Carta al Director

BODY MASS INDEX AND BODY FAT PERCENTAGE OF POLICE FORCE IN MONTENEGRO IN DIFFERENT AGE GROUPS

Dear Editor-in-Chief,

The prevalence of obesity is increasing among the global population, regardless of their living in developed or underdeveloped countries, or rural or urban areas. In the USA, for example, from 1999-2000 through 2017-2018, the prevalence of obesity increased from 30.5 % to 42.4 %, and the prevalence of severe obesity increased from 4.7 % to 9.2 % (1). Montenegro is no exception, so it is reasonable to expect that this problem will not bypass Montenegrin police officers as well. The lifestyle of people of all ages and all professions has changed in general. People are much less physically active on a daily basis, while media consumption and eating fast food are increasing (2). Police officers also face different tasks today than they used to in the past, due to the increasing rate of cybercrime relative to street crime. Therefore, the activity of a police officer at work is far less today than it was before, and now a police officer is more active off duty than at work (3). However, the seriousness of certain tasks that a member of the police forces must be ready to carry out at crucial moments points to the fact that occurrence of obesity is absolutely undesirable. Therefore, preventive action has to be undertaken continuously for ensuring significant improvements in the efficiency of police officers when it comes to performing professional tasks.

As body mass index (BMI) and body fat percentage (FAT%) represent significant indicators, used for the assessment of nutritional status among members of the police, the main goal of this study was to apply these indicators, for the first time, to perform a comprehensive analysis of the nutritional status of police officers relative to their age, primarily because this global problem is likely to vary with age. The sample of 115 members of the police forces of Montenegro included in the analysis was divided into seven age groups: I (aged to 24 yrs.), II (25-29 yrs.), III (30-34 yrs.), IV (35-39 yrs.), V (40-44 yrs.), VI (45-49 yrs.), and VII (50 yrs. or older). Body mass index and body fat percentage were calculated according to the standard formula (4). Descriptive statistics were used to calculate the socio-demographic and body composition characteristics, while the ANOVA and *post hoc* test were applied to determine differences between age groups. The significance level was set at $p < 0.05$. Mean age, BMI, and FAT% of the subjects (in total) were: 31.54 years, 27.57 kg/m^2, and 16.81 %. Amongst 115 tested subjects (based on the BMI classification of WHO), not one was underweight (< 18.50 kg/m^2), while 16 subjects (13.91 %) were normal weight (18.50-24.99 kg/m^2), 80 subjects (69.57 %) were overweight (25.00-29.99 kg/m^2), and 19 subjects (16.52 %) were obese (≥ 30.00 kg/m^2). On the other hand, age groups had specific mean BMI and FAT% values: I: 26.17 kg/m^2 and 13.03 %; II: 28.01 kg/m^2 and 15.9 %; III: 28.28 kg/m^2 and 18.08 %; IV: 29.15 kg/m^2 and 22.14 %; V: 28 kg/m^2 and 17.99 %; VI: 28.6 kg/m^2 and 21.16 %; and VII: 29.19 kg/m^2 and 23.92 %). Judging from the age perspective, no group exhibited values in the normal range. All age groups were approaching 25.0 (over-weight or pre-obese) and over, but never beyond 30.0 (obese) on average. Furthermore, groups I and V were described as "very good" (based on the normative FAT% of ACSM), while all others were described as "good", which was a surprise since at least two age groups were expected to be described as "excellent", especially because of doubts about the adequacy of applying WHO normative values to the Western Balkan's population, which has a specific body composition (5). An ANOVA was performed, which showed significant differences in both tested variables, while the *Post Hoc* test showed no significant differences in all age groups, except for BMI between the first group (aged to 24 yrs.) and all other groups except the fifth group (aged 40-44 yrs.), and for FAT% between the first group (aged to 24 yrs.) and all other groups except the second group (aged 25-30 yrs.).

In conclusion, this study indicates that the situation with regard to overweight (69.57 %) and obesity (16.52 %) among the police forces is alarming, and may lead to a decrease in their physical fitness and effectiveness when on duty. It should be noted that, together with shift work, poor sleep, and exposure to a range of

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Author contributions: Veselin Veljovic designed and led the study, performed statistical analyses, and wrote the manuscript. Zeljko Spalevic reviewed previous studies, wrote the manuscript, and discussed the results. Marija Bubanja reviewed previous studies and discussed the results. Bojan Masanovic collected the data, did the presentation of the results, discussed the results, and revised the manuscript.

stressors, this could indeed have an impact on their health in the future. Finally, it should definitely be noted that this study is limited due to the fact that measurements were taken during the ongoing COVID-19 pandemic, so it is likely that, under regular circumstances, police officers would be more active and their body composition might be different.

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