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Perception of Body Image Among Sportspersons

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Abstract

Relationship between body and self-image is a well-known and frequently investigated process. Most especially among athletes, this area has been accentuated till the last decades in the literature. This paper focuses on investigating the attitude of people engaged in sports on a regular basis by concentrating primarily on the perception of their body image, the type and form of sport activities, and the consumption habits of food supplements. After a short literature review, the results of the primary research are introduced. People who took part in the research are engaged in sports on a regular basis, and they do sport activities at least once a week on their own free will. Paper Assisted Personal Interviews (PAPI) was used, primarily concentrating on the attitudes of the respondents. During the research, the following conclusions were made: subjectively perceived "normal" body shape category moving higher and the social judgement of overweight became more and more accepted. Owing to the ideal body shape presented by the consumer society, slimmer people want to become thicker while people with a stronger shape want to become leaner. Hence a social problem come into being that only exist in the athlete's mind. This phenomenon can fundamentally base the headway of food supplements since the producers offer solutions to all segments' real or putative problems. The mostly unreal body ideals boost the dissatisfaction of people towards their own bodies. Producers and distributors of food supplements not only emphasize and draw their customers' attention to the imperfection of their shape, but they also offer a solution to their real or putative problems. The more the consumer is hesitating, the more favourable it is for the producer as the possibility of purchasing is greater.

Keywords: Body image, people engaged in sports on a regular basis, food supplements, body shape, attitude.

Introduction

Inactive Lifestyle in the Context of Body Image

Nowadays, none of the studies on nutrition and nutrition marketing can disregard the presentation of the current worldwide epidemic of overweight and obesity. The gravity of the problem is well demonstrated by the fact that today, globally, the number of overweight and obese people exceeds that of those suffering from hunger. According to data published by WHO in 2016, around 1.9 billion of people around the world aged 18 years and above were overweight. Out of these, 650 million were obese. Hence, this means that 39% of the adult population can be classified as being overweight, and 13% as being obese. Today, the majority of the world's population live in countries where overweight and obesity kills more people than undernutrition (WHO, 2018). According to the European Population Health Survey (ELEF) carried out in 2014, over half (54%) of the Hungarian population were overweight or obese. Based on the data provided by the study, 39.3% of men aged 18-34, 71.1% of men aged 35-64, and 72.1% of men aged above 65 can be classified into either the overweight or the obese category. In the case of women, the proportions are 23.4%, 52.8% and 65.0%, respectively (Central Statistical Office, hereinafter CSO, 2015a). According to statistics produced by the OECD, the organization comprising the most developed countries, 72% of men and 64.0% of women fell into either the overweight or the obese category in 2005. Data provided by ELEF show that two-thirds (67%) of the Hungarian population do not devote even 10 minutes a day to doing sports (CSO, 2015a). According to a time-budget survey conducted in Hungary between 2009 and 2011, an average person aged 10-84 spent a daily average of 139 minutes watching television, whereas only 7 minutes is allotted to sporting activities (CSO, 2018). Since then, the situation, instead of showing signs of improvement, has deteriorated even further. Research data based on the Nielsen Audience Survey show that in the third quarter of 2019, the average daily TV viewing time for the entire Hungarian population was 258 minutes (Bányai, 2019). In the 4-49 age group it averaged approximately 180 minutes. In the case of people over 50, it exceeded 360 minutes. When asked what they were doing in their free time on weekdays, young people of 15-29 years of age responded as follows: watching TV – 72 %, using computers and the Internet – 70%, chatting and Facebook – 56%, reading – 33%, and doing sports – 26% (Székely et al., 2017).

In 1986, 16.0% of men and 10.6% of women performed leisure time physical activities including sports, while in 2000 these figures were 17.5%

and 12.7%, respectively, in Hungary. Sport is often associated with masculine characteristics, such as physical strength, stamina, speed and a high level of competitive spirit, and even confrontational skills (EIGE, 2016).

However, scholars have been attentive to the problems of overweight and obese people. Not only those who have difficulties can be regarded as inactive from the physical activity point of view, but those who are physically active also struggle from doubts concerning their body shape. In many cases, the objective of the body image of athletes with a normal body mass index does not reflect the subjective image that exists in their head.

The way and how someone relates to himself and body image, its positive or negative direction, is well-known and investigated in the literature (Csabai, 2019). However, this could widely be seen only in the last 20 years. This is particularly true in the case of researches concerning athletes. Conception of body image is a complex and hardly understandable process as it is part of both the self-perception and self-evaluation (Peráčková et al., 2018).

Body Image and Self-image

There is an unequivocal relationship between the body image and the physical activity of a person. Oftentimes, a positive correlation can be discovered. Body image is relatively stable in a longer term (LeCompte et al., 2020) and correlated with self-evaluation, emotional stability, eating habits, and physical activity patterns at different levels (Cash et al., 2004). At the same time, several researches (Cronan-Scott, 2008) confirmed that the influence of physical activity, i.e., sport, have only a moderate effect on body image (Liechty et al., 2015). However, these activities play an important role in the propagation of positive body image (Prichard-Tiggemann, 2005).

Interpretation of positive body image emphasizes more and more a holistic and overall concept rather than a pathological approach (Swami et al., 2018). In a wider sense, positive body image can be defined as affection, respect, and acceptance toward one's body (Tylka-Wood-Barcalow, 2015). In the case of a positive body image, the individual accepts the uniqueness of his body even if it contradicts the social ideals; thus body functionality is emphasized rather than aesthetic (Tylka, 2011, 2012). There are several associations in connection with optimism, positive feelings, and satisfaction with life or subjective happiness (Swami et al., 2018). Well-being has a multidimensional nature and can be investigated from an emotional, psychological, and social point of view. These factors together resulted to a composed measure that indicates how "rosy" the life of the individual is (Keyes, 2002).

Body image constantly changes. It is a lifelong process and satisfaction level usually grows as the individual gets older (Littleton-Ollendick, 2003; Coelho et al., 2016; Leng, 2020). Nevertheless, this process can be influenced by several factors as nobody is born with a negative body image (Smolak, 2002). Mostly family, peers, and media have an effect on body image. Besides, all of these socio-cultural factors like ethnicity, social status, culture, family, education environment, norms or even peer pressure can form the body image of an individual (Dewi-Bambang, 2019). If there is a contradiction, discrepancy between the perceived and the ideal body image, it causes a dissatisfaction with the body image. This phenomenon is a key risk factors in many health issues like eating disorders or avoidance of physical activities (Leng et al., 2020). Some scholars (Altabe, 1998; Wardle et al., 1993) also reckon that cultural and ethnical differences can be discovered in the case of body image satisfaction. On the whole, it seems to be obvious that physical activity can be effective to reduce the level of body image dissatisfaction (Leng et al., 2020). Moreover, a positive association is connected to doing physical activity for health reasons from the point of view of both women and men's self-esteem (Peráčková et al., 2018).

Body Image and Sports

Sport plays a primary role in preventing or easing the dissatisfaction with body image (Coelho et al., 2016). However, the correlation between physical activity and body image can be influenced by the activity type and the attributes of free time activities. At the same time, there are significantly less research results concerning the activity types that can enhance or block this process (Liechty, 2015).

Otherwise, it is not easy to find the correlation and its nature as this is a very complex relationship system. In many cases, the sport and its relationship with a person's look can be defining. If a sport has a close relation with aesthetics (e.g., gymnastics, dance), the probability of negative body image occurrence is higher than in the case of sports that are concentrating less on a person's appearance (e.g., basketball) (Liechty, 2015). The study of Prichard and Tiggemann (2008) showed that, in some cases, satisfaction with body image can be increased by increasing physical activity.

Negative body image can provoke a person to start physical activities. In these cases, individuals train rather alone or with a few people in a non-public place. The primary reason is shame, fear of other people's judgement, and low body image perception. Hence, they avoid crowed training areas; this is especially true for those who are afraid of other people's judgements (Brudzynski-Ebben, 2010). Genders also differ from each other from the motivation point of view: women rather start to train

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because of social pressure to achieve the ideal shape, while men go to the gym to have fun.

In western cultures, physical activity has played an important role in connection with someone's self-esteem: a muscular body is desired as its part of self-presentation (Cambell-Hausenblas, 2011; Kruger et al., 2008; Coelho et al., 2015; Schmalz, 2007). When someone has a positive body image perception, it leads to efficiency consciousness, independence, and acceptance. All of these have a close connection with the development of self-esteem (Tosseli-Stiga, 2017). Culture and ethnicity can also lead to a more developed body image when a given culture appreciates larger body forms or accept a wide range of shapes (Liechty, 2015).

Objective

Besides providing a brief literature review about body image perception and its relationship with sports, research results of this primary investigation will be introduced. The main aim of the research was to survey the attitudes of people engaged in sports on a regular basis. The following objectives were set:

- exploring the perception of body image,
- questing the type and form of the sport activity, and
- investigating the relationship of these with dietary supplement consumption.

Material and Methods

This research assessed the attitudes of respondents concerning the issues discussed above, including the method and form of the sports-related activity they do, and their consumption habits related to dietary supplements. During the selection of the target group of this primary research, a conscious sampling procedure was used. The target group consisted only of people who voluntarily engaged in sports on a regular basis, i.e., at least once a week. People who did compulsory sport-related activities (e.g., in physical education classes at school) could not be part of the sample, even if they were doing such activities several times a week (4 classes of physical education at school). However, respondents who did sports (e.g., handball training, jogging) voluntarily beside the compulsory physical education classes were not excluded from participating in the sample. The data was collected by students of University of Debrecen Szolnok Campus, who helped to fill in the questionnaire according to strictly predetermined criteria (e.g., proportion of men and women, age of respondents have to be more than 14 years, a wide range of sport activities and geographical location should be targeted, sport means physical activities in this research so e.g., e-

sport is excluded, etc.). Once the respondent met the requirement of performing voluntary sport-related activities (this is the non-random part of the sampling), the selection process was led by snowball-method in the circle of acquaintances of interviewer.

The widest range of sports activities was used in the research. Almost all sports were represented starting from yoga, through riding, gymnastics, running, and martial arts. After the grouping, 21 types of sports activities were formed. Hence, the sample is very widespread.

In order to examine attitudes, a questionnaire-based survey was carried out in paper form in Hungary, involving a consumer sample of 737 people. The survey was carried out in 15 counties. The largest proportion of respondents in the sample were from Jász-Nagykun-Szolnok county (36.5%), but respondents from other counties were also involved in the following proportions: Pest county (18.6%), Bács-Kiskun county (14.0%), Csongrád county (12.2%), and Békés county (6.1%). According to the type of settlement, the proportion of respondents in the sample were as follows: villages 13.8%, towns 53.9%, county towns 26.3%, and the capital city 6.0%. As regards the financial situation of the family, 59.0% of the respondents considered it to be average, while 28% considered it slightly above average. The survey was conducted between 6 November 2019 and 13 December 2019. All age groups from 14 to 72 years of age were represented in the sample. The mean age of the sample was 30.2 ± 11.7 years, mode 20 years, and median 27 years. The proportion of women in the sample was 47.5% and that of men was 52.5%. The gender diversity of the sample conforms to that of the population engaged in sport-related activities. As regards educational attainment in the sample, the distribution is as follows: secondary school graduates (42.4%)—representing the highest proportion in the sample, followed by graduates from higher education (37.5%), skilled workers (7.9%), and respondents with a primary education (10.7%). Detailed information of the study sample can be found in Table 1.

Table 1. Selected demographic characteristics of the study sample

Characteristics		**Frequency**	**Percentage (N=737)**
Gender	Men	387	52.5
	Women	350	47.5
	Total	*737*	*100.0*
Age	14 - 18	103	14.0
	19 - 29	314	42.6
	30 - 49	266	36.1
	50 - 64	50	6.8

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	65 -	4	0.5
	Total	*737*	*100.0*
County	Békés	45	6.1
	Bács-Kiskun	103	14.0
	Csongrád-Csanád	90	12.2
	Jász-Nagykun-Szolnok	268	36.4
	Pest	137	18.6
	Other	94	12.8
	Total	*737*	*100.0*
Type of settlement	Capital	44	6.0
	County town	194	26.3
	Town	397	53.9
	Village	102	13.8
	Total	*737*	*100.0*

Source: Own Research 2019, N=737

Consequently, there is no national list that includes all people who voluntarily engaged in sports on a regular basis, i.e., at least once a week. Thus, it is not appropriate to state that this research is representative. In the study sample, there are more men than women which lines up with the data of Hungarian Central Statistical Office (CSO 2015a; CSO 2015b). The frequency distribution of the study sample by physique is extremely similar to the distribution of people engage in sports activities in accordance with the recommendations of the WHO. Thus, the study sample by body shape well reflects the population defined and described by the WHO.

Table 2. BMI categories in the study sample and in the sample of WHO

	Underweight	**Normal**	**Overweight**	**Obese**	**Total**
BMI category of respondents in the study sample (n=737)	3.9	55.0	30.7	10.4	100.0
Distribution of BMI of people engage in sports activities in accordance with the recommendations of the WHO	5.6	56.1	28.6	9.7	100.0

Source: Own Research 2019 according to CSO 2015c, N=737

Table 2 shows that the selection of sample is appropriate. Thus, it is believed that the study sample is nearly representative according to the BMI of people engage in sports activities in accordance with the recommendations of the WHO.

Besides those basic characteristics that can be seen in Table 2, other features like body weight and body height were measured to calculate the Body Mass Index (BMI). In order to process data, statistical methods were applied (mean, mode, median, standard deviation, Cramer's V, Kendall's tau, cross tables, factor analysis, K-means cluster analysis, discriminant analysis, etc.).

Results

The research studied how people engaged in sports on a regular basis can see their body shape realistic, and how the body image in their head relates to the calculated BMI categories. This paper compared the subjective body image (self-declared BMI) and the objective one by the measured BMI. Based on the assumption by literature sources, body image perception can be influenced by the respondent's memories of their childhood body shape. Table 3 represents the detailed results. In order to be more comparable, the body form categories of Hungarian Central Statistical Office – CSO (2015a) (4th row) and the body shape categories of WHO (2011) global recommendations on physical activity for health (5th row) are also part of the table as a reference point.

Table 3. Relationship between the self-declared and measured BMI categories completed by the reference values (percentage)

	Thin	**Normal**	**Overweight**	**Obese**	**Total**
Respondent's memories of their childhood body shape	29.0	53.7	11.5	5.9	100.0
Opinion of the respondents of their present body shape (self-declared BMI)	4.9	78.4	14.3	2.3	100.0
The categorized body shape by the measured BMI value	3.9	55.0	30.7	10.4	100.0
Distribution of body shape categories in Hungary by CSO (2015a)	3.4	42.5	33.2	20.9	100.0

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Distribution of body shape categories of WHO (2011) global recommendations on physical activity for health	5.6	56.1	28.6	9.7	100.0

Source: Own Research 2019, N=737, WHO (2011), CSO (2015a)

As can be seen from Table 3 above, BMI values of the sample are very close to the body shape categories of WHO (2011) global recommendations on physical activity for health. This means that by body shape, the sample represents the population characteristics of the WHO guideline. However, the measured BMI values are closely related with the WHO ones (it means that the study sample is representative by this factor). Thus, there is a significant difference between the measured and the self-declared BMI values. 732 respondents answered to this question and in the case of 289 people (39.5%), there were a difference between the self-declared and measured BMI category. 94.2% of them underestimated their own body shape category compared to the measured BMI value.

It has to be noticed that the BMI can be higher in the case of athletes who have a higher lean muscle mass than the average and this can indicate gratuitously overweight. This inaccuracy was revised by taking into consideration the level of muscle development of the respondents.

This type of inaccuracy may be noticed in 160 respondents. Assuming the best case, i.e., by filtering out from the sample respondents who by their own admission have more developed muscular systems (fat-free muscle mass), to either a slight or a significant degree, the 160 people in question can be reduced to 51 people. In this most favorable theoretical condition, which is probably not the actual case, the difference between the subjective and objective body image can be detected in 23.1% of the respondents. Based on estimates, the realistic figure could be around 30%, i.e., there is a very significant difference between the subjective body image the respondents have in their minds and the objective category

As shown in Table 3, it can be stated that the respondents notably underestimated the level of obesity and they were permissive of their own body shape. That can be the reason for an individual's strong self-defense mechanism and also because of the fact that overweight and obesity are more accepted at the societal level (the reference point has changed in the respondent's mind which is what constitutes a normal, overweight or obese body shape). Splitting the results by the respondent's gender, it can be seen that men are more permissive with their overweight or obesity. Only 16.6% of the queried men hold themselves overweight or obese. However, by the

measured BMI, this value is true for 54.6% of them. The reference value of WHO is 44.6%, which means that the sample is even more obese than the WHO average. 16.7% of women perceive their body as overweight or obese. In their case, the measured result BMI value is 26.3% (the reference value of WHO is 27.6%).

Despite the fact that men are more affected by overweight and obese, for them their body shape is less problematic than for women. As can be seen by the results that even among physically active people, there is a significant variance between the subjective body image in their head and the objective body shape.

It was also examined whether or not the body image from childhood can have an influence on the perception of present body image. The following statements can be made:

- 33.2% of those sportsmen who recall a thin body shape from their childhood underestimated their present BMI category. The rate of overestimation is 4.3%.
- 30% of those sportsmen who recall a normal body shape from their childhood underestimated, while 4.6% overestimated their present BMI category.
- 49.4% of those who recall an overweight body shape underestimated, while 7.2% overestimated their present BMI category.
- 51.1% of those who thought they were obese in their childhood underestimated, while 7% overestimated their category.

From a psychological point of view, it is interesting to compare how a person looks at himself and what the society think of him. This logical thread can be discovered in this paper as a type of projective technique. The investigation details what the queried sportsmen think of the way how other members of the society think of their body shape. The following table represents the main result of this comparison.

Table 4. Perception of own and socially presumptive body shape (percentage)

	Thin	**Normal**	**Overweight**	**Obese**	**Total**
How you perceive your present body shape?	4.9	78.4	14.3	2.3	100.0
What do you think about how other people perceive your body shape?	9.0	77.1	11.9	2.0	100.0

Source: Own Research 2019, N=737

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By filtering the data in Table 4, the following points were highlighted:

- Those sportsmen who reckon their body shape as thin think that other society members perceive their body shape thin (72.2%) or normal (27.8%).
- Sportsmen reckoning their body shape normal think that 7% of other society members perceive their body shape as thin, 90.4% as normal, 2.3% as overweight, and 0.3% as obese.
- Sportsmen reckoning their body shape overweight think that 28.8% of other society members perceive their body shape as normal, 66.3% as overweight, and 4.8% as obese.
- Sportsmen reckoning their body shape obese think that 23.5% of other society members perceive their body shape as normal, 29.4% as overweight, and 47.1% as obese.

Table 4 above highlighted that the subjectively perceived "normal" body shape category shifts more and more upwards, and the society is more remissive with the judgement of overweight. Although overweight is more and more accepted subjectively, but from a medical point of view, this is certainly not the case. However, society members are more remissive about being overweight or obese. Thus, this does not mean certainly that health risks, problems or costs of overweight and obese would decrease. Moreover, social resignation only further escalates the severity and extent of problems associated with overweight and obese.

Table 5. Social and personal perception of musculature's development (capita)

		What do you think about how other members of the society judge the development of your musculature?					
		much weaker, less developed than the average	slightly weaker that the average	Normal	slightly stronger that the average	much stronger, more developed than the average	Total
the present development of your	much weaker, less developed than the average	3	1	2	1	0	7
	slightly weaker that the	2	22	6	1	0	31

	average						
	normal	6	18	227	19	4	274
	slightly stronger that the average	3	3	72	206	22	306
	much stronger, more developed than the average	0	0	4	23	90	117
Total		14	44	311	250	116	735

Source: Own Research 2019, N=737

The research was extended to the subjective and objective perception of the respondents' musculature. How sportsmen perceive the development of their musculature and what they think of how other members of the society judge the development of their musculature was investigated. Detailed results are shown in Table 5 above.

Correlation between the two coefficients was measured with Cramer's V association. Ideally, the value has to be above 1. In this situation, a person reckons his musculature's development just as the society reckons him. The 0.582 value of the coefficients implies that the other members of the society do not exactly perceive the respondent's body shape exactly the same way as they do.

Values to the right of the diagonal of Table 5 indicate those people who underestimate and presumably dissatisfied with the development of their musculature. Therefore, this can lead to the evolvement of a negative body image. By sorting the results by gender, it can be seen that 6.2% of men are dissatisfied with the development of their musculature. In the case of women, this dissatisfaction rate is even higher, 9.2%. These doubts are the base for a business opportunity from a marketing point of view.

Discussion

Due to the ideal body image expected by the consumer society, thin people want to become thicker and muscular, while stronger-built people want to be thinner. Hence, there is already a social problem that often only exists in the consumer's mind. This problem can be solved by the manufacturers of dietary supplements who offer a solution for all segment's real or perceived problems by offering protein, muscle mass builders or fat burners. They provide products to solve all kinds of problems, e.g., they

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offer weight gainers for people of thin build, pre-workout formulas for those who intend to train hard, protein for those wishing more muscle mass, fat burners for the obese, etc. This is a highly profitable industry, which builds on the lack of self-confidence, doubts, and the fears of the individual. Consumers, uncertain about their own body shape, are potential customers for the producers of dietary supplements. The more uncertain the consumer is, the more favorable the situation is for the producer, since these consumers are more likely to make a purchase. The formula is simple in terms of marketing: draw the consumers' attention to their imperfect body shape, highlight the problems and at the same time offer solutions to the given problems. Consumer protection policy is typically meant to protect such consumer groups from corporate marketing activities by means of active and passive consumer protection tools. At present, the regulation of the communication of the product range is rather weak, and the producers and distributors of dietary supplements do not have to comply with substantial restrictions. Based on the results of the research, the study does not intend to take a stand on stricter active legislation; it will not provide solutions on the long term, although it may yield results in the short run. However, passive tools seem more effective in strengthening consumer awareness in the long term. From this point of view, a serious problem at present is that respondents collect information on dietary supplements primarily from laypeople, by way of word-of-mouth advertising, and not from health experts (physicians, pharmacists, dietitians, etc.).

Conclusion

The subjective body image of the respondents did not match the BMI categories based on precise calculations for up to 30% of the cases. The research carried out indicates that the subjective body image of respondents can also be influenced by their childhood build. The respondents' dissatisfaction with their own body shape is further intensified by the cult of the body emphasized in the consumer society, by the ideals of unrealistic body shape (too thin, too muscular) presented by corporate marketing communication, and by powerful advertising. The same holds true for the respondents as well. However, the producers and distributors, beside drawing consumers' attention to and emphasizing the flaws in their body shape (too thin, overweight, not muscular enough), offer solutions to problems both perceived and real.

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