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Positive body image among Polish elite athletes

Authors' Contribution:
A Study Design
B Data Collection
C Statistical Analysis
D Data Interpretation
E Manuscript Preparation
F Literature Search
G Funds Collection

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abstract

Background: This study aimed to analyze factors differentiating body appreciation among Polish elite athletes.

Material and methods: Participants were athletes, both men and women (N=408), who completed questionnaire BAS-2.

Results: In general, men had a better perception of their body than women ($p<0.01$). Higher appreciation of the body was visible among women sprinters, opposite to volleyball players ($p<0.03$). Indirect competition for women was connected to higher body appreciation ($p<0.05$). Gender and individual/team sport also significantly differentiated appreciation of the body ($p<0.02$). Furthermore, training frequency in a week differentiated body appreciation ($p<0.03$), as well as characteristic of sports performance [indoor sports, and higher in water sports ($p<0.02$)].

Conclusions: Results suggest that not only the common category of the sport type – aesthetic, technical, strength – differentiates the body image. Equally important for differences in body appreciation is also gender, sport discipline, and background of sport training: frequency per week, the character of competition (direct-indirect), individual/non-individual competition, or characteristic of sports performance.

Key words: body image, sport, athletes, body appreciation scale.

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INTRODUCTION

Body image is a complex construct, in which whole lifetime experience related to the body is reflected. The main division of the body image includes the physical dimension (mental representation of the body size, shape) and the psychological perspective (attitudes toward body). Among the attitudes toward body, two core dimensions have been established: (I) body image evaluation refers to persons' satisfaction or dissatisfaction with and evaluative beliefs about their body; (II) body image investment refers to the cognitive, behavioural, and emotional importance of the body for self-evaluation [1]. In this paper, a specific aspect of body experience – positive body image will be explored. This construct has been described and developed in detail as multidimensional positive aspects of experiencing the body [2, 3]. A positive body image creates experiences, such as body acceptance, body appreciation, conceptualized beauty, adaptive investment in body, inner positivity, gathering and interpretation information in a way protective for the body. By this time, the second version of the above mentioned research tool appeared, which has been improved by removing the items related to sexuality, and applying items concerning the positive body image. The Body Appreciation Scale - 2 is accurate both for men and women [3]. The way of perceiving and evaluating the body may be influenced by various factors. One of the factors which may increase satisfaction with the body is physical exercises. Exercise may lead to improvements in body image, which some researchers suggest concluding that athletes tend to appreciate their bodies more [4, 5]. However, some athletes may be at risk of developing negative attitudes towards it, which may result in and be explored through a disordered body image [6, 7]. This seem especially true for so-called aesthetic sports, or sports in which lean body is an advantage, or promoted. Such preoccupation may increase a negative body image and lead to eating disorders [8–12].

Further examination of the body image among athletes by de Bruin [6] suggests that classification concerning only sports disciplines reaching to lean body is too broad (based on the track&field example). Trying to find factors moderating the positive body image, this research verified 19 sport disciplines in order to discover a relationship between sport and positive body image.

MATERIAL AND METHODS

Participants in the study included 408 elite athletes (215 men and 193 women). Data was collected since December 2016 till January 2018 during training camps in Central Sports Centres (Spała, Zakopane, Szczyrk and Wałcz). Those facilities are national funded centres which aim to help national level athletes train in comfortable conditions.

The participants' age ranged from 14 to 37 years (M=17.90, SD=3.67), self-reported BMI ranged from 15.87 to 39.19 kg/m2 (M=22.08, SD=3.63). The athletes represented 19 sport disciplines: canoeing (n=81; 20%), volleyball (n=37; 9%), track&field – sprint races [40m, 100m, 200m] (n=32, n=8%), track&field – medium distance races [400, 800m, 1000m, 1500m] (n=31; 8%), field hockey (n=31; 8%), track&field – throw events [hammer throw, discus throw, javelin throw, shot put] (n=29; 7%), track&field – hurdles (n=19; 5%), fencing (n=19; 5%), powerlifting (n=19; 5%), track&field – heptathlon/decathlon (n=15; 4%), track&field – jumping events [high jump, long jump, pole vault] (n=14; 3%), sumo (n=12; 3%), rowing (n=12; 3%), beach volleyball (n=11; 3%), canoe polo (n=11; 3%), track&field long distance races [3000m, 42km] (n=9; 2%), archery (n=8; 2%), judo (n=7; 2%), track cycling (n=5; 1%). Internal separation among track&field were implemented because of two factors. Firstly, the diversification of the training scheme is reflected in training performance: in sprint races more time is spent on short sprint, in opposition to medium, or long distance races; hurdles races not only perfect races skills, but also train the rhythm of the run and jumping elements; throw competitions emphasise the strength, especially

in upper body part; jumping differs in training by giving importance to plyometric training which results in jump specification of training; women's heptathlon and men's decathlon contribute to the variety of track&field, including majority of the events. Secondly, different body shape of athletes representing specific track&field event may be a consequence of performed training specialization, or a motive, visible as adjusting the sport discipline, to the body predispositions.

Athletes completed the Body Appreciation Scale-2 [3], adapted into Polish according to the translation-back-translation procedure. The scale consists of 13 items rated on a 5-point Likert-type scale (1 = Never, 5 = Always) and measuring favourable opinions of one's own body, acceptance of the body in spite of imperfections, respect for the body, and protection of the body. The approval from the author of the scale was granted in July 2016. The BAS-2 scale consists of 10 items scored on a 5-point Likert-type scale, ranging from 1 (Never) to 5 (Always). Prior to completion of the questionnaire athletes were asked whether they agreed to participate in the research. After the permission was granted, they were given the paper-and-pencil version of the questionnaire. The survey was filled out individually and anonymously, and participants were assured to remain anonymous. The approval of a bioethics committee was obtained (approval number: KB/16/2016).

Participants were asked to provide demographic data, such as sex, age, actual body weight (in kilograms), height (in centimetres) [those data were used to calculate the BMI], ideal body weight (which they would like to achieve) [used to calculate the weight discrepancy index], sport achievement class, sport disciplines practised by them, the number of training sessions per week, average time spend on a single training session, general time spent on sport practice. Reliability of the scale was examined by an analysis of internal consistency using the Cronbach alpha coefficient. It reached the satisfactory value of $\alpha = .87$.

Statistical analyses were carried out using the STATISTICA data analysis software, version 13 Dell Inc. (2016). The distribution of the data was verified by the Shapiro-Wilk test. The skewness and kurtosis of the Body Appreciation Scale ranged from -0.58 to 0.32. Such distribution could be regarded as close to normal. The internal consistency coefficient of the BAS-2 scale was acceptable (Cronbach's = .87). Results were in an acceptable range, indicating normal distribution of data. Variance of the variable was homogeneous. Therefore, parametric tests were used. Data were analysed by one-way analysis of variance ANOVA with 'discipline' as the between-subject factor. Other factors were also analysed such us: sex, age, weight, height, actual BMI, ideal BMI, WDI index, sport achievement class, trained sport discipline, number of trainings per week, time spend on one training, general time for sport practice. Tests were followed by post-hoc Tukey comparisons.

RESULTS

ANOVA revealed statistically significant effects of 'gender' on the variable body appreciation ($F_{(1, 406)} = 29.44$, $p = < 0.01$), with higher values reported by men (M=47.54), comparing to women (M=43.39). Differences between those groups were statistically significant. Differences in the body image between various sports occurred among women athletes ($F_{(13, 179)} = 1.87$), higher values were scored in sprinters (M=47.65) than in volleyball players (M=37.79) (as shown in Table 1). Post-hoc analyses revealed significant differences between those sport disciplines ($p < 0.001$).

Based on average week frequency of training among women $F_{(3,189)}=3.295$, $p<0.03$, higher values body appreciation were noticed below training 5 times a week (M=44.889), and lowest values for women training more than 9 times a week (M=40.583) (as shown in Table 2).

Table 1. Results of the body appreciation scale among women depending on various sport disciplines

	Sport discipline	N	M	SD	$F_{(13,179)}$	p
BAS women	volleyball *	24	37.79	8.86	1.87	0.0035
	canoe polo	11	37.82	10.89		
	beach volleyball	6	41.67	9.22		
	T&F heptathlon/decathlon	7	42.00	9.31		
	field hockey	14	42.71	8.22		
	rowing	8	43.37	5.15		
	T&F - throw event	11	43.91	7.85		
	T&F - hurdles	8	44.25	11.16		
	powerlifting	7	44.42	3.99		
	T&F - jumping event	9	44.44	6.48		
	canoeing	40	44.57	9.56		
	T&F – medium distance race	20	44.75	8.08		
	T&F - sprint race *	23	47.65	7.15		
	sumo	5	47.80	4.55		
	Total:	193	43.37	7.89		

Table 2. Results of the body appreciation scale among women depending on the frequency of training per week

	frequency of training sessions per week	N	M	SD	$F_{(3,189)}$	p
BAS women	<5 *	54	44.89	1.23	3.295	0.216
	<6	50	43.92	1.09		
	<8	29	45.45	1.64		
	9+ *	60	40.58	1.13		
		193	43.38	0.63		

Detailed analyses of sport performance revealed that the character of competition significantly differentiates body appreciation among women $F_{(3,189)}$=3.189, p<0.05. The lowest body appreciation concerned female athletes in direct competition (“against opponent”) sport disciplines (M=40.166) (field hockey, volleyball, sumo, judo), the values were noticed in sport disciplines where the competition is indirect (M=45.202) (canoeing, rowing, track&field [medium race, hurdles, sprint]) (as shown in Table 3).

Table 3. Results of the body appreciation scale among women depending on the character of competition

	character of competition	N	M	SD	$F_{(3,189)}$	p
BAS women	indirect *	99	45.20	0.86	4.502	0.004
	mix	7	42.00	3.52		
	direct *	60	40.17	1.18		
	separate	27	44.22	1.22		
		193	43.38	0.63		

Another sport category revealed significant differences in body appreciation in men - the character of sport performance (water/indoor/outdoor) $F_{(2,212)}$= 4.07, p<0.02. The lowest body appreciation occurred in men athletes in indoor sports (M= 46.261), and higher in water sports (M= 49.844).

Sport discipline analysed as individual or group performance $F_{(1,191)}$= 7.86, p<0.05 showed significant differences in body appreciation between individual sport disciplines with higher body appreciation (M= 45.091), and team sport with lower scores (M= 41,620) for women

(as shown in Table 4). The individual/group factor appeared significant also for men athletes $F_{(1,213)}$= 5.07, p<0.02. Higher values in body appreciation were revealed in athletes in non-individual disciplines (M= 48.921), than in individual (M= 46.791) (as shown in Table 4).

Table 4. Results of the body appreciation scale among men and women in individual and non-individual disciplines

	Individual	N	M	SD	$F_{(3,189)}$	p
BAS women	no	95	41.62	0.99	7.86	0.005
	yes	98	45.09	0.75		
	sum	193	43.38	0.63		
BAS men	no	76	48.92	0.82	5.07	0.025
	yes	139	46.79	0.54		
	sum	215	47.54	0.46		

DISCUSSION

This study aimed to explore 19 sport disciplines in order to discover the relationship between sport and the positive body image. The innovative part of this research lies in a wide range of participants concerning extremely differentiated sport disciplines. The other important methodological factor is the sport achievement class – the research was conducted only among athletes who achieved the national level of competition.

GENDER DIFFERENCES

The most important factor, which was the sport discipline, turns out to differentiate body appreciation only among women athletes. Such results somehow relate to previous research, confirming results from Iran [13], Hong Kong [14], in which men scored higher values of body appreciation than women. This may be one reason to understand why the body appreciation did not differ based on sport discipline among men.

However, different results occurred in the Chinese population, in which gender differences in body appreciation did not appear [15]. Comparing results in BAS, Polish women scored lower than women from the UK [16].

Results of the body image research conducted in Poland investigated specific sport disciplines, such as: dancers [17], ice figure-skaters [18], rowers [19], track&field athletes, and swimmers [20]. In the group of dancers, there is a difference in body esteem concerning sport level – women in an amateur group reached the highest scores, and professional dancers the lowest [17]. Research including body image and ice figure-skating investigated gender roles and their visions of being men [18]. Analyses of rowing athletes and students revealed that athletes appreciated their body more than students [19]. A comparison of track&field athletes and swimmers revealed lower scores in body esteem among swimmers, even in comparison to the control group [20].

WEEK FREQUENCY

Distinctive way of life, which is directed by the training scheme, was also analysed with special attention paid to the time spent on it. In this research, the frequency of training was one of the factors which differentiated body appreciation. The lowest scores were noticed in the group of women athletes, who trained more than 9 times a week. However, Tylka and Homan investigating exercise frequency and motivation [21] revealed a relationship between higher body appreciation and higher exercise frequency. The difference in quoted results may have appeared due to different research groups – students/professional athletes. In this research, body appreciation had a growing tendency based on week training frequency, with the highest values of body appreciation in the training frequency

between 5–8 times week. The lowest values occurred in the group of female athletes training more than 9 times/week.

Such results may be explained by the aim of the exercise, which perhaps may differ based on week frequency training. Maybe the athletes training more than 9 times/week aim not only to improve their sport level, but also to achieve a leaner body. This hypothesis indicates that in future research the training week frequency, motivation for exercise and body image need to be verified.

CHARACTER OF SPORT COMPETITION

Sport discipline may also be analysed in terms of the competition character. In this research, sport disciplines were divided into four groups (indirect [e.g. races – short, medium, hurdles], mix [e.g. decathlon], direct [e.g. sumo, judo, volleyball], separately [e.g. track&field - jump/throw event). The categorisation of the character of competition was inspired by analyses of sport described by Lipiec [22]. He points to the way of appointing the winner, whether it is the direct defeat of the rival in fight for each point, impact, or indirectly – when a rival may be running 10 meters from us (as in sprint races), or as in jump performance, when the jump trials happen one after another. In an indirect character of sport competition, the fight is more about the result, which may be very long-lasting, in opposition to a direct fight, which refers to one fight in which the rival is defeated. The highest scores in body appreciation were noticed in the group of indirect sport competition (canoeing, rowing track&field [medium race, hurdles, sprint]) in opposition to direct competition sports, where body appreciation was significantly lower. The type of competition may be related to aggressive behaviour, such as indirect rivalry, which is linked to higher scores in anger in individual sports in Poland [23]. Another factor concerning the sport discipline and competition is age. Research of football players revealed differences in anger expression depending on the age [24]. Therefore, it may be suggested that the type of competition (direct/indirect), concerning a specific type of aggressive behaviour (anger) influences body appreciation. In this research, the direct type of competition was related to the lowest body appreciation in relation to the age (lowest body appreciation appeared in team sports with athletes aged 15–20 years).

INDIVIDUAL/NON-INDIVIDUAL SPORT

The sport discipline may challenge athlete to work for success individually or in a team. The dhoice of the discipline may be predicted by various psychological factors. In team sports, it is important to cooperate with each other – such behaviours may positively influence social self-efficacy [25]. Body appreciation of professional athletes differed also by the factor related to individual/non-individual sport. Those differences were contrary for men and women. Female athletes were more positive with body appreciation performing individual sports (canoeing, track&field, powerlifting, sumo) than those in non-individual sports (field hockey, volleyball, canoe-polo, rowing, beach volleyball). A significant factor and difference based on gender may be interpreted in terms of homogenous surrounding. For females the factor may decrease body appreciation, and, by contrast, men may feel more positive about their body in a group of men.

CHARACTER OF SPORT PERFORMANCE

The difference in body appreciation for men which occurred due to character of sport performance revealed that the highest values were scored by athletes training water sports (canoeing, rowing); high values were also noticed for outdoor sports (beach volleyball, track&field, field hockey, archery), and the lowest ones were noticed in indoor sports (fencing, speed ice-skating, powerlifting, judo, sumo, track cycling). Such results may be interpreted in terms of connectedness to nature [26, 27]. In this research, we did not examine the connectedness to nature, but this concept may be a way for understanding

those results. Maybe it is due to the research group that those differences in body appreciation and the character of sport performance occurred in men athletes (but not in women). In spite of the fact that in Swami's research athletes were not investigated, and the difference appeared in women, this research seems to link training in natural surroundings and body appreciation [27]. The factor of outdoor performance was broadly researched, and it confirmed a positive impact on well-being [26, 28].

SPORT DISCIPLINE

The essence of this research was to investigate whether body appreciation is differentiated in various sport disciplines. The hypothesis was confirmed only for female athletes in the difference between volleyball players and sprinters. Sprinters appreciated their body significantly more than volleyball players.

Researchers have already proved that aesthetic sports are related to lower body esteem and eating disorders [9]. Karin de Bruin brings the insight to gymnasts whose body appreciation does not differ from the control group, but the difference in gymnastics appears in the behaviour towards food and body and is more restrictive [8].

An important trait for interpretation of the results in this article is that volleyball offers the conditions of sexual objectification [29, 30]. However, the type of performance during competition in volleyball and in sprints according to the outfit is similar and shows a lot of body parts. Therefore, those results are very interesting in terms of a significant difference in body appreciation in both sport disciplines, where the outfits show naked stomach, legs, arms, and part of haunches. In this context body exposition and outfit, cannot be considered as moderating factors.

Therefore, it seems more possible that the training surrounding is one of the explanations of those results. In volleyball, athletes are in a homogenous group, consisting only of women (also a coach), which is in contrast to sprint races – where athletes train together, men and women. It may be suggested that if women appreciate their body less, then in gender homogenous surrounding body concerns may decrease.

Moreover, the gender environment seems to hold a promise, especially that in the 2015 World Youth Championships in Athletics in Cali mix [gender] relay race [track&field – sprint relay] debuted. It was also present at the 2020 Tokyo Olympic Games. This competition, open to both genders, may constitute amplification of equal competition, and maybe their body perception will not differ so much.

MEDIALIZATION OF THE SPORT DISCIPLINE

Another factor that may be conducive to understanding those results is the level of medialization of a sport discipline. Volleyball is in a group of the most commonly watched sports in Poland [31]. However, successes in sprint races, both men and women's, increase the popularity of those sports events among the fans.

It may be concluded that because of the popularity of a sport discipline in media, women athletes feel more pressure to look good. Therefore, their positive attitude toward body may lower if the trained sport discipline appears more often in media.

CONCLUSIONS

Those results suggest that not only the common category of the sport type – aesthetic, technical, strength – differentiates the body image. It is concluded that gender as well as a sport discipline and details (background) of sport training – week frequency, character

of competition (direct-indirect), individual/non-individual competition, or the character of sport performance (water, indoor, outdoor) are as important for the differences in body appreciation.

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