



Orthorexia nervosa in university athletes

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Orthorexia nervosa is a condition characterised by an obsession with healthy eating⁽¹⁾. Orthorexic individuals pursue their healthy eating obsession by adhering to a strict diet focussing on quality rather than quantity, exhibiting unreasonable concern over food preparation, cooking equipment and following set eating patterns⁽²⁾. Eventually, diet becomes the most important part of their lives thus obsession is associated with malnourishment, social isolation and poor quality of life⁽³⁾. Athletes exert a high degree of control over their diets in order to maximise athletic performance, putting them at a greater risk of ON⁽⁴⁾. The level of competition athletes are involved in may be associated with the level of risk to the athlete.

Adherence to the Western social ideal of thinness may also put female athletes at greater risk of ON⁽⁵⁾. No relationship between body mass index (BMI) and ON has been shown in the general population⁽³⁾; however, this relationship remains unexplored in athletes. Therefore, the aims of this study were to measure ON in athletes, to compare ON by gender and competition level, and to explore the relationship with BMI.

University students (aged ≥ 18 years, female and male) who either represented their university competitively in sport or participated for leisure purposes were recruited between November 2015 and February 2016. Participants completed paper-based questionnaires either at the beginning or end of a training session. A validated measure (orthorexia nervosa assessment scale, ORTO-15)⁽¹⁾ was used to assess ON; information on gender, competition level (1st team/2nd team/leisure), and self-reported weight and height were also collected. ORTO-15 consists of 15 items, scored 1 to 4, with a low score indicating higher levels of ON. A score <35 , which has shown high specificity for diagnosis purposes⁽⁴⁾, was chosen as the threshold for classifying individuals as having ON. The score for ORTO-15 was not normally distributed, therefore median and interquartile range (IQR) are reported and non-parametric statistical tests conducted.

Of the 228 athletes that completed questionnaires, complete data were available for 213, 84 (39%) females and 129 (61%) males, with a median (IQR) age of 20 (2) years. The majority (172, 81%) were in the 1st team, 10 (5%) played for the 2nd team, and the remainder (31, 15%) were leisure participants. Median BMI was 24.3 kg/m² (5.7 kg/m²) [females 23.3 kg/m² (5.0 kg/m²), males 25.1 kg/m² (5.5 kg/m²), $p = 0.002$]. The median score for ORTO-15 was 36 (10), with no difference in score between females and males (see table). ORTO-15 score was not significantly different by competition level. Based on a score of <35 , 37% ($n = 79$) were diagnosed as having ON, 31% ($n = 26$) of females and 41% ($n = 53$) of males, $p = 0.177$. Thirty-six percent ($n = 62$) of 1st team players, 30% ($n = 3$) of 2nd team players, and 45% ($n = 14$) of leisure participants were diagnosed as having ON ($p = 0.56$). There was no relationship between BMI and ORTO-15 ($r = 0.033$, $p = 0.653$).

	Females Median (IQR)	Males Median (IQR)	P	1 st Team Median (IQR)	2 nd Team Median (IQR)	Leisure Median (IQR)	P
ORTO-15 score	37 (9)	36 (11)	0.209	37 (10)	39 (12)	36 (12)	0.078

The findings agree with the limited European athlete studies conducted which suggest athletes are susceptible to ON behaviour⁽⁴⁾. To date, this is the first study conducted in a United Kingdom (U.K.) university athletes sample which has revealed a higher frequency of ON than previously observed in athletes⁽⁴⁾. Future qualitative research could be conducted among ON individuals to investigate attitudes and opinions to their eating behaviours.

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