CME LIVE OPEN ACCESS

Journal of Cancer Research

Research Article

Women's Martial Arts: Changes In Indicators of Gender Self-Identification in Women Athletes in Gender Somatotypes

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Received: 2024 Mar 03 **Accepted:** 2024 Mar 22 **Published:** 2024 Apr 25

Abstract

This article presents the results of a comparative analysis of the indicators of gender self-identification of the personality type of female athletes identified as a result of the research conducted by the author, in their individual gender somatotypes, among adolescent female athletes involved in a number of types of female martial arts.

Keywords: Female Athletes, Adolescence, Martial Arts, Sexual Dimorphism, Sexual Somatotypes, Gender Identification of Personality Types and Inversion.

1. Introduction

Practicing various types of modern martial arts by female representatives has today become a practical reality and is active and widespread. The study of ongoing adaptive, somatic and psychological changes occurring in the body of women, occurring as a result of intense physical and psychological stress, modifications in the functioning of organs and systems of the female body, including psychologically determined gender self-esteem in female athletes, is an urgent problem in research, concerning the influence of sports on the body of women of different ages [1-4].

1.1. Aim of study

The purpose of the article is to analyze, obtained as a result of the study, pathological (inverse), non-physiological, altered indicators of gender self-esteem and sexual somatotypes in female athletes in different types of martial arts.

Abbreviations

- SDI – sexual dimorphism index, proposed by J.M. Tanner and W.A. Marshall;
- GIPT - gender identification personality type;

2. Material and Methods

This study was conducted in 2019-2022, involving 271 athletes from 9 types of martial arts. All athletes were divided into 3 groups, depending on the type of martial arts they practice. The group of martial arts (n=173) was represented by athletes involved in Greco-Roman and freestyle wrestling, pankration, sambo and judo. Impact martial arts (n=77) were represented by girls involved in kickboxing, kyokushinkai karate and taekwondo. Mixed martial arts (n=21) were presented as fights without rules. The level of sportsmanship ranges from III-I sports categories in their disciplines, to candidate master of sports and master of sports. The duration of training in various martial arts is from 2 to 9 years. Classes are held 4-6 times a week, from 2 to 4 hours per training, according to individual schedules and depends on the level of sportsmanship. The age of the female athletes in the entire group was 18.73±0.96 years, which corresponds to the values of adolescence [5].

To achieve the goal of the study, we used anthropometric methods such as determining the interacromial and intercrestal dimensions, the indicators of which are necessary to determine the sexual dimorphism index (SDI) according to the method proposed by J.M. Tanner and W.A. Marshall [1, 3-5]. Based on the obtained values of the index of sexual dimorphism (SDI), somatotyping was carried out on female athletes, with the determination of their gynecomorphic, mesomorphic and andromorphic sexual somatotypes [1, 2]. Determining the type of gender identity (GITP) was carried out using the Russian analogue of the "Bem sex role inventory" questionnaire, containing 27 points, and assessing each point with a scale from 1 to 5 points [1, 2]. The method of literary analysis of available sources of information and the method of mathematical statistics were used.

3. Results and Discussion

After determining the SDI, all athletes (n=271) underwent somatotyping [1, 3-5]. The results obtained for the variants of sexual somatotypes are presented in Table. 1 (p≤0.05):

Table 1: Identified Variants of Sexual Somatotypes in the Studied Groups of Young Female Athletes.

Gynecomorphic sexual somatotype (less than 73.1 c.u.)	Mesomorphic sexual somatotype (from 73.1 to 82.1 c.u.)	Andromorphic sexual somatotype (more than 82.1 c.u.)
Wrestling types of martial arts		
Freestyle wrestling (n=27)		
71,53 ± 065 6 (22,22%) young female sportsmens	80,56 ± 0,31 18 (66,67%) young female sportsmens	84,02 ± 1,02 3 (11,11%) young female sportsmens
Greco-Roman wrestling (n=49)		
69,45 ± 067 8 (16,33%) young female sportsmens	79,56 ± 1,13 36 (73,47%) young female sportsmens	82,19 ± 073 5 (10,20%) young female sportsmens
Pankration (n=23)		
68,43 ± 1,04 4 (17,39%) young female sportsmens	79,67 ± 0,81 17 (73,91%) young female sportsmens	84,14 ± 0,23 2 (8,70%) young female sportsmens
Sambo (n=39)		
72,14 ± 053 4 (10,26%) young female sportsmens	81,54 ±0,78 31 (79,49%) young female sportsmens	83,17 ± 1,11 4 (10,26%) young female sportsmens
Judo (n=35)		
71,58 ± 1,05 5 (14,28%) young female sportsmens	80,04 ± 1,07 26 (74,29%) young female sportsmens	84,16 ± 0,34 4 (11,43%) young female sportsmens
Impact martial arts		
Kyokushinkai – karate (n=29)		
70,11±086 5 (17,24%) young female sportsmens	77,45 ± 052 21 (72,41%) young female sportsmens	83,23 ± 0,1 3 (10,35%) young female sportsmens
Taekwondo (n=25)		
69,11 ± 0,24 5 (20,00%) young female sportsmens	80,14 ± 0,93 17 (68,00%) young female sportsmens	82,77 ± 089 3 (12,00%) young female sportsmens
Kickboxing (n=23)		
69,78 ± 0,76 4 (17,39%) young female sportsmens	78,54 ± 0,63 17 (73,91%) young female sportsmens	82,41 ± 0,18 2 (8,70%) young female sportsmens
Mixed martial arts		
Fights without rules (n=21)		
71,14 ± 0,76 3 (14,29%) young female sportsmens	79,14 ± 1,12 17 (80,95%) young female sportsmens	82,34 ± 0,53 1 (4,76%) young female sportsmens

Analysis of the identified somatotypes, according to the IPD values in each group of martial arts, showed the following: in 27 (15.61%) athletes from the group of wrestling types of martial arts (n=173), a gynecomorphic somatotype was determined, in 128 (73.99%) - a mesomorphic one and, 18 (10.40%) have an andromorphic sexual somatotype. In girls from the group of striking martial arts (n=77), a gynecomorphic somatotype was determined in 14 (18.18%), a mesomorphic somatotype in 55 (71.43%), and an andromorphic sexual somatotype in 8 (10.39%) athletes. this group. In all presented groups, gynecomorphy was determined in 44 (16.24%), mesomorphy - in 200 (73.80%), andromorphy - in 27 (9.96%) representatives of different types of female martial arts. The SDI value for all 271 athletes was 80.34±1.07 cu. e., which indicates the predominance of mesomorphism in a significant number of athletes in all 9 groups.

Table 2: Data From the Analysis of the Results of Gender Self-Identification of Female Athletes Using the Questionnaire by O.G. Lopukhova [1, 2], are Presented in Table. 2.

Feminine type GIPT	Androgynous type GIPT	Masculine type GIPT
Wrestling types of martial arts		
Freestyle wrestling (n=27)		
4 (14,82%) young female sportsmens	19 (70,37%) young female sportsmens	4 (14,82%) young female sportsmens
Greco-Roman wrestling (n=49)		
10 (20,41%) young female sportsmens	33 (67,35%) young female sportsmens	6 (12,25%) young female sportsmens
Pankration (n=23)		
6 (26,09%) young female sportsmens	13 (56,52%) young female sportsmens	4 (17,39%) young female sportsmens
Sambo (n=39)		
4 (10,26%) young female sportsmens	31 (56,00%) young female sportsmens	4 (17,39%) young female sportsmens
Judo (n=35)		
4 (11,43%) young female sportsmens	26 (74,29%) young female sportsmens	5 (14,29%) young female sportsmens
Impact martial arts		
Kyokushin - karate (n=29)		
6 (20,69%) young female sportsmens	19 (65,52%) young female sportsmens	4 (13,79%) young female sportsmens
Taekwondo (n=25)		
6 (24,00%) young female sportsmens	14 (68,00%) young female sportsmens	5 (20,00%) young female sportsmens
Kickboxing (n=23)		
5 (21,74%) young female sportsmens	15 (65,22%) young female sportsmens	3 (13,04%) young female sportsmens
Mixed martial arts		
Fights without rules (n=21)		
4 (19,05%) young female sportsmens	16 (7619%) young female sportsmens	1 (4,76%) young female sportsmens

It was found that in the group of wrestling types of martial arts (n=173), the indicators of determination of their GIPT type by athletes were as follows: the feminine type was established in 28 (16.19%), the androgynous type - in 122 (70.52%), the masculine type of gender self-identification – in 23 (13.29%). In the group of striking martial arts (n=77), there were 17 (22.08%) representatives of the feminine type, 48 (62.34%) of the androgynous type, and 12 (15.58%) of the masculine type. Analysis of GIPT indicators in all 271 athletes showed that 186 (68.64%) of them had an androgynous (transitional) type of GIPT and 36 (13.28%) had an inverse, masculine type of GIPT, and 49 (18. 08%) – feminine (physiological) type of GIPT. In a comparative analysis of the values of SDI and GITP, it was determined that young athletes, under the influence of intense physical and psycho-emotional stress, experience both somatic changes in their biological sex and psychological inverse changes in the self-identification of their gender personality type.

4. Conclusions

- It was revealed that among all female athletes, in each type of martial arts, the overwhelming number of young female athletes have a transitional, mesomorphic and inverse, andromorphic sexual somatotype.
- It was determined that in the study group, regardless of the type of female martial arts presented, there are manifestations of altered indicators of gender self-identification of personality types, especially among athletes, representatives of inverse gender somatotypes.

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