

# Are there sport-related differences in the patterns of gender among professional male athletes?

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- ✍ **A** Study Design
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- 📊 **C** Statistical Analysis
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## Abstract

**Background & Study Aim:**

According to gender theory, psychological readiness to apply behaviours that are culturally ascribed to the pattern of 'masculinity' (competitiveness, independence, aggressiveness,) and 'femininity' (emotionalism, social sensitivity) in action is the criterion for its identification. The objective of the paper was the knowledge about the sports-related participation of gender in professional athletes.

**Material & Methods:**

The investigated group of 200 professional sportsmen consisted of basketball players, bodybuilders, boxers, judokas, volleyball players, weight-lifters, windsurfers, wrestlers. The authors used 'Inventory for evaluation of gender' questionnaire technique (by Kuczyńska) that determined the profile of gender about the intensification of the pattern of 'femininity' WK (maximum 75 points) and 'masculinity' WM (maximum 75 points) measure independently from each other. The differences between groups were analysed using the Kruskal-Wallis non-parametric test.

**Results:**

We found significant differences between extreme mean values defining gender. Windsurfers, basketball and volleyball players achieved higher results than wrestlers and boxers on a scale of 'masculinity', 'femininity' and in the overall score. Results concerning other sports are in the middle of the above extreme values.

**Conclusions:**

Windsurfing and team games set highest requirements before sportsmen with regard to readiness and ability to apply 'masculine' and 'feminine' patterns of behaviour in action at the same time.

**Keywords:**

'femininity' • 'masculinity' • profile of gender • sport psychology

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**Sport psychology** - is an interdisciplinary science that draws on knowledge from many related fields including biomechanics, physiology, kinesiology and psychology. It involves the study of how psychological factors affect performance and how participation in sport and exercise affect psychological and physical factors [16].

**Psychomotor** - relating to bodily movement triggered by mental activity, especially voluntary muscle action [17].

**Performance** - noun the level at which a player or athlete is carrying out their activity, either in relation to others or in relation to personal goals or standards [17].

## INTRODUCTION

From the psychological point of view, the precondition for determining the optimal strategy for the performance of a sports task is recognition of its objective requirements from which personality-related, strength and endurance-related, emotional, cognitive, psycho-motor or interpersonal requirements result logically in relation to its performer. This accounts for the fact that so many studies pertained more or less directly to the problem of congruence of task features and possibilities of a performer [1-3].

The criterion for description of objective features that characterize a sports task may be both the duration of a given competition, followed by its complexity in the area of decision making, perception and motricity, predictability of the order of action, open-close time-space of activity, dynamism and flexibility of action, personal or impersonal style of performance which defines the scope and prospects for creativity of such performer. Each of these requirements determines or suggests the optimal strategy for performance [4, 5].-

The gender schema theory, which justifies the thesis that the psychological, sexual dimorphism is a cultural creation as the effect of transformation of certain biological differences into social differences, falls within the considerations on 'how much of biology, and how much of social convention there is in us' [6-8]. In accordance with the concept, the criterion for differentiation is not exclusively the sex of a person, but their psychological readiness to apply behaviours that are culturally ascribed to the 'masculinity' pattern (competitiveness, independence, aggressiveness) and 'femininity' (emotionalism, social sensitivity) in their actions.

In the feminine gender stereotype, actions and objectives are perceived mainly in interpersonal and emotional categories, whereas in the masculine gender stereotype in categories of instrumentality and hierarchy of priorities, where any rank is achieved through struggle, rivalry, risk-taking. The requirements established by professional sports have undoubtedly become an inseparable part of this set of behaviours which conforms to a social pattern of 'masculinity'. The thesis suggests *a priori* that the effectiveness of action results from the ability to apply the set of instrumental behaviours that belong to the 'masculinity'

stereotype (WM), to a lesser extent the skills that belong to the 'femininity' stereotype (WK).

On the basis of gender theory, it has been assumed, however, that the more difficult and more complex tasks that require complicated or non-standard competencies from its performer are, the more desirable high readiness to apply both patterns of gender (androgenic type) is and that the stronger both patterns are, the more likely are new quality and higher effectiveness of action, irrespective of the specific nature of a performed task [6, 7]. Few studies of psychological androgyny in sports pertain mainly to the verification of regularities accepted in psychology and empirical confirmation of the thesis that in certain areas of human function, gender may be a more important determinant of behaviour than sex [9, 10].

As for self-perception, some studies question a widespread belief about reduced self-esteem in women, thus revealing the fact that the best opinion of oneself, irrespective of their sex, is manifested by androgenic persons [11, 12]. It is believed that such persons are more willing to undertake tasks that are risky or tasks considered proper for the opposite gender than other types distinguished according to the criterion of gender. On the other hand, the biggest reluctance and the least effectiveness while performing this type of tasks (risky, generically inadequate) are shown by persons with a typical gender identity, that is masculine men and feminine women [13]. The author's studies showed clearly that any lack of developed psychological masculinity is connected with increased emotional costs; on the other hand, however, this relationship is relevant for the same sex. While taking into consideration both gender and sex at the same time, men with strongly developed masculinity handle best the situations that involve strong emotions, contrary to women with poor readiness to apply the masculinity pattern [10].

The regularities in the area of the relationship between the intensity of the masculinity pattern WM and the level of aggressive behaviours in tasks of the various structure revealed that women practising 'masculine' disciplines (handball) showed a masculine type of sexual identification with an increased level of social aggression and low self-esteem [11]. The author's studies in the area of aggression did not confirm such

a relationship; they pointed, however, to a lack of differences between disciplines in the representativeness of sportswomen exhibiting poor or strong 'masculinity'. It turned out, however, as well, that in all investigated sports diversified characteristically regarding the structure of a given task and a distance to the opponent, the predominating type of gender is a contestant with a strongly marked pattern of masculinity [14].

Data coming from literature turn out to be dispersed, ambiguous and in most cases obtained from small study groups and of little variety regarding sports disciplines.

The objective of the paper was the knowledge about the sports-related participation of gender in professional athletes. Two research hypotheses have been formulated. Firstly, irrespective of the specific nature of tasks with a cognitive or strength-endurance focus, the stereotype of masculinity predominates in sports disciplines significantly or relatively more than the pattern of femininity. Secondly, the more the performance of a task requires the involvement of cognitive processes (perceptive, analytical, decision-making),

the bigger the readiness to apply both sets of behaviours attributable to WM and WK is.

## MATERIAL AND METHODS

### Participants

In total 200 senior players (age 21-28 years) were investigated in the following sports disciplines, divided arbitrarily into 3 groups:

DP sports tasks that require a high level of cognitive process function as dominant feature information receiving and processing speed: basketball (n = 24), volleyball (n = 29), windsurfing (n = 29);

DW tasks that require a high level of endurance and strength as a basic focus resistance to long-term, static or monotonous training effort: body building (n = 20), weight lifting (n = 21);

DZ tasks that require a relatively balanced function of cognitive and analytical exercise and endurance processes: boxing (n = 30, judo (n = 25), wrestling (n = 22).

**Table 1.** Components of gender-based on typical behaviours of women ('femininity') and men ('masculinity') in male athletes from various sports.

Sport	'Femininity'		'Masculinity'		Sum of the scores	
	scores	differ from	scores	differ from	scores	differ from
<b>DP group</b>						
basketball <b>Ba</b> (n = 24)	54.6 ±5.4	Wr, Bo	55.0 ±6.1	none	109.5 ±8.8	Wr
volleyball <b>Vo</b> (n = 29)	53.7 ±7.1	Wr, Bo	56.4 ±6.2	none	110.1 ±11.1	Wr
windsurfing <b>Wi</b> (n = 29)	54.0 ±6.9	Wr, Bo	59.3 ±6.6	Wr, WI, Bo	113.4 ±10.9	Bo, Wr
<b>DW group</b>						
body building <b>Bb</b> (n = 20)	53.9 ±6.2	Wr, Bo	56.9 ±7.4	none	110.7 ±10.8	Wr
weight lifting <b>WI</b> (n = 21)	52.3 ±5.4	none	52.3 ±5.8	Wi	104.4 ±7.6	none
<b>DZ group</b>						
boxing <b>Bo</b> (n = 30)	47.2 ±7.0	Wi, Bb, Vo, Ba	53.3 ±4.7	Wi	100.6 ±10.4	Wi
judo <b>Ju</b> (n = 25)	52.4 ±5.8	none	55.5 ±9.7	none	107.9 ±13.7	none
wrestling <b>Wr</b> (n = 22)	45.0 ±8.8	Wi, Bb, Vo, Ba	52.7 ±5.6	Wi	97.7 ±11.9	Wi, Bb, Vo, Ba
Comparisons	H (7, N = 200) = 34.71 p = 0.000		H (7, N = 200) = 24.6 p = 0.001		H (7, N = 200) = 35.29 0.000	

## Procedures

The authors used 'Inventory for evaluation of gender' questionnaire technique (by A Kuczyńska [15]) that determines a profile of gender in relation to the intensification of the pattern of 'femininity' WK (maximum 75 points) and 'masculinity' WM (maximum 75 points) measured independently from each other.

## Statistical analysis

Due to a lack of normal distribution of data for comparison of differences between the groups, non-parametric statistics were applied, namely ANOVA Kruskal-Wallis multiple comparison tests. The calculations were made with the use of STATISTICA software, ver. 12.

## RESULTS

Irrespective of the specific nature of investigated sports disciplines (injuries, stress, exercise and motor capacity) and irrespective of the arbitrarily accepted category of tasks focused on cognition and strength-endurance, the masculinity stereotype by far predominates and is significantly or relatively higher than the femininity pattern. In disciplines, that in this paper have been considered as sports tasks that require a high level of cognitive process function as a basic dominant feature (windsurfing, team games), readiness to apply the femininity pattern was higher and significantly different from the lowest one observed among wrestlers and boxers. Judokas and weightlifters obtained intermediate results that did not differ significantly from the above mentioned extreme values (Table 1).

In general, for the entire group ( $n = 200$ ) a significant positive linear correlation has been observed ( $r=0.373$ ,  $p<0.0005$ ) between WM and WK. From all disciplines, professional windsurfers represented the highest level of readiness to apply both gender patterns, WM and WK, which significantly distinguished them from wrestlers and boxers (the latter showed the lowest level of inclination to such choices) This results mainly from the reluctance to apply the repertoire of the femininity pattern.

## DISCUSSION

The data presented above fully confirm the working hypothesis that the more the completion of a

task requires the involvement of cognitive processes (perceptive, analytical, decision-making), the bigger the readiness to apply both sets of behaviours attributable to masculinity and femininity pattern is. If the investigated disciplines were arranged according to the intensity of each gender pattern independently from one another and as a resultant of both patterns, two types of sports tasks would be located in extreme positions, namely windsurfing and wrestling. The focus on cognitive processes in windsurfing is manifested mainly by maximum application of all receptors and analysers for the purpose of evaluation of hydro-atmospheric conditions of any action. The attempt to evaluate the ability of a team to gain an advantage in any contest best argues in favour of the role of cognitive processes in team games.

When comparing 'female/male' pattern ratio in any discipline independently from one another, and in comparison to all other ones in general, it seems that contestants are differentiated more by their readiness to apply the femininity than masculinity stereotype. The biggest differences between both patterns in favour of WM (masculinity pattern), contrary to initial predictions, were not revealed in sports with a dominant focus on endurance, but in sports that in this paper were arbitrarily considered as tasks that require a relatively balanced function of cognitive and exercise – strength processes. Likewise, when comparing readiness to apply WM, it appears that the highest results are also displayed by sportsmen representing the disciplines, that as a result of their structure, require a high level of efficiency in cognitive processes, such as professional windsurfers, team game players and bodybuilders. This observation distinguishes them significantly from professional weight-lifters, boxers and wrestlers who display the lowest readiness to apply WM.

As both constituents of gender are complementary, relationships revealed in our research means that greater readiness to apply the repertoire of behaviours from one gender pattern increases the probability of using the behaviours from the other pattern as well.

Gender, contrary to physical, anthropometric or psychometric attributes, does not determine the choice of a given discipline; it shows, however, what the psychological resources formed by social environment, cultural or biological factors

(e.g. hormones) are. Based on the assumptions of the androgyny theory, every performer uses a set of behaviours from both gender patterns to a different extent, but the cultural pattern additively formula does not determine the quality and effectiveness of action; their synergism in the actual reality of their operation does. Arbitrarily perceived criteria for considering sports disciplines regarding the necessity to involve cognitive processes at the highest level seems to be accurate and may be used for initial recognition and identification of talents during the first phase of recruitment to various sports disciplines.

## CONCLUSIONS

The focus on efficiency (endurance and strength) by *sine quanon* rule is the basis in sport and as such is outside the sphere of psychological exploration.

Extension of the search by the context of gender reveals the level of social and emotional maturity represented by a contestant reflected by their readiness to apply such repertoire of behaviours that are forced by the conditions of action, that is all that constitutes the complexity of competitive situations, space-time and predictability of actions, dynamism and flexibility, changeability of style or strategies, individualism and creativity of the performer.+

The presented data and relationships suggest to some extent what the course of social learning processes is when one action or behaviour may trigger or not another type of behaviour, depending on their social enhancement. Windsurfing and team games set highest requirements before sportsmen about readiness and ability to apply 'masculine' and 'feminine' patterns of behaviour in action at the same time.

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