

Original article

## Physical fitness of candidates to the General Tadeusz Kościuszko Military University of Land Forces

Dariusz Jamro<sup>1\*</sup> , Dariusz Lenart<sup>1</sup> , Grzegorz Żurek<sup>2</sup> 

<sup>1</sup> Department of Physical Education and Sport,  
General Tadeusz Kościuszko Military University of Land Forces, Wrocław, Poland,  
e-mail: [dariusz.jamro@awl.edu.pl](mailto:dariusz.jamro@awl.edu.pl); [dariusz.lenart@awl.edu.pl](mailto:dariusz.lenart@awl.edu.pl)

<sup>2</sup> Department of Biostructure, University of Physical Education in Wrocław, Poland,  
e-mail: [grzegorz.zurek@awf.wroc.pl](mailto:grzegorz.zurek@awf.wroc.pl)

### INFORMATION

#### Article history:

Submitted: 27 November 2020

Accepted: 08 February 2021

Published: 15 December 2021

### ABSTRACT

The study is to compare the level of comprehensive physical fitness of accepted candidates to the Wrocław military university in 2015 and in 2019 depending on the type of high school completed. The research material was collected from the motor tests conducted during the recruitment process to the Wrocław military university. The study included measurements of endurance, relative strength, running speed and agility, and swimming skills. The level of all analyzed functional traits of candidates admitted to the university in 2015 is statistically significantly higher compared to men accepted to the university in 2019. The type of secondary school completed does not significantly differentiate the level of comprehensive physical fitness of candidates to the Wrocław military university, both in 2015 and 2019. The type of secondary school completed does not significantly differentiate the level of all-round physical fitness of applicants to the Wrocław military university, either in 2015 or 2019.

### KEYWORDS

physical fitness, motor skills, movement skills

\* Corresponding author



© 2021 by Author(s). This is an open access article under the Creative Commons Attribution International License (CC BY). <http://creativecommons.org/licenses/by/4.0/>

## Introduction

The issue of various determinants of human physical development is widely known. Both genetic and external environmental factors affect the level of shaping traits and an individual's development rate. The fundamental external factors influencing human development include socio-economic factors, also referred to as civilization and cultural modifiers. Many researchers mention the level of parents' education and culture [1-4], organization of leisure time [5-6], size of the social environment [7-8], and marital status [9-12] in the group of determinants. The impact and level of influence of individual factors of the social environment on human biological development are challenging as they occur in diverse interrelations. For that reason, many attempts to interpret the mechanisms of formation of the phenomenon of differential physical fitness cannot always be considered reliable [13].

The soldiers' physical development, including their physical fitness, is the subject of many researchers' interest, both at home and abroad. Numerous authors address the variability of somatic characteristics and physical fitness in their publications [14-16]. A considerable number of researchers also focus their analyses on the impact of compulsory physical activity in service and physical activity in leisure time on the effectiveness of fulfilling various tasks [17-19]. The issues of the influence of physical activity on the soldiers' state of health and their physical fitness level are also the point of interest of many authors [20-21].

Many researchers addressed the physical fitness of candidates and cadets of foreign and Polish military universities. It is particularly interesting and important because an accurate analysis and assessment of the physical fitness of officer candidates significantly enable the effective implementation of the educational process for military students [22-28].

The research mentioned above issues concerning candidates and military students of the General Tadeusz Kościuszko Military Academy of Land Forces in Wrocław (since 2017, the General Tadeusz Kościuszko Military University of Land Forces) were taken up in their publications by many researchers. A significant part of their studies concerned assessing the somatic constitution and physical fitness and efficiency of the Wrocław military school cadets [29-35]. Plezia [36] dealt with the tendency of changes in physical fitness in terms of the secular trend of candidates of the Wrocław military school.

## Research objective

The study aims to compare the level of comprehensive physical fitness of the candidates accepted to the Wrocław military university in 2015 and in 2019 depending on the type of secondary school completed.

## Materials and methods

The research material was collected from the conducted battery of fitness tests as part of the 2015 and 2019 recruitment process at the Wrocław military university. Only the results of candidates who were eventually admitted to the military university, i.e., 445 males, including 138 in 2015 and 307 in 2019, were analyzed.

There was made a categorization of the types of secondary schools completed by candidates, among which the following were distinguished: general secondary schools, technical schools, complexes of vocational schools, and sports championship schools.

The level of comprehensive physical fitness was determined based on results from the following battery of tests:

- 1) a 1000 m run (a test to determine the candidates' endurance),
- 2) a bent arm position while hanging from a bar (a test to determine the candidates' relative strength),
- 3) the 10×10 m shuttle run (a test to determine candidates' running speed and agility),
- 4) swimming 50 m freestyle (a test to determine the candidates' swimming ability).

All men performed the motor tests in sportswear in the sports facilities of the University.

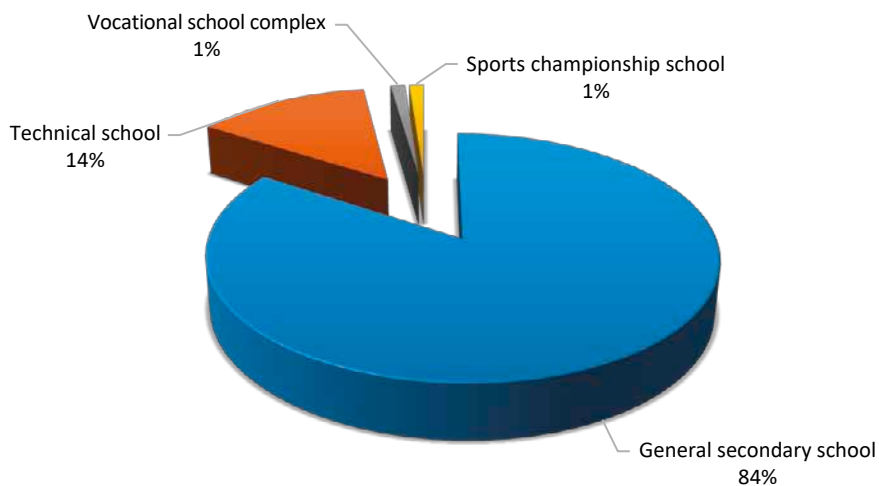
The collected material was processed using basic statistical methods. The arithmetic mean, standard deviation, and coefficient of variation were calculated.

The Student's t-test for independent attempts was performed to determine the statistical significance of the differences between the mean values of the results of functional trait

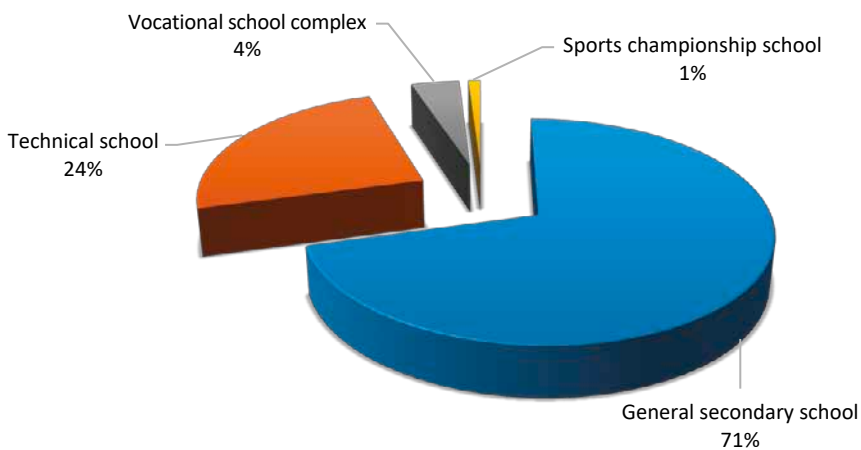
measurements of the total accepted candidates in 2015 and in 2019 and the differences between the mean values of the results of functional trait measurements of the admitted candidates in the analyzed recruitment processes depending on the type of high school completed.

## Results

Among all secondary school graduates accepted to the military university in Wrocław, both in 2015 and 2019, the largest percentage are graduates of general secondary schools (75%) and technical schools (21%). The exact percentage distribution of the types of secondary school completed by candidates admitted to the Wrocław military university in 2015 and 2019 is presented below (Fig. 1-2).



**Fig. 1.** Types of completed secondary schools by candidates accepted to the Wrocław military university in 2015  
*Source: Own study.*

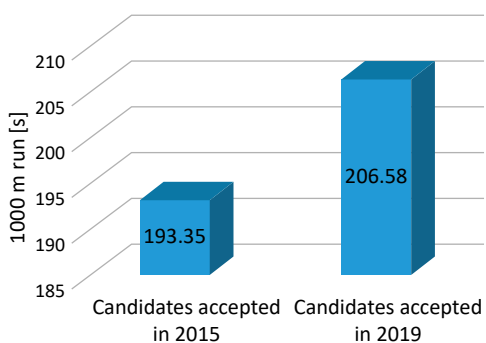


**Fig. 2.** Types of secondary schools completed by candidates admitted to the Wrocław military university in 2019  
*Source: Own study.*

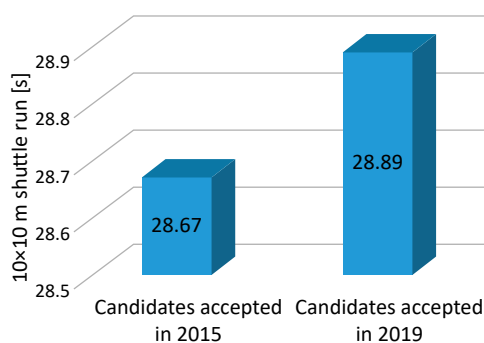
Due to the insufficient number of candidates that graduated from secondary schools other than general secondary and technical ones, the results obtained by them were not analyzed in the paper.

The level of all the functional traits analyzed in the study, i.e., endurance, relative strength, running speed and agility, and swimming skills of candidates in 2015, is statistically significantly higher than males accepted to the university in 2019 (Table 1, Fig. 3-6). Regardless of the considered group of men, the mean values of coefficients of variation are the lowest for running speed and agility, and endurance, higher for relative strength and swimming skills. The values of the coefficients of variation of the results achieved by the candidates of both groups show that the tested men are most differentiated by relative strength. The lowest variability characterizes the results of the speed and agility test (Table 1).

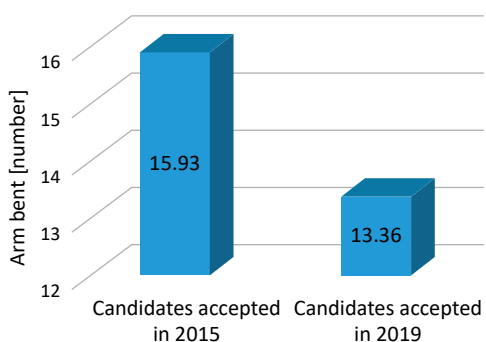
In the recruitment process to the Military University of Land Forces in 2015, graduates of general secondary schools were characterized by a higher level of relative strength compared to graduates of technical schools. However, attention should be paid to the relatively small number of candidates representing technicians. The remaining differences of the analyzed functional characteristics are statistically insignificant (Table 2, Fig. 7).



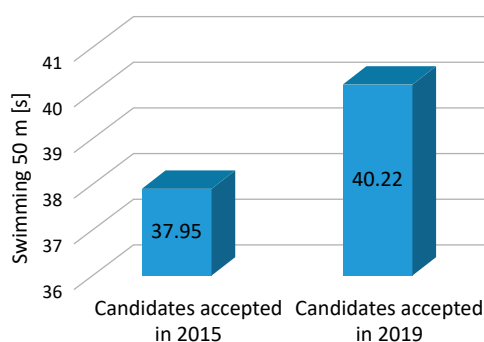
**Fig. 3.** The strength of candidates accepted at the Wrocław military university in 2015 and 2019  
*Source: Own study.*



**Fig. 4.** The running speed and agility of the candidates adopted to the Wrocław military university in 2015 and 2019  
*Source: Own study.*



**Fig. 5.** The relative strength of candidates accepted to the Wrocław military university in 2015 and 2019  
*Source: Own study.*



**Fig. 6.** The swimming ability of the candidates admitted to the Wrocław military university in 2015 and 2019  
*Source: Own study.*

**Table 1.** Numerical characteristics of physical fitness test attempts – all tested candidates

No.	Attempt	Candidates accepted							t	p
		in 2015 N = 138			in 2019 N = 307					
		$\bar{x}$	s	v	$\bar{x}$	s	v			
1	1000 m run [s]	193.35	11.54	5.97	206.58	16.58	8.03	8.49	<b>0.00*</b>	
2	10×10 m shuttle run [s]	28.67	0.82	2.86	28.89	0.85	2.94	2.60	<b>0.01*</b>	
3	arm bent [number]	15.93	4.03	25.30	13.36	3.84	28.74	6.44	<b>0.00*</b>	
4	swimming 50 m [s]	37.95	5.48	14.44	40.22	7.28	18.10	3.28	<b>0.00*</b>	

\* – significant at the level of  $p \leq 0.05$ .

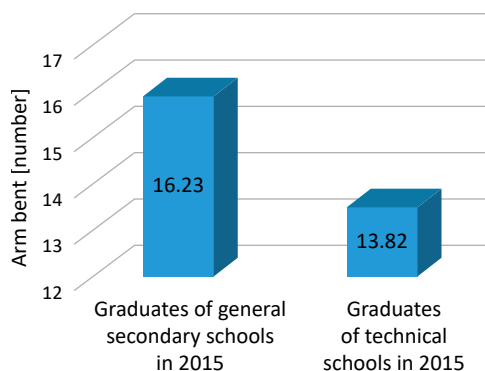
Source: Own study.

**Table 2.** Numerical characteristics of the physical fitness test attempts of the studied graduates of general secondary schools and technical schools – the 2015 study

No.	Attempt	Candidates accepted to the university in 2015							t	p
		Graduates of general secondary schools N = 121			Graduates of technical schools N = 17					
		$\bar{x}$	s	v	$\bar{x}$	s	v			
1	1000 m run [s]	192.96	11.70	6.06	196.12	10.16	5.18	1.06	0.29	
2	10×10 m shuttle run [s]	28.66	0.83	2.90	28.75	0.78	2.71	0.42	0.68	
3	arm bent [number]	16.23	3.94	24.28	13.82	4.16	30.10	2.34	<b>0.02*</b>	
4	swimming 50 m [s]	37.74	5.41	14.33	39.47	5.93	15.02	1.22	0.22	

\* – significant at the level of  $p \leq 0.05$ .

Source: Own study.



**Fig. 7.** The relative strength of general and technical high school graduates admitted to the Wrocław military university in 2015

Source: Own study.

Table 3 presents the statistical characteristics of selected functional traits of candidates admitted to the Military University of Land Forces in 2019. The analysis revealed no differences in the mean values of the tested functional characteristics between the graduates of general secondary schools and technical schools.

**Table 3.** Numerical characteristics of the physical fitness test attempts of the studied graduates of general secondary schools and technical schools – the 2019 study

No.	Attempt	Candidates accepted to the university in 2019							
		Graduates of general secondary schools N = 228			Graduates of technical schools N = 79			t	p
		$\bar{x}$	s	v	$\bar{x}$	s	v		
1	1000 m run [s]	206.44	16.92	8.20	206.99	15.65	7.56	0.25	0.80
2	10×10 m shuttle run [s]	28.89	0.86	2.98	28.91	0.80	2.77	0.17	0.87
3	arm bent [number]	13.37	4.04	30.22	13.32	3.21	24.10	0.11	0.91
4	swimming 50 m [s]	40.35	7.16	17.74	39.86	7.66	19.22	0.51	0.61

\* – significant at the level of  $p \leq 0.05$ .

Source: Own study.

## Discussion

Military education at the Military University of Land Forces in Wrocław (formerly the Military Academy of Land Forces) is one of the elements of the training system in the Polish Armed Forces [37]. The military education for officer candidates, who are graduates of high schools, aims to prepare them in basic theoretical and practical terms to perform tasks in their first officer posts. The level of knowledge and skills mastered by them during the didactic process should allow them to effectively solve organizational problems, plan, organize and conduct tactical actions in the composition of a platoon.

Influencing motor skills of that group of men, mainly stimulating changes of individual somatic and functional parameters, is essential in the military training process realized by the Wrocław Military University.

The evaluation of the physical fitness level is an essential criterion for selecting candidates for specific professional groups. It becomes imperative when the health and high level of fitness and physical efficiency are the condition of military students' effective education and service. Therefore, a fitness test plays a significant role in the recruitment process to the Military University of Land Forces. One of its fundamental aims is to separate from all candidates with the highest level of comprehensive physical fitness.

The results of the conducted research indicate that the social factor, which is the type of secondary school completed, did not considerably influence the level of comprehensive physical fitness of candidates to the Wrocław military university in 2015 and 2019. The exception is the significantly higher level of relative strength in graduates of general secondary schools

compared to graduates of technical schools, who were accepted to the Military Academy of Land Forces in 2015.

The results obtained in testing candidates accepted to the Wrocław military academy from the 1970s to the present constituted the material for the comparisons.

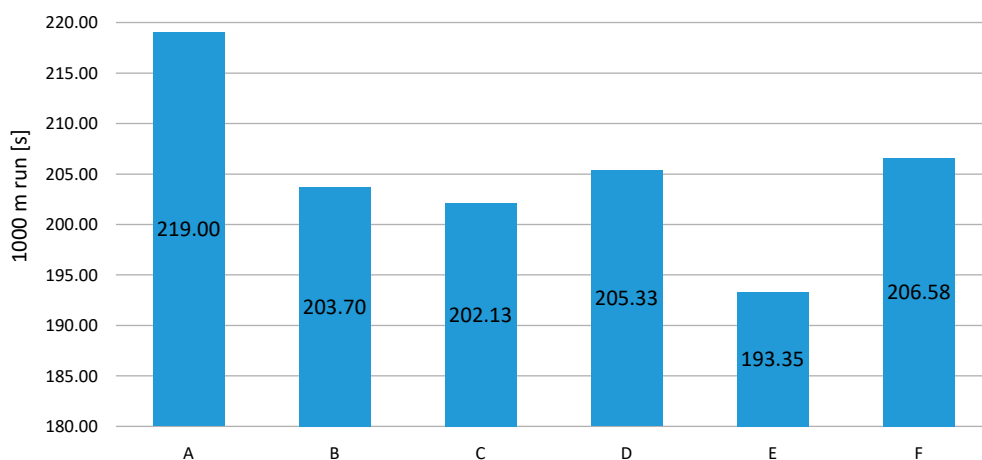
Comparison of the results of running at the distance of 1000 m of the candidates admitted to the Wrocław military university from our research with the results obtained by the candidates from previous years makes it possible to state that, in terms of endurance, the men accepted to the University in 2019 are characterized by a similar level of that motor predisposition concerning other candidate teams (Fig. 8). Only the 2015 candidates outperform all other groups of respondents in terms of endurance levels.

The men from both the 2015 and 2019 own studies dominate the men from the other teams in terms of relative strength levels (Fig. 9).

The results obtained by the candidates from both study groups clearly indicated that they outperformed the other teams of the tested men in terms of their mastery of swimming skills (Fig. 10).

## Conclusions

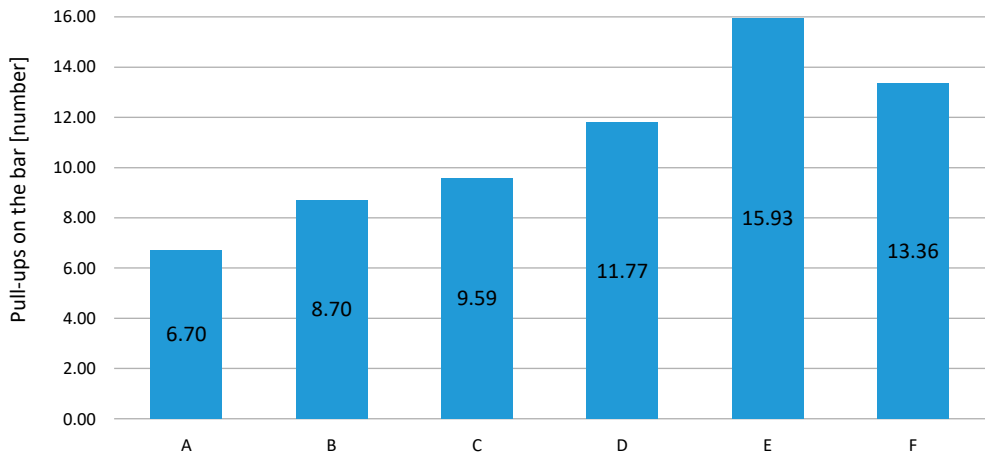
1. The levels of endurance, relative strength, running speed and agility, and swimming skills of candidates admitted to the military university in 2015 are statistically higher compared to men accepted in 2019.



Legend:

- A – candidates admitted to the Higher Officer School of the Mechanized Forces in 1972
- B – candidates admitted to the Higher Officer School of the Mechanized Forces in 1983
- C – candidates admitted to the Military Academy of Land Forces in 1998
- D – candidates admitted to the Military Academy of Land Forces in 2004
- E – candidates from own study of 2015
- F – candidates from own study of 2019

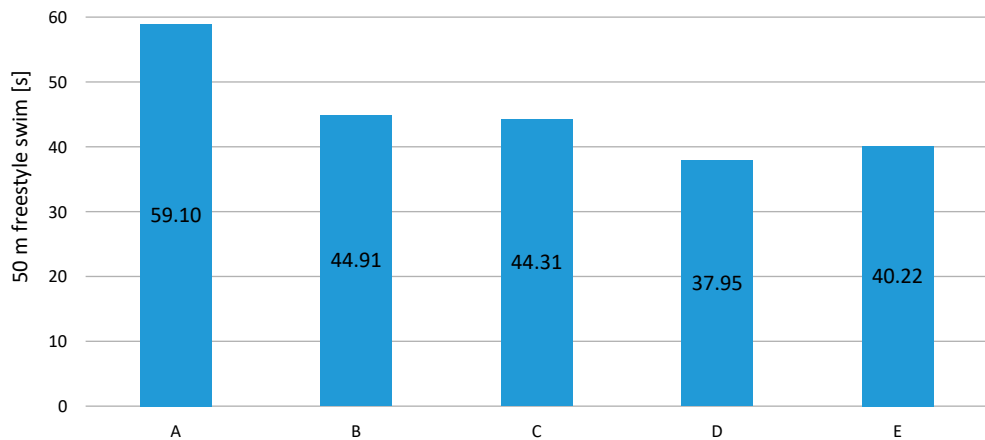
**Fig. 8.** Average running time over a distance of 1000 m  
*Source: Own study based on [23; 38-40].*



Legend:

- A – candidates admitted to the Higher Officer School of the Mechanized Forces in 1972
- B – candidates admitted to the Higher Officer School of the Mechanized Forces in 1983
- C – candidates admitted to the Military Academy of Land Forces in 1998
- D – candidates admitted to the Military Academy of Land Forces in 2004
- E – candidates from own study of 2015
- F – candidates from own study of 2019

**Fig. 9.** Average number of pull-ups on the bar  
 Source: Own study based on [23; 38-40].



Legend:

- A – candidates admitted to the Higher Officer School of the Mechanized Forces in 1983
- B – candidates admitted to the Military Academy of Land Forces in 1998
- C – candidates admitted to the Military Academy of Land Forces in 2004
- D – candidates from own study of 2015
- E – candidates from own study of 2019

**Fig. 10.** Average time for the 50 m freestyle swim  
 Source: Own study based on [23; 39-40].



2. The type of secondary school completed did not significantly differentiate the level of all-round physical fitness of candidates to the Wrocław military university, both in 2015 and 2019. Only in the recruitment process to the Military University of Land Forces in 2015, graduates of general secondary schools were statistically characterized by significantly higher relative strength compared to graduates of technical schools.
3. The obtained results indicate a trend of decreasing level of physical fitness of candidates for studies at the Military University of Land Forces. In consequence, it may imply the necessity to put more emphasis on the motor training of future professional soldiers during their studies at the Military University in Wrocław.

### Acknowledgement

No acknowledgement and potential founding was reported by the authors.

### Conflict of interests

All authors declared no conflict of interests.


### Author contributions


All authors contributed to the interpretation of results and writing of the paper. All authors read and approved the final manuscript.


### Ethical statement

The research complies with all national and international ethical requirements.

### ORCID

Dariusz Jamro  <https://orcid.org/0000-0002-8724-2365>

Dariusz Lenart  <https://orcid.org/0000-0002-0229-2444>

Grzegorz Żurek  <https://orcid.org/0000-0002-1795-4367>

### References

1. Sławińska T. *Uwarunkowanie środowiskowe w rozwoju motoryczności dzieci wiejskich*. Wrocław: Wydawnictwo AWF; 2000.
2. Andersen MP, Mortensen RN, Vardinghus-Nielsen H, Franch J, et al. *Association between physical fitness and academic achievement in a cohort of Danish school pupils*. Journal of School Health. 2016;86(9):686-95.
3. Kozakevych VK, Ziuzina LS, Zhuk LA, Korovina LD. *The role of social and economic factors in the formation of the somatic health level in school-aged children*. Wiadomości Lekarskie. 2018;71(3):537-41.
4. Andersen MP, Valeri L, Starkopf L, Mortensen RN, et al. *The mediating effect of pupils' physical fitness on the relationship between family socioeconomic status and academic achievement in a Danish school cohort*. Sports Medicine. 2019;49(8):1291-301.
5. Migueles JH, Cadenas-Sanchez C, Ekelund U, Nyström CD, et al. *Accelerometer data collection and processing criteria to assess physical activity and other outcomes: a systematic review and practical considerations*. Sports Medicine. 2017;47(9):1821-45.
6. Crouter SE, Salas C, Wiecha J. *Effects of an afterschool community center physical activity program on fitness and body composition in obese youth*. Journal of Sports Sciences. 2017;35(11):1034-40.
7. Bergier J, Bergier B, Tsos A. *Place of residence as a factor differentiating physical activity in the life style of Ukrainian students*. Annals of Agricultural and Environmental Medicine. 2016;23(4):549-52.

8. Torres-Luque G, Hernández-García R, Ortega-Toro E, Nikolaidis PT. *The effect of place of residence on physical fitness and adherence to mediterranean diet in 3-5-year-old girls and boys: urban vs. rural*. *Nutrients*. 2018;10(12):1855.
9. Lipowicz A. *Marital status and biological condition of Polish males*. *Anthropological Review*. 2001;64:81-91.
10. Lenart D. *Zmienność rozwoju somatycznego i sprawności fizycznej mężczyzn Studium Oficerskiego w aspekcie ich stanu cywilnego*. *Zeszyty Naukowe Wyższej Szkoły Oficerskiej Wojsk Lądowych im. gen. Tadeusza Kościuszki*. 2009;154(4):125-38.
11. Rauer A, Hornbuckle LM. *If he is in shape, so is the marriage: perceptions of physical fitness and exercise and older couples' marital functioning*. *Journal of Aging and Physical Activity*. 2019;27(4):503-9.
12. Wood N, McMunn A, Webb E, Stafford M. *Marriage and physical capability at mid to later life in England and the USA*. *PLoS One*. 2019;14(1):e0209388.
13. Osiński W. *Antropomotoryka*. Poznań: Wydawnictwo AWF Poznań; 2003.
14. Knapik JJ, Redmond JE, Grier TL, Sharp MA. *Secular trends in the physical fitness of United States Army infantry units and infantry soldiers 1976-2015*. *Military Medicine*. 2018;183(11/12):414-26.
15. Lissner L, Mehlig K, Rosengren A, Toren K, et al. *A growing social divide in body mass index, strength, and fitness of Swedish male conscripts*. *Journal of Adolescent Health*. 2019;65(2):232-38.
16. Gassmann NN, Matthes KL, Eppenberger P, Brabec M, et al. *Residential Ititude Associates with endurance but not muscle power in young Swiss men*. *Frontiers in Physiology*. 2020;11:860.
17. Thomas DQ, Lumppp SA, Schreiber JA, Keith JA. *Physical fitness profile of army ROTC cadets*. *Journal of Strength & Conditioning Research*. 2004;18(4):904-7.
18. Pławiņa L. *Evaluation of cadets' physical preparedness and fitness*. *Papers on Anthropology*. 2010;19:292-302.
19. Basar MJ, Stanek JM, Dodd DD, Begalle RL. *The Influence of corrective exercises on functional movement screen and physical fitness performance in army ROTC Cadets*. *Journal of Sport Rehabilitation*. 2019;28(4):360-67.
20. Blacker SD, Horner FL, Brown PI, Linnane DM, et al. *Health, Fitness, and Responses to Military Training of Officer Cadets in a Gulf Cooperation Council Country*. *Military Medicine*. 2011;176(12):1376-81.
21. Haddock CK, Poston WSC, Heinrich KM, Jahnke SA, et al. *The benefits of high-intensity functional training fitness programs for military personnel*. *Military Medicine*. 2016;181(11):1508-14.
22. Uhorchak JM, Scoville CR, Williams GN, Arciero RA, et al. *Risk factors associated with noncontact injury of the anterior cruciate ligament: a prospective four-year evaluation of 859 West Point cadets*. *American Journal of Sports Medicine*. 2003;31(6):831-42.
23. Doliński M, Domaradzki J. *Analiza struktury morfofunkcjonalnej kandydatów do Wyższej Szkoły Oficerskiej*. In: Drozdowski S, Sokołowski M (eds.). *Motoryczne i somatyczne kryteria selekcji żołnierzy w służbie zawodowej*. Poznań: Wydawnictwo Akademii Wychowania Fizycznego; 2006, p. 107-19.
24. Mariü L, Krsmanoviü B, Mraoviü T, Gogiü A, et al. *Efikasnost fizipkog vaspitanja kadeta vojne akademije tokompvetvorogodišnjih studija*. *Vojnosanitetski Pregled*. 2013;70(1):16-20.
25. Steed CL, Krull BR, Morgan ML, Tucker RM, et al. *Relationship between body fat and physical fitness in army ROTC cadets*. *Military Medicine*. 2016;181(9):1007-12.
26. Zheng JM, Fang SC, Hu F, Ju QL, et al. *Incidence and Characteristics of Meniscal Injuries in Cadets at a Military School 2013-2015*. *Journal of Athletic Training*. 2016;51(11):876-79.
27. Vantarakis A, Chatzinikolaou A, Avloniti A, Vezos N, et al. *2-month linear periodized resistance exercise training improved musculoskeletal fitness and specific conditioning of navy cadets*. *Journal of Strength & Conditioning Research*. 2017;31(5):1362-70.
28. Aandstad A, Sandberg F, Hageberg R, Kolle E. *Change in anthropometrics and physical fitness in Norwegian cadets during 3 years of military academy education*. *Military Medicine*. 2020;185(7/8):1112-19.
29. Reczko W, Gątkiewicz M. *Budowa somatyczna i sprawność fizyczna podchorążych WSOWZ*. *Poglądy i Doświadczenia*. 1989;3:39-50.

30. Reczko W. *Współzależność cech morfologicznych, sprawności i wydolności fizycznej podchorążych Wyższej Szkoły Oficerskiej Wojsk Zmechanizowanych*. Rozprawa Doktorska. Wrocław: Wydawnictwo AWF; 1993.
31. Doliński M, Ignasiak Z. *Poziom zdolności motorycznych w kategoriach BMI kandydatów do wyższej szkoły oficerskiej*. In: Sokołowski M (ed.). *Morfofunkcjonalne uwarunkowania i skutki służby wojskowej*. Poznań: Wydawnictwo WSO; 2001, p. 43-7.
32. Plezia L. *Kierunki rozwoju morfofunkcjonalnego studentów Wyższej Szkoły Oficerskiej im. T. Kościuszki w ujęciu trendu sekularnego*. [Dissertation]. Wrocław: Wydawnictwo AWF; 2001.
33. Doliński M. *Zmienność rozwoju morfofunkcjonalnego studentów wyższej szkoły oficerskiej w świetle wybranych czynników stylu życia*. [Dissertation]. Wrocław: Wydawnictwo AWF; 2002.
34. Lenart D. *Sports activity as a factor differentiating the level of somatic constitution and physical fitness of officer cadets at the Military Academy of Land Forces*. Human Movement. 2015;16(4):195-99.
35. Lenart D. *The location of back pain as a factor differentiating the physical fitness of cadets of the Military Academy of Land Forces*. Baltic Journal of Health and Physical Activity. 2019;11(2):85-98.
36. Plezia L. *Trend sekularny cech morfofunkcjonalnych podchorążych Wyższej Szkoły Oficerskiej im. Tadeusza Kościuszki*. In: Sokołowski M (ed.). *Morfofunkcjonalne uwarunkowania i skutki służby wojskowej*. Poznań: Wydawnictwo WSO; 2001, p. 105-18.
37. Junczewicz A. *System szkolenia oddziałów (pododdziałów) wojsk lądowych*. Warszawa: Wydawnictwo AON; 2006.
38. Pawlikowski A. *Wyjściowa sprawność fizyczna kandydatów do Wyższej Szkoły Oficerskiej Wojsk Zmechanizowanych w roku szkolnym 1971/72*. Poglądy i Doświadczenia. 1972;3:31-45.
39. Dąbrowski M. *Poziom sprawności fizycznej kandydatów do WSOWZ na tle obowiązujących norm*. Poglądy i Doświadczenia. 1983;4:52-56.
40. Doliński M, Plezia L, Meńkarski M. *Analiza struktury morfofunkcjonalnej kandydatów do Wyższej Szkoły Oficerskiej im. Tadeusza Kościuszki*. Poglądy i Doświadczenia. 2000;1:53-63.

## Biographical note

**Dariusz Jamro** – Lt., M.A., Assistant in the Department of Physical Education and Sport at the General Tadeusz Kościuszko Military University of Land Forces in Wrocław. The publication is an introduction to the research project and further scientific work of the author.

**Dariusz Lenart** – Lt. Col., Ph.D., Assistant Professor and the Head of the Department of Physical Education and Sport at the General Tadeusz Kościuszko Military University of Land Forces in Wrocław. In his scientific publications, he undertakes the following research problems: Rozwój morfofunkcjonalny człowieka w ontogenezie (Morphofunctional development of human in ontogenesis); Uwarunkowania środowiskowe rozwoju somatycznego i sprawności fizycznej żołnierzy zawodowych i kandydatów na żołnierzy zawodowych (Environmental determinants of somatic development and physical fitness of professional soldiers and candidates for professional soldiers); Morfologiczne modulatory sprawności fizycznej żołnierzy (Morphological modulators of soldiers' physical fitness); Wpływ kondycji biologicznej człowieka na stopień opanowania umiejętności żołnierskich (Influence of human biological condition on the degree of mastering soldier's skills); Trend sekularny budowy somatycznej i cech funkcjonalnych studentów uczelni wojskowych (The secular trend of somatic structure and functional characteristics of students of military universities); Rozwój fizyczny żołnierzy w świetle wybranych czynników stylu i jakości życia (Physical development of soldiers in the light of selected lifestyle and life quality factors); Aktywność fizyczna żołnierzy zawodowych i kandydatów na żołnierzy zawodowych (Physical activity of professional soldiers and candidates for professional soldiers).

**Grzegorz Żurek** – Ph.D., Professor of the University of Physical Education in Wrocław, author of over 100 scientific publications, visiting professor at American universities, in his scientific work he deals with factors supporting cognitive functions, conducts classes in neurocognitive science, mental training, and neuroanatomy. He is interested in contemporary history and economic changes in the world; he is physically active, swims and rides a bicycle.

---

### **Sprawność fizyczna kandydatów do Akademii Wojsk Lądowych imienia generała Tadeusza Kościuszki**

---

#### **STRESZCZENIE**

Celem pracy jest porównanie poziomu wszechstronnej sprawności fizycznej przyjętych kandydatów do wrocławskiej uczelni wojskowej w 2015 i w 2019 roku w zależności od rodzaju ukończonej szkoły średniej. Materiał badawczy został zebrany w wyniku przeprowadzenia testów motorycznych podczas procesu rekrutacji do wrocławskiej uczelni wojskowej. Badania obejmowały pomiary wytrzymałości, siły relatywnej, szybkości biegowej i zwinności oraz umiejętności pływania. Poziom wszystkich analizowanych w pracy cech funkcjonalnych kandydatów przyjętych do uczelni w 2015 roku jest istotnie statystycznie wyższy w porównaniu do mężczyzn przyjętych do uczelni w 2019 roku. Typ ukończonej szkoły średniej w istotny sposób nie różnicuje poziomu wszechstronnej sprawności fizycznej kandydatów do wrocławskiej uczelni wojskowej, zarówno w 2015, jak i 2019 roku.

---

**SŁOWA KLUCZOWE**    sprawność fizyczna, zdolności motoryczne, umiejętności ruchowe

#### **How to cite this paper**

Jamro D, Lenart D, Żurek G. *Physical fitness of candidates to the General Tadeusz Kościuszko Military University of Land Forces*. Scientific Journal of the Military University of Land Forces. 2021;53;4(202):652-63.

DOI: <http://dx.doi.org/10.5604/01.3001.0015.6171>



This work is licensed under the Creative Commons Attribution International License (CC BY).  
<http://creativecommons.org/licenses/by/4.0/>