

# Body height of Montenegro Army members of different military specialties

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## Dear Editor-in-Chief,

The characteristics of military specialties can be defined by different physical, physiological and biochemical parameters. Various analysis are used for determining such parameters, out of which the most important are: anthropometric, motor, functional and biomechanical [1]. Anthropometric measurements for the purpose of setting certain referential values and norms, which are applied for grouping soldiers into a certain military branch or military specialty, are widely used in the armed forces worldwide [2]. Body height as the most dominant parameter of longitudinal dimensionality of the skeleton in such processes has expressed significance [3]. Bearing in mind that the military organization is a specific system of functioning which produces the effect of numerous factors during the process of selection and training for certain military specialties [4], the aim of this study related to determining the existence of eventual differences in the body height with soldiers of different military specialties.

The sample of 150 soldiers which has been covered by the analysis, was divided on five subsamples with 30 examinees each: I (pilots), II (land special forces), III (marine saboteurs), IV (logistics) and V (guardsmen). The measure of body height was taken in accordance with the Protocol for anthropometric research of soldiers [5]. When calculating the average values of the stated measure, descriptive statistics has been used. The following results were obtained: I (bh=180.2); II (bh=179.4); III (bh=179.5); IV (bh=180.6); V (bh=184.0). The domination in body height compared to other military specialties has been shown by the guardsmen. These types of differences are no wonder when we are talking about the soldiers of the honor guards, bearing in mind the strict selection process during their selection, where one of the most dominant criteria refers specifically to certain standards of body height. Land special forces and the marine saboteurs have contributed with deviations in the sense of the least body height. This value of body height has shown great similarity with the equivalent with military special forces of Austria[6], as well as the police special forces of Slovenia [7] and Serbia [8]. This kind of match shows that certain values of body height are extremely important in special forces due to efficiency of performing special tasks where the most dominating ones are movement forms (crawling, dragging, vertical descent in narrow spaces, descent on the platform in the „spider“ manner, descent from the helicopter, raid effect on apartment facilities and

transport assets etc.). In addition, deviations compared to guardsmen have been shown by the logistics and pilots. For logistics we can reliably confirm that certain body height does not have any connection with the specific performance of their tasks. Namely, this is mainly about supplying and handling other army units with food, water, medical material and other necessary material and technical assets. However, with the pilots the body height must be in accordance with certain standards due to dimensionality of aircraft cockpit, where the aim is the sitting height which must not exceed certain standards compared to the type of the aircraft seat. This first of all relates to aircraft which possess the function of pilot catapult, so that such circumstances wouldn't cause his\her injuring in the cervical part of the spinal column[9]. The pilots of the helicopter during the flight must have the precise control of the cyclic stick, which is directly in front of the seat, collective stick from the left side and two pedals of foot commands. The position imposed to the pilot on this includes leaning forward, with the semirotation of the body and is called helicopter curvature[10]. This is why it is necessary that the standards are met for the length of legs and the sitting height, so that the helicopter pilot would have optimal possibilities of managing the commands with lower extremities. Since the pilots when being accepted for training are selected bearing in mind the previously mentioned, then it is clear why they deviated in average values of body height compared to the majority of other military specialties.

It is concluded that there are differences in body height between certain military specialties in the Army of Montenegro. In the majority of cases its existence is explained by the selection processes and specificity of performing multi-purpose military tasks. The recommendation to perform further studies would relate to the need of determining eventual differences when we are talking about other parameters of morphology and body composition. This would certainly contribute to the appropriate development of protocol for the acceptance and selection in certain military units.

## Author Contributions

Boris Banjevic designed and led the study, performed statistical analyses and wrote the manuscript, overviewed previous studies, wrote manuscript and discussed the results, collected the data, did the presentation of the results and discussed the results.

## Conflicts of Interest

The author declares no conflict of interest.

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