces the idea that stereotypical beliefs operate as psychological barriers, limiting students' perception of competence and the enjoyment of physical activity. This highlights the importance of interventions targeting GS reduction in school settings. By challenging rigid norms and promoting inclusive messages about ability and participation, educators can help enhance intrinsic motivation and engagement across genders. Approaches such as co-educational collaborative activities, autonomy-supportive teaching, and the inclusion of diverse role models have been shown to mitigate stereotype-driven disparities in motivation. In this context, even modest gains in motivation can have meaningful implications for long-term participation in physical activity, health outcomes, and the development of positive attitudes toward gender equity in sport. The fact that stereotypes predict lower motivation highlights that the issue is not incidental, but systemic. PE does not only reflect societal inequalities; it contributes to building them. When belief leads to behavioural withdrawal, and withdrawal leads to skill gap, a vicious cycle is created: stereotypes reduce participation, reduced participation weakens competence, and weakened competence 'confirms' the stereotype. Unless pedagogy intentionally breaks this cycle, PE becomes an engine of inequality disguised as neutral activity.

In light of these results, it becomes evident that motivational and relational dynamics observed in PE are not merely the outcome of individual characteristics, but reflect broader cultural and educational structures. If implicit stereotypes influence engagement, if girls' motivation becomes more controlled, and if coeducation reinforces asymmetry rather than equity, then the pedagogical organisation of PE is not neutral, but generates tangible effects on students'

opportunities for participation and development. These findings make it necessary to question the institutional level itself, critically assessing whether the recent Italian reform introducing specialist PE teachers can truly address the educational needs that have emerged. The Italian school reform introducing specialist PE teachers in primary education has been widely promoted as a strategy to elevate the status of physical activity in schools and to enhance motor competence at national level. However, the findings of this study reveal a substantial contradiction between reform rhetoric and the everyday pedagogical reality experienced by children. While the reform aims to strengthen teaching quality, it does not equip educators with the pedagogical tools necessary to build equitable learning environments, particularly regarding gender inclusion. The reform prioritises motor expertise while neglecting gender-sensitive pedagogy, thereby strengthening technical performance without dismantling the cultural mechanisms that sustain inequality. In practice, the introduction of specialist teachers risks intensifying disparities: a technically competent teacher, lacking critical training in gender, may reproduce stereotypes more efficiently than a generalist who interacts intuitively but without systematic reinforcement of bias. In other words, the system has chosen to 'teach sport better' instead of 'educating children equally'. Moreover, Italian educational policy has formally endorsed international frameworks such as UNESCO guidelines and the 2030 Agenda for Sustainable Development. These documents explicitly state that equality cannot be delegated to occasional initiatives, but must be ensured through systemic pedagogical change. Yet, current legislation fails to mandate training in gender-transformative practices, leaving equality as a symbolic aspiration rather than a binding educational requirement. Italy therefore endorses global commitments at the policy level but fails to translate them into teacher preparation, violating the principle of accountability that international agreements demand. A reform that strengthens sport performance without dismantling power hierarchies becomes not only ineffective, but ideologically regressive. It cultivates motor skills while cultivating inequality, widening the distance between boys and girls in autonomy, confidence and curricular agency. The data from this study indicate that stereotypes do not disappear simply because children spend more hours in PE or because instructors are more technically prepared. Motivation, participation, and relational comfort remain structurally constrained by school practices that normalise masculine-

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coded forms of movement and leadership. Without explicit pedagogical intervention, the reform risks reinforcing the very inequalities it claims to address. The introduction of specialist teachers should have been an opportunity to reform PE as a democratic discipline—one capable of redistributing space, voice, choice and leadership. Instead, it prioritised competition, efficiency, and motor expertise, treating equality as a collateral effect rather than a structural goal. By ignoring how gendered norms are reproduced through didactics, evaluation, game selection and classroom management, the reform implicitly protects privilege and sanctions difference. In this sense, the reform is not neutral: it is politically partial. It protects a model of sport education aligned with performance ideologies, not educational equity. Its silence on gender makes the State a passive agent of inequality. If institutions refuse to transform the pedagogical culture of PE, they cannot claim to promote equality; they merely reproduce it under the guise of ‘professionalization’.

Interpreting these findings through the lenses of SDT and critical pedagogy suggests that the pursuit of gender equality in PE cannot be achieved through an increase in technical sport competencies alone. In other words, it is not enough to ‘know more about movement’; educators must ‘teach differently through movement.’ The motivational profiles observed among girls—characterised by higher introjected regulation, external motivation and amotivation—indicate that PE remains an evaluative environment in which their participation is conditional. Girls are more likely to experience participation as a requirement rather than a choice, and their involvement is often linked to behavioural expectations of politeness, supportiveness, or self-restraint rather than autonomy, expression or leadership. This shows that teacher preparation cannot be limited to biomechanics, physiology or sport methodology. A specialist teacher who lacks critical tools to recognise symbolic oppression and exclusionary dynamics may unintentionally reinforce the same gendered system that produces less motivated girls, male leadership as a default, and coeducational practices that replicate hierarchies instead of negotiating them. From this perspective, SDT should not be interpreted simply as a psychological theory describing individual motivation, but as an ethical and political lens that interrogates what type of educational space is offered to each body. The correlation and regression results do not merely illustrate a ‘negative effect’ of stereotypes on motivation; they reveal how school practices authorise or restrict the desire to participate. A school system that generates different

motivational drives according to gender is not only less effective; it becomes a producer of structural inequality. Consequently, the purpose of PE cannot be the physical training of bodies, but the liberation of bodily possibilities constrained by culture.

VII – CONCLUSIONS

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The present study examined the presence and consequences of GS in primary school PE, focusing on how these beliefs influence children's motivation and coeducational attitudes. Through the combined analysis of explicit gender beliefs, motivational regulation, and relational dynamics, this research provides evidence that stereotypes do not operate solely as explicit judgments, but as invisible pedagogical forces shaping bodily participation, desire, and classroom interaction. Explicit stereotype measures revealed minimal gender differences, with boys and girls expressing relatively similar beliefs regarding sport suitability and motor abilities. At first glance, such uniformity may suggest progress toward gender equality in PE. However, the lack of difference should not be interpreted as the absence of inequality. Instead, it may represent the early normalization of stereotyped sport norms so deeply integrated into school practices that children no longer recognise them as beliefs but as "common sense". This confirms that stereotypes at this age are not fixed opinions but embodied norms silently reproduced through routine PE practices. In this way, H1 and H2 highlight the need to investigate not only what children think, but what the school context teaches bodies to consider possible, legitimate, or desirable. Significant gender differences emerged in motivational regulation. Boys demonstrated higher intrinsic and identified motivation, whereas girls reported increased external regulation and amotivation, showing participation driven more by obligation than genuine engagement. These results demonstrate that PE does not promote equal motivational climates. Rather than reducing inequalities, PE can implicitly reward masculine-coded participation (assertive, competitive, dominant) while discouraging girls from expressing agency, ambition, or leadership. H3 therefore reveals that motivation is not a personal attribute, but a social product shaped by the pedagogical climate. When motivation becomes gendered, PE ceases to be an equal educational space and instead becomes an environment that distributes opportunities unevenly. Relational attitudes toward coeducation were not fully equitable. Girls expressed more socio-relational awareness but also more discomfort during mixed-gender activities, while boys demonstrated more "adaptive" attitudes in quantitative terms. This must not be misread as evidence

that boys are “more open” to coeducation. Rather, boys benefit from existing game structures that privilege their motor repertoire and leadership assumptions. Girls’ relational caution represents not opposition but self-protection against unequal participation. Consequently, H4 shows that coeducation is not inherently inclusive; without gender-transformative pedagogy, it becomes a site where privilege is reproduced and vulnerability is negotiated, not resolved.

Taken together, these findings underline that the challenge of promoting gender equity in PE is not merely to increase children’s participation, but to transform the pedagogical conditions that structure who feels authorised to participate, lead, compete or simply enjoy movement. Educational interventions should therefore go beyond general encouragement and explicitly target the dismantling of gendered expectations through autonomy-supportive and relationally inclusive practices. Strategies such as co-educational cooperative tasks, gender-neutral role assignment, exposure to counter-stereotypical role models, critical reflection on sport media representations, and the redistribution of leadership in games can strengthen intrinsic motivation among girls and reduce the reproduction of privilege among boys. The observed differences in socio-relational attitudes indicate that boys’ “comfort” in coeducation should not be mistaken for inclusiveness, but seen as a manifestation of existing advantages. Conversely, girls’ cautious attitudes highlight the need to protect their agency, not to “adapt” them to inequitable environments. Thus, interventions must simultaneously challenge boys’ unconscious dominance and support girls’ bodily and relational autonomy. Despite its contributions, this study presents several limitations. The sample was restricted to one age group and a specific geographical region, which may limit generalisability. Moreover, the exclusive use of self-report questionnaires may have been sensitive to social desirability, particularly given the implicit nature of gender norms. Although stereotype beliefs predicted motivation, the proportion of explained variance was modest, suggesting that other contextual and interpersonal factors (e.g., teacher practices, peer interactions, family expectations) also shape children’s engagement in PE. Future research should adopt longitudinal and mixed-method designs to investigate how stereotypes, motivation and coeducational behaviours evolve across development, and how pedagogical interventions may disrupt inequitable trajectories. Qualitative and observational methods are especially needed to uncover the “hidden curriculum”

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of PE—those tacit norms embedded in game selection, leadership allocation and teacher feedback that may sustain gendered participation even in the absence of explicit stereotypes. Ultimately, empirical work must move toward evaluating not only children’s beliefs, but the pedagogical responsibility of institutions and teachers. Without explicit teacher training in gender-transformative motor pedagogy, reforms risk improving technical quality while perpetuating structural inequality. Addressing these issues early in education is vital to foster long-term participation, equitable social relations and genuine gender equality within schools and sport culture.

VIII – LIMITATIONS AND FUTURE PERSPECTIVES

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From an educational standpoint, the findings underline the need for intentional strategies to dismantle gendered expectations in PE contexts. Interventions should move beyond neutral teaching approaches toward explicitly gender-transformative pedagogy. This includes activities that challenge stereotypes through discussion, exposure to diverse athletic role models, and mixed-gender collaboration. Teachers can also integrate reflective exercises where students analyse media portrayals of male and female athletes, encouraging critical thinking about social representations of sport. When children are encouraged to question stereotypes, their sense of competence and intrinsic motivation increases. Furthermore, creating autonomy-supportive environments (Reeve, 2012) where students can choose among a variety of activities helps counteract stereotype-driven disengagement and fosters ownership of learning.

Several limitations of the present study should be acknowledged. First, the sample consisted of primary school students aged 8–9 years from a limited number of schools, which may affect the generalizability of the findings to other age groups or cultural contexts. Second, the study relied primarily on self-report questionnaires (CEFGAD, CMEP-EF, motivation scales), which are susceptible to social desirability bias and may not fully capture children's internal beliefs or behaviors (Fisher & Katz, 2000). Third, the cross-sectional design precludes any causal inferences regarding the relationship between GS beliefs and motivation in PE. Longitudinal studies would be required to assess changes in attitudes and motivation over time. Additionally, other potentially influential factors—such as parental support, peer influence, prior experience with sports, or media exposure—were not measured and could account for additional variance in students' motivation and attitudes toward gender roles in sports. Finally, while the study

used validated instruments, some subscales showed modest internal consistency, which could have affected the reliability of the results. Despite these limitations, the findings offer important practical implications for educators, policymakers, and school administrators. The negative association between GS and motivation highlights the need for interventions that reduce stereotypical beliefs in PE settings. Educators can implement different strategies (see Table 20).

Table 20. Strategies that could be implemented to reduce gender stereotypes.

Provide autonomy-supportive and inclusive learning environments where children are encouraged to explore a variety of activities without gendered constraints.	Develop co-educational collaborative activities that promote cooperation, teamwork, and positive social interaction between boys and girls (Fabes et al., 2012; Eagly & Wood, 2012).
Introduce diverse role models, including female athletes and instructors, to challenge traditional gender norms and enhance girls' intrinsic motivation.	Offer structured feedback and encouragement focused on skill development rather than competition, supporting students' perceived competence and reducing amotivation (Ntoumanis, 2005).
<i>Source: Author's own elaboration.</i>	

Addressing socio-relational and relational attitudes in co-education also has practical implications. Programs should encourage boys' engagement in social interactions and challenge internalized GS among girls, fostering a more equitable school environment and promoting gender-sensitive peer relationships. The present study opens several avenues for future research. First, longitudinal designs are recommended to examine how gender beliefs and motivation evolve across childhood and adolescence, providing insight into developmental trajectories. Second, incorporating qualitative methods, such as interviews or focus groups,

could enrich understanding of the underlying processes behind children's motivation and attitudes toward gender roles in sports. Third, future studies should consider additional predictors of motivation and attitudes, such as family environment, peer group dynamics, and extracurricular physical activity participation, to develop more comprehensive models. Fourth, cross-cultural comparisons could examine how societal norms influence GS and motivation in different educational contexts. Finally, intervention studies should test the effectiveness of gender-stereotype reduction programs and autonomy-supportive teaching strategies, evaluating their impact on both motivation and socio-relational outcomes in primary school students.

One further limitation concerns the extent to which implicit beliefs may have been underestimated due to the nature of the instruments used. Self-report questionnaires rely on the child's ability to consciously recognise and verbalise stereotypes, yet much of gender socialisation operates unconsciously, through imitation, silence, and repeated exposure to normative behaviours. At this age, children may "act" gendered norms without "knowing" why they do so, thus creating a discrepancy between what is believed and what is enacted. In this sense, the instruments used likely captured explicit awareness, but not the tacit behavioural reproduction of inequality. Future research should therefore integrate behavioural coding tools, observational rubrics, and implicit association measures adapted for children. These methods could reveal how stereotypes emerge through voice dominance, ball possession, leadership roles, space occupation, and physical risk-taking, rather than through explicit statements about gender. Additionally, measurement validity might have been impacted by normative pressures present in school environments. Children may have provided socially acceptable answers due to expectations imposed by teacher presence, institutional authority, or peer evaluation. More neutral, non-school-based settings, or the use of digital anonymous questionnaires, could reduce the pressure to conform to "expected" answers and offer a more authentic representation of children's beliefs.

Despite focusing on the student level, this study did not measure how institutional, curricular, and pedagogical decisions influence the reproduction of gender norms. For example, the curricular emphasis on competitive activities, invasion games, and sport-specific techniques may privilege masculine-coded performance while marginalising expressive, cooperative or exploratory activities

more frequently associated with girls' engagement. By not systematically analysing curricular content, teacher training, or instructional ideology, this research cannot fully explain whether stereotypes are transmitted by the teacher, by the institutional curriculum, or by students' prior socialisation. Future studies should therefore examine the interaction between school policy and classroom practice. This is particularly urgent in the Italian context, where the recent introduction of specialist PE teachers risks reinforcing technical proficiency without addressing gendered participation patterns. Mixed-method designs that investigate how teachers plan, justify and evaluate PE sessions are essential to uncover the "institutional voice" that influences children's motivation. Without such research, it remains unclear whether observed gender differences are a product of children's beliefs or of the pedagogical system that educates them. Future investigations should not only describe inequities but actively test the efficacy of gender-transformative interventions. Experimental and quasi-experimental studies could evaluate whether autonomy-supportive, cooperative, and role-rotational teaching practices reduce stereotype endorsement and increase intrinsic motivation among girls. Furthermore, classroom interventions that reassign leadership roles, modify game rules to promote equity, and explicitly discuss gender norms in sport may serve as powerful tools for reshaping students' socio-relational behaviours. Another promising direction lies in multi-level modelling that integrates family attitudes, media consumption, extracurricular sport experiences, and teacher feedback as simultaneous predictors of gendered motivation. Such approaches would allow researchers to map not only where stereotypes originate, but how they circulate between home, school, and society. Finally, international comparative studies should examine how national PE systems reproduce or challenge gender norms differently, enabling scholars to identify which educational policies promote equity and which perpetuate exclusion under the guise of neutrality.

IX - REFERENCES

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X – ANEXOS



X - ANEXOS

ANEXO I – Encouraging the overcoming of gender differences in physical activity: the role of enjoyment

ENCOURAGING THE OVERCOMING OF GENDER DIFFERENCES IN PHYSICAL ACTIVITY: THE ROLE OF THE ENJOYMENT

FAVORIRE IL SUPERAMENTO DELLE DIFFERENZE DI GENERE NELL'ATTIVITÀ FISICA: IL RUOLO DEL DIVERTIMENTO

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ABSTRACT

Expectations of women in sport are often based on gender stereotypes. In this context, enjoyment would seem to play a key role in improving gender trends in sport choice. This article aims to explore the relationship between perceived competence as one of the basic psychological needs and gender differences among primary school students, considering enjoyment as a mediator factor. 50 children performed different games proposed by emphasizing the enjoyment aspect for the experimental group and a regular program of curricular physical education. The findings of this study highlight the importance of enjoyment in play a significant role in promoting gender equality in the choice of sport.

Le aspettative nei confronti delle donne nello sport sono spesso basate su stereotipi di genere. In questo contesto, il divertimento sembrerebbe svolgere un ruolo chiave nel migliorare le tendenze di genere nella scelta dello sport. Questo articolo si propone di esplorare la relazione tra la competenza percepita come uno dei bisogni psicologici di base e le differenze di genere tra gli studenti della scuola primaria, considerando il divertimento come fattore mediatore. 50 bambini hanno eseguito diversi giochi proposti enfatizzando l'aspetto ludico per il gruppo sperimentale e un programma regolare di educazione fisica curricolare. I risultati di questo studio evidenziano l'importanza del divertimento nello svolgere un ruolo significativo nel promuovere l'uguaglianza di genere nella scelta dello sport.

KEYWORDS

academic achievement; motor competence; exercise.
risultati accademici; capacità motoria; esercizio.

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Introduction

The formation of identity is configured as a long and complex process in which a wide range of factors intervene providing the individual with the cognitive, emotional, conscious and unconscious supports functional to the construction of a coherent and dynamically integrated self-image. Identity development cannot ignore the socio-cultural environment in which the person is immersed, permeated by specific value, ethical, behavioral and legislative systems. Gender identity, namely the inner feeling of belonging to the male or female gender, is built on the basis of the convergence of constitutional and socio-cultural aspects from the living environment in which the person is inserted (McGovern, Drewson, Hope, & Konopack, 2020). This process also takes place thanks to agents and organizations responsible for socialization that, often, are bearers of beliefs and expectations that reflect gender stereotypes, that is the representations of male and female in a specific society. Gender stereotypes can be defined as simplified and reductionist representations of reality, socio-culturally shared, which attribute certain characteristics to men, women and their relationships (Portela-Pino et al., 2020). They are on the basis of the preservation of traditional gender roles and are an expression of: (i) a generalizing tendency that implies the affirmation of a representation that is independent of empirical evidence; (ii) a shared collective character of this representation or the common and widespread belief that men and women possess different heritages of characteristics; (iii) a minimization of individual differences within the same category and an accentuation of the differences between the elements present within the two different categories.

Gender stereotypes have a dual function, descriptive and prescriptive, not only defining how people actually are but also how they should be. They revolve around opposing characteristics (competence-care, strength-sweetness, independence-dependence, etc.) and see the male gender more oriented to the assumption of responsibility in an active way, while the female one as reactive, as a response to events of which one is not a first-person supporter (Orlandi et al., 2021). Education has been shown to increase children's and future adults' awareness of gender stereotypes and the ability to identify them. Therefore, through a "thought" education it may also be possible to deconstruct such stereotypes. Sport, like other social organizers, constitutes a real space for the formation of the identity structure because, alongside the school, the peer group and the family, it is considered one of the ideal contexts in which to experiment and experiment (Duffey et al., 2021). As such, it contributes to the process of acquiring meaning and self-awareness. Like the other bodies appointed and involved in the process of identity formation, the sports world does not seem to be exempt from logics that invite to adhere to gender stereotypes, resulting in sexist and heterosexist prejudice. In this sense, the sporting context is configured as a sexualized environment and sexuality is a structuring principle insofar as it clearly influences the degree of participation of

individuals and their choice to attend such realities (Molanorouzi, Khoo, & Morris, 2015).

In the choice of sport, the children are often encouraged to undertake sport considered "male" or "female", namely in accordance with their sex. Actually, do not exist any biological obstacles whereby a little girl cannot play soccer, or a little boy cannot to dance. Sometimes, within the scholastic environment there is still a dualistic mind-body view, where sensorimotor aspects are excluded. Scholastic education and, specifically, physical education should not be restricted to the teaching of the corporeality in a limited vision. Neuroscience, which currently cooperate with the pedagogical approach, solicitate teacher and trainers to promote a corporeality and movement education within a wider framework (Meyers-Levy, & Loken, 2015).

Sport, in fact, plays a very important role in the educational development of an individual. The educational features involve teachers and trainers, whose role will be those to create an environment in which will be analyzed the respect of the rules, the self-respect, and the respect of the others. Sport become element of discovery whereby interpret social roles and functions.

It can be element of knowledge of one's limits and, at the same time, a means of discovery of one's capability. Through the sport activities it is possible to get in touch and promote one's morphological dimension (Lenhart et al., 2012).

One of the tasks of trainers, teachers and coaches can be to highlight the vision and mission of their work regarding the context in which each one operates (school, sports, rehabilitation, preventive). Thus, the trainer identifies paths and strategies that consider both theoretical innovations and the design of individualized educational and sports paths, that is respectful of personal differences, age, gender and sexual orientation (Chalabaev, Sarrazin, Fontayne, Boiché, & Clément-Guillotin, 2013). Some "good practices" concerning the development of identity and physical self-concept emerge from the scientific literature. In particular, to improve the physical self-concept seems very useful:

1. pay attention to the different physical and sporting skills of the individual, considering the student in his multidimensionality;
2. be aware of the influence that the media have in the elaboration of the individual regarding his own body, sexual and aesthetic image;
3. try not to make judgments, understanding and valuing each subject in its uniqueness and totality;
4. Keep in mind the ways in which the individual assigns the causes of success or failure in a specific sports performance, helping the individual to recognize and positively use his resources and emotions in order to prevent him from abandoning physical activity and / or sports.

Therefore, the purpose of the present paper was to explore the relationship between perceived competence as one of the basic psychological needs and gender differences among primary school students, considering enjoyment as a mediator factor.

Method

Study design

We utilized a randomized controlled study to investigate the role of enjoyment on gender differences in the choice of physical activity among children.

The study was conducted in a primary school. The intervention consisted of different games proposed by emphasizing the enjoyment aspect for the experimental group and a regular program of curricular physical education. The evaluation regarded 24 lessons monitoring the participants at the 1st and 12th week, and the measurements were administered one day before intervention program and one day after training.

Participants

50 children were recruited with an age range of 8-10 years (M age = 9.04, $SD = \pm 0.66$) from a local primary school.

Inclusion criteria were: participants had to be able of completing a moderate-to-vigorous intensity aerobic exercise session, current students in one of the school, and able to abstain from all physical activity outside the parameters of the study protocol during test days. From the study were excluded any children with an orthopedic condition limiting their ability to perform sports, and those unable to abstain from exercise outside the study protocol. Participation in the research study was voluntary.

Children and their parents were informed about the study characteristics. The researchers ensured the anonymity of the participants, and the protocol was performed in accordance with the Declaration of Helsinki. All parents provided their written informed consent. The study was conducted from 30 January 2023 to 30 April 2023.

Procedures

Before the first training session, a special briefing was given to provide explanation on content of the exercise training program and the motivation of every single child was verified. One week before the beginning of the intervention, participants were led to the school gym to proceed with the measurements included standardized motor assessment tests and a cognitive test.

The participants were tested individually and completed each test immediately prior to and following the intervention, at the same time of the day and under the same experimental conditions. Measurements were instructed, supervised and performed by two experienced physical education teachers.

Measures

Motor tests

The evaluation regarded 6 subtests which are part of the Motorfit battery (Perotta, Corona, & Cozzarelli, 2011), as shown below:

1. Motorfit Locomotor
 - Jumping forward on one foot (SAP1);
 - Lateral galloping (GL);
 - Hopping step forward on one foot (SAP2);
2. Motorfit Object
 - Throwing a ball with one hand (LP);
 - Catching a ball with hands (RP);
 - Hitting a ball with a tennis racket (CP).

They were chosen due to their simple and time-efficient implementation, by requiring minimal equipment.

Physical Activity Enjoyment Scale

Participants' enjoyment of physical activity was measured using the 16-item Physical Activity Enjoyment Scale (PACES; Carraro, Young & Robazza, 2008). This scale intended to gauge enjoyment of children involved in outdoor recreational physical activity. The scale was slightly modified to render them easily understandable by children. Item scores ranged from 1 (not at all) to 5 (very much).

Sport Orientation Questionnaire (SOQ)

The Sport Orientation Questionnaire (SOQ) was developed in 1988 by Gill and Deeter. Its objective is to identify individual and sport-specific differences in performance orientation. The SOQ is composed of three distinct but interrelated subscales, namely competition (13 items), win (6 items), and goal orientation in relation to sport (6 items). Respondents respond to these items on a 5-point Likert scale (1=strongly disagree; 5=strongly agree).

Exercise training intervention

The training intervention included 10 minutes of warm-up, 40 minutes of core session, and 10 minutes of cool-down. The core session consisted of a series of games which had the purpose to increase involvement, motivation, and enjoyment. In fact, the exercise program was designed a way to be enjoyable and appealing in order to create full awareness of one's own ability. Each game consisted of activities finalized to acquire and improve motor competence. They could be schematically summarized as follows:

- Targeted activities to bring students closer to different types of sports;
- Individual exercises;
- Cooperation exercises;
- Team or individual competitions and games to promote healthy competition;
- Exercises and movements to develop lateralization, control, and general and segmental coordination;
- Recreational-motor activities to develop motor and postural patterns, stillness and movement: running, jumping, catching, throwing;
- Games of coordination and exploration to gain mastery of space;
- Use of body segments in games aimed at enhancing concentration and attention,
- Exercises and recreational activities in pairs, in teams, also organized in the form of a competition to develop cohesion, reciprocity in the group and trust in the other,
- The body to communicate, express and represent real and imaginary situations, personal sensations, emotions and feelings;
- Rhythmic activities and games with the help of music.

Statistical analysis

Data analysis was carried out using SPSS software version 25.0 (IBM, Armonk, NY, USA). Correlation coefficients (Pearson's r) were calculated. The normality of all variables was tested using the Shapiro-Wilk test procedure, and the data were checked for homogeneity of variance assumptions (Levene test). We used an independent sample t-test to assess group differences at baseline and a two-way Anova (experimental/control group) $\times$ time (pre/post-intervention). When the "Group $\times$ Time" interactions reached significance, post hoc testing was conducted. Partial eta squared (η^2p) (small ($\eta^2p < 0.06$), medium ($0.06 \leq \eta^2p < 0.14$), large ($\eta^2p \geq 0.14$)) was used to estimate the magnitude of the difference within each group. Effect sizes (ES) were determined by Cohen's d (small ($0.20 \leq d < 0.50$), moderate ($0.50 \leq d < 0.79$) and large ($d \geq 0.80$)). Statistical significance was set at p 0.05.

Results

All participants received treatment conditions equally and according to the same procedures and time conditions. None of them were injured during the course of the study. The students involved in the research did not differ in age, sex, anthropometric characteristics, psychological measures, as well as socioeconomic status.

Motor tests

Statistical analysis revealed a significant "Time x Group" interaction for Motorfit Locomotor ($F_{1,97} = 66.12$, $p < 0.001$, $\eta^2p = 0.40$, large effect size) and Motorfit Object ($F_{1,97} = 106.50$, $p < 0.001$, $\eta^2p = 0.52$ large effect size). Post-hoc analysis revealed a positive for Motorfit Locomotor ($t = 8.72$, $p < 0.001$, $d = 1.24$, large effect size) and Motorfit Object ($t = 10.40$, $p < 0.001$, $d = 1.48$, large effect size) in the intervention group. No significant changes were found for the control group ($p > 0.05$).

Physical Activity Enjoyment Scale (PACES)

Statistical analysis revealed a significant "Time x Group" interaction for PACES ($F_{1,97} = 70.97$, $p < 0.001$, $\eta^2p = 0.42$, large effect size). Post-hoc analysis revealed a positive improvement in PACES ($t = 5.69$, $p < 0.001$, $d = 0.81$, large effect size) in the intervention group. No significant changes were found for the control group ($p > 0.05$).

Sport Orientation Questionnaire (SOQ)

Statistical analysis revealed a significant "Time x Group" interaction for Competitiveness ($F_{1,48} = 106.76$, $p < 0.001$, $\eta^2p = 0.69$), Win ($F_{1,48} = 45.50$, $p < 0.001$, $\eta^2p = 0.58$), and Goal orientation in relation to sport ($F_{1,48} = 71.30$, $p < 0.001$, $\eta^2p = 0.59$). Post-hoc analysis revealed a positive improvement in Competitiveness ($t = 12.97$, $p < 0.001$, $d = 2.59$), Win ($t = 6.23$, $p < 0.001$, $d = 1.24$), and Goal orientation in relation to sport ($t = 9.56$, $p < 0.001$, $d = 1.91$) in the intervention group. No significant changes were found for the control group ($p > 0.05$).

Discussion

Given the crucial role of physical activity in fostering the positive development of the individual, the purpose of the present paper was to explore the relationship

between perceived competence as one of the basic psychological needs and gender differences among primary school students, considering enjoyment as a mediator factor.

The main finding of the present research was that male students had higher scores of perceived competence and enjoyment compared with female students. One possible reason related to this result is that boys have higher perceived competence in their own abilities than girls. This is in accordance with the Self-Determination theory. The Theory of Self-Determination (Deci and Ryan, 1985), in fact, argues that an individual's well-being is the result of the satisfaction of three basic psychological needs: (i) Need for autonomy, i.e. feeling free in each action and feeling that one acts of one's own will; (ii) Need for competence, i.e. believing that you can act competently in your environment to perform important tasks; (iii) Need for relationships, i.e. seeking and developing safe and positive relationships with others in one's social context. To meet these three needs, a person must develop a certain amount of self-determination, a combination of skills, knowledge, and beliefs that allow the individual to adopt self-regulating, autonomous, goal-directed behaviors. Over time, self-determination leads individuals to engage in behaviors by acting out of choice rather than obligation or compulsion.

A further reason lies in the different attitude that boys and girls had in relation to the competitiveness. According to Gill and Deeter (1988), differences in competitive behavior reflect personality or individual differences in motivation to achieve a goal. The three domains identified reflect three areas of sports orientation, including a general motivation for competitiveness (or the desire to strive for success in situations of sporting success), the specific desire to win (victory orientation), and the desire to meet personal standards (goal orientation). Although these three areas are interrelated, they represent unique components of sports guidance.

Previous research has established that male athletes generally score higher than women in terms of sports orientation in all three areas (competitiveness, winning, and goal orientation) (Pfister, 2010; Gill and Deeter 1988). In addition, males typically score higher in terms of competitiveness than females, and females report being more goal-oriented (Gill 1988; Gill and Deeter 1988). It is assumed that individuals driven to compete and achieve challenging sports-related goals are more likely to participate in sports. Swain and Jones (1992) reported that athletes with a higher competitive orientation had a higher self-concept than athletes who scored lower in competitive orientation. Although the direction of this relationship is unclear, Swain and Jones suggested that individuals who have developed greater awareness of their motor skills are more likely to be driven to compete and take pleasure in performing a given sporting activity, and that a more competitive athlete is likely to feel more confident in a competitive environment. These findings

suggest that, for adolescent athletes, it is particularly important to assess the type of sports-related goals, as well as the extent to which they are driven to achieve them.

Another finding was that enjoyment seems to play a significant role than the perceived competence in students' participation in school physical activities. These results could be the result of social and cultural legacies linked to physical activities according to which certain physical activities suit the most to girls rather than boys and vice-versa. Indeed, despite the rapid growth of women's sport, as in particular in recent years in women's football, the overall participation levels of women remain low compared to men's. In addition, they do not participate in all sports activities and physical activity. This has been partly attributed to the fact that many sports are still considered typically "male" and, therefore, deemed less suitable for women and girls by society. The exclusion of women from certain sports, combined with active discrimination, not only has a negative impact on individual women, but is also detrimental to sports culture and limits the potential and sustainability of sport as a whole (Bonneville-Roussy et al., 2017).

On the basis of the results achieved in this research and consistent with the results of previous research on primary school students it is possible to claim that boys had significantly a higher physical activity in comparison to girls and that enjoyment seems to play a crucial role than the perceived competence in mediating students' participation in physical activities.

It is clear that it is necessary, especially in the context of primary school, to propose an education of corporeality and movement in a broader vision. Teachers should consider practices of education to the body by developing the practice of care, time for play, educational experiences in the name of playful pleasure and the relationship between different expressive languages.

Sporting activity can lead to a morphological and psychological shaping of the individual. Sport cooperates in the enhancement of the aesthetic form and improves the way in which the subject interfaces on a social level, allowing, among other things, to break down psychological resistance and potential dysfunctions (Pluhar et al., 2019).

Sport is the basic element for the formation and construction of the group. In sport, the team is the input that allows the individual to transform subjective responsibility into collective responsibility. The transition from an individual to an individual, as part of a group, creates a model to be imitated in a positive way even outside the sporting context. The elaboration of the values of friendship, relationship, mutual collaboration, respect for rules, loyalty, recognition of roles, are skills that the individual can apply to all contexts of life and stages of growth. In the national indications of the "General Objectives of the Formation Process" what is defined as "corporeality as a value" is clearly exposed. This highlights how exercise science, assisted by other disciplines, can promote the positive

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development of the individual. In the psycho-pedagogical field, it has been highlighted how physical education can promote interdisciplinary approaches with cognitive, emotional and expressive characteristics (Sindik, Mandić, Schiefler, & Kondrič, 2013).

Despite the present research presented evident point of strength some limits need to be highlighted: the first one was the small number of the sample and conduct of the trial in a single school. A further limit was the lack of evaluation of important variables that could affect the participation in physical activity, such as motivation, emotional factors and self-esteem.

On the contrary, the value of this paper was related to the fact that it showed the importance of physical activity in improving self-competence, as well as the importance of enjoyment in play a significant role in promoting gender equality in the choice of sport.

Conclusions

In conclusion, we can believe that educating to corporeality means, above all, generating good educational and training practices that can help the individual to have a greater awareness of himself from both a personal and social point of view. This should be guaranteed through educational and sports programs that pay attention both to the uniqueness of the individual and to the training of teachers, teachers and coaches, so as to play sports a fundamental tool for the improvement and physical, mental and social integration of each individual.

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ANEXO II – Gender stereotypes in physical education: state of the art and future perspectives in primary school

REVIEW ARTICLE

Gender stereotypes in physical education: state of the art and future perspectives in primary school

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Authors' Contribution: A – Study design; B – Data collection; C – Statistical analysis; D – Manuscript Preparation; E – Funds Collection

Abstract

Background and Study Aim Given the recent mandate by the Budget Law 2022 for compulsory two hours of physical education (PE) in IV and V classes of Italian primary schools, understanding the dynamics of gender stereotypes during movement activities becomes crucial. This review aims to summarize the scientific evidence of the gender gap in PE lessons and identify barriers to female participation in movement activities.

Material and Methods The methodology employed was a systematic literature review guided by the PRISMA 2020 guidelines. The literature search was conducted in April 2023, utilizing a range of databases including Web of Science and Scopus. The search strategy applied MeSH terms and text words, connected by AND: "gender stereotypes" OR "gender gap", "PE" OR "physical education" OR "school" OR "children". Additionally, relevant articles were manually selected from Google Scholar to supplement the database findings. The inclusion criteria were centered on studies within the school context. Only articles published in English within the time frame of 2012 to 2023 were considered. Exclusion criteria ruled out conference proceedings, literature reviews, articles published before 2012, and non-English language publications.

Results Thirteen items met the inclusion criteria. The main barriers included personal beliefs of pupils towards sporting activities, particularly highlighting concerns from the female gender. Other significant barriers were attitudes of teachers and the perpetuation of gender stereotypes in PE textbooks. Several interventions were conducted, primarily focused on co-educational methodologies. These interventions proved effective in dismantling some gender stereotypes.

Conclusions The results demonstrated the presence of gender stereotypes during PE lessons. There was a need to improve teacher training, which was perceived as inadequate to work on gender inequality from primary school onwards.

Keywords: perceptions, gender gap, teaching methods, strategies, barriers

Introduction

In recent decades, the pursuit of gender equality has become a cornerstone of educational reform worldwide, reflecting a broader commitment to social justice and equitable opportunities for all students. Despite considerable progress, disparities persist, particularly in the realm of school education.

The contrast of the gender gap in school education is one of the main priorities on which education policies have been focusing in recent years, as it significantly affects learning outcomes [1]. This concern is directly aligned with the objectives of the 2030 Agenda for Sustainable Development. Specifically, Goals 4 and 5 of the UN Global Agenda 2030 emphasize the importance of providing quality, equitable, and inclusive education for all and achieving gender equality, respectively. Goals 4.1 and 4.5 call for the elimination of gender disparities in education by 2030, ensuring that every child has access to quality and equitable education. Similarly, Goal 5.1 focuses on ending discrimination against women and girls as a fundamental step

towards equality. However, the attainment of these objectives faces significant challenges, exacerbated by the COVID-19 pandemic, which has adversely affected educational systems and widened existing inequalities [2, 3]. This backdrop underpins the critical examination of gender stereotypes in physical education within primary schools, spotlighting both the current state of affairs and future prospects for gender equality in education.

Gender stereotypes significantly influence individuals' perceptions and behaviors. These stereotypes are normalized and embedded in social practices from an early age, even before a child is born, illustrated by the common practice of assigning pink or blue colors based on the child's gender. As a result, children internalize gender distinctions through socialization, forming their gender identity [4]. This process affects all aspects of their lives, including their educational experiences. Physical education (PE) is a domain where the gender gap is particularly pronounced. PE has historically perpetuated notions of hegemonic masculinity [5], often sidelining girls either directly or through self-exclusion from activities. It's noteworthy that

the discipline was initially introduced in schools as 'gymnastics,' exclusively for boys to prepare for military service. Only subsequently was it made available to girls and gradually adopted a more inclusive, educational focus [6, 7].

Historically, sports were deemed unsuitable for women, who were traditionally seen as caregivers, focused on domestic responsibilities. Despite this, an increasing number of women have shown interest in sports over time. Nonetheless, the sports sector remains characterized by significant gender inequalities, with men's participation and sports receiving more economic and cultural recognition. According to the World Health Organization [8] and other research [9], women tend to be more sedentary and less active than men. Typically, women engage more in non-competitive, health-oriented activities, such as gym workouts. This shift has the potential to mitigate gender disparities by blending traditionally masculine traits with those traditionally feminine.

Schools, as institutions, often appear ill-equipped to counteract the mechanisms that foster gender inequalities [10]. They are frequently criticized for systematically producing and reinforcing disparities [11]. One of the most visible manifestations of this issue within educational settings is the perpetuation of stereotypical gender roles, notably through sexism in textbooks. Such materials frequently emphasize traditional roles, casting women primarily as mothers and caregivers, and men as the economic providers for their families [12]. Moreover, teachers may unintentionally propagate gender stereotypes through their teaching practices and content, affecting the quality of instruction in subjects like physical education (PE). Historically, PE instruction has disproportionately favored boys, to the detriment of girls, who often report decreased interest and enjoyment in PE classes [11]. This discrepancy extends beyond the classroom, influencing daily life activities where females tend to be less physically active compared to males.

Considering that attitudes and habits formed during childhood significantly shape behaviors and choices in adulthood, addressing gender stereotypes in PE from the earliest stages of education, starting with pre-school and early primary classes, becomes imperative. Doing so can begin to dismantle the entrenched biases that contribute to gender disparities in physical activity and beyond.

In Italian primary schools, until the 2021/2022 academic year, the teaching of Physical Education (PE) was delegated to generalist teachers. According to several studies conducted in recent years [13, 14], these teachers did not feel adequately prepared to conduct PE lessons, potentially leading to diminished attention to gender policies due to concerns over the content and modalities of a PE

lesson. From the academic year 2023/2024, only for Classes V and IV, PE teaching has been assigned to specialist teachers with a master's degree in sports science [15]. This change was made in recognition of the generalist teachers' insufficient competence in promoting children's health and well-being through movement.

Hypothesis and Purpose

Our hypothesis (H1) posits that gender stereotypes remain prevalent in the school context, manifesting themselves during PE lessons. This assumption is based on the observation that the importance of PE in the overall development of children has not been fully acknowledged. Historically, PE was considered a lesser subject, taught by generalist teachers who received general training for all subjects and thus lacked specific expertise in PE.

The purpose of this review is to summarize the scientific evidence demonstrating the presence of the gender gap phenomenon during PE lessons and to identify the barriers that particularly hinder female participation in movement activities. Additionally, it aims to identify variables that should be considered to dismantle this phenomenon and provide actionable guidance for both generalist and specialist teachers responsible for PE in primary schools.

Materials and Methods

Information Sources

The literature search was conducted in April 2023, utilizing various databases and sources: Web of Science; Scopus; Google Scholar (for manual selection of articles). Additional sources included manually selected articles via Google Scholar.

Eligibility Criteria

Inclusion Criteria: Studies were included if they focused on the school context, analyzed teachers' and pupils' perceptions of gender stereotypes in PE, evaluated interventions aimed at breaking down gender stereotypes in PE, and analyzed variables that may influence the reproduction of gender stereotypes in PE. Only publications in English and those published from 2012 to 2023 were considered.

Exclusion Criteria: Exclusions were made for publications in conference proceedings, literature reviews, articles published before 2012, and non-English language articles.

Search Strategy

The search strategy employed MeSH terms/text words combined with AND/OR operators: "gender stereotypes" OR "gender gap", "PE" OR "physical education" OR "school" OR "children".

Selection Process

The selection process was guided by the PRISMA 2020 flowchart to decide whether a study met the inclusion criteria (Figure 1). This involved screening

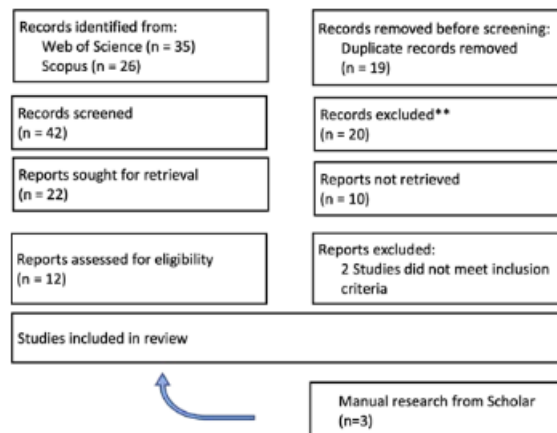


Figure 1. PRISMA 2020 Flowchart Illustrating the Study Selection Process

each record and retrieved report for eligibility, with details of the process to be further specified.

Data Items

Outcomes Sought: Data were sought for outcomes related to the presence of gender stereotypes during PE lessons, barriers hindering female participation in movement activities, and effective interventions breaking down gender stereotypes.

Other Variables: Data were also sought for variables such as participant characteristics, intervention details, and study settings. Assumptions were made for any missing or unclear information, to be further specified.

Results

A search in the Scopus and Web of Science databases yielded a total of 61 articles matching the search criteria. After the removal of 19 duplicates, 42 articles remained for further analysis. Screening of titles and abstracts for relevance to the inclusion criteria led to the exclusion of an additional 20 articles. Full-text review of the remaining 22 articles identified 2 more articles that did not meet the inclusion criteria. Additionally, 3 articles from Google Scholar were included in the study. Consequently, a final sample of 13 relevant articles was identified for analysis, as detailed in Table 1.

Table 1. Gender stereotypes during PE classes.

Sources	Aim	Design	Sample	Tools and intervention	Results
Cárcamo et al. [9]	To understand the gender beliefs, value and participation of Colombian boys and girls in PE.	Qualitative	30 pupils (50% M; 50% F; age 8-10) of primary school	Interview	Gender stereotypes were still present in PE. Topics were beliefs on sports ability, intrinsic and extrinsic motivation, kind of sports, kind of activities preferred.
Gubby [25]	To understand if mixed-sports such as korfbal could provide an opportunity for successful mixed PE.	Qualitative	Junior korfbal players (aged 11-15) of primary school	Interview	Korfbal seemed to reduce the gender gap.

Table 1. (Continued)

Sources	Aim	Design	Sample	Tools and intervention	Results
López-Morales et al. [17]	To investigate how teachers perceived their teaching on gender equality during their PE.	Qualitative	191 PE secondary teachers in Spain	12 questions	PE teachers considered they had proper co-educational behaviour (regarding gender equality).
Martin et al. [16]	To investigate the barriers girls face during PE classes and the benefits of an activist approach on gender issue.	Experimental	20 girls and 28 boys (age 10 -12) and PE teachers of primary school	Focus group, interviews, specific activities	Several barriers were identified focus on the male dominance in games. The programme led to an improvement in the girls' participation.
Martínez et al. [26]	To test the effects of co-educational physical education in improving students' gender beliefs.	Quasi-experimental	91 primary school pupils (age, 11.5 ± 0.7)	Didactic intervention of 4-Colpobol sessions, 2 questionnaire.	The intervention was useful to promote gender equality in PE.
Mateo-Orcajada et al. [19]	To establish differences in gender stereotypes in sport among teachers and trainers.	Qualitative	127 PE teachers and trainers	CEGAFD	The gender stereotypes in trainers and teachers were still present.
Moya-Mata et al. [23]	To analyze the link between gender issue and textbooks of PE in primary school.	Qualitative	54 PE textbooks (Spain)	SAIMEF	PE textbooks reflected gender stereotypes.
Moya-Mata et al. [24]	To analyze the existence of gender stereotypes in PE Brazilian textbooks.	Qualitative	10 PE books containing 1527 images (Brazilian)	SAIMEF	PE textbooks reflected gender stereotypes.
O'Reilly et al. [27]	To investigate the effect of a Girls Active program on girls during PE classes.	Experimental	46 (EXP) and 58 (CON) girls (age, 12-15) from secondary school	Focus group and interviews , Girls Active program	Girls Active was useful to promote PE.
Peterson et al. [22]	To assess physical educators' (N = 162) ability and performance expectations, attributions, and attitudes toward overweight and non-overweight students.	Qualitative	162 PE teachers	Students' photos, questions on ability and performance expectations, Fat Phobia Scale.	PE teachers had lower ability expectations for overweight students than for non-overweight.
Preece and Bullingham [4]	To explore gender stereotypes and their impact upon perceived roles and practice of PE teachers.	Qualitative	21 PE teachers	An online story	Teachers' perceptions largely conformed to typical gender stereotypes.
Vera et al. [21]	To design a Spanish instrument to measure gender stereotypes in PE.	Qualitative	73 primary school students	An ad-hoc questionnaire (24 items + 5 dimensions)	There were prejudice and stereotypes in PE classes related to gender. The tool was valid and reliable.

Xiang et al. [28]	To investigate the presence of gender stereotypes about running during PE.	Qualitative	52 boys and 114 girls of primary school	Ad hoc questions; Run for Your Life program	Running was perceived to be a gender-neutral activity.
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CEGAFD, gender beliefs and stereotypes towards physical activity and sport; CON, control; EXP, experimental; SAIMEF, Physical Analysis Images Analysis System

Discussion

The results of the present study demonstrated the persistence of gender stereotypes in the school context during PE lessons. The stereotypes were primarily derived from personal beliefs on the part of the pupils with regard to sports activities. Cárcamo et al. [9], through qualitative research, sought to understand the gender beliefs, value and participation of Colombian boys and girls in PE lessons and concluded that gender stereotypes were still present. Their findings reveal a prevailing perception of male superiority in sports, with most students attributing higher performance to males, except for a minority who believe abilities depend more on individual characteristics and task complexity. Additionally, the study notes differing motivations between genders, with females placing a higher value on psychological well-being from PE. Sports preferences were also gendered, with traditional “masculine” and “feminine” categorizations for activities like football and volleyball, respectively. The research underscores the need for educational strategies that promote gender equality, suggesting adjustments in activity selection and space usage to provide balanced experiences for all students.

Another critical aspect discussed was the barriers to participation in PE lessons, as perceived by females. These barriers included a self-perceived lack of skill, particularly in invasion games; the dominance of boys in activities and the assignment of passive roles to girls; the prominence of male-centric sports in media; the pressure felt by girls when making mistakes; and a lack of self-criticism among boys [16]. To address these perceptions, Martin et al. [16] devised a protocol incorporating two teaching units focused on volleyball and colpbol—comprising six volleyball sessions to explore the barriers, interests, and motivations of girls in PE, followed by nine colpbol sessions implementing an ‘activist phase’ with reflective spaces aimed at enhancing girls’ empowerment and fostering communication between teachers and pupils.

For effective application of these strategies, teachers should consider: 1) selecting and adapting game content to reduce the emphasis on physical contact or activities that require prior knowledge, thereby making participation less daunting; and 2) creating opportunities for reflective discussions. Training for teachers is essential for the successful

implementation of this approach. Adopting these practices can help schools move away from perpetuating hegemonic masculinity, ensuring a safer and more positive learning environment for all students.

The third aspect addresses the perceptions and beliefs of primary and secondary school teachers regarding gender stereotypes in PE, as well as the adequacy of their training to address this issue in practice. On one hand, a subset of teachers believes they employ teaching methods that avoid perpetuating these stereotypes. They report not holding higher expectations for male students, employing inclusive language, and providing examples of both male and female athletes in their lessons [17]. On the other hand, a significant number of teachers have expressed a lack of confidence in their training concerning the most effective methodologies to counter gender inequality in PE. This highlights a crucial need for enhanced training programs, especially considering that many educators rely on self-directed learning to fill these gaps.

The REFLECT program, highlighted in the literature, was designed to enhance secondary school teachers’ competences in reflective co-education [18]. However, research by Mateo-Orcajada et al. [19] indicated that gender stereotypes persist among PE teachers, particularly among the older cohort. This finding is in line with the study by Preece and Bullingham [4], which observed that PE lessons often mirror prevailing stereotypes: female teachers were of the opinion that males receive preferential treatment in sports, to the detriment of females, while male teachers pointed to developmental differences as a basis for this disparity.

A recent narrative review [20] has highlighted the profound influence of teachers on female students’ dissatisfaction in PE, especially in programs that predominantly feature traditional sports. Similarly, Vera et al. [21], by validating a questionnaire designed to explore the existence of gender stereotypes in PE classes, affirmed the continuance of such stereotypes. They underscored the critical need to challenge and change sexist attitudes among educators. Further, Peterson et al. [22] investigated PE teachers’ expectations, attributions, and attitudes, with a particular focus on how these are shaped by the gender and weight of the students. Their research revealed that teachers generally have lower expectations for overweight students’

abilities, with this bias being more pronounced towards female students. This body of evidence calls for immediate action to address and rectify the misconceptions prevalent among PE teachers.

A significant barrier in the fight against gender stereotypes in sports and physical education (PE) is their perpetuation in educational textbooks. Moya-Mata et al. [23] revealed that textbooks used in Spanish primary schools depict a stereotypical portrayal of sports, characterized by a predominant representation of male sports figures. Activities such as orienteering were predominantly associated with males, while climbing was linked with females. The study suggests a need for textbooks to present role models that challenge these gendered expectations. Reflecting on the content of textbooks could foster more egalitarian and co-educational practices among students. In subsequent research [24], Moya-Mata et al. found similar trends in Brazilian textbooks, where combat sports were typically assigned to males and individual practices like gymnastics to females. These findings underscore the importance of educators actively working to counteract the promotion of hegemonic male sports models in both primary and secondary education.

Various innovative protocols have been successfully employed to tackle gender stereotypes in PE, yielding positive results towards narrowing the gender gap. These include korfbal sessions, colpol, 'girl active', and 'run for your life'. Gubby [25] highlighted korfbal, a sport akin to basketball originating from the Netherlands, known for promoting gender equality through its mixed-gender teams and gameplay that ensures a balanced competition between genders. Martinez et al. [26] found that a co-educational intervention using colpol effectively shifted students' gender perceptions, promoting more equitable views. O'Reilly et al. [27] introduced the 'girl active' initiative in secondary schools, underscoring the significance of teachers engaging with adolescent girls' perspectives to dismantle prevailing gender stereotypes, including the myth of girls' disinterest in sports. This calls for schools to enhance support for teachers in facilitating such discussions. Xiang et al. [28] reported on the 'run for your life' program, a running activity in PE that was deemed gender-neutral by both boys and girls, fostering increased interest and participation among students.

Teachers are instrumental in either perpetuating or dismantling gender stereotypes in physical

education (PE) [29]. The effectiveness of their role hinges on their teaching approach and the thoughtful selection of content to foster a quality, inclusive educational environment. It's crucial for teachers to engage in active listening and seek creative alternatives, including content adaptations or variations, to promote inclusive education practices. The introduction of PE specialist teachers, with their targeted university training in sports sciences [30-32], represents a significant step forward compared to the more generalized approach of generalist teachers. Nonetheless, with generalist teachers still responsible for delivering PE in the early years of primary education (classes I, II, and III), there is a clear need for enhanced training and awareness initiatives for these educators.

Future research should aim to explore teachers' perceptions of gender equality and the extent to which their teaching practices in PE reflect gender stereotypes. This includes comparing the approaches of generalist and specialist teachers in primary schools and examining children's perceptions of their teachers' methods and views on gender equality within PE lessons.

Conclusions

This study has illuminated the enduring presence of gender stereotypes in physical education (PE) within both primary and secondary educational settings. Key barriers include pupils' personal beliefs towards sporting activities—with notable emphasis on female students' perceptions—the attitudes of teachers, and the perpetuation of these stereotypes through PE textbooks. Notably, the implementation of several protocols, such as colpol, korfbal, and running programs, has been effective in fostering a more inclusive environment. These sports, by virtue of their rules and adaptations, do not ascribe to traditional gender norms and thus promote inclusivity.

However, a significant challenge remains: many educators report a lack of adequate training to effectively address gender stereotypes in PE. This underscores an urgent need for educational institutions to offer comprehensive resources and materials to support teachers in this critical area. The findings from the reviewed studies suggest that coeducation represents the most effective strategy for overcoming gender biases and fostering an equitable and inclusive PE environment.

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ANEXO III – Ucam Ethics Committee

Figure 8. Ethical approval from UCAM Committee.

**UCAM ETHICS COMMITTEE**

PROJECT DATA

Title: "Gender Equality in Primary School"		
Principle Researcher	Name	Email
PhD.	Domenico Cherubini	dcherubini@ucam.edu

COMITTEE REPORT

Date	21/07/2023	Code	CE072314
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Type of Experimentation

Experimental clinical research involving human subjects	
Non-clinical experimental research with humans	
Using human tissues from patients, healthy people, embryonic or fetal tissue	
Using human tissues, embryonic or fetal tissue from banks or tissue samples	
Observational research with humans or use of personal data	X
Animal studies	
Use of biological agents of risk to human health, animal or plant	
Use of genetically modified organisms (GMOs)	

Comments regarding the type of experimentation

No comments

Comments regarding the methodology of experimentation

No comments



ANEXO IV – Administration of questionnaire in the classroom and the gym.

Figure 9. Administration of the three questionnaires on gender stereotypes conducted in the classroom.



Source: Photo by the author.

Figure 10. Administration of the three questionnaires on gender stereotypes conducted in the gym.



Source: Photo by the author.