DIVISION OF
SCIENCE
Indiana University Columbus

Sport Nutrition Knowledge of NAIA Student Athletes

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ABSTRACT

Purpose: To investigate the perceived nutrition education needs for athletes participating in the National Association of Intercollegiate Athletics (NAIA) division of sports. **Methods:** Utilize survey research to gain an understanding of the knowledge level of current athletes. The survey results are then translated into a score which can be used to measure the athletes' understanding of nutrition needs. **Results:** The scores were significantly lower than expected for more physically taxing sports falling in the poor knowledge range. **Conclusion:** Though there are varying levels of physical taxation based on what sport is being played, there was still a low average of knowledge about athlete nutrition. This was expected as a result of different socio-economic factors, as well as varying sport-specific recommendations and nutrition information being offered at the NAIA level.

BACKGROUND INFORMATION

By studying the difference between athletes perceived nutritional needs and their actual nutrient requirements, researchers and coaches can help athletes optimize performance, prevent injuries, and promote long-term health. Similar studies have been done for NCAA athletes (Singleton, et al. 2024), but there remains a need to study nutritional knowledge among NAIA student athletes. We will use the abbreviated sport nutrition knowledge questionnaire (ASNKQ) to gather objective data on perceived nutritional requirements among NAIA athletes. The survey was developed and validated by Trakman, et al. (2018) and will include questions about general nutrition and sports nutrition recommendations. We have already received IRB approval as an exempt study to include all IU Columbus student athletes (an NAIA participating school).

METHODS

Survey research was used to gather data from current student athletes

Scoring as follows: each correct answer = 1 point
Note: there is no negative scoring; both 'incorrect' and 'not sure' are scored as zero. The score is then converted into a % and overall performance can be assessed

The scoring system is as follows:
"**poor**" knowledge(0–49%),
"**average**" knowledge (50–65%),
"**good**" knowledge (66–75%)
"**excellent**" knowledge (75–100%)

TABLE 1– PARTICIPANT CHARACTERISTICS

Number of participants:
(n= 116)

Age Range (years)	18-30
Average Grade Level	Sophomore
Total # of Sports Assessed	11
# of male sports	4
# of female sports	7
Male Avg Survey Score	42.505%
Female Avg Survey Score	42.965%

RESULTS & DISCUSSION

Average by Sport

Women's Soccer: 37.14%
Men's Soccer: 49.01%
Women's Basketball: 37.15%
Men's Basketball: 38.15%
Women's Cross Country: 52.00%
Men's Cross Country: 44.29%
Softball: 48.98%
Baseball: 38.57%
Women's Volleyball: 36.91%
Dance: 44.29%
Cheerleading: 44.29%

The data obtained from the survey suggests that at the collegiate level of NAIA competition, gender and sport do not influence the lack of nutrition knowledge needed by athletes. While we did expect some deficiencies to arise in the sports nutrition knowledge of student athletes. This can be the result of different socio-economic factors, as well as sport-specific recommendations and nutrition emphasis. For example, while athletes in general can demonstrate inadequate nutrition knowledge scores (<75% correct), further discrepancies may arise between sports (see Table 1). Athletes from more physically demanding sports, such as Track & Field or Soccer, tend to score higher on nutrition knowledge than athletes from less physically demanding sports, such as softball or baseball (Andrews, et al. 2016).

TABLE 1: Sports nutrition knowledge questionnaire mean scores by sport team.

Sport	*n*	Mean (SD)
Baseball	22	55.2 (15.0)
Tennis	15	56.7 (15.8)
Track and field	42	57.4 (11.3)
Men's soccer	25	59.4 (16.7)
Softball	19	54.4 (15.4)
Total	123	56.9 (14.3)

Note. n = number of participants; inadequate nutrition knowledge score mean < 75%; $P = 0.798$ between sport teams.

Our overall conclusion is that in the NAIA division, there is a lack of nutrition knowledge for all student athletes albeit female or male and regardless of sport.

FIGURE 1 Survey Averages based on sport

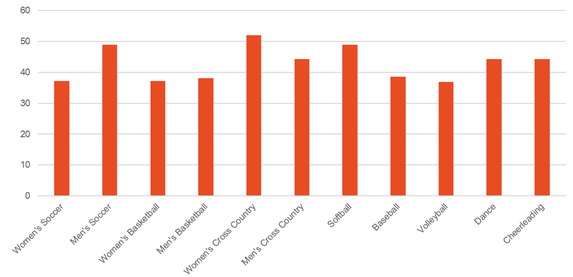
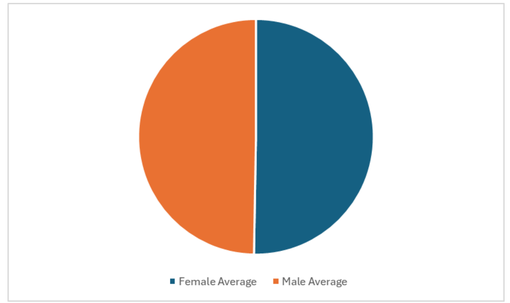


FIGURE 2 Men's Average versus Women's Average



DISCUSSION & CONCLUSION

As the data suggests, there is no discrimination for the lack of knowledge on nutrition needs for a student athlete. This is most likely caused by the NAIA division of sports being a lower level of competition than NCAA division of sports. The lower-level programs do not have as much funding as the upper levels thus cannot afford the cost of the resources to educate the student athletes properly on needed nutrition knowledge. Further research may be needed to confirm this being the main factor, but it can explain the nondiscriminatory results of there being lack of knowledge regardless of gender, sport, or age. The higher scoring student athletes varied in their ages, level of schooling, gender, and majors meaning health related degrees also had no effect on the survey outcomes meaning that they had nutrition knowledge from prior experiences.

One area that could be explored further is the level of participation of the survey participants. There were several surveys that had a score of 0% which could have skewed the whole survey but further investigation into the participants would need to be done to determine the cause of the 0% scores.

References

1. **Andrews A, Wojcik JR, Boyd JM, Bowers CJ.** (2016) Sports Nutrition Knowledge among Mid-Major Division I University Student-Athletes. J Nutr Metab. 3172460

2. **Singleton KM, Jagim AR, McAllister-Deitrick J, Daou M, and Kerksick C.** (2024) Differences in perceived energy and macronutrient requirements across divisions in NCAA athletes. J Int Soc Sports Nutr. 21:1: 2365307

3. **Trakman GL, Forsyth A, Hoye R, and Belski R.** (2018) Development and validation of a brief general and sportsnutrition knowledge questionnaire and assessment of athletes' nutrition knowledge. J Int Soc Sports Nutr. 15:17-22.