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Self-Reported Health and Fitness Habits of Certified Athletic Trainers

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SELF-REPORTED HEALTH AND FITNESS HABITS OF CERTIFIED ATHLETIC TRAINERS

by

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The purpose of our study was to analyze the health and fitness habits of ATCs. One thousand participants from the Great Lakes Athletic Trainers' Association (GLATA District 4) were invited to participate in the study. Two-hundred and seventy-five ATCs completed the questionnaire. The questionnaire was a 23-item health habits and activity questionnaire divided into four sections: fitness, nutrition, alcohol and tobacco and demographics. It was pilot tested before administration with a reliability coefficient of .73. Participants were sent an email invitation with a link to the questionnaire and were given five weeks to complete the questionnaire. Analyses were run on exercise, nutrition, alcohol and tobacco habits. Of the respondents, 40.7% met the exercise recommendations of the American College of Sports Medicine (ACSM) and 6.9% reported being sedentary. Significant differences were found between genders for fitness habits and composite health score. Seven percent of female ATCs consumed more alcohol than is recommended by the United States Department of Agriculture (USDA) compared to only 1.7% of males. Only .8% reported that they currently smoke. ATCs have better health and fitness habits than the general population, but do not meet the professional recommendations set forth by the ACSM or the USDA. Our study reveals inappropriate role model behaviors by ATCs for athletes' behaviors.

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CHAPTER I

INTRODUCTION

Health and fitness are two aspects of a lifestyle that have garnered much attention over the past decade as obesity has become increasingly prevalent in the American society.[1] According the United States Department of Agriculture (USDA), a caloric imbalance from physical inactivity and a poor diet are the major causes of obesity in our society.[2] Obesity brings increased risk for conditions such as coronary artery disease, diabetes, osteoporosis and decreased cardiovascular and respiratory function. However, a lifelong practice of physical activity can decrease these risks and improve a person's quality of life.[3]

Health professionals are considered health and fitness behavior role models because many assume that these people will apply their professional knowledge to their own lifestyle. It has been shown that healthcare professionals are more likely to educate their patients and discuss the importance of physical activity and proper nutrition if they themselves practice these healthy lifestyle habits.[4] Given this implicit responsibility, and their primary function as health care providers for the physically active, certified athletic trainers (ATCs) should be role models and proponents for athletes' dietary and physical activity habits.

Cuppett and Latin's[5] work on physical activity levels of ATCs revealed higher total activity levels by females than males with 16% of the ATCs reporting no physical activity. However, their work did not look at any other lifestyle habits apart from fitness. Since there has been limited research on ATCs' fitness habits, the purpose of our study was to extend the work of Cuppett and Latin[5] by examining ATCs' health and fitness

habits using a broad range of dietary, nutritional, and behavioral factors and adding nutrition, alcohol and tobacco variables. Our investigation was based upon the research question: Do ATCs choose healthy lifestyle practices? We compared the ATCs' habits to those of the general population as well as to recommended health practices by the American College of Sports Medicine (ACSM) and USDA. Our study also compared ATCs by employment setting, age, gender and in versus out of season ATCs.

CHAPTER II

METHODS

Participants

The sampling frame was comprised of athletic trainers in District IV, the Great Lakes Athletic Training Association (GLATA), which includes Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin. Following standard protocol for research applications, the NATA Information Technology Coordinator randomly selected 1000 participants from the GLATA member database who were certified athletic trainers. We emailed the informed consent document with the link to the online questionnaire to the Information Technology Coordinator, who then sent out the document to the 1000 participants. Our study was approved by the Human Subjects Institutional Review Board (HSIRB) at the institution. Following approval, we submitted an application to solicit participants to GLATA and to the National Athletic Training Association (NATA).

Questionnaire

We developed a questionnaire based upon the *Health Behaviors of Health Educators: A National Survey* instrument developed by Jenkins & Olson[6] and modified this questionnaire using additional health and fitness surveys[7, 8] only addressing lifestyle behaviors over which an individual has choice and control. Our modifications, such as the addition of minutes spent performing fitness activities and the deletion of sections such as stress and relaxation which were not applicable to our study, allowed us to examine other habits in addition to fitness to analyze overall health. Our final questionnaire consisted of 23 questions divided into four sections: 1) fitness, 2) nutrition, 3) alcohol and tobacco and 4) demographics. The fitness section, comprised of

cardiovascular, resistance and flexibility training, addressed participants' exercise frequency, intensity and time. The nutrition section addressed the number of meals eaten in a week as well as the types of food, caffeine, supplements, and vitamins consumed. The alcohol and tobacco section assessed participants' alcohol and tobacco usage patterns. The demographics section included questions on education, employment setting, gender, age, weight and height. We designed the final questionnaire online using SurveyMonkey.

Pilot Study

We administered a pilot questionnaire to 25 ATCs who were not in the sampling frame. Of the 25 requests for participation in the pilot study, 17 completed questionnaires were collected (68% return rate). The pilot participants read for clarity and provided feedback about item appropriateness. Minimal editing was completed to improve item readability and clarity. We then conducted reliability analyses on the pilot data using the Statistical Package for Social Sciences (SPSS) 11.5 (Chicago, IL). The overall questionnaire had a reliability coefficient of .73, meeting the minimum recommended value of .70.[9]

Procedures

Initial contact with participants was made via e-mail and included an invitation to participate in the study, a copy of the informed consent document and a link to the online questionnaire. The final questionnaire was available online for five weeks and participants were asked to follow the online link to complete the questionnaire. Submission of the questionnaire was evidence of agreement to participate in the study. Follow-up reminders were sent out via e-mail to all 1000 participants at weeks two and

four as this study was anonymous and we were unable to determine which participants had already completed the study. After the initial contact, 221 questionnaires were completed, an additional 6 were collected after the two-week follow-up and the final 69 questionnaires were completed after the four-week follow-up reminder. Of the 1000 e-mail invitations to participate, 1.4% (n = 14) were returned as undeliverable, and 275 of the 986 invitations resulted in returned useable surveys (27.9% return rate). The remaining 21 surveys were unable to be used as they were not fully completed. Typical response rates for similar studies conducted using GLATA data were between 20-30%.[10]

Composite Health Score

While dated, Beloc[11] reported seven health practices that were significantly associated with a general index of physical health: hours of sleep, physical exercise in leisure time, alcohol consumption, cigarette usage, obesity, eating between meals, and having regular breakfasts. These variables were the basis behind our composite health score. The composite health score was calculated for each participant using individual's responses from the fitness, nutrition, alcohol and tobacco sections and comparing them against the recommendations from the ACSM for fitness habits and the USDA for nutritional, alcohol and tobacco habits. The ACSM recommends at least 30 minutes of exercise 5 or more days per week[12] while the USDA recommendations include eating 4 servings of fruit, 5 servings of vegetables, 6 servings of grains, 2 servings of meat or beans, and 3 servings of dairy, as well as consuming alcohol in moderation (1 drink per day for females and 2 drinks per day for males) and avoiding tobacco.[2] Because these lifestyle variables are associated with health status, disease prevention and mortality rates, they provide a good indication of overall health.[2] We assigned participants a 1

(favorable) or a 0 (unfavorable) based on whether or not they met the professional recommendations for each of the following variables: exercise, BMI, grains, fruits, vegetables, protein, low fat dairy, caffeine, alcohol use and tobacco use. Using this scoring technique, each participant was assigned a composite health score between 0 and 10.

Statistical Analysis

The results were downloaded from SurveyMonkey into a spreadsheet for input into SPSS. Descriptive statistics, including frequencies and measures of central tendency were calculated. We conducted one-way analysis of variance (ANOVA) on the composite health score and in- verses out-of-season ATCs, the composite health score and gender, and the composite health score and employment setting. Tukey post-hoc tests were conducted on the composite health score and age to determine where the significance lay amongst the age groups. Chi square analyses were conducted on gender and fitness, gender and smoking, employment and smoking, employment and exercise, and in- verses out-of-season ATCs and exercise. These analyses were run to compare ATCs by gender, employment setting, age and in versus out of season ATCs. We also calculated body mass index (BMI) from self-reported height and weight responses for inclusion in the composite health score. BMI was chosen for use in this study since it is the most commonly used method to determine if someone is overweight or obese[13] and rates of hypertension and diabetes have been shown to increase as BMI increases.[14]

CHAPTER III

RESULTS

Demographics

Of the 275 respondents, 50% (n = 137) were female and 7% (n = 18) did not specify a gender. Respondents' mean age was 34.4 years ± 10, with a range of 22 to 64 years. To simplify analyses, the age ranges were categorized in ten year increments (Figure 1), revealing that over 40% of all participants were in their 30s. This sample included participants who were employed in a variety of professional settings (Figure 2), with one-fourth of all participants working at a college/university setting. Demographic responses from height and weight were used to calculate BMI. The mean BMI for participants was 25.78 (females) and 27.97 (males). Of the female respondents 53% (n=73) had a BMI in the healthy range, 33% (n=46) were overweight and 14% (n=20) were obese based on the Center for Disease Control (CDC).[12] Of the male participants, 25% (n=31) had a healthy BMI, 59% (n=72) were overweight and 16% (n=19) were obese.

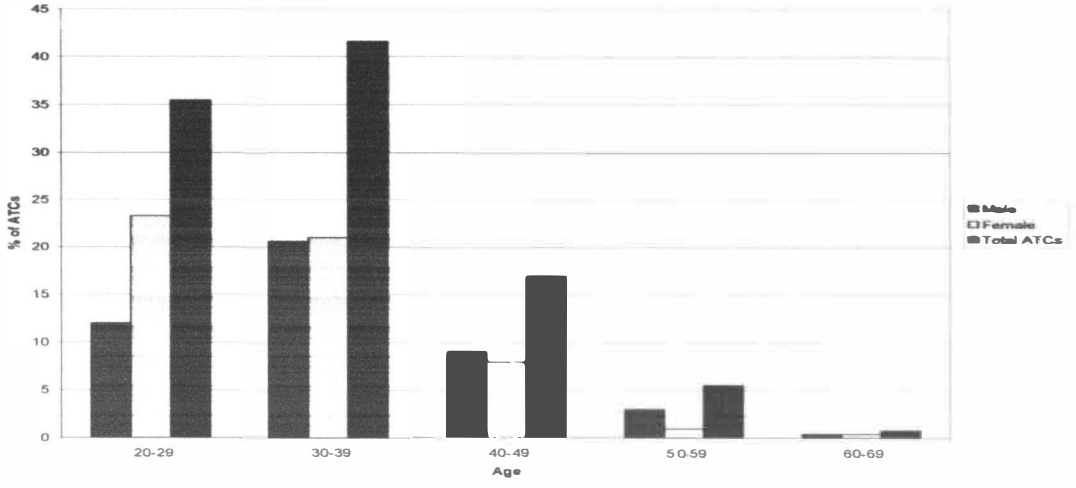

Figure 1. ATCs by Age.

Seasonal Differences. We hypothesized that there would be seasonal health and fitness habit differences between in and out of season ATCs. A one-way ANOVA revealed a significant difference between the mean health scores of those ATCs who reported being out of season (3.53) and those who reported not having a season (4.21) ($F_{2,72}$=4.43, p<.013, β=.76). Of the 111 participants who reported being in-season, 43% (n=48) reported that their health habits were the same in and out of season and 45% (n=50) reported healthier habits out of season. Of the 88 who reported being out of season, 47% (n=41) reported no difference in habits between the seasons and 36% (n=32) reported healthier habits out of season.

Fitness

The questionnaire included items pertaining to individual fitness habits during a typical seven-day week. Of the 275 ATCs who responded to the questions pertaining to fitness, 41% (n = 112) met the ACSM exercise recommendations. Of those respondents indicating gender (all but 9 participants), 39% (n = 43) of those meeting the fitness guidelines were male and 61% (n = 67) were female (Figure 2). Chi-square tests revealed a significant difference between male and female ATCs (χ^2=4.46, p<.035), with females reporting higher levels of physical activity. Of all participants, only 7% (n = 19) reported not participating in any physical activity. Those employed by a health or fitness club reported the highest rate of physical activity, as 80% (4 of 5) met the ACSM recommendations, while independent contractors reported the lowest rate of physical activity with only 25% (3 of 12) meeting the recommendations. However, no significant differences were found amongst the different employment settings (Figure 3).

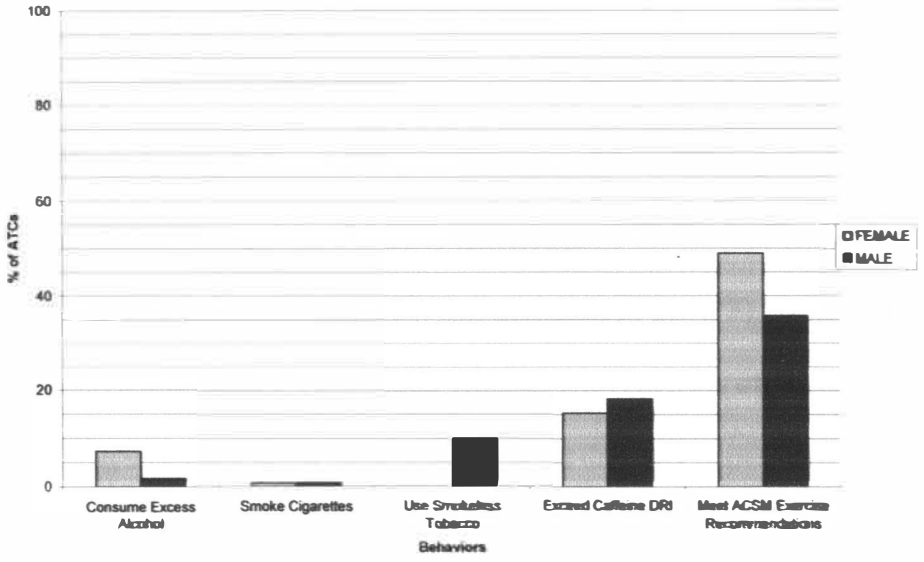

Figure 2. Health and Fitness Behaviors by Gender.

The 20-29 year age group reported the highest rates of physical activity 49% (n = 44) who met the ACSM recommendations. No significant differences were found amongst the remaining age groups.

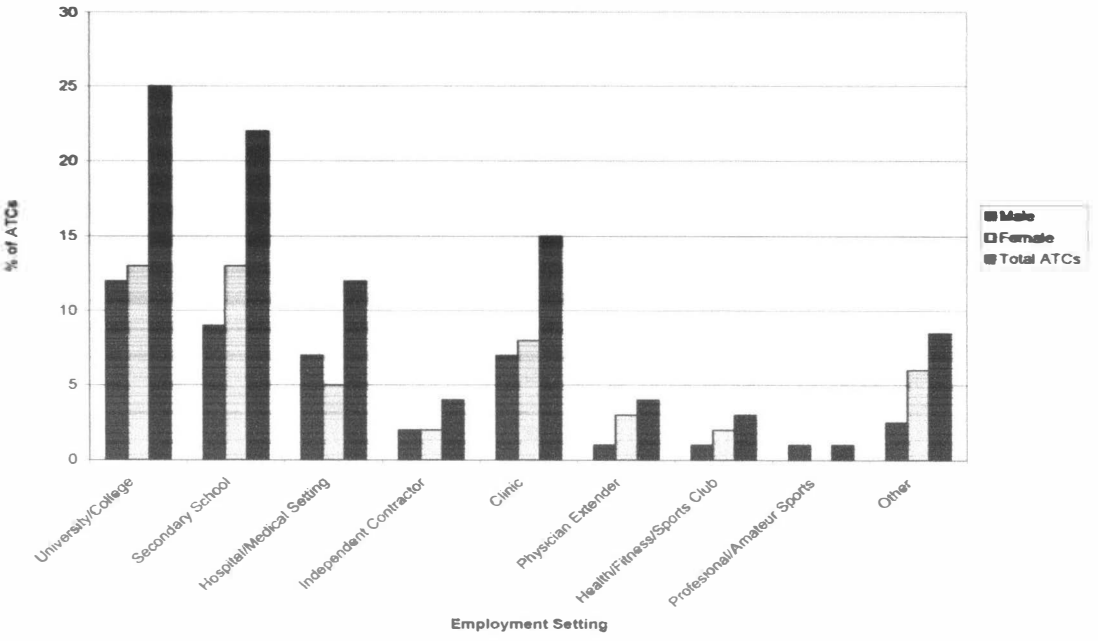

Figure 3. ATCs by Employment Setting.

Nutrition

ATCs in general did not follow the recommendations for nutritional habits. While some of the ATCs reported meeting the Dietary Reference Intake (DRI) for individual food groups in a typical seven day week, none of the ATCs reported meeting the USDA's DRI for all five food groups during a typical seven day week. The food group met most often by ATCs was protein with 27% of participants (n = 73) meeting the DRI, while grains had the fewest ATCs meeting the DRI with only 4% of participants (n = 10) consuming sufficient grain intake (Figure 4). It does not appear that ATCs regularly substituted these nutritious foods with discretionary foods however, as they only reported eating fried foods, high fat foods, high fat dairy foods and sweets between 3 and 5 times in a typical seven day week.

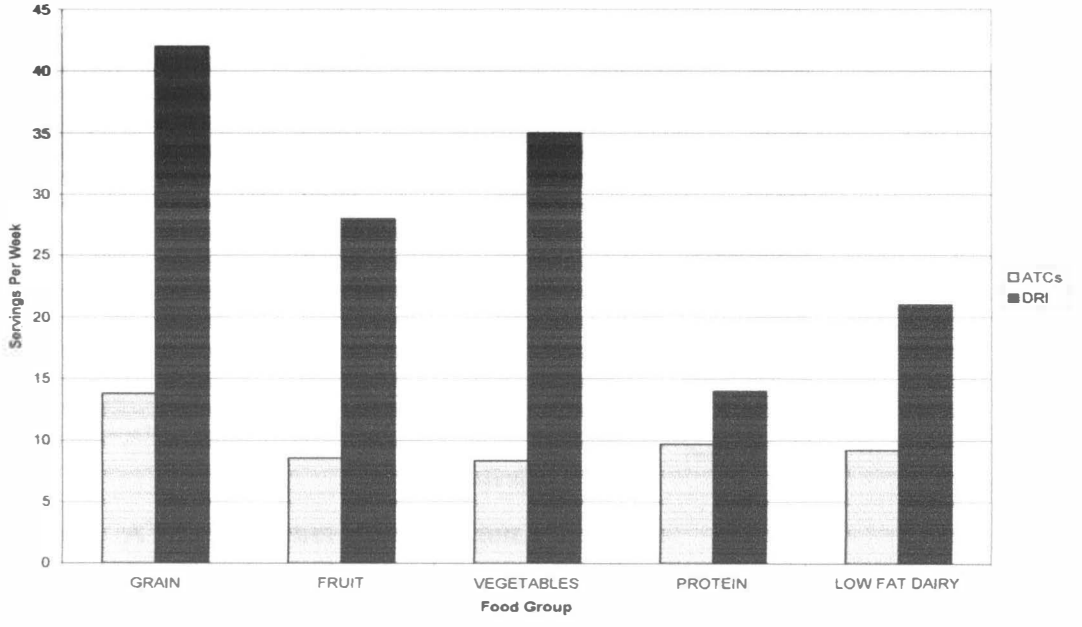

Figure 4. ATCs Nutritional Intake vs. DRI.

Alcohol and Tobacco

Results regarding alcohol consumption showed that 7% (n = 10) of female ATCs consume more alcohol than is recommended by the USDA compared to only 2% (n = 2) of male ATCs. The DRI for females is 0-1 drink per day, while for males it is 1-2 drinks per day. However, males averaged more drinks per seven day week (2.63) than females (2.28). Of all participants, 11% (n = 57) of ATCs (21% female [n = 30] and 19% male [n = 23]) reported that they do not consume alcohol (Figure 5) compared to 45% of the general population.

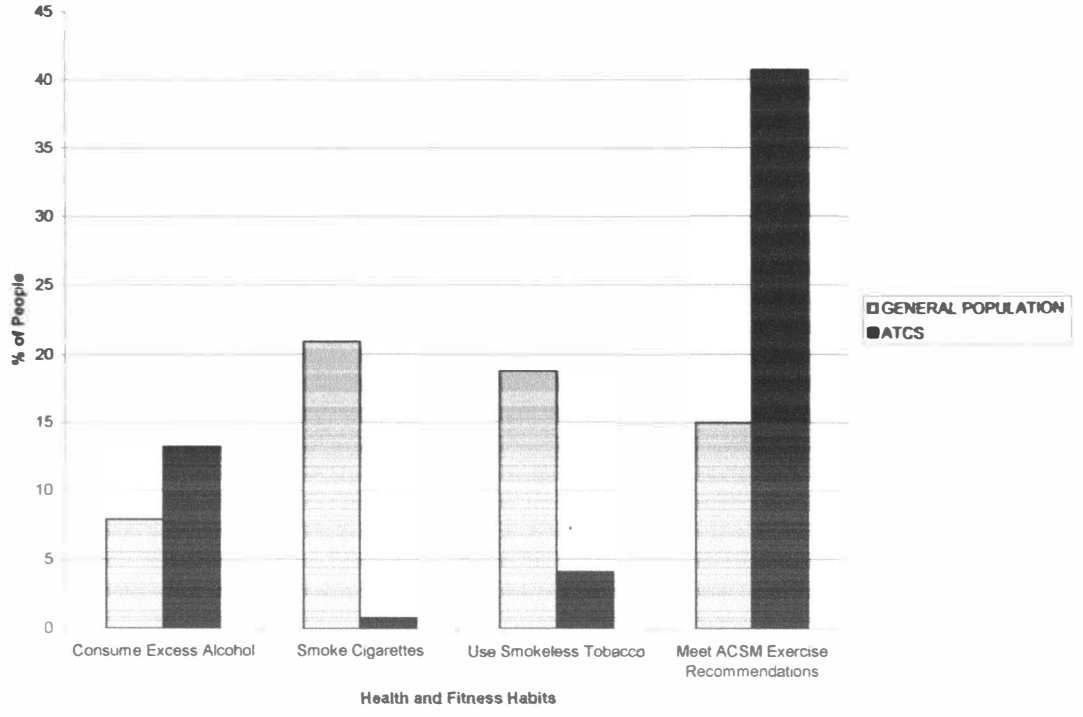

Figure 5. ATCs vs. General Population.

When asked about their tobacco habits, 1% (n = 2) of ATCs reported that they currently smoked cigarettes and 8% (n = 21) reported having previously smoked. Those employed in a hospital or clinic reported the highest prevalence of smoking 3% (1 of 30), while ATCs employed in all other settings all reported not currently smoking. There was

no significant difference between cigarette use and employment setting. All ATCs who reported currently using smokeless tobacco (4% [n = 12]) were males.

Composite Health Score

Gender. A mean composite health score of 3.8 out of a possible score of 10 was calculated for this sample with a range of 0 to 9. A one-way ANOVA revealed that female composite health scores (4.34) were significantly higher than male composite health scores (3.37) ($F_{1,225}=17.41, p<.001, \beta=.98$).

Age. One-way ANOVA ($F_{4,250}=2.54, p<.04, \beta=.71$) revealed a significant difference by age group on the composite health score. Tukey post-hoc tests showed the 20-29 year age group (4.24) was statistically significant compared to the 50-59 year age group (3.21).

CHAPTER IV

DISCUSSION

It is widely accepted that physical activity has beneficial effects on health and disease prevention. Cardiorespiratory endurance, muscular endurance, muscular strength, body composition and flexibility, the five components which make up physical fitness, have been defined as the ability to carry out one's daily tasks with energy to enjoy leisure activities and meet unforeseen emergencies.[3] Our study was designed to extend the work of Cuppitt and Latin[5] by adding health habits to their original focus on ATCs' fitness habits. Our study compared ATCs' habits based on demographics as well as ATCs' habits compared to those of the general population.

Because of their involvement with health and fitness of the general population, health professionals have been targeted in previous studies to determine their own health status. Those involved in the health profession are often perceived as promoters of a healthy lifestyle and those involved in the education aspect not only promote a healthy lifestyle but motivate others to do the same.[6] Athletic training is a growing career in the healthcare profession and ATCs have emerged as one of the primary health care providers for athletes and the physically active populations. ATCs often provide health and fitness guidance for athletes and therefore should promote a healthy lifestyle through their actions in order to lead by example. Due to the wide range of settings in which ATCs are employed, they can influence many different populations through their role as models of healthy behavior. The role of both health educators and coaches as role models has been documented[6] and considering this, we agree with Cuppet and Latin[5] that ATCs should serve as physical activity role models and proponents for their clientele.

Fitness

The ACSM and the Centers CDC both recommend at least 30 minutes of physical activity on most, if not all days of the week at a moderate intensity.[3, 15] The ATCs participating in this study were more physically active than the general population; 7% of participants reported being sedentary and 41% met the professional recommendations, whereas 15% of the general population met the ACSM recommendations and 25% are sedentary[1]. This suggests that while the majority of participants were not meeting the recommendations, most were getting some regular physical activity. Cuppett and Latin[5] reported that 16% of their respondents were sedentary and that women were significantly more physically active when compared to males. These gender differences are consistent with the results of our study where females reported higher levels of physical activity than males; however they differ from studies on the general population in which physical inactivity is more prevalent among women (25.9%) than men (21.4%).[3, 17] A possible explanation for this difference is that many ATCs work long hours, usually more than 40 and sometimes more than 60 hours a week, and are often not in control of their time due to game and practice schedules.[5, 18] As a result, personal time is sacrificed which can lead to difficulty maintaining a regular exercise routine and therefore reduced levels of physical activity.[5] Long work hours can also lead to high levels of personal stress[19] and the way in which males and females cope with stress has been shown to be significantly different even when presented with an identical situation.[20] Therefore, females may find physical activity as a stress reliever while males may find other ways to relieve stress.

Our results showed no significant differences when comparing fitness habits across employment settings although those employed by a health or fitness club reported

the highest rate of physical activity. While Cuppett and Latin[5] also found no significant differences in levels of physical activity across employment position levels, they reported that those employed in a clinical setting were the most physically active of all job settings with the most common barrier given for participating in physical activity being time.

Fitness is an area in which most ATCs have a reasonable level of professional training and understanding; however, more than one-half of these participants reported not meeting the professional recommendations. Regular physical activity is important in maintaining health and well being and should therefore be part of a daily routine for professionals who are responsible for others' health and fitness.

Nutrition

Healthy dietary practices are not based on one's food intake for a single meal or even a day, but rather on a pattern of food intake over an extended period of time.[21] As a population, Americans consume too many calories and do not follow a healthy or balanced diet. Nutrition guidelines are designed to help individuals maintain a healthy lifestyle through a healthy eating pattern including all five food groups. A healthy diet helps maintain a healthy body weight and desirable cholesterol, lipoprotein and blood pressure levels, while a poor diet has been linked to cardiovascular disease, hypertension, dyslipidemia, type II diabetes, overweight and obesity, osteoporosis, anemia, malnutrition and some cancers.[2, 21] Healthy eating requires individuals to keep caloric intake under control while consuming a variety of nutrient-dense foods from the basic food groups and limiting the consumption of saturated fats, trans fats, cholesterol, added sugars, salt and alcohol.[2] The USDA's recommendations include choosing foods from the five basic food groups (grains, vegetables, fruits, milk, and meat and beans) while also including

physical activity. These recommendations are based around Dietary Reference Intakes (DRI) which are encompass the Upper Level Intake Level (UL) for each nutrient, the Recommended Dietary Allowance (RDA) or the Adequate Intake (AI) as some nutrients do not have RDAs.[2]

In our study, ATCs did not follow the USDA's nutritional recommendations. None of the ATCs met the DRI for all five food groups during a typical seven day week. Protein was the food group DRI most often met (27%) while grains were the food group least often met (4%). In another study examining health professionals, female nursing students' carbohydrate intake was also found to be below the recommended values.[4] The results of our study also showed that ATCs consumed low amounts of discretionary foods. These habits differ from those of the general population as the general population has been found to have a higher fat intake than the DRI.[2] The ATCs nutritional habits could be influenced by schedules which require ATCs to eat away from home and can lead to meals which lack diversity and tend to be high in carbohydrates.[4]

A well balanced diet leads to sound nutritional intake and also promotes maintenance of a healthy body weight.[21] Participants' reported intakes of the five food groups seem to be inadequate when compared to the USDA's DRI. ATCs should examine their nutritional habits in order to align them more closely with the USDA's recommendations.

Alcohol and Tobacco

Alcohol provides little to no nutritional value, however it has been shown to have beneficial effects on the heart when consumed in moderation as the lowest all-cause mortality rates occur at an intake of 1-2 drinks per day.[2] Drinking in moderation does not

negatively affect the diet, nor does it increase the risk for developing drinking-related problems. For women, "moderation" is defined as up to one drink per day and for men up to two drinks per day. Different DRIs are based on weight and metabolism differences between the sexes.[2] ATCs followed the recommendations of moderation rather closely as only 4% of participants (n = 12) consumed more than the DRI. Compared to the general population (45%) few ATCs (20%, n = 55) reported that they do not consume alcohol, while 11% of physicians reported no alcohol consumption.[22]

Our study's results of alcohol consumption showed that more females than males exceeded the DRI for alcohol; however males (2.63) consumed more alcohol in a typical seven day week than females (2.28). This is consistent with Jenkins' and Olsen's[6] work which revealed that more males than females consumed 6-10 drinks per week and only males consumed more than 11 drinks per week. Similarly, Unruh et al[23] found male athletic training students to consume significantly more drinks than female athletic training students. Chambers' and Belcher's[24] study on physicians and teachers showed similar results; significantly fewer female physicians (10.6%) than male physicians (14.8%) consumed alcohol daily and only 4.7% of females compared to 10.5% of the male practitioners consumed more than 14 drinks per week. In the same study, female teachers also consumed less alcohol than their male counterparts with 5.2% of females and 18.3% of males consuming more than 14 drinks per week.

Tobacco has no known health benefits and cigarette smoking has been linked to depression and unhealthy nutritional habits. Studies have shown that smokers' nutritional habits are less healthy than nonsmokers' habits as smokers reported a higher intake of fat, alcohol and overall calories, as well as a lower fiber intake than nonsmokers.[25] Also,

Hemenway et al[26] found a positive correlation between cigarette smoking and depression and suicide.

In 2004, 20.9% of the general population smoked cigarettes (males [23.4%] and females [18.5%]).[27] Only 0.8% of all participants in our study reported smoking and there was no significant difference between males (0.8%) and females (0.7%). While there was no significant difference found between employment settings, the ATCs who were employed in a hospital or medical setting reported the highest percentage of current smokers (3%). Similarly, Garfinkel and Stellman[28] found that hospital employees, specifically 23.4% of nurses, reported high smoking rates. Linn et al[22] found that 9% of hospital employees reported smoking at least once a month. Only 4.1% of ATCs, all of whom were male, reported using smokeless tobacco. These results were lower than those of the general population where 18.7% of Americans use smokeless tobacco.[29]

Of all the areas examined in this study, participants reported the most sound health practices in regards to alcohol and tobacco use; ATCs met the professional recommendations and avoided excessive alcohol consumption and tobacco use all together. Based on these findings, we suggest that ATCs in this study reported positive alcohol and tobacco use role model behaviors.

Composite Health Score

Previous studies have shown that physical fitness and nutritional habits are associated with one's own attitude towards health promotion.[4, 22] The mean composite health score, comprised of responses regarding exercise, BMI, grains, fruits, vegetables, protein, low fat dairy, caffeine use, alcohol use and tobacco use of ATCs was 3.8 out of a possible score of 10 indicating that ATCs do not appear to be highly concerned with their

health habits. ATCs should be more aware of their health and fitness actions and how they promote these aspects of daily living as they are role models for the healthy and active lifestyle based on their level of authority and perceived knowledge.

Limitations

A habitual questionnaire is by no means a gold standard for measuring personal habits; however it is the most practical method when examining a large population.[30] A questionnaire holds the respondent accountable for the information they give, while also drawing conclusions from the information they report. Another limitation of this study is the inherent limitations to self-reported data as well as the generalization of the food frequency in phrasing the questions using consumption times interchangeably with servings. Other limitations were the limited response rate (27.5%) and the demographic area in which it was administered. A more in-depth examination of ATCs' dietary habits and other geographical regions should be examined. Further research is warranted to determine barriers towards practicing recommended health and fitness habits.

Conclusions

ATCs should choose and exhibit positive health and fitness behaviors in order to serve as positive role models for their athletes, patients and clients. ATCs demonstrated positive role model behaviors for alcohol and tobacco habits. ATCs also reported better health and fitness habits than the general population but did not meet professional recommendations set by the ACSM or USDA. To improve health and fitness, ATCs should incorporate exercise into their daily routine. ATCs also need to examine their daily nutritional habits and make adaptations to their diets based on the five basic food groups. We recommend that ATCs examine their personal behaviors and consider

improving their health habits based on professional guidelines and recommendations as our study reveals less than ideal role model behaviors by ATCs as an influencing factor for athletes' and clients' behaviors.

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Appendix A

Human Subjects Institutional Review Board Application

Project Description

Health and fitness are two separate aspects of a lifestyle that have critical effects on a person. These two aspects have had increasing awareness dedicated to them over the past decade as obesity has become increasingly prevalent in the American society, (U.S. Department of Health and Human Services, 2001). It is not just the general population that has been examined though. Studies are narrowing their participants to specific populations.

Health professionals and educators are key target populations of previous studies due to their direct involvement and effect on others. Previous studies indicate that "many nurses have accepted their role as health educators and counselors by adopting a 'practice what you preach' lifestyle and have become true role models for healthy living," (Dracup & Bryan-Brown, 2002, p. 499).

"Certified athletic trainers (ATCs) are the primary health care providers for the physically active and should be a role model and proponent for physical activity for the athlete," (Cuppett & Latin, 2002, p. 281). Past research is very limited and has focused on the level of physical activity of ATCs which is only one aspect of their job.

When working with athletes at any level, health and nutrition are key components in addition to training. While all sports may require a different diet, in general, a healthy and balanced diet is necessary and effective. ATCs are looked to for guidance and as a role model of both health and fitness habits for athletes and therefore should promote a positive lifestyle.

The purpose of this study is to analyze the self-reported health and fitness habits of ATCs in terms of generally accepted standards for healthy living. Since there is

limited research on the fitness habits of ATCs (Cuppett & Latin, 2002), it is difficult to predict what outcomes this study will produce. Cuppett and Latin's study did not examine nutritional habits, only fitness. The proposed study will be the first to establish the heath and fitness habits of ATCs. However, based on previous research of other health professions, it is expected that ATC's habits will vary based on their employment setting and age, and gender.

Methods

The questionnaires will be administered via electronic mail using Survey Monkey. The survey will be sent to ATCs who are currently employed as an athletic trainer and who are members in good standing with the NATA. Subjects will be randomly selected by Rik Hess, Information Technology Coordinator of the NATA. Mr. Hess will be asked to randomly select 1000 athletic trainers. Once the survey has been sent the subjects will be given five weeks to complete the survey and send back the results. Up to four follow-up prompts will be administered to maximize the response rate throughout the five weeks. Follow-up prompts will go out to all subjects and will read: This is a reminder that you have been selected to participate in a research project entitled Self-Reported Health and Fitness Habits of Certified Athletic Trainers. If you have not done so, please take the opportunity to complete the online survey found at the following link: _____. Data analysis will begin eight weeks after sending the initial questionnaire.

The data collected from the survey will be collected using Survey Monkey, and analyzed using the SPSS Data System. One-way analysis of variance (ANOVA) and post hoc Sheffe multiple comparisons will be conducted to determine if differences exist

between the health and fitness habits of ATCs, and also between males and females and different employment settings.

Benefits

This study will be important to athletic training because, to date, very few investigations have been done to study health and fitness habits of certified athletic trainers. It is important to find out if certified athletic trainers do practice the healthy and physically active lifestyle which they promote. Certain aspects of the job sometimes require one to be physically active, so not only is it important from a role model perspective, but also for the effectiveness of the profession. There are no direct benefits for those who choose to participate.

Subject Selection

Subjects will be randomly selected from the NATA Membership Database by the Information Technology Coordinator for the NATA, Rik Hess. Persons selected randomly as participants must be a certified member in good standing of the NATA and currently working in the field of athletic training, as determined by the information on the NATA Membership Database, and have a current electronic mail address.

Risk

There are no foreseen physical risks placed on the subjects of this study. The subjects may experience some discomfort answering questions about their habitual activity or inactivity. The mental risks involved are minimal.

Protection of Subjects

The subjects will be given an informed consent form that will outline the purpose and the possible risks of the study. This form will also let the participants know that if at

any time they are uncomfortable with the questions or subject matter or they wish to not continue with the survey they can stop immediately.

Confidentiality of Data

All subjects' privacy will be protected. The data and results from the surveys used in this study will be kept confidential. No names or other identifying information (i.e. addresses, telephone numbers) will appear on any papers on which the data is collected. All forms will be retained by the principal investigator in the Department of Health, Physical Education, and Recreation at Western Michigan University for three years, after which the principal investigator will destroy them.

Instrumentation

The instrument to be used for this study is a 67 item questionnaire divided into four sections: exercise and recreation, diet and nutrition, alcohol and tobacco, and demographics, designed to assess key aspects of total wellness. The questions asked address the weekly exercise habits, body weight, eating habits, alcohol and tobacco use, and general questions regarding gender, weight, height, age, and employment. The questions have been pilot tested and are based on criteria set forth in the health education literature (Jenkins & Olsen, 1994). The questionnaire asks respondents to answer the questions on a Likert-type scale (see appendix A). The demographic indicators will be necessary to answer the research question when comparing the habits of males to females as well as amongst the different employment settings.

Informed Consent

An informed consent statement will be attached to each electronic mail to inform the participants that they have been chosen to be invited to participate in this study. At

the bottom of the statement will be a link to a website that will take them to the survey. By clicking on the link they are agreeing to take part in the survey and have thereby given their consent. If they choose not to participate they do not click the link or select the option that states, "I decline" (see appendix B).

References

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Appendix B

Human Subjects Institutional Review Board Informed Consent

Western Michigan University
Department of: Health Physical Education and Recreation Principal Investigator:
Dr. Michael Miller
Student Investigators: Jessica J. Groth

You have been invited to participate in a research project entitled "Self-Reported Health and Fitness Habits of Certified Athletic Trainers." This research is intended to study both the exercise and eating habits of ATCs over the past month.

You will be asked to complete one online questionnaire provided by Jessica Groth. You will be asked to answer questions honestly and to the best of your knowledge. We would like you to answer all questions to the best of your ability, but you are not required to answer any questions. The only time that you will need to spend involved in the study is during the time that you are using to fill out the questionnaire.

You will also be asked to provide general information about yourself, such as age, gender, height, weight and employment setting.
One way in which you may benefit from this activity is having the chance to examine your current health and fitness habits. You may find that your current habits are very healthy. You may also discover that there are areas of your lifestyle that are not healthy and may need to be adjusted. The overall outcome may be one of greater satisfaction and comfort in your current lifestyle.

All of the information collected from you is confidential. That means that your name will not appear on any papers on which this information is recorded. The forms will all be coded and neither names nor other identifying information will appear on any papers on which this information is recorded. Survey Monkey will be used to administer the questionnaire insuring anonymity. All other forms will be retained for at least three years in a locked file in the principal investigator's office.

You may refuse to participate or quit at any time during the study without prejudice or penalty. If you have any questions or concerns about this study, you may contact either Jessica Groth at 269.352.7899 or via email at ssej21@yahoo.com, or Dr. Miller at 269.387.2728. You may also contact the chair of Human Subjects Institutional Review Board at 269-387-8293 or the vice president for research at 269-387-8298 with any concerns that you have. This consent document has been approved for use for one year by the Human Subjects Institutional Review Board on April 10, 2006. Do not participate in this after April 10, 2007.

By clicking on the link below you will be directed to the webpage containing the questionnaire. Submitting the survey is evidence that you agree to participate and have your data used in the study. If you do not wish to participate in this research project, simply do not continue on any further.

http://www.surveymonkey.com/s.asp?u=87702000463

Appendix C

Human Subjects Institutional Review Board Approval Letter

WESTERN MICHIGAN UNIVERSITY

Human Subjects Institutional Review Board

Date: April 10, 2006

To: Michael Miller, Principal Investigator
Jessica Groth, Student Investigator for thesis

From: Mary Lagerwey, Ph.D., Chair Mary Lagerwey

Re: HSIRB Project Number: 06-04-06

This letter will serve as confirmation that your research project entitled "Self-Reported Health and Fitness Habits of Certified Athletic Trainers" has been approved under the exempt category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may only conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: April 10, 2007

Walwood Hall, Kalamazoo, MI 49008-5456
PHONE: (269) 387-8293 FAX: (269) 387-8276

Appendix D

Health and Fitness Questionnaire

Self-Reported Health and Fitness Habits of Certified Athletic Trainers

Introduction to the Questionnaire:
This questionnaire should take approximately 10 to 15 minutes to complete. Thank you for your participation in this study.

Directions:

A) For each of the following questions, choose the answer that best fits your response.
B) If you do not see the answer that best fits your response, type your response under the OTHER section.
C) Please do not reveal your identity anywhere on the questionnaire.

1. Please indicate which of the following best describes the time of athletic season you are currently involved:
   a. In season
   b. Out of season
   c. N/A

Section 1 – Exercise and Recreation:

Please indicate, for a TYPICAL seven day week, how many days, the approximate number of minutes per day, and the approximate intensity you do any of the activities listed below.

2. Days per week

Cardiovascular Training	1	2	3	4	5	6	7	N/A
Resistance Training	1	2	3	4	5	6	7	N/A
Flexibility Training	1	2	3	4	5	6	7	N/A

3. Minutes per session

Cardiovascular Training	<10	10-20	21-30	31-40	41-50	51-60	>60	N/A
Resistance Training	<10	10-20	21-30	31-40	41-50	51-60	>60	N/A
Flexibility Training	<10	10-20	21-30	31-40	41-50	51-60	>60	N/A

4. Heart Rate Intensity

Cardiovascular Training	<35%	35-54%	55-69%	70-89%	90-99%	100%	N/A

5. During what time interval do you normally exercise?
4 to 10 AM 10AM to 1PM 1 to 5PM 5 to 10PM 10 PM to 4AM

6. Please list any seasonal recreational activities in which you participate in two or more days a week (i.e. golf, snowboarding, skiing, etc.).

Activity: _____ Apx. times per seven day week:_____
Activity: _____ Apx. times per seven day week:_____
Activity: _____ Apx. times per seven day week:_____

7. How would you rate yourself with regard to your ideal body weight? I am
1...20% under my ideal body weight.
2...10% under my ideal body weight.
3...at my ideal body weight.
4...10% over my ideal body weight.
5...20% over my ideal body weight.
6...greater than 20% over my ideal body weight.
7...Other (please Specify) _____

Section 2 – Diet and Nutrition:

8. During a TYPICAL seven day week, how many days do you eat:

Breakfast	0	1	2	3	4	5	6	7
Lunch	0	1	2	3	4	5	6	7
Dinner	0	1	2	3	4	5	6	7

9. During a TYPICAL seven day week, how many times did you eat each of the following foods?

Whole grains: Breads, cereals, pasta, rice, etc. _____times
Fresh fruit: Berries, apples, peaches, etc. _____times
Fresh or cooked vegetables: Carrots, lettuce, corn, peas, etc. _____times
Meat or beans: Poultry, fish, dry beans, nuts, etc. _____times
Low fat dairy product: Skim milk, yogurt, etc. _____times
Fried or deep fat: French fries, onion rings, etc. _____times
Fatty or high cholesterol foods: Bacon, sausage, liver, eggs, etc. _____times
High fat dairy products: Cheeses, sour cream, butter, etc. _____times
Sweet deserts: Cake, pie, cookies, ice cream, etc. _____times

10. Which of the following do you use on a daily or routine basis (> 3x/week)? (Check all that apply).
Vitamins ___
Herbs ___
Minerals ___
Protein/Weight gain shakes ___
Supplement bars ___
N/A ___
Other (please specify) _____

11. In a TYPICAL seven day week, how many 8 oz. cups of caffeinated coffee, tea, or sodas did you drink per day?
1...None

2...Less than 1 cup (1-7 oz) per day
3...1 to 3 cups per day
4...4 to 6 cups per day
5...More than 6 cups per day

12. In a TYPICAL seven day week, about how many times do you consume food from a restaurant?

_____times

13. From your answer to the previous question, how many of these times were from fast food establishments? (e.g. McDonald's, Burger King, Kentucky Fried Chicken, Arby's, etc.)

_____times

Section 3 – Alcohol and Tobacco:

14. In a TYPICAL seven day week, about how many alcoholic drinks do you consume? (A drink is 12 oz. of beer, 5 oz. of wine, or 1.5 oz. of hard liquor)

1...None, I do not drink alcohol
2...Less than 1 drink
3...1 to 5 drinks
4...6 to 10 drinks
5...11 to 15 drinks
6...16 to 20 drinks
7...20 or more drinks

15. Do you smoke cigarettes?

1...No, I have never smoked
2...No, I used to smoke but quit
3...Yes, less than one pack per day
4...Yes, one pack per day
5...Yes, more than one pack per day
6...Other (please specify) _____

16. Do you use smokeless tobacco such as chew, snuff, etc.?

1...No, I have never used smokeless tobacco
2...No, I used to use it, but quit
3...Yes, less than 1 can/pouch per seven day week
4...Yes, 1 or more cans/pouches per seven day week

Section 4 – Demographics:

17. What is your gender?

1...Male
2...Female

18. What is your height to the nearest inch without shoes?
_____inches

19. What is your weight without clothing?
_____pounds

20. What was your age at your last birthday?
_____years

21. What is the highest degree you have earned?
1...Associate
2...Baccalaureate
3...Masters
4...Doctorate
5...MD/DO/DMD
6...Other (please specify) _____

22. What is your current place of employment?
1...University/College
2...Secondary School
3...Hospital/Medical Setting
4...Independent Contractor
5...Clinic
6...Physician Extender
7...Health/Fitness/Sports Club
8...Industrial/Business/Corporate
9...Military/Government
10...Professional/Amateur Sports
11...Other (please specify) _____

23. Is there a difference in the health habits addressed in this survey based on time of season? If so, please indicate the type of difference that exists.
1...Yes, I have healthier habits in season
2...Yes, I have healthier habits out of season
3...No difference in my health habits based on time of season

Thank you for completing this questionnaire. Your contribution will help up evaluate the health and fitness behaviors of certified athletic trainers.