Sportis
Revista Técnico-Científica del Deporte Escolar, Educación Física y Psicomotricidad
Scientific Technical Journal of School Sport, Physical Education and Psychomotricity

Editor: University of A Coruña. A Coruña. Spain
ISSN-e 2386-8333
E-mail: sportis.journal@udc.es Web: https://revistas.udc.es

Original article. Men and Muscles: Men and muscles: the influence of masculinity on selected physical fitness components of Pathfit 1 male students. Vol. 11, n. º 2; p. 1-23, Abril 2025.
https://doi.org/10.17979/sportis.2025.11.2.11634

Men and muscles: the influence of masculinity on selected physical fitness components of Pathfit 1 male students

Hombres y músculos: la influencia de la masculinidad en componentes seleccionados de la condición física de los estudiantes masculinos de Pathfit 1

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Editorial Schedule: *Article received 15/01/2025 Accepted: 18/02/2025 Published: 01/04/2025*
https://doi.org/10.17979/sportis.2025.11.2.11634

Para citar este artículo utilice la siguiente referencia:
Pasno, A. (2025 Men and Muscles: Men and muscles: the influence of masculinity on selected physical fitness components of Pathfit 1 male students.
Sportis Sci J, 11 (2), 1-23 https://doi.org/10.17979/sportis.2025.11.2.11634

Contribución autores: Not applicable

Funding: The study did not obtain funding.

Conflict of interest: The authors declare that they have no conflict of any kind

Ethical aspects: The study declares the ethical aspects.

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Abstract
The study examined the influence of masculinity norms on flexibility, endurance, agility, and leg power among 168 first-year male students enrolled in the Physical Activity towards Health and Fitness 1 course (AY 2024-2025) at Bulacan State University, selected via simple random sampling. Fitness levels were assessed using validated instruments: flexibility (Trunk Lift, Zipper, Sit and Reach Tests), endurance (Three-Minute Step Test, Wall Sit, Push-Up, Plank Tests), agility (Hexagon Jump Test), and leg power (Standing Broad Jump, Vertical Jump Tests). Masculinity was measured with the Masculinities Attitude Norms Inventory-III.Data collection followed ethical clearance and included informed consent, confidentiality, and accessibility of results. Multiple linear regression analysis (SPSS v30) revealed that masculinity did not predict flexibility, cardiovascular endurance, lower extremity/core endurance, agility, or leg power but was a predictor of upper extremity muscular endurance. The findings challenge stereotypes linking masculinity to physical superiority and advocate for gender-neutral, individualized training. Limitations include narrow testing methods and the exclusion of muscular hypertrophy and strength, suggesting the need for broader future research.

Keywords: masculinity, flexibility, cardiovascular endurance, muscular endurance, power

Resumen
El estudio analizó la influencia de las normas de masculinidad en la flexibilidad, resistencia, agilidad y potencia de las piernas en 168 estudiantes de primer año del curso *Physical Activity towards Health and Fitness 1* (AY 2024-2025) en la Universidad Estatal de Bulacan, seleccionados por muestreo aleatorio simple. Se evaluaron la flexibilidad (pruebas *Trunk Lift*, *Zipper* y *Sit and Reach*), resistencia cardiovascular (prueba de escalones de tres minutos), resistencia muscular (sentadilla contra la pared, flexiones y plancha), agilidad (salto en hexágono) y potencia de piernas (saltos horizontal y vertical). La masculinidad se midió con el *Masculinities Attitude Norms Inventory-III*. Tras la aprobación ética, se recolectaron los datos y se realizó un análisis de regresión lineal múltiple con SPSS v30. Los resultados mostraron que la masculinidad no predijo flexibilidad, resistencia cardiovascular, resistencia muscular del núcleo o extremidades inferiores, agilidad ni potencia de piernas, pero sí fue un predictor de la resistencia muscular del tren superior. Los hallazgos desafían los estereotipos que asocian masculinidad con superioridad física, promoviendo entrenamientos individualizados y neutros en género. Limitaciones como métodos de prueba restringidos y la exclusión de hipertrofia muscular y fuerza señalan la necesidad de investigaciones futuras más amplias.

Palabras clave: masculinidad, flexibilidad, resistencia cardiovascular, resistencia muscular, potencia

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Introduction

Masculinity traits

Masculinity is a multidimensional construct encompassing psychological, social, health-related, and gender-dynamic perspectives. Psychologically, it is linked to traits like independence, toughness, assertiveness, and self-efficacy, which contribute to adjustment and interpersonal success (Sinn, 1997; Adams & Sherer, 1985). Socially, it is a socially constructed concept tied to hegemonic norms such as dominance and competitiveness, shaped by cultural and temporal contexts (Berg & Longhurst, 2003; Connell, 2014). Relationally, masculinity is defined in opposition to femininity and influenced by familial and romantic experiences, with intersectional perspectives highlighting the role of race and culture, particularly in African American men (Talbot & Quayle, 2010; Rogers et al., 2015). Health-related perspectives associate masculinity with independence, reluctance to seek help, and risk-taking, which influence health practices (Tannenbaum & Frank, 2011; Mahalik et al., 2007). For older men, masculinity is often associated with strength and leadership, maintained through activities like exercise (Hurd Clarke & Lefkowich, 2018). Gender dynamics highlight internal conflicts as men reconcile traditional roles with evolving expectations (Levant, 2011). Given this complexity, the Masculinities Attitude Norms Inventory-III (MANI-III), English version, is an appropriate tool for this study, as it captures a range of traditional and non-traditional masculine attitudes. This instrument aligns well with the study's goal of exploring how masculinity influences physical fitness components, providing a comprehensive and reliable measure reflecting masculinity's multidimensional nature.

Influence of Masculinity on Flexibility

Females are consistently more flexible than males due to greater joint mobility and laxity, as shown in flexibility tests (Wilkinson et al., 1996; Rene, 1984) and trunk flexion assessments (Valdivia et al., 2009). This difference is evident across age groups and activities like running, where females exhibit superior hip flexibility (Williams & Welch, 2015). Additionally, females engage less in traditionally masculine behaviors, such as assertiveness and exaggerated self-reliance, and show weaker associations with

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masculine traits in contexts like aggression, addiction, and prenatal stress environments (Bem et al., 1976; Snell, 1989; Evans, 1982; Hines et al., 2002). Sex-role inventories also reveal females predominantly identify as feminine, with limited alignment to masculine behaviors (Griffin-Shelley, 1986). These findings conclude that masculinity does not predict flexibility, supported by research showing gender role self-concept does not influence lower extremity flexibility in Filipino collegiate students (Masagca, 2025b).

Influence of Masculinity on Cardiovascular

Males consistently exhibit higher levels of physical activity, particularly in moderate-to-vigorous and vigorous activities (Kelley, 1995; Brazo-Sayavera et al., 2021), and show greater participation in high-intensity activities, independent of social-cognitive factors (Trost et al., 1996). They are also more strongly associated with masculine traits such as self-reliance, assertiveness, and self-esteem while facing greater social penalties for engaging in feminine behaviors (Snell, 1989; Feingold, 1994; McCreary, 1994). Masculine identification correlates with positive attitudes toward traditional masculine roles (Glick et al., 2015). Additionally, gender role self-concept predicts physical activity levels, including walking as a cardiovascular endurance activity, further highlighting masculinity as a key predictor of physical activity (Masagca, 2024a; Masagca, 2025b).

Influence of Masculinity on Muscle Fitness

Masculinity significantly predicts muscular fitness, influencing behaviors, body image, and fitness ideals. Masculinity is linked to muscular power, endurance, and strength (Masagca, 2024b; Masagca, 2025b). Conformity to masculine norms, such as risk-taking and competitiveness, drives men's pursuit of muscularity, leanness, and fitness (Gattario et al., 2015). Among college football players, traditional masculine norms were associated with a stronger drive for muscularity, connecting athletic identity to masculinity (Steinfeldt et al., 2011). Feedback threatening masculinity increased strength dissatisfaction, reinforcing fitness as compensatory behavior (Frederick et al., 2017). Strength and muscularity, seen as markers of masculinity, reflect evolutionary pressures and are tied to physical fitness ideals (Lidborg et al., 2020). Aerobic and

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resistance training improved perceptions of masculinity and body image, even among men with prostate cancer (Langelier et al., 2019). Muscular endurance of the lower and upper extremities and core predicts a masculine gender role self-concept, though no link between masculinity and agility was found (Masagca, 2025b).

Gaps and Aims of the Study

Masculinity is a multidimensional construct that includes psychological traits like independence and assertiveness, social norms emphasizing dominance and competitiveness, and health-related behaviors linked to risk-taking and strength, all of which influence physical activity and fitness. It is a significant predictor of cardiovascular endurance and muscular fitness, with traditional masculine norms driving higher physical activity levels and a focus on muscularity, leanness, and strength. While masculinity predicts aspects of fitness such as muscular endurance, its connection to flexibility and agility remains unclear, as flexibility is primarily influenced by gender differences and biological factors rather than masculinity. As a result of the conducted literature review, gaps were identified. There was a knowledge gap aboutabout masculinity's influence on physical fitness, as few to no studies focused on the variables. Secondly, although theories about gender relate masculinity to physical fitness-related behavior, empirical data was absent to support the association. Lastly, a methodological gap was present as no studies used a quantitative approach and authentic fitness data in the investigation. With this, the study investigated the influence of masculinity norms on physical fitness in terms of flexibility, endurance, agility, and leg power. Lastly, hypotheses were formed after the meticulous literature review.

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H_1	Masculinity has no direct influence on the flexibility of the trunk
H_2	Masculinity has no direct influence on the flexibility of the right upper extremity
H_3	Masculinity has no direct influence on the flexibility of the Left upper extremity
H_4	Masculinity has no direct influence on the flexibility of the lower extremities
H_5	Masculinity has a direct influence on cardiovascular endurance
H_6	Masculinity has a direct influence on the muscular endurance of the lower extremities
H_7	Masculinity has a direct influence on the muscular endurance of the core
H_8	Masculinity has a direct influence on the muscular endurance of the upper extremities
H_9	Masculinity has no direct influence on agility (counterclockwise)
H_{10}	Masculinity has no direct influence on agility (anti-counterclockwise)
H_{11}	Masculinity has a direct influence on bilateral horizontal jumping performance
H_{12}	Masculinity has a direct influence on bilateral vertical jumping performance

Methodology

Research Design

The study employed a quantitative research approach, measuring the variables through validated and reliable instruments that yield numerical data. Also, a predictive analysis was used to investigate the relationship between masculinity and physical fitness components such as flexibility, muscular and cardiovascular endurance, agility, and leg power.

Sampling and respondents

The study population was 168 male students from the course Physical Activity towards Health and Fitness 1 who were enrolled in the Academic Year 2024-2025, 1st semester. Also, inclusion criteria were set when selecting the study sample. A qualified respondent should be a bona fide student of Bulacan State University. He should be taking the PatHFit 1 course during the study. Lastly, do not undergo formal athletic training. Also, exclusion criteria were set. Respondents from other campuses of Bulacan State University will not be included. Those students only in their first year,

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first semester, joined the study. With this, students taking up the course for the reason of failure were not included. Also, withdrawal from the study is a respondent's right. These criteria were set to establish rigor in sampling. The sampling technique used was simple random sampling. Table 1 shows the demographic profile of the respondents with an age mean of 18.41 ± 0.63 years. The height mean is 166.87 ± 18.41 cm, while the weight mean is 64.08 ± 15.71 kg. The Body Mass Index (BMI) has a mean of 22.28 ± 4.50.

Table 1. Demographic profile of the respondents

Demographics	Mean± Standard Deviation
Age	18.41±.63
Height	166.87±18.41
Weight	64.08±15.71
Body Mass Index	22.28±4.50

Research Instrument

Physical Fitness levels

Flexibility was assessed using the Trunk Lift, Zipper, and Sit and Reach Test. The Trunk Lift Test measures lower back flexibility and core strength, demonstrating strong reliability (r = .70 for boys and r = .68 for girls) (Patterson et al., 1997). The Zipper Test evaluates shoulder and upper arm flexibility, showing high reliability (ICC = 0.93) (Welk et al., 2010; Vanhelst et al., 2016). The Sit and Reach Test measures hamstring and lower back flexibility with moderate criterion-related validity (correlation coefficients 0.46 to 0.67) (Haff & Triplett, 2016; Mayorga-Vega et al., 2014).

Endurance was assessed using cardiovascular and muscular endurance tests. For cardiovascular endurance, the Three-Minute Step Test requires participants to step on a 12-inch platform at a rate of 96 beats per minute for three minutes, followed by heart rate measurement, and is validated as reliable (Iturain et al., 2021; Masagca, 2025d). Muscular endurance tests included the Wall Sit Test, which measures lower body endurance (Boyer et al., 2013); the Push-Up Test, which evaluates upper extremity endurance and has high inter-rater reliability exceeding 0.90 (Baumgartner et al., 2002);

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and the Plank Test, which assesses core endurance and demonstrates strong test-retest reliability (coefficient 0.915) (Tong et al., 2014; Laurson et al., 2022; Bohannon et al., 2017).

Agility was assessed using the Hexagon Jump Test, which measures the ability to change direction effectively (Masagca, 2025c). Participants begin at the center of a hexagon with 60.5 cm sides, jumping over each side and returning to the center before moving to the next side, completing three revolutions. Performance is scored based on time, with the Test exhibiting excellent test-retest reliability (same-day ICC (3,1) = 0.938; between-day ICC (3,1) = 0.924) (Beekhuizen et al., 2009). This Test provides a reliable assessment of agility and directional changeability.

Leg power was categorized into horizontal and vertical performance. Horizontal power was measured using the Standing Broad Jump Test, where participants jump forward from a standing position. This Test has high reliability (ICCs of 0.96 for males and 0.99 for females) and test-retest reliability (r = 0.96 for males, r = 0.90 for females), effectively distinguishing between elite and non-elite athletes (Thomas et al., 2020; Rahman, 2021). Vertical power was assessed using the Vertical Jump Test, which calculates the difference between a participant's standing reach and maximum jump height using the jump-and-reach method.

Masculinity

The Masculinities Attitude Norms Inventory-III, English version, is a multidimensional research instrument designed to measure gender (re)presentation, particularly masculinity. Validated through a study with male students in South Africa (n = 319), the MRI consists of 29 items divided into three core factors: Representations of Othering (Anti-Effeminacy and Homo-Negativity), Responsibility (Dependability and Success), and Control (Dominance and Toughness). It demonstrates strong structural, convergent, and divergent validity, with significant correlations to established measures such as the Male Role Norms Inventory and Gender Role Conflict Scales. It maintains nonsignificant correlations with the Personal Attributes Questionnaire in all but one instance (Masculinity). This scale was used to quantify

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masculinity among the study respondents. The table below also presents the range and descriptions used in the study to assess the respondents' level of masculinity.

Table 2. 5-point Likert Scale of Masculinities Attitude Norms Inventory-III (Luyt, 2017)

Range	Description
1.0 - 1.9	*Strongly Disagree*
2.0 - 2.9	*Disagree*
3.0 - 3.9	*Neutral*
4.0 - 4.9	*Agree*
5.0	*Strongly Agree*

Data Gathering

The data gathering commenced with the ethical clearance from the College of Sports, Exercise and Recreation Local Research Ethics Committee. The respondents' fitness data on their PathFit 1 course were gathered. These include testing results of the Body Mass Index (BMI), Trunk Lift, Zipper Test, Sit and Reach Test, Three-Minute Step Test, Wall Sit Test, Push-Up Test, Plank Test, Hexagon Jump Test, Standing Broad Jump Test, and Vertical Jump Test. After this, data was analyzed.

Data Analysis

Multiple linear regression analysis was used to explore whether the mentioned physical fitness components can be predicted by masculinity. This approach aimed to quantify the predictive relationship between selected physical components and masculinity. Lastly, the data was processed with the help of SPSS version 30.

Potential Ethical Issues

The study received approval from the Local In-House Ethics Committee of the College of Sport, Exercise, and Recreation at Bulacan State University. After obtaining ethical clearance, permission to begin data collection was secured from the College's research coordinator. Participants were subsequently invited to provide their informed consent for collecting physical fitness data. They were informed that the results would be available to them and the study location's administration upon request. Furthermore, it was highlighted that all collected data would be treated with the utmost confidentiality.

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Results

Table 3 presents the physical fitness levels of the respondents. The data is summarized using mean and standard deviation for each fitness component. For flexibility, the trunk lift test recorded a mean of 26.99 ± 8.39 cm, the right zipper test had a mean of 9.95 ± 6.20 cm, the left zipper test showed a mean of 5.12 ± 9.58 cm, and the sit and reach test reported a mean of 43.26 ± 9.10 cm. For endurance, the 3-minute step test achieved a mean of 149.46 ± 31.67 beats per minute, the wall sit test displayed a mean of 70.78 ± 43.37 seconds, the plank test showed a mean of 125.57 ± 108.67 seconds, and the push-up Test had a mean of 14.62 ± 11.28 repetitions. Regarding agility, the hexagon jump test clockwise had a mean of 17.97 ± 4.60 seconds, while the anti-clockwise direction had a mean of 17.59 ± 4.57 seconds. Regarding power, the standing long jump test reported a mean of 187.17 ± 31.42 cm, and the vertical jump test recorded a mean of 49.24 ± 9.43 cm.

Table 3. The physical fitness level of the respondents

Physical Fitness Components	Mean ± Standard Deviation
Flexibility	
Trunk lift test	26.99 ± 8.39
Right Zipper test	9.95 ± 6.2
Left Zipper test	5.12 ± 9.58
Sit and Reach	43.26 ± 9.10
Endurance	
3-minute step test	149.46 ± 31.67
Wall sit test	70.78 ± 43.37
Plank test	125.57 ± 108.67
Push up Test	14.62 ± 11.28
Agility	
Hexagon Jump test, clockwise	17.97 ± 4.6
Hexagon jump test, anti-clockwise	17.59 ± 4.57
Power	
Standing Long Jump test	187.17 ± 31.42
Vertical Jump test	49.24 ± 9.43

Table 4 shows respondents' masculinity representation level based on various subscales. Mean and standard deviation were used to summarize the data for each subscale. The Anti-Effeminacy and Homo-Negativity subscale had a mean score of 3.02 ± 0.40, placing it in the "Neutral" range, indicating neither agreement nor disagreement

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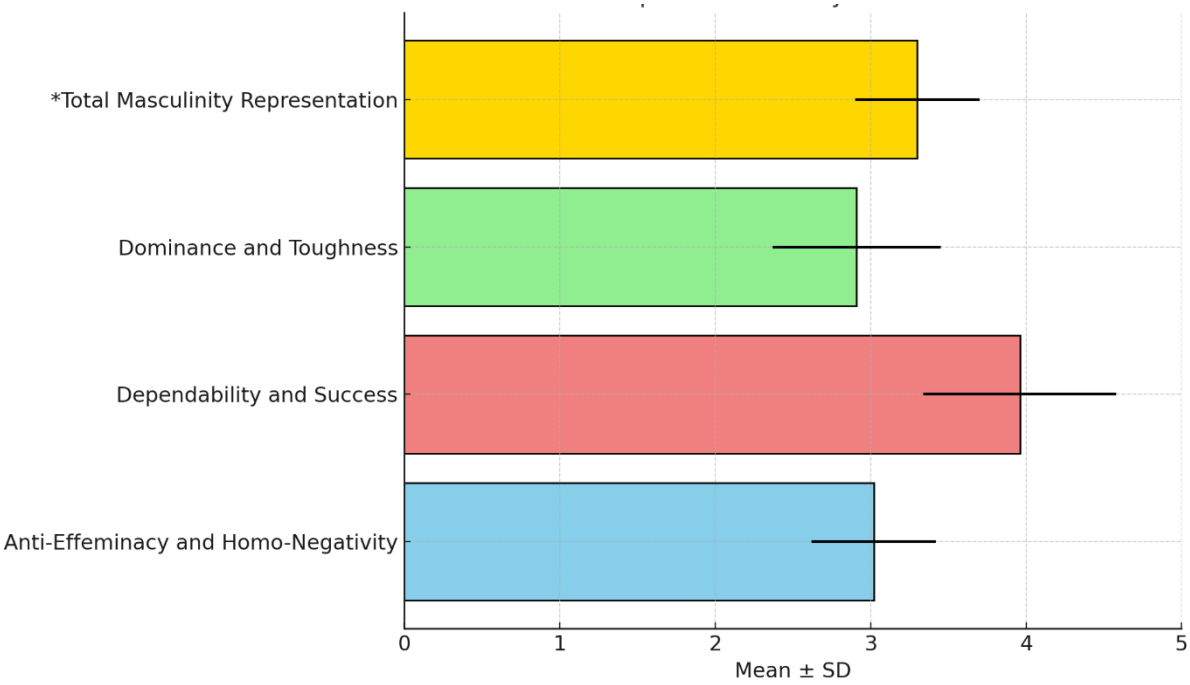
with this aspect of masculinity representation. The Dependability and Success subscale recorded a mean score of 3.96 ± 0.62, which falls within the "Agree" range, showing moderate agreement with traits related to dependability and success. The Dominance and Toughness subscale had a mean score of 2.91 ± 0.54, falling in the "Neutral," reflecting a stance closer to neutrality. The total masculinity representation score was 3.30 ± 0.40, also within the "Neutral" range, suggesting an overall balanced perspective with neither strong agreement nor disagreement regarding masculinity representation among the respondents.

Table 4. Level of Masculinity Representation



Subscales	Mean± Standard Deviation
Anti-Effeminacy and Homo-Negativity	3.02±.40
Dependability and Success	3.96±.62
Dominance and Toughness	2.91±.54
***Total Masculinity Representation**	3.30±.40

Multiple linear regression was employed to examine whether Total Masculinity Representation (TMR) predicts various physical fitness components among collegiate students. Table 5 shows that TMR did not significantly predict flexibility, represented by tests such as TL, RZT, and LZT. H_1 was **accepted**, indicating that TMR accounted for only 0.4% of the variance in TL ($R^2 = .004$, $F(1,166) = .629$, $p = .429$). Similarly, H_2

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was **accepted** as TMR accounted for only 0.7% of the variance in RZT (R^2 = .007, F(1,166) = 1.202, p = .274), and H_3 was **accepted** since TMR explained just 0.5% of the variance in LZT (R^2 = .005, F(1,166) = .875, p = .351). TMR did not significantly predict SART, with results leading to the **acceptance** of H_4 (R^2 = .007, F(1,166) = 1.210, p = .273). Similarly, H_5 was **rejected** as TMR accounted for only 0.9% of the variance in TMST, showing no significant relationship (R^2 = .009, F(1,166) = 1.421, p = .235). Muscular endurance, represented by WST and PT, was not significantly predicted by TMR for H_6 (R^2 = .000, F(1,166) = .071, p = .790). However, H_7, which explored TMR's prediction of PT, approached significance but did not meet the .05 threshold, and H_7 was **rejected** (R^2 = .020, F(1,166) = 3.470, p = .064). For agility, TMR did not significantly predict CWHJ and ACWHJ. H_9 was **accepted** as TMR explained only 0.1% of the variance in CWHJ (R^2 = .001, F(1,166) = .134, p = .715), and H_{10} was **accepted** with TMR accounting for just 0.2% of the variance in ACWHJ (R^2 = .002, F(1,166) = .285, p = .594). For power, SLJT and VJT showed no significant relationships with TMR. H_{11} was **rejected** as TMR accounted for 0.0% of the variance in SLJT (R^2 = .000, F(1,166) = .000, p = .866), and H_{12} was **rejected** since TMR explained only 0.3% of the variance in VJT (R^2 = .003, F(1,166) = .463, p = .497). The only significant relationship observed was for H_8, where TMR significantly predicted PUT, explaining 3.5% of the variance (R^2 = .035, F(1,166) = 6.007, p = .015), leading to the **acceptance** of H_8. In summary, TMR significantly predicted only PUT, while no significant relationships were observed for other physical fitness components.

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Table 5. Predictive analysis of total masculinity representation and physical fitness

Hypothesis		Beta Coefficient	R2	F	t-value	p-value	Decision
H_1	TMR→TL	-.003	.004	.629	-.793	.429	Accepted
H_2	TMR→RZT	.006	.007	1.202	.085	.274	Accepted
H_3	TMR→LZT	-.003	.005	.875	-.935	.351	Accepted
H_4	TMR→SART	.004	.007	1.210	1.100	.273	Accepted
H_5	TMR→TMST	-.001	.009	1.421	-1.192	.235	Rejected
H_6	TMR→WST	.000	.000	.071	.267	.790	Rejected
H_7	TMR→PT	.001	.020	3.470	1.863	.064	Rejected
H_8	TMR→PUT	.007	.035	6.007	2.451	.015	Accepted
H_9	TMR→CWHJ	-.002	.001	.134	-.366	.715	Accepted
H_{10}	TMR→ACWHJ	-.004	.002	.285	-.534	.594	Accepted
H_{11}	TMR→SLJT	.000	0	.000	.169	.866	Rejected
H_{12}	TMR→VJT	.002	.003	.463	.681	.497	Rejected

Note. TL = Trunk Lift test; RZT = Right Zipper test; LZT = Left Zipper test; SART = Sit and Reach test; TMST = 3-minute Step test; WST = Wall Sit test; PT = Plank test; PUT = Push-Up test; CWHJ = Clockwise, Hexagon Jump test; ACWHJ = Anti-clockwise, Hexagon Jump test; SLJT = Standing Long Jump test; VJT = Vertical Jump test; TMR = Total Masculinity Representation.

Discussion

Limitations

Socioeconomic, cultural, and gender biases may have influenced the findings. Socioeconomic disparities affect access to fitness resources, potentially creating unequal fitness outcomes (Hooda, 2015). Cultural norms surrounding masculinity often prioritize strength and endurance while neglecting flexibility and cardiovascular health, aligning fitness behaviors with stereotypical masculine ideals (Bhattarai et al., 2017). Gender biases in physical education reinforce these patterns, promoting competitive strength-based activities over balanced fitness. Addressing these biases is essential to interpret the results accurately and advocate for inclusive, holistic fitness programs. Also, each physical fitness component was measured only using one validated instrument. With this, the results were only limited to the used instruments.

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Original article. Men and Muscles: Men and muscles: the influence of masculinity on selected physical fitness components of Pathfit 1 male students. Vol. 11, n. º 2; p. 1-23, Abril 2025.
https://doi.org/10.17979/sportis.2025.11.2.11634

Influence of Masculinity on Flexibility

The study found that masculinity does not predict flexibility in the upper extremities, lower extremities, or core, supporting hypotheses H_1, H_2, H_3, and H_4. This aligns with prior research showing females consistently outperform males in flexibility due to greater joint mobility and laxity (Rene, 1984; Valdivia et al., 2009). This flexibility advantage extends across age groups and activities such as running, where females display superior hip flexibility (Williams & Welch, 2015). Females also exhibit fewer traditionally masculine traits, such as independence and assertiveness, and identify predominantly with feminine traits (Bem et al., 1976; Snell, 1989; Griffin-Shelley, 1986). Supporting this, a study on Filipino collegiate students found no link between gender role self-concept, masculinity, and lower extremity flexibility in either sex (Masagca, 2025b). These findings challenge stereotypes linking masculinity to physical superiority, highlighting that flexibility is unaffected by masculinity and advocating for gender-neutral, individualized training programs. However, the study's reliance on three field tests and the Masculinities Attitude Norms Inventory-III (Luyt, 2017) highlights the need for future research to employ alternative instruments to validate these findings.

Influence of Masculinity on Cardiovascular

The study found that masculinity does not predict cardiovascular endurance, leading to the rejection of H_5. This contradicts previous research indicating that males engage more in moderate-to-vigorous and vigorous physical activities (Kelley, 1995; Brazo-Sayavera et al., 2021) and participate more frequently in high-intensity activities, even when controlling for social-cognitive factors (Trost et al., 1996). Males are traditionally linked to traits like assertiveness, self-reliance, and restrictive emotionality, which align with societal perceptions of masculinity and are reinforced by social penalties for feminine behaviors (Snell, 1989; Feingold, 1994; McCreary, 1994). These traits have been suggested to influence physical activity levels, including walking as a form of cardiovascular endurance (Masagca, 2024a; Masagca, 2025b). The findings challenge stereotypes linking endurance to masculinity and advocate for inclusive endurance training across genders without stigma. The study's limitations include using

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a time-bounded test that did not assess endurance to volitional withdrawal. Future research should employ cardiovascular-specific tests that capture endurance until failure to provide a more accurate assessment.

Influence of Masculinity on Muscle Fitness

The study found that masculinity predicts upper-extremity muscular endurance (H_8 accepted) but does not predict lower-extremity or core endurance as H_6 and H_7 rejected), agility, or leg power (H_9, H_{10}, H_{11}, and H_{12} rejected). These findings partially align with prior research showing masculinity's influence on muscular fitness through behaviors, body image, and fitness ideals. Masculine norms like risk-taking and competitiveness drive men's pursuit of muscularity and fitness (Gattario et al., 2015). Among athletes, these norms correlate with a higher drive for muscularity (Steinfeldt et al., 2011). Threats to masculinity, such as feedback indicating low masculinity, have been shown to increase strength dissatisfaction and compensatory fitness behaviors (Frederick et al., 2017). Strength and muscularity are strongly linked to masculine identity and influenced by evolutionary pressures, and training programs have been shown to enhance perceptions of masculinity even in clinical settings (Lidborg et al., 2020; Langelier et al., 2019). While prior studies suggest masculinity broadly influences muscular endurance across muscle groups (Masagca, 2025b), this study reveals that its predictive effect is limited to upper-extremity endurance and does not extend to lower-extremity or core endurance, agility, or leg power. These findings highlight the need to shift fitness programs away from traditional masculine norms toward individualized approaches that address diverse needs. Gender-neutral training focuses on promoting inclusive fitness practices that prioritize individual health goals and balanced physical development rather than stereotypical gender-based fitness expectations, with the study's findings highlighting the need to move beyond strength-centric approaches linked to traditional masculinity. Limitations include the exclusion of muscular hypertrophy and strength, which should be incorporated in future research to provide a more comprehensive understanding of masculinity and fitness.

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Conclusion

The study found that masculinity predicts upper extremity muscular endurance but not flexibility, cardiovascular endurance, lower extremity or core muscular endurance, agility, or leg power. These findings challenge stereotypes linking masculinity to physical superiority and support inclusive, gender-neutral training programs. While masculinity may influence some aspects of fitness, the study advocates for individualized approaches and over-reliance on traditional masculine norms. Limitations include the narrow scope of flexibility tests, the Masculinities Attitude Norms Inventory-III use, and the time-bounded endurance test, which did not assess endurance until failure. Additionally, muscular hypertrophy and strength were excluded as sub-variables, highlighting the need for more comprehensive future research. Future studies should focus on using additional tools for masculinity and even use qualitative approaches in data gathering. Lastly, factor analysis or structural equation modeling is recommended to explore deeper relationships among variables.

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