

PREVALENCE OF LEA AND RELATIVE ENERGY AVAILABILITY- SYNDROME (RED-S) IN DI COLLEGIATE VOLLEYBALL ATHLETES

¹Fisher, I. ¹Purdom TM. ²Savage N. ²Wendt, C.
³Ryan, G. ¹Rice, D. ¹Jones, B.
¹North Carolina A&T State University
²Winston Salem State Univ. Physical Therapy
³Peidmont University

GI Distress is a More Sensitive Indicator of RED-S in D1 Volleyball Athletes



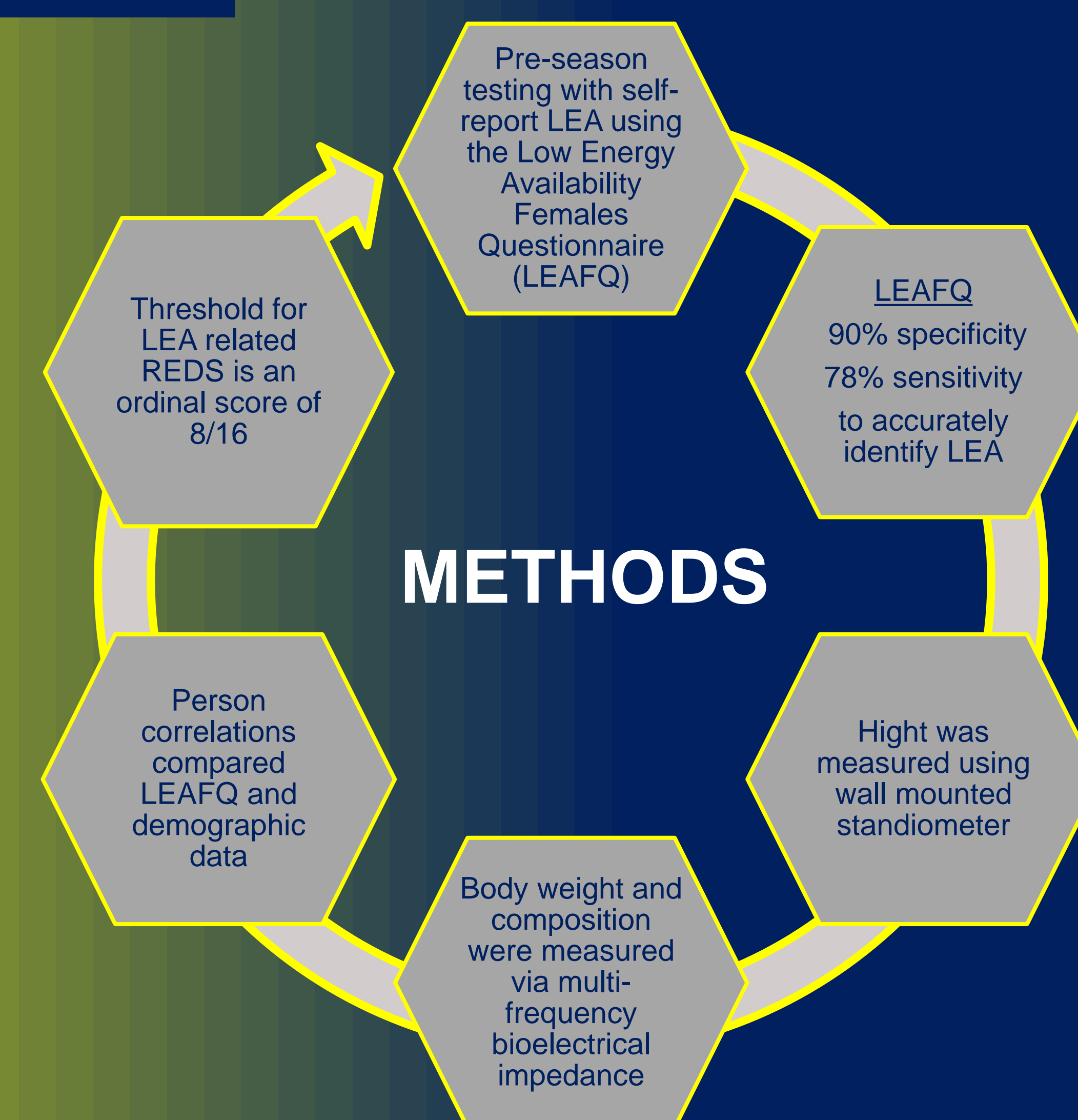
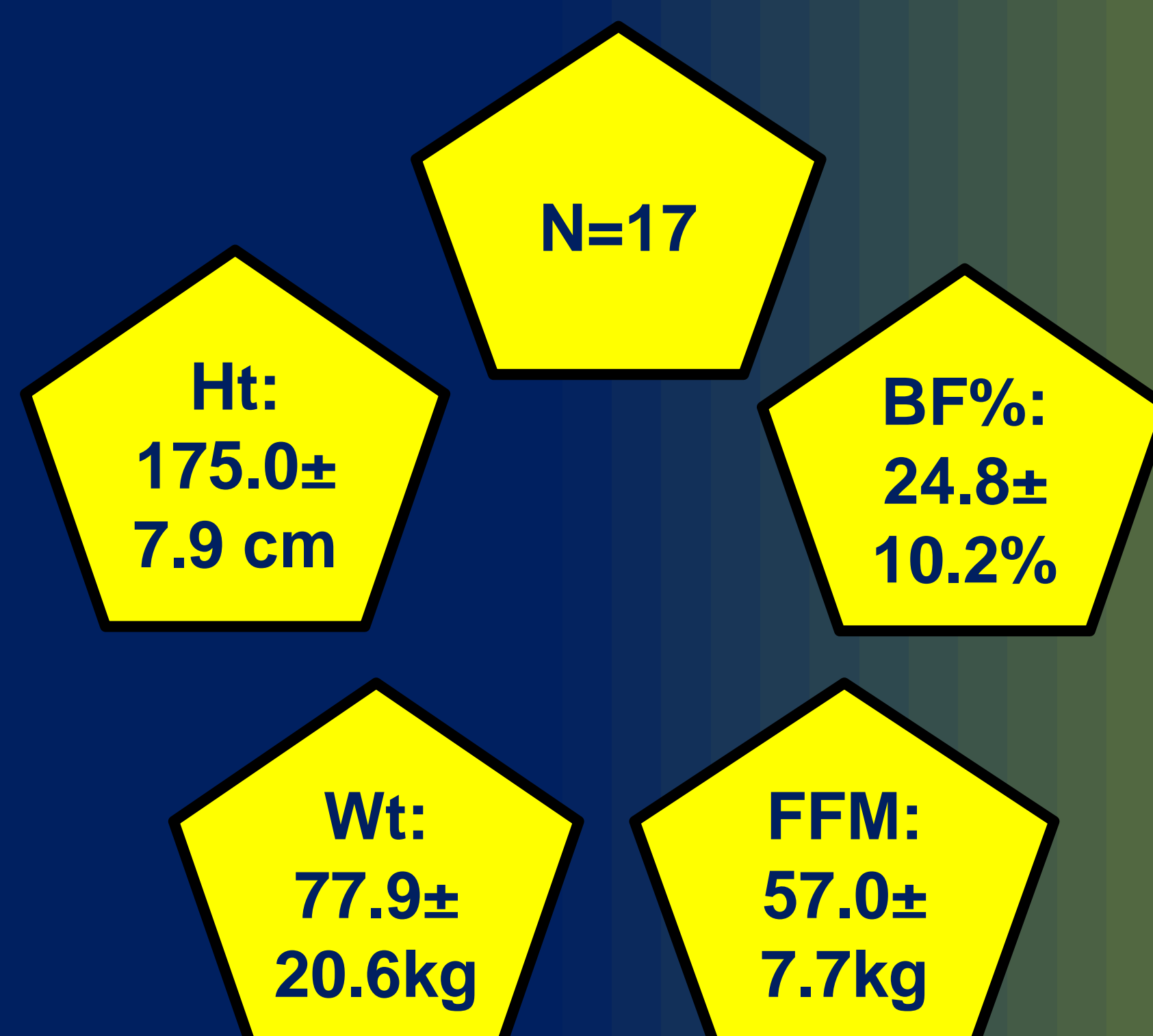
INTRODUCTION

- Collegiate athletes commonly fail to consume adequate energy (calories) to meet exercise energy expenditure demands, which may lead to an energy deficit e.g: low energy availability (LEA)
- Chronic LEA can result in relative energy deficiency syndrome (RED-S) observed as disruption of gastrointestinal (GI), reproductive, and muscular systems.
- LEA in Females Questionnaire (LEAFQ) evaluates LEA risk of athletes by separating questions into three sections: injuries, GI, and reproductive functions. A risk score of ≥ 8 is the threshold for LEA risk.

HYPOTHESIS

LEA risk in DI collegiate volleyball athletes predicates symptoms of REDS that include heightened injury, GI distress, and abnormal menstruation.

VOLLEYBALL PARTICIPANTS



RESULTS

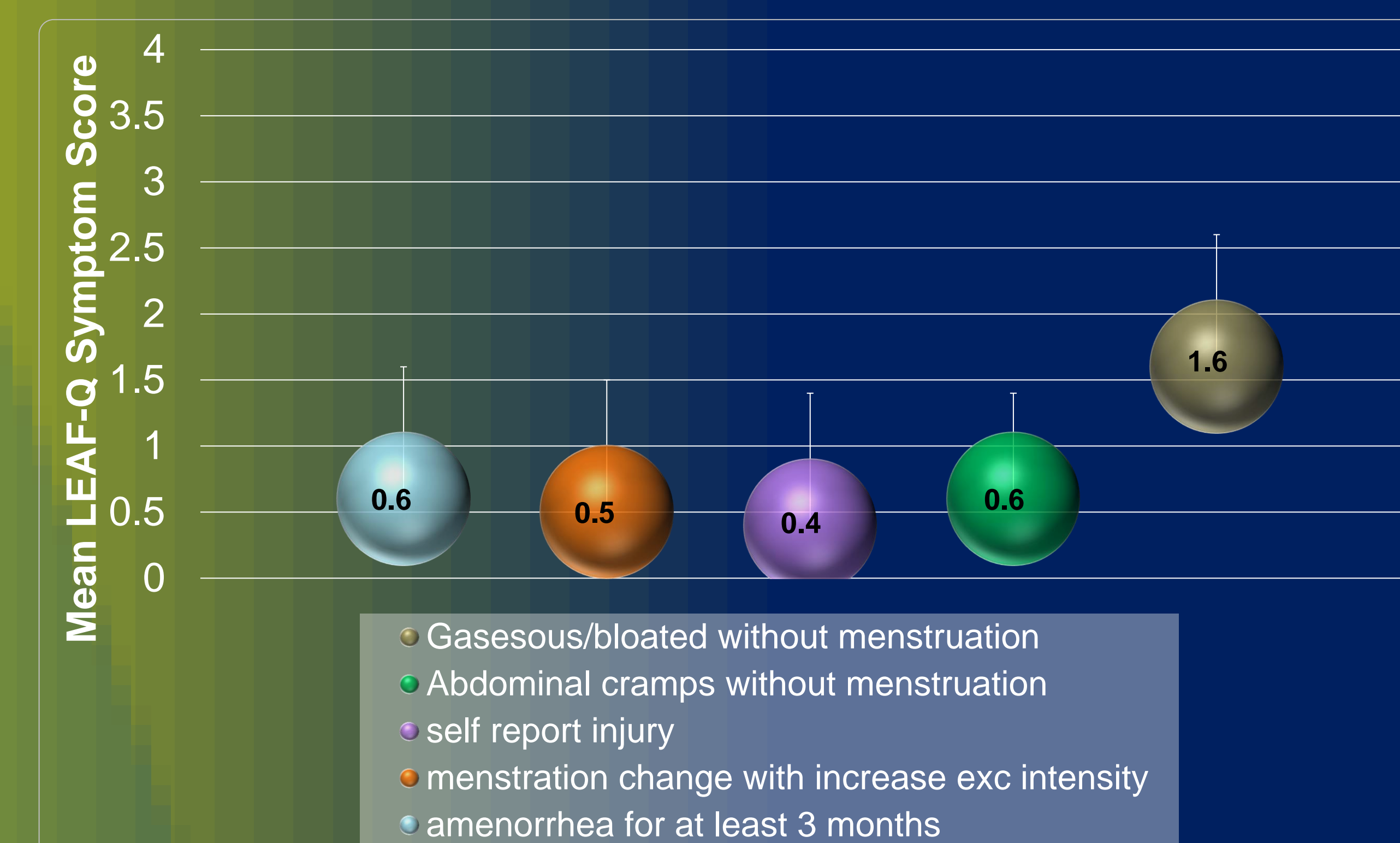


Figure 1: Average LEAF-Q symptom score on a scale of 0-4. The self reported value describes the severity of the symptom(s) experienced as it relates to LEA.

Discussion

- 50% (8/16) of athletes met the threshold for LEA risk (8.2±3.5) during pre-season testing.
- No significant correlations were found despite a negative moderate relationship with body mass ($r = -0.39$ $p = 0.14$, CI: 0.14, -0.74)
- 50% of those with GI distress were at risk for LEA
- Of those with LEA risk, 50% (4/8) experienced menstrual changes with increased exercise intensity, duration, and frequency while 44% of all athletes reported having lost their period for at least 3 months

LEA Risk

100% of those with LEA risk experienced symptoms of RED-S. GI distress symptoms is a more sensitive indicator of LEA risk, while abnormal menstruation was less prevalent. LEA did not seem to impact injury risk in this population.

Conclusions

LEA can adversely affect athletes' health. A top-down education approach for administrators, coaches, staff, and athletes needs to consider the symptoms and negative effects associated with LEA.

Application

Regular evaluations for GI distress, abnormal menstruation, and injuries that consider seasonal training changes and across the competitive season would enable allied staff to protect against the negative effects of LEA while improving the health and performance of Division I Volleyball players.