Prevalence of the Attributes of the Female Athlete Triad in Competitive Nigerian Female Athletes

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The Female Athlete Triad (Triad) syndrome describes three interrelated conditions: low energy availability with or without disordered eating, menstrual dysfunction, and poor bone health, inclusive of low bone density and bone stress injury. Data on the prevalence of the Female Athlete Triad components is scarce in Nigerian athletes. **PURPOSE:** The purpose of this study was to investigate the prevalence of Triad components in competitive Nigerian female university athletes as well as explore hematological markers. **METHODS:** A cross-sectional study design was employed. Eighty-eight participants met the inclusion criteria. The study sample consisted of 71 study completers aged 21.8 ± 0.3yr and BMI 22.5 ± 0.6 kg/m^2 in female athletes from the University of Lagos, during the Nigeria University Games Competition. The participants completed a Health, Exercise Nutritional Survey questionnaire to provide demographics, medical history, exercise, and dietary practices. Seventy-one female athletes consented to a blood sample for a complete blood count (CBC) assessment using a Unicel DxH 800 coulter hematology analyzer. The following hematological assessments were performed: white blood cell (WBC), hematocrit (HCT), red blood cell (RBC) and hemoglobin (HGB). **RESULTS:** The Nigerian competitive female athletes were aged 21.8 ± 0.3yr and BMI 22.5 ± 0.6 kg/m$^{2.}$ Exercise frequency was 4.6 ± 0.3 days/wk, age at menarche 12.8 ± 0.1 yrs, and gynecological age 9.2 ± 0.5 yrs. Factors reflecting energetic status include reports that 28% reported eating a low-fat diet, 38% dieted to lose weight to change their body composition and to improve performance and 3% reported a history of anorexia. Prevalence of oligomenorrhea was 15% while that for amenorrhea was 19%. Stress fracture prevalence was reported to be 13% and 34% refrained from training due to injuries during the past year. Complete blood count measures showed RBC (3.95 ± 0.06 10^12/L), HGB (10.64 ± 0.11 g/dL), HCT (32.68 ± 0.31%) WBC (5.20 ± 0.14 10^9/L) and platelets (245.17 ± 8.2 *10^9/L), demonstrating that RBC and WBC are within the normal range while HGB, HCT and platelets are abnormal. Trained athletes, particularly in endurance sports, had a decreased hematocrit (HCT). **CONCLUSION:** In Nigerian competitive athletes, a significant percentage demonstrated factors reflective of poor energy intake, menstrual dysfunction and bone health problems including a history of stress fractures and absence from sport due to injury. **SIGNIFICANCE/NOVELTY:** Our findings indicate that the number of female athletes in the Nigeria University Games experiencing some aspects of the Triad is significant and warrants further study. The prevalence of factors observed suggests the need to advance screening tools and education efforts to optimize health and provide information for future investigation into the Triad among Nigerian athletes.