

Nutritional Knowledge of College Coaches

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Nutrition is recognized as an integral component to achieving optimal athletic performance. Even with the increase in sports nutrition research, athletes continually exhibit a lack of knowledge, which is cause for concern (Jacobson & Aldana, 1992; Jacobson, Sobonya, & Ransone, 2001; Rosenbloom, Jonnalagadda, & Skinner, 2002; Torres-McGehee et al., 2012). Moreover, coaches are a primary source of information to their athletes, but research is limited regarding the adequacy of their nutritional knowledge. Therefore, the purpose of this study was to investigate the nutritional knowledge of college coaches using the validated 88 item Sports Nutrition Questionnaire by Caryn Zinn. Twenty-one coaches from a Division I National Collegiate Athletic Association (NCAA) institution in the southeastern United States participated. The sample consisted of 16 males and five females. Sports represented were basketball (n=5), cross country and track (n=5), football (n=6), soccer (n=2), softball (n=1), and volleyball (n=2). Results revealed college coaches do not have adequate nutritional knowledge. Only one participant obtained a score about 70% (M=55%). Results indicate coaches may not be an appropriate source of information to their athletes but more research needs to be conducted in the area to further assess collegiate coaches' nutritional knowledge.

Keywords: sports nutrition, coaching, nutritional knowledge

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Introduction

The mentality of “bigger, faster, stronger” has become prevalent in athletics at the collegiate and professional levels. Many athletes are striving to optimize their performance, which has led to an increase in sport nutrition research (Rosenbloom, Jonnalagadda, & Skinner, 2002; Torres-McGehee et al., 2012). Sports nutrition has been defined as the application of nutritional knowledge to daily food consumption focused on providing energy for physical activity and facilitating the repair and rebuilding processes while promoting overall wellness and optimizing athletic performance (Fink & Mikesky, 2015). Research has demonstrated that nutrition is an integral part of any athletics program, especially if the goal is to achieve optimal athletic performance. To achieve optimal performance, collegiate athletes train at high intensities and perform under demanding competition schedules, which puts them at risk for musculoskeletal injury (Arazi & Hosseini, 2012; Torres-McGehee et al., 2012). In addition, athletes may also be coping with the social, financial, and academic stressors associated with being a college student (Torres-McGehee et al., 2012). These many factors make athletes in particular need of good dietary practices and reliable sources of nutrition information.

Sports nutrition research has grown over the past 20 years, and its importance to exercise performance has been well documented. The American College of Sports Medicine (ACSM), American Dietetic Association (ADA), and Dietitians of Canada (DC) adopted a joint statement in 2000 to express the role of nutrition to sport performance. They reported, “Physical activity, athletic performance, and recovery from exercise are enhanced by optimal nutrition” (Barr, Butterfield, & Manore, 2000, p. 2130). They stressed athletes who desire to optimize performance need to, “follow good nutrition and hydration practices, use supplements and ergogenic aids carefully, minimize severe weight loss practices, and eat a variety of foods in adequate amounts” (Barr et al., 2000, p. 2130). Prior and current literature shows college athletes are deficient in nutritional knowledge, which is a barrier to following the guidelines adopted by the abovementioned organizations.

Torres-McGehee et al. (2012) reported athletes were deficient in all domains, which included micronutrients and macronutrients, supplements and performance, weight management and eating disorders, and hydration. Researchers in this study defined adequate nutritional knowledge as an overall score of 75% (out of 100%) in all domains of the instrument. Mean score of the athletes who participated (N=185) was 55%, demonstrating an overall lack of adequate knowledge. Moreover, only 9% of the athletes had adequate knowledge. Participants scored the lowest (M=47%) in the weight management

and eating disorders section, which is alarming because the incidence of eating disorders among college athletes ranges from 2 to 40%. Athletes scored the highest (M=66%) in the supplements and performance section, but still did not exhibit adequate knowledge as defined by the authors. This is also cause for concern because as many as 50% of athletes use in the study used some type of supplement (Lukaski, Haymes, & Kanter, n.d.; Rockwell et al., 2001).

The findings of Torres-McGehee et al. (2012) are reflective of the findings of another study conducted 10 years earlier. Rosenbloom, Jonnalagadda, and Skinner (2002) reported athletes had many misconceptions of the roles of carbohydrates, proteins, vitamins, and minerals. While both men and women understood carbohydrates will not make them fat and also that they are an important fuel source, 63% of men and 71% of women believed that consuming carbohydrates prior to performance was detrimental. Regarding protein, approximately 35% believed protein supplements to be necessary, and nearly half of athletes believed protein to be the main energy source for muscles. These results have been noted in other studies (Jacobson & Aldana, 1992; Jacobson, Sobonya, & Ransone, 2001). In reference to vitamins and minerals, Rosenbloom et al. (2002) determined athletes appear to be unsure of the functions of vitamins and minerals. Researchers found that 67% of men and 53% of women believed vitamins and minerals increased energy. This is less than the 75% that Jacobson and Aldana (1992) reported, which could indicate a possible increase in knowledge. However, a follow-up study by Jacobson, Sobonya, and Ransone (2001) did not indicate that college athletes' nutritional knowledge had significantly increased since Jacobson and Aldana (1992).

The apparent lack of nutritional knowledge exhibited by athletes is cause for concern. Not only is improper nutrition detrimental to performance, but also harmful to overall health and well-being. Having appropriate knowledge and easy access to reliable resources for nutrition guidance is essential for athletes. Athletes receive advice from many sources, such as athletic trainers, teammates, magazines, and parents; however, studies show coaches are a primary resource for nutritional advice. In a study of 168 rugby coaches, approximately 84% of coaches indicated advising their athletes (Zinn, Schofield, & Wall, 2006). Torres-McGehee et al. (2012) showed 43% of athletes refer to their coach for nutrition advice. Alarming, research has indicated that coaches as a whole lack nutritional knowledge (Holden et al., in press; Rockwell, Nickols-Richardson, & Thye, 2001; Torres-McGehee et al., 2012; Zinn et al., 2006). This is of grave concern since coaches are an important resource for their athletes. Therefore, it is necessary to investigate coaches' nutritional knowledge and determine whether or not it is adequate.

Torres-McGehee et al. (2012) found that only 40% of coaches had adequate knowledge, which is 30% and 43% less than athletic trainers and strength and conditioning coaches, respectively. Other studies found coaches' nutritional knowledge to range from 55-70% (Juzwiak & Ancona-Lopez, 2004; Rockwell et al., 2001; Zinn et al., 2006). Sports nutrition research has become more prevalent in recent years and has clearly shown the link between proper nutrition and performance; yet, athletes' nutritional knowledge, as well as the misconceptions they hold, appears to have remained steady in the past 20 years. College coaches push their athletes to reach optimal performance and often give nutrition advice to their athletes; however, research has not concluded that coaches are qualified to deliver such information. Therefore, the purpose of this study was to determine the nutritional knowledge of college coaches.

Method

Research Setting and Participants

All research was conducted on the campus of a Division I National Collegiate Athletic Association (NCAA) in the southeastern United States. Participants included head and assistant coaches from the following sports: (a) women's volleyball; (b) softball; (c) men's and women's track and cross country; (d) football; and (e) men's and women's basketball (N=21). Data regarding the number of coaches represented from each sport are presented in Table 1. Of the 21 coaches surveyed, 16 were males and five were females. Races represented in the sample were White or Caucasian (n=18), Black or African American (n=2), and Middle Eastern (n=1). All participants were informed of their right not to participate and of the confidentiality of their results.

Measures

The instrument used was the Sports Nutrition Questionnaire developed and validated by Zinn (2004). The questionnaire was comprised of six sections (nutrition, fluid, recovery, weight gain, weight loss, and supplements) and 23 multiple choice questions, with a total of 88 items. Prior to the questionnaire was a demographics section that included items such as age, gender, race, length of time coaching, and college degree obtained.

Data Collection

Permission to conduct this study was granted by the Institutional Review Board (IRB) from the investigators institution of higher learning. Participants were contacted via e-mail and in person to request participation. Upon agreeing

to participate, coaches were given a hard copy of the demographics and questionnaire to complete. Eleven of the questionnaires were administered in the presence of the researcher (52%), while the remaining 10 were not (48%). One point was given for correct answers on the Sport Nutrition Questionnaire, and no points were given for incorrect or unsure answers. All questionnaires were scored out of 88 and then the percentage of answers correct was calculated. All data was analyzed by the Statistical Packages for the Social Sciences (SPSS) program.

Results

Adequate nutritional knowledge for this study was defined as 70-75% or higher on the instrument based upon prior studies (Bedgood & Tuck, 1983; Torres-McGhee et al., 2012). Mean score on the instrument was 48 (55%); therefore, results confirm college coaches lack adequate nutritional knowledge in all areas of sports nutrition. Of the 21 coaches surveyed, only one coach demonstrated adequate knowledge (74%). The second highest score was 57 (65%) and the lowest score was 33 (38%). Mean score of the entire sample was 48 (55%). Further, results revealed a female mean score of 49 (56%) and 48 (55%) for males. A significant difference was observed among coaches who coached one gender and coaches who coach both males and females. Mean scores for coaches of either male or female athletes was 46 (52%) and 47 (53%), respectively. Those coaching both genders appeared to have greater nutritional knowledge, which is exhibited by their mean score of 53 (60%); yet, it does not represent adequate amount of nutritional knowledge. Interestingly, the only coach found to have adequate knowledge coaches both genders.

Results of this study do not demonstrate a correlation between years of coaching and nutritional knowledge. The highest score of 65 (74%) was achieved by a coach with two years of experience. Potentially, this could be attributed to the fact that this coach may be a recent college graduate; however, his degree was in Marine Science. Two coaches indicated 12 years of experience, and they recorded both the lowest and second highest scores of 33 (38%) and 57 (65%), respectively. The most seasoned coaches in the sample had a mean 18 years of coaching experience. These coaches (n=2) scored 54 (61%). Thus, a correlation between coaching experience and nutritional knowledge was not evident by the results of this study.

Discussion

Coaches are an important source of information to their athletes. They often advise their athletes about nutrition, and their athletes seek their nutritional

advice from them (Torres-McGehee et al., 2012; Zinn, Schofield, & Wall, 2006). Therefore, it is crucial the information they give is accurate to ensure that their athletes remain healthy and perform optimally.

Research is somewhat limited on the nutritional knowledge of college coaches, and the present study sought to expand the literature. By using Zinn's (2004) validated Sports Nutrition Questionnaire and a definition of adequate knowledge, the researcher found that only one out of 21 participants exhibited adequate knowledge. The mean score was 48 (55%) and therefore indicate college coaches may not have the knowledge necessary to give accurate nutritional advice. In addition, no significant gender difference was observed among the coaches nor did years of coaching experience appear to be correlated with sports nutritional knowledge. However, coaches who coach both male and female athletes tended to score higher than coaches who coach only one gender.

Since a recurring theme in the literature is that athletes receive nutritional advice from their coaches, future research using psychometrically valid measures are necessary to investigate the concern that coaches are providing insufficient or incorrect information to their athletes. The present study examined a small sample of coaches, and larger sample sizes are needed to gain a complete understanding of the issue. In addition, future research should include examining nutritional knowledge differences between NCAA Division I, II, and III institutions and also between coaches who college or university have access to a registered dietician (RD) and those who do not have this type of professional on staff.

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