

3<sup>rd</sup> International Conference on

# SPORTS MEDICINE AND FITNESS

October 05-06, 2017 Barcelona, Spain

## Evaluation of female athlete triad in female university athletes

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**Introduction & Aim:** Female athlete triad (FAT) including low energy availability, functional hypothalamic amenorrhea, and low bone mineral density (BMD) is a serious problem in elite athletes. The purpose of this study was to assess the female athlete triad in different sports.

**Materials & Methods:** All 47 female athletes in the department of Health and Sports Science of Juntendo University participated in the study. These athletes were divided into three groups who participate in different sports: track and field, volleyball, and football. This study was approved by the institutional review boards at the Juntendo University institution.

**Results:** The percentages of athletes who have suffered fatigue fracture, were 46.2% (6/13runners), 15.4% (2/13 volleyball player), 23.2% (5/21 football player), respectively. Two volleyball players had the bone mineral density appropriate for their age. All three runners who had suffered from fatigue fracture repetitively had hypothalamic amenorrhea.

**Discussion:** There was characteristic body composition for each sport. It suspected that the volleyball player needed higher body height and body weight because they needed to jump higher and attack powerfully. Runners had lower body weight and body fat mass because they believe that lower body weight and body fat mass is related to having a positive effect on running performance.

**Conclusion:** It considered that the fatigue fracture in two of the volleyball players had no association of female athlete triad because they had appropriate body fat mass percentage and body mineral density, and their fracture occurred from repetitive stress in the bone.

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