

Psychological gender of the female students, who training boxing in the sports-oriented physical education

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Abstract:

The assessment of the psychological gender of female students who have training in sports-oriented physical education using boxing seems to be relevant due to the lack of knowledge of this issue. **Purpose:** to study the state of motivational characteristics of the personality of female students of different psychological gender, engaged in sports-oriented physical education using boxing. **Materials and methods.** We examined girls (n=90) aged 18-20 who studied at the Siberian Federal University (Krasnoyarsk, Russia). The girls were completely healthy and had no contraindications for physical activity. Sports-oriented physical education of female students was carried out 2 times a week with the use of boxing training. Determination of psychological gender was carried out using the Masculinity-femininity technique (Bem, 1974). We conducted a study of girls' readiness for risk according to the method of A.M. Schubert (Ilyin, 2016), the motive for achieving success and the motivation of the individual to avoid failure were carried out using the technique of T. Ehlers. **Results.** In the surveyed group of girls engaged in the specialization of physical education "boxing", more than half of the female students of the surveyed group (57.8%) registered androgynous gender. The masculine psychological type was registered in 15.5%, the feminine type was found in 26.7% of female students. It has been established that all girls have different motives for choosing boxing. The study of motivation for success, avoidance of failures and inclination to take risks indicates that all girls who attend boxing training sessions have chosen this sport independently and consciously. They have a high motivation to master this martial art. This is also confirmed by the fact that of all the girls of different psychological genders, a few students have a low level of motivation, a motive for success and risky behavior. The study of the motive and reasons for the choice of sports-oriented physical education by female students using boxing indicates that the key reasons are the acquisition of self-defense skills, physical improvement and the development of character and mental qualities. **Conclusions.** The data obtained in the course of the study can be implemented in the educational and training process of sports-oriented physical education of girl students of a boxing orientation. The use of a differentiated training process for girls of different psychological gender will increase the motivation for physical activity and the effectiveness of the health-improving orientation of physical education.

Key Words: boxing, sportization, sports training, psychological gender, physical education

Introduction

A necessary condition for successfully solving the goals and objectives of physical culture and sports activities of people performing physical activity is their mandatory gender orientation (Dogan, & Graham, 2019; Aranson, 2021). The construction of physical education classes is based on the characteristics of the male and female body, which is the most important pedagogical principle that the teacher of physical education should take into account (Romanova et al., 2022). In sports activities, the training process and competitive activities are also based on the principle of an athlete's gender difference (Fernandez et al., 2019; Osipov et al., 2020; Oleynik, & Bugaevsky, 2020).

Such features of physical activity performance, especially in sports, are due to significant differences in the physical, functional fitness of men and women, their anthropometric parameters and the specifics of the exercises they perform (Preece & Bullingham, 2020; Rosgamón et al., 2021; Kolokoltsev et al., 2022). One person may have signs of both male and female gender. The predominance of male traits in an individual denotes "masculinity" and the predominance of female traits - "femininity". The corresponding predominance of gender

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features is reflected in the psychological portrait of a person with a predominance of character traits characteristic of a man or a woman. If a person has equally masculine and feminine traits, then they speak of androgyny. It should be remembered that signs of masculinization in girls may indicate a negative state of their health due to an increased content of male sex hormones (Tkachuk et al., 2019). Girls with this type of psychological type have higher values of morphological and functional indicators (Eksterowicz Jerzy, & Napierała Marek, 2020; Kolokoltsev et al., 2021).

In recent decades, in sports activities, there has been an increase in the number of female athletes who perform in "male" sports (Sutresna et al., 2021; Osipov et al., 2020). A fairly young sport is amateur women's boxing, which has recently been included in the program of the Summer Olympic Games. Scientists and experts note an increased interest in boxing among girls (Korobeynikov et al., 2019). In the scientific world, the point of view prevails that various martial arts, including boxing, are practiced by women with character traits inherent in men (Burdzicka-Wolowik, & Goral-Radziszewska, 2014). In educational institutions of a number of countries, sports-oriented physical education using boxing is gaining popularity, including among female students (Kovalev, & Bulgakova, 2023). The participation of women in martial arts is associated with the peculiarities of their psychological motives and attitudes towards these sports. These questions, according to McGannon et al. (2019) are not well understood or the information is contradictory.

There is a lack of scientific knowledge devoted to the study of the motivation of female students for boxing in educational institutions during the course of physical education (Kovalev et al., 2019). This is especially true in connection with a decrease in the interest of a significant part of young people in physical activity (Galan et al., 2021), which is accompanied by a deterioration in their health and physical development indicators (Martin, & Naziruddin, 2020; Soleh Solahuddin et al., 2021).

The lack of knowledge in the field of sports psychology when doing boxing while sporting the physical education of female students makes it difficult for the sports selection of girls who have a desire to go in for this sport. The teacher's knowledge of the psychological profile of female students involved in boxing will provide detailed information for improving the curriculum of sports-oriented physical education, which will increase the health-improving orientation of teaching the discipline "physical culture".

Purpose. To study the state of motivational features of the personality of female students of different psychological genders, engaged in sports-oriented physical education using boxing.

Material & methods

The research work was carried out among girls (n=90) aged 18-20 (18.8±0.5) who studied at the Siberian Federal University (Krasnoyarsk, Russia). The examined girls were completely healthy and had no contraindications for physical activity. They voluntarily gave their written consent to participate in the study, which does not contradict the principles of the Declaration of Helsinki 2008 for scientific biomedical work. Sports-oriented physical education of female students was carried out 2 times a week with the use of boxing training. By a randomized method, girls attending training sessions at the 2nd and 3rd years of study at the university were selected.

To determine the features of psychological gender, the Masculine-femininity technique was applied (Bem, 1974). Calculation of the results of the questionnaire allows us to identify four psychological genders of girls: 1. Masculine - high rates of male traits; 2. Feminine - high rates of female traits; 3. Androgynous - high rates of both male and female characteristics; 4. Undifferentiated type, characterized by low levels of male and female traits.

To assess the characteristics of behavioral reactions in cases associated with risk and danger to life and health, an assessment of risk readiness was carried out according to the method of A.M. Schubert (Ilyin, 2016). Diagnostics of the characteristics of the motive for achieving success was carried out among all girls using the technique of T. Ehlers (Raigorodsky, 2011). An assessment of the characteristics of a person's motivation to avoid failure was carried out in a study in groups of androgynous and masculine female students using the method of T. Ehlers (Raigorodsky, 2011).

The significance of the motives and reasons for choosing sports-oriented physical education of boxing orientation was determined using a questionnaire developed by us, which included 11 questions. The students were asked to evaluate the significance of the motive and the reason for choosing the specialization "boxing" from 1 to 5 points, where 1 point was assessed as a less significant assessment, 5 points - the most significant assessment of the motive.

We used the Statistica 10.1 software package and Excel for Windows for statistical processing of the obtained data. Mean values and standard sigmal deviations were calculated (mean ± standard deviation). The normal distribution of the data was checked and confirmed using the Shapiro-Wilk test. All variables in the study are represented by a normal distribution. Variables were compared using one-way analysis of variance for independent measurements. Significant significance was considered at $p \leq 0.05$.

Results

The results of the study of the psychological gender of girls involved in sports-oriented physical education are shown in Figure 1.

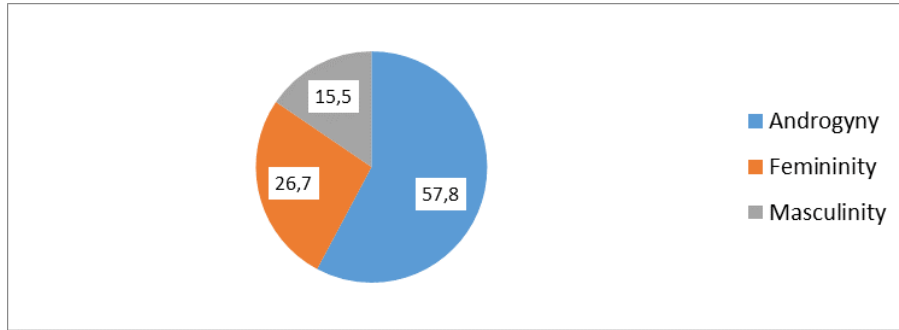


Fig. 1. Distribution of girls by psychological gender, %

It was found that girls with androgynous personality traits are registered most often (57.8%), feminine girls are 2 times less common (26.7%), and the smallest group is girls with masculine personality traits (15.5%). No girls with an indefinite psychological type were identified. The results of the study of motivation to achieve success among female students of different psychological gender are presented in Table 1.

Table 1. Number of girls of different psychological gender by levels of success motive, %

Psychological Gender	Levels of Achievement Motivation			
	High	Moderate	Medium	Low
Androgynous	21.1	28.8	32.7	17.3
Feminine	16.7	41.6	25.0	16.7
Masculine	42.8	35.7	21.4	-
Total	23.3	33.3	28.9	14.4

Of all the sex types, the most common (33.3%) are girls with a moderate motive for achieving success, the most rare are girls with a low motive for success (14.4%). An analysis of the distribution of the number of female students by psychological gender indicates that the largest number of androgynous girls have an average (32.7%) level of motivation for success. Among girls of the feminine gender, girls with a moderate motive (41.6%) are most often found, and among the representatives of the masculine type, girls with a high level of motivation to achieve success are most often registered. The results of the study of the motivation to avoid failure among female students of different psychological gender are presented in Table 2.

Table 2. The number of girls of different psychological gender by levels of the motive to avoid failure, %

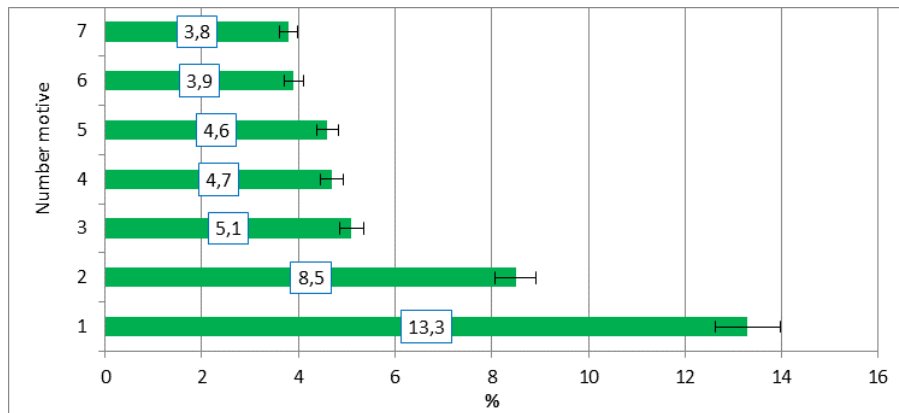
Psychological Gender	Levels of motive to avoid failure			
	Super high	High	Medium	Low
Androgynous	15.3	13.5	51.9	19.3
Feminine	37.5	45.8	16.6	-
Masculine	-	7.2	42.8	50.0
Total	18.8	41.1	21.2	18.8

Among girls of all psychological types, girls with a high level of motive for avoiding failures are most often registered (41.1%). Girls with an ultra-high gradation and a low level of the motive for avoiding failure are 2.2 times less common (18.8% each). Among girls of androgynous gender, 51.9% of them have an average level of motive. The smallest number of girls of this gender type have super high (15.3%) and high levels of motive to avoid failure (13.5%). Among girls of the feminine sexual type, girls with a high (45.8%) motive are most often found, and among the representatives of the masculine gender, girls with an average level of motivation to achieve success are most often registered (45.8%). In this group of female students quite often there are girls with a low level (50.0%) of motivation to achieve success, which indirectly may indicate their inclination to risky behavior. The results of the study of risk appetite among female students of different psychological gender are presented in Table 3.

Table 3. Number of girls of different psychological gender by levels of risk appetite, %

Psychological Gender	Levels of risk appetite			
	High	Above average	Average	Below average
Androgynous	7.7	17.3	59.6	15.4
Feminine	-	4.2	83.3	12.5
Masculine	28.5	42.8	28.5	-
Total	8.9	17.8	61.2	12.2

Among girls of all psychological types, girls with an average level of risk appetite (61.2%) are most often registered. 6.8 times less common are girls with an ultra-high gradation (8.9%) and 5.0 times less with a low level of risk appetite (12.2%). Among girls of androgynous type, girls with an average level of risk inclination of 59.6% are most often registered, girls with a high risk inclination are least of all (7.7%). Among girls of the feminine psychological type, girls with an average (83.3%) level of risk inclination are most often found, and among the representatives of the masculine type, girls with an above average level of risk inclination (42.8%) are most often registered. In this group of sexual type, there are no girls with a low level of propensity for risk, which confirms their tendency to risky behavior. With the help of the developed questionnaire, the motives and reasons for choosing a sports-oriented physical education of a boxing orientation were investigated, Figure 2.



Note. 1. Obtaining self-defense skills; 2. Physical improvement; 3. Development of character and mental qualities; 4. In boxing, the growth of results is more clearly visible; 5. Improving well-being and health; 6. Communication with peers; 7. Fashion for boxing.

Fig. 2. Motives and reasons for the choice of sports-oriented physical education by female students using boxing

The results of the survey of girls indicate that the leading motives and skills of choosing boxing for physical education are gaining self-defense skills - 13.3 ± 1.2 points; physical improvement - 8.5 ± 0.9 points; development of character and mental qualities – 5.1 ± 0.5 points, $p < 0.05$. The results of the analysis of the motives for boxing in all the girls show a significant difference in the scoring of the choice among female students of different psychological genders, Figure 3.

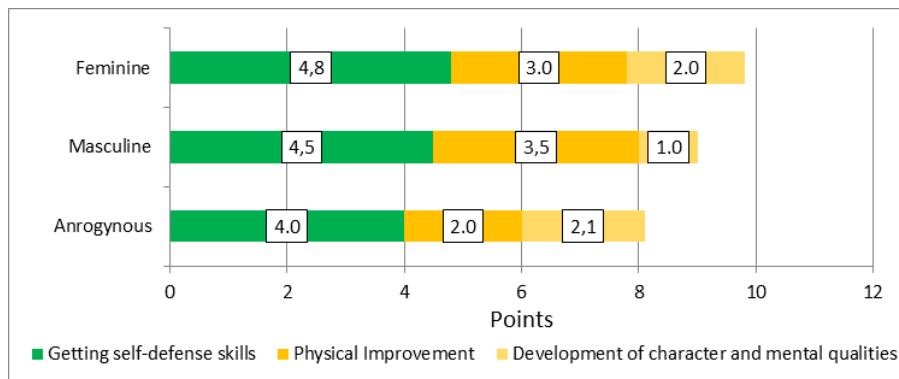


Fig. 3. Motives for choosing boxing by girls of different psychological genders

For girls of all types of psychological gender, the most significant motive for choosing boxing training is to acquire self-defense skills. The highest value of the score in this motive is recorded in girls of the feminine type - 4.8 ± 0.3 points, Fig. 3. The motive of physical improvement is the most significant for female students with masculine personality traits - 3.5 ± 0.5 points. The motive for the development of character and mental qualities is the most significant for androgynous students - 2.1 ± 0.4 points.

Dicussion

The study of issues related to the psychological gender of individuals who perform physical activity during physical culture and sports activities is an urgent problem (Dougan, & Graham, 2019; Aranson, 2021). This is due to the fact that the achievement of positive results, especially in martial arts, is largely determined by the motivation to achieve success, mental and emotional endurance, stress tolerance and other mental factors (Slimani et al., 2017). The scientific literature contains information about higher values of speed-strength motor qualities of women involved in martial arts and having a masculine psychological gender. This, according to Hendarto et al. (2018) provides a significant advantage for such women compared to women with androgynous and feminine psychological types of gender. Women who practice boxing have been reported to have higher height and body mass index as a result of developing muscle mass (Osipov et al., 2023). It is known that one of the reasons for the masculinization of the female body is the increased content of male sex hormones (Tkachuk et al., 2019). More pronounced indicators of morphofunctional qualities in masculine women were also noted by other specialists in the field of physical culture and sports (Eksterowicz Jerzy, Napierała Marek, 2020; Kolokoltsev et al., 2021).

The testing of the psychological gender that we conducted showed that in the surveyed group of female students engaged in the specialization of physical education "boxing", the masculine psychological type was registered in 15.5%. Female (feminine) psychological gender was found in 26.7% of girls. More than half of the female students of the study group (57.8%) have an androgynous psychological gender, the representatives of which are characterized by approximately equal signs of both female and male traits. This distribution of girls by psychological gender is consistent with the opinion of Cardoso et al., (2016), who found that among women involved in martial arts, representatives of the androgynous psychological gender predominate. Although there is a statement about the predominant distribution of martial artists of the masculine psychological type among women (Burdzicka-Wolowik, & Goral-Radziszewska, 2014).

According to our data, a study of all girls showed that they have different "motivational portraits". The study of motivation for success, avoidance of failures and inclination to take risks indicates that all girls who attend boxing training sessions have chosen this sport independently and consciously. They have a high motivation to master this martial art. This is also confirmed by the fact that out of all the girls of different psychological sexes, only a few female students have a low level of motivation and risky behavior, and only 14.4% of the surveyed have a low motive for success. Increasing the motivation for physical activity is especially important at the present time, when a significant number of young people who are studying have physical inactivity associated with a low need for physical culture (Galan et al., 2021) and a deterioration in their health (Martin, & Naziruddin, 2020; Soleh Solahuddin et al., 2021). The conducted research testifies in favor of the choice of sportization of physical education with the use of training sessions of a boxing orientation.

The analysis of the results of the study of the motive and reasons for the choice of sports-oriented physical education by students using boxing indicates that the key reasons are obtaining self-defense skills, physical improvement and development of character and mental qualities. The most developed motivation for obtaining self-defense skills is among girls of the feminine psychological sex. A significant number of girls of masculine psychological gender indicated the motive for physical improvement. The motive for the development of character and mental qualities is most significant for androgynous female students attending boxing training sessions.

In our opinion, in order to increase the effectiveness of boxing sports technologies among female students, it is necessary to use a differentiated psychological approach to gender determination. We believe that on a psychological basis, it is necessary to distinguish two groups: the first group is female students with androgynous and masculine gender (these girls correspond to women's boxing athletes). The second group is female students with a feminine psychological gender (least of all corresponding to women's boxing athletes). The use of this approach in the training process will increase the motivation of female students for classes and will contribute to the successful development of the boxing program.

Conclusions

The results of a survey of female students attending sports-oriented physical education of the boxing specialization indicate that representatives of the androgynous psychological gender predominate among them (57.8%). Girls of female and male psychological gender were 2.2 and 3.7 times less, respectively.

Female students have different motives for choosing boxing in physical education classes. All girls are characterized by a fairly high motivation for success, motivation to avoid failures and inclination to take risks.

This may indicate that all the girls who attend boxing training sessions have chosen this sport on their own and consciously. They have a high motivation to master martial arts, which is confirmed by the fact that of all the girls of different psychological types, a few students have a low level of motivation for success and risky behavior. These data testify in favor of the use of sportization of physical education of university students with the use of boxing training.

According to the psychological gender of girls, we propose to distinguish two groups: the first group is female students with androgynous and masculine types (they most closely correspond to women's boxing athletes). The second group - girls with a feminine psychological gender (less corresponding to women's boxing athletes). The distribution of girls into two groups allows for a differentiated educational and training process. This will prevent the exodus of students from the training groups and ensure the success of the boxing program.

Conflicts of interest. The authors declare no conflict of interest.

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