Examining Eating Behaviors in Competitive Male Cyclists across Racing Categories

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Introduction

Less than five peer reviewed articles have examined the prevalence of disordered eating behaviors in male competitive cyclists. Various health risks are associated with athletes engaged in disordered eating behaviors, specifically athletes involved in sports that emphasize appearance or weight to strength ratio. Certain warning signs for possible disordered eating which may lead to a clinical diagnosis of an Eating Disorder (ED) according to the DSM-IV. Endurance athletes continually face the challenge of fueling for training/competition and maintaining a high power/weight ratio (Jeukendrup, Craig, and Hawley, 2000). According to Burke, various challenges exists for competitive cyclists when training for competition. These include meeting the energy demands of the training regime's volume, maintain an ideal physique for each event (i.e. percent of lean body mass), maintain proper immune function, and practice performance nutrition during each event (i.e. race nutrition strategies) (2001). Coupling each racers' dietary demands and perceived demands can lead to a discrepancy in caloric intake and expenditure. Mujika and Padilla labeled competitive cyclists as unique endurance athletes due to the required physiological attributes (anaerobic power, muscular strength, and cardiorespiritory endurance) needed to compete at a high level (2001). Therefore, a positive association exists between caliber/level of racing (i.e. Category) and the required amount of food intake needed for competitive racing (Jensen, Zaltas, and Whittam, 1992). Within the sampled population, training volume, indicated by hours per week, varied across racing categories (Cat 1 = 12. 7, Cat 2 = 11.9, Cat 3 = 8.7, Cat 4 = 9, Cat 5 = 6.8, and Masters = 10.1). Martin reported caloric restriction practices in female cyclists who desired to improve lean body mass for an increase in power/weight ratio (2001). In addition, Sundgot-Borden and Torstveit determined the prevalence of disordered eating is higher for sports dependent on a high power/weight ratio (2004), specifically as the demands of racing increase (Garcia-Roves et al., 2000).

Purpose

Burke reports the desire for excessive "thinness" in cyclists can precede the development of negative health ailments, body image, and affective well-being (2001). Identifying erratic eating behaviors in competitive cyclists can prevent possible clinical disordered eating patterns (2001). Riebl et al., administered the Eating Attitudes Test (EAT-26) to a group of professional males cyclists (n = 61) and a control group (n = 63) (2007). Results indicated male cyclists scored significantly higher on the EAT-26 than the control group (p <.001). To date, no study has determined if eating behaviors vary across racing categories. Petrie et al. emphasize the need to identify eating patterns among male athletes since a substantial amount may be symptomatic of an ED (2008). Therefore, the purpose of this cross-sectional investigation was to identify subclinical disordered eating patterns and dietary characteristics differences among competitive male cyclists (defined as cyclists with a valid racing license) based on level of competition (Cat 1 – Cat 5 and Masters).

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Methods

The United States Cycling Federation (USCF) racing categories are stratified based on ability/level of racing with Category 1 being the most skillful and Category 5 being the most amateur. Athletes over the age of 40 can compete as Masters racers. Texas USCF racers were solicited for survey participation through a link contained on the Texas Bicycle Racing Association (TXBRA) website. Eighty-six (n = 86) male cyclists (mean age = 36) provided valid responses on the 26 item Eating Attitudes Test (EAT-26). Equal group membership was determined prior to statistical analysis ($x^2 = 8.057$; p = .154). The EAT-26 is a reliable ($\alpha = .87$), standardized self-reported measure of symptoms and concerns usually characterized by eating disorders (Garner et al, 1982). Traditional administration of the EAT-26 is useful as a screening tool to assess risks associated with a possible clinical eating disorder (EAT-26, 2011). A one-way ANOVA was used to determine differences between each racing category 's mean EAT-26 scores.

Table 1
Mean EAT-26 Scores Across Racing Categories

	n	*M*	*SD*	*SE*
Cat 1	13	13.6	7.6	2.1
Cat 2	17	19.5	7.3	1.7
Cat 3	16	9.7	6.4	1.6
Cat 4	21	11.0	8.6	1.8
Cat 5	7	8.1	7.9	2.9
Masters	12	10.3	7.0	2.0

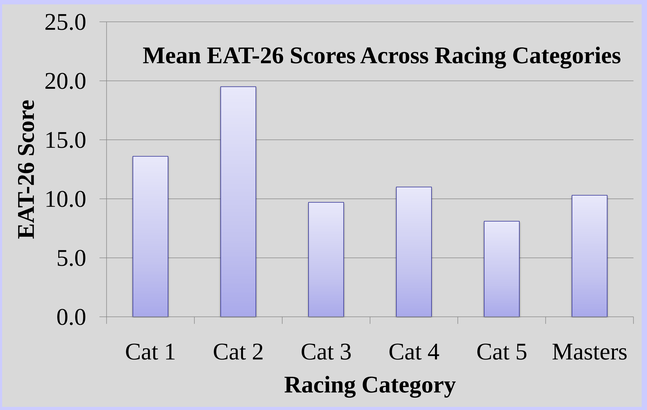

Table 2

Analysis of Variance for Mean EAT-26 Scores

	SS	*df*	*MS*	*F*	*p*
Between	1213.61	5	242.72	4.2	0.002
Within	4621.83	80	57.77		
Total	5835.45	85			

Table 3
Post Hoc Comparisons Across Racing Categories
Significant Tukey a

Category		*M* Difference	*SE*	*p*
Cat 1	Cat 2	-5.91	2.80	0.04
Cat 2	Cat 3	9.77	2.64	0.00
Cat 2	Cat 4	8.52	2.47	0.00
Cat 2	Cat 5	11.38	3.41	0.00
Cat 2	Masters	9.19	2.86	0.00

Conclusions

1. Mean EAT-26 scores are significantly different across racing categories (p = .002). Therefore, based on the skill and level of racing for each cyclist, eating patterns were different. Causation of differences should be investigated further, however, possible contributing factors could be training volume and desire for a high power/weight ratio.
2. Post hoc comparisons indicate Category 2 racers differ significantly from all other categories of racing (mean EAT-26 = 19.5). In this sample, Cat 2 racers had much higher EAT-26 scores than Cat 1 racers. Possible causation could be attributed to combined racing fields between Category 1 and 2 racers. Cat 2 racers could be in an "overreaching" state of training. Within this sample Cat 2 racers may be at an increased risk for developing a clinical eating disorder compared to the other categories.