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**CHARACTERISTICS OF BODY COMPOSITION HIGHLY QUALIFIED
DANCERS AND DANCERS LATIN AMERICAN STYLE OF DANCE SPORTS
IN LIGHT OF TYPOLOGY OF SOMATIC A. WANKY AND KRETSCHMER**

**Charakterystyka budowy ciała wysokokwalifikowanych tancerek i tancerzy stylu
latynoamerykańskiego sportowego tańca w świetle typologii somatycznej A.
Wankego i Kretschmera**

Wiesława Pilewska¹, Robert Pilewski¹, Walery Zukow²

¹Institute of Physical Culture, Kazimierz Wielki University, Bydgoszcz, Poland

²University of Economy, Bydgoszcz, Poland

Keywords: sports dance, somatic structure, typological systems.

Słowa kluczowe: taniec sportowy, budowa somatyczna, systemy typologiczne.

Abstract

According to theoreticians' of sport the build of athletes makes making up its mind different from the build of persons not dealing with sport what material meaning has in sports activity. The build in many sports determined of specimens predestines for taking the determined motor initiative. They stated that the specificity of the somatic build of competitors was made conditional on character of the performed work and from a point of view of biomechanics is connected with the effectiveness of performed exercises. At work an attempt to describe the specificity of the somatic structure of high-qualified pairs of the sports dance was made. This problem was taken in many sports peculiar structure somatic, considered in aspects: sizes of the body (height and mass), a large impact has a proportion of internal relationships between tissue components to sports results.

Material:

Semi-final and final pairs of the sports dance constituted the research group, of the Polish championship of Amateurs in the style dance Latin American (20 persons). Largely the examined group had a "Sec." - class, that is comparing the master class to sports classes. In the group of women the age fluctuated within the limits of 18 - 23 years (average of 21 years). In the group of men the age fluctuated within the limits of 18 - 28 years (average 23 flies). Length of the dance internship examined developed within the limits of from 7 up to 15 years - motoricity dancers and from 6 up to 12 years of the dancer. Examined dance pairs trained from 4 to 7 days during the week counting from 10 to 28 of hours every week.

Method:

A typological system was used for the evaluation of the somatic structure A. Wanky drawn up to male teams (1954) widened through E. Kolasa to female teams (1969) and of Kretschmer.

Conclusions:

1. According to typological system A. Wanke in the group of dancers of the Latin American style was a presented most oftentimes type of the structure: clean type V (40%) and type VH mixt up (40%). In the little per cent a type mixt up was presented VI (10%) and Ha (10%). Elements had a large stake: V (59.00%) and H (20.06%).
2. According to of typological system A. Wanky, widened through E. Kolasa to female teams in the group of dancers of the Latin American style was a presented most oftentimes type of the structure: type mixt up VI (30%) and type mixt up IV (30%). In the little per cent a type IH mixt up was presented (10%), clean type and (10%), clean type V (10%) and type VH mixt up (10%). Elements had a large stake and (45.00%) and V (30.83%).
3. According to introduced the ranking of Kretschmer in the group of dancers of the Latin American style most oftentimes was: athletic type of the build (80%). Remaining the 20% constituted the pyknic type of the structure.
4. According to type introduced the ranking of Kretschmer in the group of dancers of the Latin American style presented most oftentimes of the structure was: leptosomatic type of the build (60%). Remaining the 40% constituted the athletic type of the structure.

Streszczenie

Zdaniem teoretyków sportu budowa ciała sportowców różni się zdecydowanie od budowy osób nie zajmujących się sportem, co ma istotne znaczenie w działalności sportowej. W wielu dyscyplinach sportowych określona budowa ciała osobników predestynuje do podejmowania określonej aktywności ruchowej. Stwierdzono, iż specyfika budowy somatycznej zawodników uzależniona jest od charakteru wykonywanej pracy a z punktu widzenia biomechaniki związana jest z efektywnością wykonywanych ćwiczeń.

W pracy podjęto próbę przedstawienia specyfiki budowy somatycznej wysokokwalifikowanych par tańca sportowego. Problem ten podjęto W wielu dyscyplinach sportowych specyficzna budowa somatyczna, rozpatrywana w aspektach: wielkości ciała (wysokość i masa), proporcji stosunków wewnętrznych między komponentami tkankowymi ma znaczny wpływ na wyniki sportowe.

Materiał:

Grupę badawczą stanowiły półfinałowe i finałowe pary tańca sportowego, Mistrzostw Polski Amatorów w stylu tanecznych latynoamerykańskim (20 osób). W większości badana grupa posiadała „S” – klasę, czyli porównując do klas sportowych klasę Mistrzowską. W grupie kobiet wiek wahał się w granicach 18 – 23 lata (średnia 21 lat). W grupie mężczyzn wiek wahał się w granicach 18 – 28 lat (średnia 23 lata). Długość stażu tanecznego badanych kształtowała się w granicach od 7 do 15 lat - tancerze i od 6 do 12 lat tancerki. Badane pary taneczne trenowały od 4 do 7 dni w tygodniu licząc od 10 do 28 godzin tygodniowo.

Metoda:

Do oceny budowy somatycznej wykorzystano system typologiczny A. Wankego opracowany na zespoły męskie (1954 r.) rozszerzony przez E. Kolasę na zespoły żeńskie (1969 r.) oraz Kretschmera.

Wnioski:

1. Wg systemu typologicznego A. Wankego w grupie tancerzy stylu latynoamerykańskiego prezentowanym najczęściej typem budowy był: typ czysty V (40%) oraz mieszany typ VH (40%). W niewielkim procencie prezentowany był typ mieszany VI (10%) i HA (10%). Największy udział miały elementy: V (59,00%) oraz H (20,06%).
2. Wg systemu typologicznego A. Wankego, rozszerzonego przez E. Kolasę na zespoły żeńskie w grupie tancerek stylu latynoamerykańskiego prezentowanym

najczęściej typem budowy był: typ mieszany VI (30%) oraz typ mieszany IV (30%). W niewielkim procencie prezentowany był typ mieszany IH (10%), typ czysty I (10%), typ czysty V (10%) oraz typ mieszany VH (10%). Największy udział miały elementy I (45,00%) oraz V (30,83%).

3. Wg klasyfikacji Kretschmera prezentowanym w grupie tancerzy stylu latynoamerykańskiego najczęściej był: atletyczny typ budowy ciała (80%). Pozostałe 20% stanowił pykniczny typ budowy.

4. Wg klasyfikacji Kretschmera prezentowanym w grupie tancerek stylu latynoamerykańskiego prezentowanym najczęściej typem budowy był: leptosomatyczny typ budowy ciała (60%). Pozostałe 40% stanowił atletyczny typ budowy.

Introduction

The build in many sports determined of specimens predestines for taking the determined motor initiative. As a result of conducted researches in the row sports the most essential indicators of the somatic build of competitors and competitors were distinguished, characterised both with size of individual features as well as of them proportion. They stated that the specificity of the somatic build of competitors was made conditional on character of the performed work, whereas from a point of view of biomechanics connected with the effectiveness of performed exercises. With reference to the above with assignment of the work, characterizing the somatic build of individuals practising the sports dance according to typological systems was A. Wanky and Kretschmer.

Through comprehending the typology of the build systematizing various kinds and types of the structure of the human body in terms of resemblances and individual differences understands one another guild [1, 5, 7]. The type of the build is conditioned genetically by inheriting the predisposition of the development of constitutional features. To genetic conditioning of the structure (predispositions), influences of the external environment overlap each other, in it important from a point of view of the physical education and sport factor of the move, being able to play back either positive or negative role.

The build of the man is defined variously depending on the considered aspect and the included circuit race. However from timeouts of Hipokrates in all typological systems being based on a morphology, similar concepts are met of models of the build whether or not they are called types or also a factor of action [1].

With reference to characteristics of the somatic structure a possibility of taking issues of the interdependence between somatic features, but elements is a crucial element of motricity. These issues were taken in Poland already in the twentieth years

and are continued up to contemporary timeouts. Issues of the interdependence between various effects motor, but in the different way taken hold proportion builds are a subject of scientific studies. In their result connections of the somatic structure with the motricity are stated. A determined specificity of the build with the motricity determined is identified with results of specific tests [3,4, 6]. Among others the meaning connection is made a note between the level of muscle power (static) and with mass and the height of the body and the body weight slim (LBM). Relation between the height of the body, as well as relatively with LBM high level (caused mainly with development of the active tissue), was stated in test based on high-speed abilities (results in the test on the long jump from the place. A fact that the occurrence taken note didn't appear at individuals very high, being characterized by a leptosomatic build deserves the underline. Weaker results reached also signifying persons oneself with larger content of mass of fat, however positive role in achieving results in the discussed test, played back proportion bodies, particularly the length of lower limbs. The increase in strength of the association was also observed between get in with test results, but the height of the body. Diversified connections with somatic features at both the sex was taken note between results of the test being based on endurance abilities (of long race). For the basic correctness they caught here enough considerable - stronger at girls - negative connections of results of the test with mass of fat. How he underlines [3] were these are expected results, because how demonstrated conducted tests - the test on the run on distance of 1000 m is to a considerable degree dependent on the ability of maximum consuming oxygen (VO₂ max), the one next in the biggest measuring cup correlates with the composition of the body, specifically with the proportion of the active tissue.

Purpose of the work

In work, a task of characterizing the somatic build of individuals practising the sports dance was undertaken.

Material and testing methods

Material:

Semi-final and final pairs of the sports dance constituted the research group, of the Polish championship of Amateurs in the style dance Latin American (20 persons). Largely the examined group had a "Sec." - class that is comparing the master class to sports classes. In the group of women the age fluctuated within the limits of 18 - 23 years (average of 21 years). In the group of men the age fluctuated within the limits of

18 - 28 years (average 23 flies). Length of the dance internship examined developed within the limits of from 7 up to 15 years - motoricity dancers and from 6 up to 12 years of the dancer. Examined dance pairs trained from 4 to 7 days during the week counting from 10 to 28 of hours every week.

Method:

In order to determine the specificity of the build of dancers at dancers of the sports dance they made the following measurements anthropometric:

Measurement of the body weight

Measurements longish

- height of the body (B-V)
- length of the neck (t-sst)
- length of the torso (sst-sy)

Measurements weight's

- width of bars (a-a)
- width of the chest (thl - thl)
- chest depth (xi - ths)
- width of the pelvis (ic-ic)

Tests were performed with method R. Martin according to principles of measurements anthropometric [2] using anthropometr, with arch-shaped compasses big, metric tape, electronic weighing scale.

Based on made measurements the following rates of the build were counted out:

-motoricity indicator of the torso and = motoricity/ length of the torso: height of the x100 body/

- indicator of bars and = motoricity/ width of bars: length of the x 100 torso/
- indicator of the pelvis and = motoricity/ width of the pelvis: length of the x 100 torso/
- indicator of the chest and = motoricity/ chest depth: width of the x 100 chest

Also a size of the Rohrer indicator was calculated using the formula F. Curtis in the following form:

-motoricity Rohrer indicator and = motoricity/ body weight (in grams): height of the body (in cm³) motoricity/ x 100

These results served for the evaluation of the build according to the system of typological Kretschmer where:

x (1.28 is characteristic of a leptosomatic type

The leptosomatic type is characterized by a narrow and extended build, with small weight of the body, dimensions longish predominate above weight's. The chest is flat and narrow, barges and a pelvis are narrow, vaulting horse slender acts, in general poorly muscular. Slender general construction.

1.28 (1.49 an athletic type is characteristic

The athletic type has strongly developed bones and muscles, the wide shoulder belt, narrow hips, wide and strongly vaulted chest.

General strong structure.

1.47 (x is characteristic of a type picnic.

Type picnic is characterized by a small skeleton, an underdeveloped musculature and a rich fatty tissue. Shapes of the silhouette are rounded off by the tendency of putting on weight. The chest is wide and well vaulted, short limbs, barges and the pelvis wide.

Squat general construction [2].

For determining the type of the build of individuals practising the sports dance they used the typology A. Wanky widened through E. Kolasa.

How J. Charzewski et al. [1] with method A. Wanky to determine it is possible both individual individuals, and groups or populations. One should add, that with above method populous groups of young people were characterised and of athletes. Works were taken up mainly at the Poznań Centre, as well as at other centres.

Distinguished in the system A. Wanky types are characteristic into the following way of individual features of the build.

Men:

Type and - weak general build, long torso, narrow shoulders, on average the wide pelvis, the flat chest and the small weight towards the height.

Type and - long torso, narrow shoulders, wide pelvis, barrel-shaped chest, average weight of the body towards the height.

The V type - short torso, wide barges, the narrow pelvis, the flat chest and the great weight of the body towards the height.

Type H - short torso, wide barges, wide pelvis, barrel-shaped chest, average weight of the body towards the height.

Women:

Type and - slender figure, relatively the long torso, narrow shoulders, the narrow pelvis, the deep chest and the small weight of the body towards the height.

Type and - debts towards the height torso, narrow shoulders towards the length of the torso, wide pelvis towards the height.

The V type - short torso, wide barges, narrow pelvis, flat chest, small towards the height weight of the body.

Type H - short torso, wide barges, wide pelvis, deep chest, great weight of the body towards the height [2].

Findings

Tbl. 1. Numerical characterization of features of the somatic build of dancers of the Latin American style

Features of the somatic structure	M	SD	min-max	V%
Height of the body	163.13	4.33	157.1-171.4	2.66
Body weight	52.91	5.23	47.6-63.9	9.88
Length of the torso	48.77	1.18	47.1-50.7	2.42
Width of bars	36.95	1.57	36.0-41.0	4.25
Width of hips	26.80	1.18	25.0-28.5	4.41
Width of the deep cl.	25.90	1.73	23.0-28.5	6.68
Thorax depth	18.55	1.26	17.0-21.0	6.78
Rohrer indicator	1.22	0.07	1.13-1.38	5.46
Indicator of bars	75.79	3.29	71.01-83.33	4.35
Indicator of the torso	29.90	0.67	28.30-30.75	2.25
Rate of the deep cl.	71.83	5.85	64.15 - 81.62	8.14
Indicator of the pelvis	72.61	3.72	67.11 - 77.78	5.12

In tables 1 and 2 numerical characterizations of features of the structure and indicators of somatic dancers and dancers of the style of the Latin American sports dance were introduced.

Tbl. 2. Numerical characterization of features of the somatic build of dancers of the Latin American style

Somatic features	M	SD	min-max	V%
Height of the body	176.21	5.72	166.8-184.8	3.25
Body weight	70.86	5.39	62.5 -79.1	7.61
Length of the torso	52.37	1.32	50.3-54.1	2.53
Width of bars	42.20	2.21	38.0-45.0	5.25
Width of hips	28.60	1.66	26.0-31.0	5.82
Width of the deep cl.	29.85	1.55	27.5-32.0	5.18
Thorax depth	21.35	1.68	20.0-25.0	7.89
Rohrer indicator	1.30	0.11	1.17-1.54	8.84
Indicator of bars	80.57	3.50	75.47-86.37	4.34

Indicator of the torso	29.73	0.45	28.74-30.20	1.52
Rate of the deep cl.	71.69	6.64	62.50 -	9.26
Indicator of the pelvis	67.92	4.94	59.77-75.00	7.27

Tbl. 3. Individual numerical characterization of the typological composition of the build of dancers of both dancers of the sports dance of participants in the semi-final and the final of the Polish championship of Amateurs in the typology A. Wanky (male teams) and E. Kolasa (female teams)

Typological line-up (in %)											
Dancers	AND	AND	V	H	Type	Dancers	AND	AND	V	H	Type
1.	9.98	4.48	79.23	6.31	V	1.	55.74	13.11	13.35	17.79	IH
2.	14.17	9.39	54.54	21.90	VH	2.	34.80	12.44	37.68	15.07	VI
3.	23.37	7.45	61.15	8.04	VI	3.	35.70	10.26	42.61	11.43	VI
4.	15.08	12.05	49.78	22.09	VH	4.	16.30	7.99	64.22	11.99	VI
5.	13.29	7.02	64.66	15.04	VH	5.	72.08	8.76	9.60	9.55	AND
6.	8.95	22.22	8.90	59.93	HA	6.	64.86	9.69	14.17	11.29	IV
7.	3.44	1.69	91.50	3.37	V	7.	59.61	12.41	17.88	10.11	IV
8.	8.09	5.24	72.35	14.31	V	8.	42.96	13.68	24.27	19.09	IV
9.	10.76	7.04	68.81	13.40	V	9.	14.50	6.66	70.52	8.32	V
10.	13.79	11.82	38.14	35.24	VH	10.	53.49	15.56	13.95	17.00	VH
with time	12.09	8.84	59.00	20.06	VH	with time	45.00	11.01	30.83	13.16	IV

Above (tbl. 3.) an individual characterization of the typological composition of the build of competitors and competitors planting the Latin American style was presented. The presented order in accordance with the sports level of dancers and dancers - motoricity taken space for M.P. (from 1 place).

According to assumptions of the presented typological system, if one of elements decides at least the examined individual represents the 68% clean type. In the opposite case, a type mixt up assessed based on the largest number of two elements is characteristic of an examined specimen, in addition a symbol of the element in large most numbers presented is put on the top one spot [2].

Based on the conducted test placed in a score sheet, determining (taken hold in in percentage terms) typological composition of the build of competitors and

competitors of the sports dance, they made a note, that in the group of dancers of the Latin American style presented by individual competitors there was the clean V type (40%), type VH mixt up (40%) and in the little per cent type mixt up VI (10%) and Ha (10%).

In the analyzed group the V elements had a large stake (59.00%) and H (20.06%). For the whole of the group of the discussed dance style drawing 1 contains the test of the percentage share of individual elements.

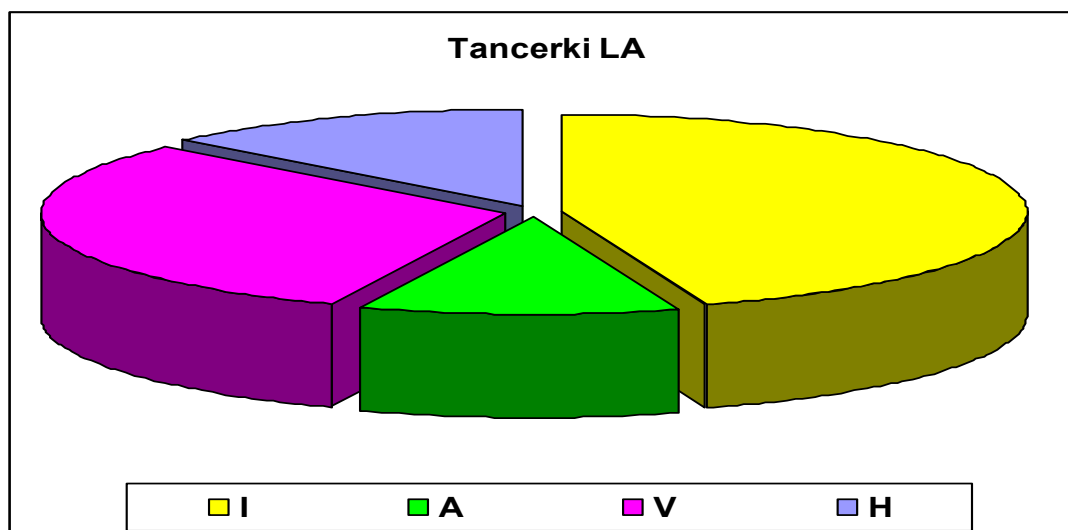


Fig. 1. Interest-bearing share of the typological composition of the build of dancers of the sports dance of the Latin American style (semi-finalists and finalists of the Polish championship of Amateurs) according to the typology A. Wanky

The following types of the build being characteristic of competitors planting this dance style were made a note in the group of dancers of the Latin American style: presented the 30% type mixt up VI, 30% type mixt up IV, 10% type IH mixt up, 10% clean type and, 10% clean type V and 10% type VH mixt up.

In the analyzed group elements had a large stake and (45.00%) and V (30.83%). Drawing 2 contains the test of the percentage share in the group of the discussed dance style.

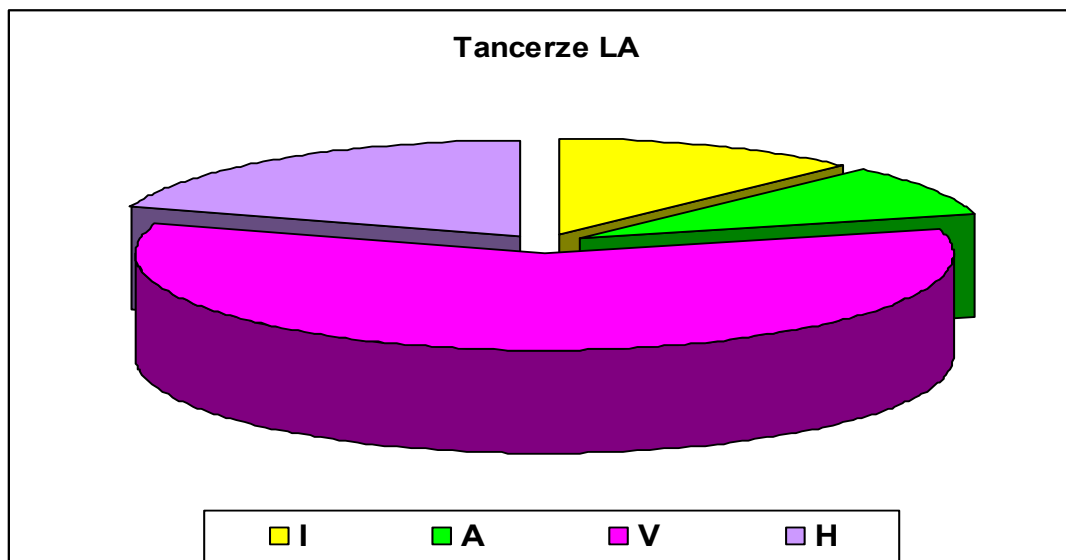


Fig. 2. Interest-bearing share of the typological composition of the build of dancers of the sports dance of the Latin American style (semi-finalists and finalists of the Polish championship of Amateurs) according to the typology A. Wanky

Tbl. 2. Individual sizes of the Rohrer indicator of dancers of dancers and the sports dance, of Latin American style - of participants in the Polish championship of Amateurs and ranking according to the system of Kretschmer - presented results of places according to the order taken (from the top one spot)

Dancers La		Dancers La	
Size of the Rohrer indicator	Ranking	Size of the Rohrer indicator	Ranking
1.23	athletic type	1.23	athletic type
1.20	athletic type	1.21	leptosomatic type
1.17	athletic type	1.25	athletic type
1.28	athletic type	1.38	athletic type
1.54	pyknic type	1.19	leptosomatic type
1.33	athletic type	1.23	athletic type
1.44	pyknic type	1.13	leptosomatic type
1.24	athletic type	1.18	leptosomatic type
1.32	athletic type	1.16	leptosomatic type
1.22	athletic type	1.21	leptosomatic type

Table 2 (above) introduces the Rohrer indicator of dancers of dancers and the sports dance, the Latin American style and him to the size ranking in the system of Kretschmer.

How he results from data presented in the style introduced table 2 in the group of dancers Latin American most oftentimes was: athletic type of the build (80%). Remaining the 20% constituted the pyknic type of the structure. In the group of dancers of the Latin American style he was a presented most oftentimes type of the structure: leptosomatic type of the build (60%). Remaining the 40% constituted the athletic type of the structure.

Conclusions:

1. According to typological system A. Wanky in the group of dancers of the Latin American style was a presented most oftentimes type of the structure: clean type V (40%) and type VH mixt up (40%). In the little per cent a type mixt up was presented VI (10%) and Ha (10%). Elements had a large stake: V (59.00%) and H (20.06%).
2. According to typological system A. Wanky, widened through E. Kolasa to female teams in the group of dancers of the Latin American style was a presented most oftentimes type of the structure: type mixt up VI (30%) and type mixt up IV (30%). In the little per cent a type IH mixt up was presented (10%), clean type and (10%,) clean type V (10%) and type VH mixt up (10%). Elements had a large stake and (45.00%) and V (30.83%).
3. According to introduced the ranking of Kretschmer in the group of dancers of the Latin American style most oftentimes was: athletic type of the build (80%). Remaining the 20% constituted the pyknic type of the structure.
4. According to type introduced the ranking of Kretschmer in the group of dancers of the Latin American style presented most oftentimes of the structure was: leptosomatic type of the build (60%). Remaining the 40% constituted the athletic type of the structure.

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