RELATIONSHIP OF CARDIORESPIRATORY FITNESS WITH CARDIOVASCULAR RISK FACTORS, PERCEIVED STRESS AND RESPIRATORY FUNCTION IN STREET RUNNING ATHLETES

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Abstract

Introduction: Regular exercises, such as running, directly influence the improvement of maximal oxygen consumption (VO_{2max}). VO_{2max} is considered one of the main indicators of aerobic power and the maintenance of adequate levels of cardiorespiratory fitness are recognized for bringing health benefits, acting in the prevention of cardiovascular and cardiorespiratory diseases, obesity and stress. **Objective:** To relate cardiorespiratory fitness with anthropometric measurements, cardiovascular risk factors, respiratory function, food consumption and perceived stress in street runners. **Methods:** This is a descriptive, quantitative, observational cross-sectional study with experimental procedures and field data collection. Street runners between 18 and 59 years of age, of both sexes, divided by tertiles (tertile 1 VO2max ≤32.6 ml/kg/min, tertile 2 VO_{2max} between 32.7 and 41.6 ml/kg/min and tertile 3 with VO2max ≥41.6 ml/kg/min.) according to VO_{2max} values, were included in the research, and individuals who did not participate in all stages of the research were excluded. Mediterranean Diet Food Frequency, International Physical Activity Questionnaire (IPAQ), and Perceived Stress Scale (PSS-10) were applied, as well as anthropometric measurements (waist-hip ratio – WHR; body mass index - BMI), Shuttle Run test, pulmonary function tests (peak expiratory flow- PEF; Forced Expiratory volume in one second - FEV_1; Forced vital capacity – FVC; maximal inspiratory pressure – MIP; maximal expiratory pressure – MEP). **Results:** Participated runners aged 34.9±11.1 years. Tertile 1 had lower values of FVC (p=0.001), FEV_1 (p<0.001), PEF (p=0.003) than tertile 2. Tertile 1 had lower values of MEP (p=0.007), FVC (p= 0.030), FEV_1 (p=0.012) and PEF (p=0.001) when compared to tertile 3, the higher the score (p=0.022) when compared to tertile 3. There was an association of WHR with VO_{2max}, 69.6% of people with WHR above predicted were in the group with the lowest VO_{2max}. Among the participants, 14 (22.6%) had ventilatory disorders, 9 (14.5%) had a restrictive disorder and 5 (8.1%) had a mixed disorder. BMI showed a small negative correlation with VO_{2max} (r=-0.270, p=0.034), FEV_1 (r=0.509, p<0.001), PEF (r=0577, p<0.001) and MEP (r=0.490, p<0.001) were strong positive correlation, as well as the level of physical activity. **Conclusion:** The results indicated that street runners with better VO_{2max} also presented better spirometric parameters, expiratory muscle strength and perceived stress and consequently a reduction in cardiovascular risk.

Keywords: cardiorespiratory fitness; cardiovascular risk; athletes; respiratory function.

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