

2013 Fall

**Kentucky Association of Health, Physical Education,
Recreation and Dance**



Health, Physical Education, Recreation and Dance
Hang Tough!!

2012 KAHPERD Convention in Louisville

[KAHPERD JOURNAL]

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A Message from the KAHPERD President

Greetings from your president to my fellow KAHPERD members and readers of this Journal! Once again Dr. Steve Chen has put together a quality Research and Information Journal that I am sure you will find interesting. I also would like to thank all of authors' involvement and contribution in strengthening the research component of our organization.

This coming school year we have been given the opportunity and responsibility of hosting the Southern District Convention February 17-23, 2014 at the Convention Center in Lexington. Sandra Sims from the state of Alabama will be the President in charge of this year's proceedings and has chosen as her theme "Finding Joy in the Journey". The state of Kentucky needs to be proactive in submitting proposals for presentations. Even though this is a Southern District event the host state traditionally has had more attendees than any other state. We need to keep that ratio in the opportunity of giving presentations. Submitting a proposal can be done on line at our KAHPERD web site or the Southern District web site. Proposals are due by June 15th.

Thank you, you the reader for your continued involvement with the students in our Commonwealth. Through your collective efforts our children will become better prepared for the challenges of tomorrow. We too must pass to them the skills, knowledge, and persistence that education can provide them so they too may "Find Joy in THEIR Journey"!

Jim Hinerman, KAHPERD President
Eastern Kentucky University

Acknowledgement

Kentucky Association for
Health, Physical Education, Recreation and Dance

As the Editor of the KAHPERD Journal, I would like to show my appreciation to the following guest reviewers for their assistance in reviewing this current issue.

Dr. A J Motara, Berea College; Dr. Wardell Johnson, Eastern Kentucky University; Dr. Travis Esslinger, Western Kentucky University; Dr. Monica Magner, Morehead State University; Dr. Keri Esslinger, Western Kentucky University; & Dr. Jennifer Dearden

In addition, I would like to personal thank Mr. Phil Lederer, my diligent graduate assistant, for helping format the articles.

Sincerely,
Steve Chen, KAHPERD Journal Editor



KAHPERD Journal Submission Guideline

SUBMISSION OF A PAPER

The KAHPERD Journal is published twice yearly (spring and fall) by the Kentucky Association for Health, Physical Education, Recreation, and Dance. The journal welcomes the submission of empirical research papers, articles/commentaries, best practices/strategies, interviews, research abstracts (spring Issue only) and book reviews from academics and practitioners. Please read the information below about the aims and scope of the journal, the format and style for submitted material and the submissions protocol. Your work will more likely to be published, if you follow the following guidelines thoroughly.

Articles are accepted via an electronic attachment (must be in Microsoft Word format, doc or docx) through e-mail to the editor before the deadline dates. Submissions should be sent to editor, Steve Chen: s.chen@moreheadstate.edu

Deadlines: Spring issue—March 1 & fall issue—September 1

AIMS AND SCOPE

The main mission is to bring together academics and practitioners to further the knowledge and understanding of issues and topics related to health, physical education, sport administration and marketing, exercise science, sport coaching, dance, and recreation, etc. We encourage submissions relating to these topics from a variety of perspectives.

CONTENT

All articles should be written primarily to inform senior practitioners and academics involved in areas of health, physical education, recreation and dance.

Research articles should be well grounded conceptually and theoretically, and be methodologically sound. Qualitative and quantitative pieces of research are equally appropriate. A good format to follow would be: Introduction, Literature Review, Methodology, Results, & Discussion, Conclusion, and Implication. Articles may include an abstract of approximately 150 words including the rationale for the study, methods used, key findings and conclusions. Article should not exceed 10 double-spaced pages (including the references).

Reviews of books and/or reports are welcome (around 1000-2000 words). Information concerning the book/report must be sent to the editor.

Interviews (it would be nice to discuss with the editor beforehand) and best practice/strategy papers of 1,500-3,000 words should be objective and informative rather than promotional and should follow the following format: Objective/Background/Discussion and Practical Implication.

Research abstracts (300 words or less) are welcome and limited to the spring issue only. The submitted abstracts should have been presented (either an oral or a poster presentation) in the KAHPERD annual conference in the previous year.

*The editor is keen to discuss and advise on proposed research projects, but this is no guarantee of publication.

FORMAT AND STYLE

Manuscripts should follow the form of the guidelines for publications outlined in the 6th edition of the Publication Manual of the American Psychological Association.

Tables, charts, pictures, diagrams, drawings and figures should be in black and white, placed on separate pages at the end of the manuscript. They must be submitted photo ready and reproduced to fit into a standard print column of 3.5 inches. Only one copy of each illustration is required, and captions and proper citations should be typed on the bottom of the table and diagrams. Jargon should be reduced to a minimum, with technical language and acronyms clearly defined. The accuracy of any citations is the responsibility of the author(s).

For more specific style questions, please consult a recent edition of the journal.

SUBMISSIONS PROTOCOL

Submission of a paper to the publication implies agreement of the author(s) that copyright rests with KAHPERD Journal when the paper is published.

KAHPERD Journal will not accept any submissions that are under review with other publications. All manuscripts submitted will be peer reviewed by 3 members of the editorial board. To be accepted for publication in the journal, the article must be approved by no less than 2 of the 3 reviewers. Authors will normally receive a decision regarding publication within six to 12 weeks. Rejected manuscripts will not be returned.

The Efficacy of Service-Learning in Health Education to Increase Pre-Service Teachers' Openness to Diversity

Jason Crandall, Western Kentucky University
Christopher Zachary, Kentucky Wesleyan College

Abstract

One of the goals for Healthy People 2020 is to “achieve health equity, eliminate disparities, and improve the health of all groups” (U.S. Department of Health and Human Services, 2012). Because classroom teachers have the opportunity to make a significant impact on the health of their students, there is a need for colleges and universities to offer health education courses with goals of preparing pre-service teachers to address critical health behaviors in the classroom especially for those from diverse backgrounds. Service-learning can positively influence pre-service teachers' openness to diversity and create connections between the classroom and community. Therefore, the purpose of this study was to determine if including service-learning in a university health education course could increase pre-service teachers' openness to diversity. Participants are undergraduate students at a small, Midwestern, liberal arts college (n= 23) who enrolled in a 15-week sophomore level health education course. Community partnerships were formed between the institution and five community sites that served primarily underserved children. Groups of students designed and implemented physical activity and nutrition programs at each site. The Openness to Diversity and Challenge Scale (ODSC) was used to assess openness to diversity. There were no significant differences in students' openness to diversity before (M=3.48, SD=.49) or after (M=3.57, SD=.46) the course; $t(22) = -.752, p = 0.460$. There were no significant differences based on variables such as: gender [F (9, 13) = 1.08, $p = .436$], class rank [F (9, 13) = .879, $p = .566$], or degree status [F (9, 13) = 1.04, $p = .459$] after participation in the course. Although no significant increases were detected, course assessments (participants' reflections, presentations, community partner evaluations) showed that many participants were more aware of critical health behaviors and underserved populations. Key Words: service-learning, health, higher education, diversity, education

Introduction

The Centers for Disease Control (CDC) and Prevention (2012) identified six critical health behaviors that contribute to the leading causes of death, disability, and social problems in the United States: physical inactivity, poor dietary habits, violence, sexual behaviors, tobacco use, and, alcohol and drug use. Certain vulnerable populations are disproportionately affected by these behaviors due to social, economic, and/or environmental disadvantages (CDC, 2012). To address the inequalities of diverse populations, one of the four overarching goals for Healthy People 2020 is to “achieve health equity, eliminate health disparities, and improve the health of all groups” (U.S. Department of Health and Human Services, 2012). Classroom teachers, through school-based health programs, have the opportunity to make a significant impact on the health of their students especially those who suffer from health disparities.

Influencing future teachers to commit to school-based health programs is not without its challenges. Speller and colleagues (2010) found that few institutions provided training to enhance pre-service classroom teachers' role in health education. Even after training, pre-service teachers' health knowledge remained low and some did not believe health promotion should be a part of their job responsibilities (Speller & Colleagues, 2010). Another challenge for pre-service teachers' promoting health issues in schools is their lack of knowledge about racial diversity education. Most of the new teachers entering U.S. classrooms are white (84%) and from middle class backgrounds, while only slightly over half of the students they teach are white (U.S. Department of Education, 2012). These future teachers may not have developed the cultural understanding necessary. White students are also least likely to be prepared for diversity experiences in college (Milem & Umbach, 2003). Kentucky teacher standards now require new teachers to "value and support student diversity and individual needs" (Kentucky Department of Education, 2008). Pascerella, Edison, Nora, Hagedorn, and Terenzini (1996) defined openness to diversity as "an orientation towards enjoyment from being intellectually challenged by different ideas, values, and perspectives as well as an appreciation of racial, cultural, and value diversity". Long-term success of school-based health programs may be dependent on pre-service classroom teachers developing openness to understanding the needs of underserved and diverse student populations (Wyatt & Peterson, 2008). Meaningful pedagogies, such as service-learning opportunities in diverse communities, may go a long way towards helping pre-service teachers appreciate the diversity of their students. For example, Flannery and Kelly (1999) found service-learning improved health education students' "ethnic consciousness", emphasized the importance of cultural competence with regard to health issues and validated the role of service learning in empowering students to contribute to their community.

The connections between students and the community have the potential to foster transformational partnerships between students, faculty, administrators, and community participants (Bringle, Clayton, & Price, 2009). Students may learn to be more open to diversity from the people they are serving. They may also learn from the community leaders and administrators who know the negative effects inequalities can have on health (Reiter & Davis, 2011). Therefore, the purpose of this study was to determine if including service-learning opportunities in high-poverty schools and youth programs in a health education course could increase pre-service teachers' openness to diversity.

Methods

A one group pretest/posttest design was used during the spring semester of 2011. Participants (n=23) were undergraduate students at a small, Midwestern, liberal arts college (n= 23) enrolled in a 15-week sophomore level health education course required for all education students titled, *Contemporary Health Topics*. The course met twice per week for one hour and fifteen minutes per session. Required of all teacher education, kinesiology, and health promotion undergraduate students, the course is a comprehensive study of critical health behaviors with consideration given to their physical, emotional, social and intellectual dimensions.

Course Characteristics

The first assignment in the course was designed to help students better understand how critical health behaviors affect children. Four groups of five students and one group of three students were asked to conduct an in-depth analysis of one of the critical health behaviors using the Comprehensive School

Health Education Standards as a guide (Meeks, Heit, & Page, 2010). Their analysis was to include the background, epidemiology, treatment/prevention, utilization of school health standards, and program options. A diverse selection of articles was assigned throughout the semester. The purpose of these articles was to introduce students to the pedagogy of service-learning and concepts of wellness programming. In-class discussions of the readings were used to further enhance the students' appreciation for the social determinants of health. Socioeconomic status, race, gender, and age were specifically addressed during these discussions.

The second assignment involved service-learning. The primary researcher (instructor of the course) contacted administrators at three elementary schools designated as 21st Century Community Learning Centers (CCLC). CCLC receive federal funding to provide before-school, after-school, and summer learning programs for high-poverty, low-performing schools (U.S. Department of Education, 2012). Administrators from the YMCA and Girls, Inc. were also contacted because many of the children and youth attending these facilities are low-income. Groups of five students were assigned to each of the five community sites. The first two weeks of the course, students are prepared to implement their program. Beginning the third week, the groups visited their community site once per week for the remainder of the semester. The remaining weekly classroom sessions were dedicated to discussing assigned readings and issues of critical health behaviors. Because it was important to ensure that the needs of the community partners were being met, the students focused on programming requested by the community site partner. The two most critical behaviors requested were nutrition and physical activity. The students designed and implemented programs focused on improving these two behaviors. The groups took advantage of existing programs and equipment at their assigned sites. Some groups chose to create their own programs by creating learning aids such as bulletin boards and games. The instructor contacted each community site partner weekly to discuss the students' progress. This consistent communication allowed for timely feedback during class discussions. Diversity issues were addressed both on-site by the community partners as well as during class discussions and weekly written reflections.

Reflection is a key component of effective service-learning programs (Strouse, 2003). Weekly reflections using the e-learning internet platform, Moodle, were assigned. Students reflected on their community site experiences (e.g., reflect on any aspect of diversity that you can relate to your site experience, your recognition of stereotypes, barriers, anything related to diversity and site participants), required reading assignments (e.g., what stood out in each reading, any critiques, relate experiences to comprehensive school health education standards, etc.), and health behavior presentations (e.g., reflect on others' comments, activities that were done, whether your perspective changed, etc.)

Outcome Measures

A demographic questionnaire was administered the first day of the course. The Openness to Diversity and Challenge Scale (ODCS) was administered before and after the course to determine changes in the students' openness to diversity (Pascarella et al., 1996). See Table 1 for details of the scale. The instrument targets students' feelings about being intellectually challenged by different ideas, values, and perspectives as well as an appreciation of racial, cultural, and value diversity. Students indicated on 5-point Likert scales the degree to which they agreed or disagreed with each statement (5= Strongly

Agree, 1= Strongly Disagree). Pascerella et al. (1996) reported a Cronbach’s alpha of .84 demonstrating internal consistency of the instrument.

Table 1: *Openness to Diversity and Challenge Scale*

1.	I enjoy having discussions with people whose ideas and values are different from my own.
2.	The real value of a college education lies in being introduced to different values.
3.	I enjoy talking with people who have values different from mine because it helps me understand myself and my values better.
4.	Learning about people from different cultures is a very important part of my college education.
5.	I enjoy taking courses that challenge my beliefs and values.
6.	The courses I enjoy the most are those that make me think about things from a different perspective.
7.	Contact with individuals whose background (e.g. race, ethnicity, and sexual orientation) is different from my own is an essential part of my college education.
8.	I enjoy courses that are intellectually challenging.

Note: (Pascerella et al., 1996)

Statistical Analyses

Descriptive data were calculated for age, year in school, sex, and major in school. The statistical software Statistical Package for the Social Sciences (SPSS, version 17.0) was used for statistical analysis. The Alpha level was set at $p < .05$. A paired sample t-test was conducted to compare significant differences in students’ openness to diversity before and after the course. A one-way (ANOVA) was conducted to determine significant differences between gender, class rank, and degree status after participation in the course. Ethnicity was not analyzed since 98% of the participants identified as Caucasian.

Results

There were no significant differences in students’ openness to diversity before ($M=3.48$, $SD=.49$) or after ($M=3.57$, $SD=.46$) the course; $t(22) = -.752$, $p = 0.460$. Although there was no significant difference there was a slight improvement. There were no significant differences between gender [$F(9, 13) = 1.08$, $p = .436$], class rank [$F(9, 13) = .879$, $p = .566$], or degree status [$F(9, 13) = 1.04$, $p = .459$] after participation in the course. See Table 2.

Table 2
Demographic Characteristics and Reported Means on Openness to Diversity

Characteristic	Pre		Post		Pre-Post		N	%
	M^a	SD^a	M^a	SD^a	M^b	SD^b		
Gender								
Male	3.28	.43	3.53	.51	.25	.75	11	48
Female	3.67	.48	3.60	.42	-.06	.24	12	52

Class Rank								
Freshman	3.55	.51	3.50	.47	-.05	.38	7	30
Sophomore	3.25	.67	3.66	.83	.41	1.17	4	17
Junior	3.49	.47	3.59	.35	.10	.36	10	44
Senior	3.69	.09	3.56	.27	-.12	.35	2	9
Degree Status								
Education	3.67	.46	3.63	.42	-.04	.24	13	57
Kinesiology/Health	3.24	.43	3.49	.51	.25	.79	10	43

Note: ^a based on scale ratings 1-5, 5 being the highest; ^b difference between pre and post ODSC scores

Discussion

The purpose of this study was to determine if including service-learning opportunities in high poverty schools and youth programs in a health education course could increase pre-service teachers' openness to diversity. An increase in openness to diversity scores was found but not to a statistically significant level. Although we did not detect significant changes in participants' openness to diversity using the ODSC questionnaire, course assessments (participants' reflections, presentations, community partner evaluations) showed that the objectives for the course were met. Participants were more aware of their openness to support learning for future students from diverse populations, cultures, and environments and they did begin to identify environmental barriers to health behaviors in underserved populations. The lack of statistically significant changes was surprising; however a closer look at the background of our participants provided some insight.

Comparing both pre and post test ODSC scores for our participants with those from another study, we found our participants' scores to be much lower (Summers, Svnicki, Gorin, and Sullivan, 2002). Mean scores for males in a study by Summers, Svnicki, Gorin, and Sullivan (2002) were 3.84, compared to a mean pre-test score of 3.28 for our study. Similar differences were seen in females (3.99 vs. 3.67 pre-versus post-test respectively). The student body at our particular college is homogeneous with little diversity. Predominately Caucasian (73%), most come from small rural communities where exposure to diverse populations is limited, if not, nonexistent. There are data to support this explanation. Barkley, Boone, and Holloway (2005) found determinants of openness to diversity include the level of experiences students have with diversity and students from smaller towns tend to be less open to diversity when compared to students from larger cities. White students are least likely to be prepared for diversity experiences in college (Milem & Umbach, 2003). The overall mean ODSC scores did increase, but may not have approached significance because the participants' initial level of openness to diversity was lower than expected due to their race and rural backgrounds.

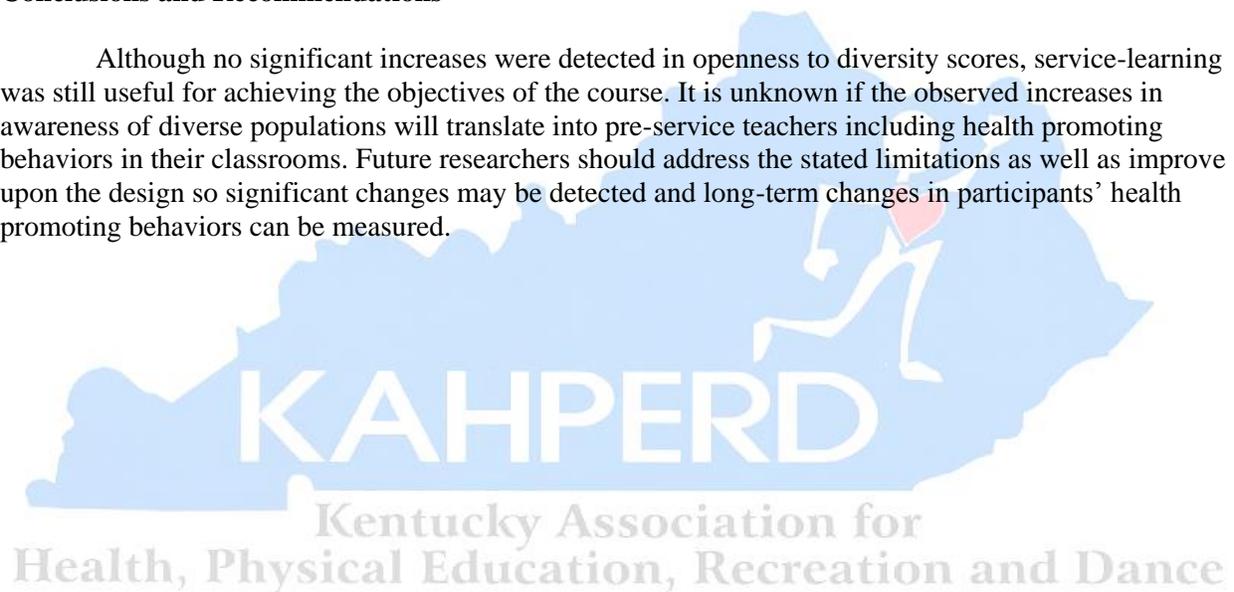
Although not part of the collected data of the initial study, participants' reflections and evaluations by community site partners indicated that both the participants and the children at the community sites benefited from the service-learning activities. For example, the community site partner from Girls, Inc. commented, "As they (participants) encountered difficulties they asked for time to discuss and strategize their next steps. They even went on to explain the assignments they had in class and their relation to their work here. They were very professional in taking time to ask how they could do better in their roles here and in class (T. Osborne, personal communication, May 7, 2011)."

A university student participant reflected on their experience at one of the elementary schools by writing, “After our discussion in class about looking at the kids at our site and noticing if there is any differences ...like what kind of background do they come from, I caught myself doing this. People automatically judge other people when they first see them but they tend to do it more unconsciously.... I paid attention to the clothes they were wearing, the way they acted, how they interacted with the other students, and what they knew educational wise.” There were other participant reflections that revealed an increased awareness to children with backgrounds different from their own.

There were limitations to our study including a small sample size. The absence of a control group also made it difficult to separate the effects of the service-learning from other experiences the participants may have had in and outside of their academic courses.

Conclusions and Recommendations

Although no significant increases were detected in openness to diversity scores, service-learning was still useful for achieving the objectives of the course. It is unknown if the observed increases in awareness of diverse populations will translate into pre-service teachers including health promoting behaviors in their classrooms. Future researchers should address the stated limitations as well as improve upon the design so significant changes may be detected and long-term changes in participants’ health promoting behaviors can be measured.



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College Students' Sexual Knowledge and Attitudes

Jean Claude Martin, Marshall University

Jennifer Y. Mak, Marshall University

Abstract

There is currently a controversy in this country about college students' perceived sexual knowledge and attitude. The purpose of the study was to identify and examine: 1) students' sexual knowledge, sexual attitude, and students' main source of sexual knowledge; 2) the differences between sociodemographic variables of gender, age, and self-perceived sexual knowledge in relation to sexual knowledge and sexual attitude; and 3) the relationship between sexual knowledge and sexual attitude. Participants were college students (n=201) of a Mid-Atlantic university. The students achieved an average score of 83% on the sexual knowledge test with all (100%) students having either an ambivalent or progressive/open-minded attitude toward sex as opposed to a traditional view of human sexuality. The top two sources of students' sexual knowledge came from friends and personal experience. Results indicated that a significant difference was found between students' self-perceived sexual knowledge and their actual sexual knowledge test scores. Students who rated themselves as having excellent sexual knowledge achieved the highest test score. A significant difference was also found between male and female students in their sexual attitude. Female students were significantly more progressive/open-minded than male students in their attitude. Males were more ambivalent.

Keyword(s): student issues, sexual knowledge, health promotion

Introduction

The 2005 Youth Risk Behavioral Survey and the 1995 College Risk Behavioral Survey revealed that 63.1% of high school seniors and 79.5% of college students have had sexual intercourse (Centre for Disease Control and Prevention [CDC], 2006a, 2006b). Every year about 250,000 college students took a human sexuality course (Moglia, 1994). The National Survey of Family Growth (NSFG) reported that 90% of 18 to 19 year old women received formal instruction on Sexually Transmitted Infections (STIs), safer sex, and how to say no to sex (Mosher, 2001). A similar study conducted by the National Survey of Adolescent Males (NSAM) discovered that 88% of males ages 17 to 19 received instruction on STIs and 87% received information about birth control (Sonenstein, 1995).

Two recent surveys of teens supported by the National Institute of Child Health and Human Development (NICHD) discovered that there was a decline for the seventh year in a row in sexuality activity, an increase in the use of condoms, and a declining approval of premarital sex (National Institute of Child Health and Human Development [NICHD], 2006). The NICHD attributed these results to sex education. Mckelvey, Webb, Baldassar, Robinson, and Riley

(1999) revealed that there was a relationship between knowledge and attitudes in where the college students who have less sex knowledge exhibited negative attitudes toward gay/lesbian/bisexual behavior, masturbation, premarital sex and contraception.

Conversely, a survey that determined sexual knowledge of college students in four Louisiana universities discovered that students performed poorly on the sexual knowledge test, averaging 55.39%, despite most of the students having a school-based sexuality education (Synovitz, Herbert, Kelley, & Carlson, 2002). This implied that college students, who were sexually active, were not equipped with sufficient knowledge to adopt responsible behaviors. There was a flaw in sex education since many students, despite gaining sex knowledge, did not practice safer sex (Pilkington, Kern & Indest, 1994; Rodden, Crawford, Kippax, & French, 1996). Other studies also contend the notion that sex education/information has no influence on sexual behavior, implying that knowledge influences attitudes which in turn influence behavior (Haywood, 1996; Thomson, 1994).

Studies suggested that sexual behavior could be predicted from sexual attitudes (Geringer, Marks, Allen, & Armstrong, 1993; Plotnick, 1992). Geringer and his colleagues (1993) revealed that attitude toward condom use predicted the use of condoms. It was unclear how sexual attitudes were mainly formed. The family influence may have a greater impact in the development of sexual attitudes than sex knowledge/education (Robertson, 1995; Whitbeck, Simmons & Kao, 1994). Other studies suggested that having divorced parents, lesser parental supervision, living with a single parent and having more permissive sexual attitudes put adolescents at an increased risk for sexual intercourse, pregnancy, and contracting an STD (Miller, Benson & Galbraith, 2001; Thornton & Camburn, 1987; Whitbeck, et al., 1994).

Interestingly, most students (96.9%) thought that sex education should come from parents. In reality, however, peers were the most significant source of sexual information, not literature, school, or parents (Kisker, 1985; Miller, 2002). Parents tended to be the least cited source of sexual information for young people (Sanders & Mullis, 1988). The lack of sex education at home causes students to turn to their peers and, unfortunately, peers might spread incorrect sexual information among each other (Rozena, 1986).

Sexual attitudes among college men and women appeared to have merged over recent years (Larry, 2004). Differences, however, still existed. Oliver and Hyde (1993) reported that college men still had a more permissive attitude toward casual sex while college women appeared to have a more conservative attitude in discussing condom use. In addition, college men had a more negative attitude regarding homosexuality than women did and were more likely to believe that sexual intimidation was justifiable (Feltey, Ainslie, & Geib, 1991; Kite & Whitley, 1996).

Keller's study (1959) suggested that male college students were more knowledgeable about human sexuality than female college students. However, other researchers found that female college students were more knowledgeable than male college students (Gunderson & McCary, 1980; Woods & Mandetta, 1975). A possible explanation for females' better sexual knowledge was indicated by studies showing more college female students enrolled in sexuality courses (Gunderson & McCary, 1980).

The researchers noticed much disagreement in the literature about college students' perceived knowledge in sex education and decided to conduct a survey to better clarify these important issues. The purpose of this study was to identify and examine: 1) students' sexual knowledge, sexual attitude, and their main source of sexual knowledge; 2) the differences among variables of gender, age in self-perceived sexual knowledge in relation to sexual knowledge test score; and 3) the differences among variables of gender, age and self-perceived sexual knowledge in relation to sexual attitude.

Methodology

Participants of this study were 201 college students from a Mid-Atlantic university which consisted of 101 males and 100 females. They were mainly undergraduates (94.5%), white (87.5%), between the ages of 20 to 22 (60%) with an age range of 17 to 46. The researchers were permitted to enter classrooms to instruct the students about the data collection procedure. **No** names were to be placed on the questionnaire to assure full anonymity, voluntary and self-administered. The researchers explained the purpose of the study, distributed the questionnaires, and supervised the data collection procedure.

The questionnaire consisted of three parts. Part 1 elicited information about the students' socio-demographic characteristics such as age, gender, major, year in college, race/ethnicity, source(s) of their sexual knowledge, and self-evaluation on how well informed they were about human sexuality. Part 2 consist of a modified/adapted Kinsey Institute/Roper Organization National Sex Knowledge Test that consisted of 12 true and false questions (Insel & Roth, 2002). This part of the questionnaire contained questions about sexual intercourse, masturbation, pregnancy, body image, sexual dysfunction, sexual anatomy, and contraception. The researchers received written permission to use this knowledge test from the Kinsey Institute. Part 3 elicited answers about sexual attitudes, which contained 18 questions for students to either agree, disagree, or are not sure to each of the statements. With written permission, the Insel/Roth, Core Concepts in Health questionnaire was employed to assess college students' sexual attitudes. Students responded to statements regarding their views about sex education, homosexuality, pornography, rape, feminism, masturbation, prostitution, and relationships (Insel & Roth, 2002).

Factorial ANOVA and descriptive statistics were used to analyze the data in this study. 2X4X3 factorial ANOVA was used to analyze the differences between 1) demographic variables

(gender, age group, self-perceived knowledge) and the sexual knowledge test scores; and 2) demographic variables and the sexual attitude. The rejection level of factorial ANOVA was set at $\alpha = .05$.

Results

In descending order, the source of students' sexual knowledge was obtained from friends (39.8%), experience (36.3%), school education (23.9%), parent(s) (14.4%), and from other sources (6%) such as T.V., movies, books, or magazines. Any response with more than one answer was eliminated since students were asked to note their main source of sexual knowledge. When asked to rate their sexual knowledge, one percent of students stated their sexual knowledge as very poor, 1.5% as poor, 29.9% as average, 51.2% as good, and 16.4% as excellent. No particular definition was given to students as to what constituted very poor to excellent for the purpose of not influencing self-perception about their sexual knowledge.

Sexual Knowledge

Students achieved a mean score of 83% on the sexual knowledge portion of the questionnaire. The lowest test score was 71.6% in response to the statement "most women prefer a sexual partner who has a large penis". The highest score was 93.0% in regards to the statement "a woman cannot get pregnant if the man withdraws his penis before ejaculating". Please refer to table 1 for a more detailed account of students' sexual knowledge.

Table 1. Descriptive Information of Sexual Knowledge Test Results

Questions	N	Answer Correctly %
1. A woman cannot get pregnant if the man withdraws his penis before ejaculating.	201	93.0
2. Masturbation is physically harmful.	201	91.5
3. The average length of a man's erect penis is 5 to 7 inches.	200	90.0
4. All men like large female breasts.	201	87.1
5. A woman cannot get pregnant if she has sex during her menstrual period.	201	87.1
6. Most women have orgasms from penile thrusting alone.	200	85.0
7. Impotence usually cannot be treated successfully.	201	81.1
8. About 6 to 8 out of every 10 American women have masturbated.	200	79.0
9. People usually lose interest in sexual activities after age 60.	201	76.6
10. The average American first has sexual intercourse at about 16 or 17 years of age.	199	75.9
11. Petroleum jelly, Vaseline Intensive Care, and baby oil are not good lubricants to use with a diaphragm or condom.	200	75.5

12. Most women prefer a sexual partner who has a large penis. 201 71.6

There were no statistical significant differences between males and females, younger and older students to their sexual knowledge test scores. A significant statistical differences was found, however, between students' self-perceived sexual knowledge and sexual knowledge test scores [$F(190)=3.381$, $p<.05$] (See table 2). Students who rated themselves as having "excellent" sexual knowledge achieved the highest test scores ($M=10.8$). For unknown reason(s), students who rated themselves as "good" or "average" in sexual knowledge have similar knowledge test scores.

Table 2. Sexual Knowledge Test Scores by Gender by Age Group by Self-perceived Knowledge

Source of Variation	Sum of Squares	df	Mean Square	F	p
Gender	.035	1	.035	.014	.908
Age Group	2.036	3	.679	.257	.856
Self-perceived Knowledge	17.833	2	8.916	3.381	.036*
Gender/Age Group	.785	3	.262	.099	.960
Gender/ Self-perceived Knowledge	8.428	2	4.214	1.598	.205
Age Group/Self-perceived Knowledge	17.160	6	2.860	1.085	.374
Gender/Age Group/Self-perceived Knowledge	21.112	6	3.519	1.334	.245

*significant at the .05 level

Sexual Attitude

Sexual attitude was determined by adding up a numerical value associated with whether the students agree, disagree, or are not sure with a particular statement such as "abortion should be personal, a private choice for a woman". The results in table 3 showed that there were no significant differences among age group, self-perceived knowledge and sexual attitude. However, the results showed that female students ($M=43.57$) were significantly more progressive/open-minded than male students ($M=40.19$) (see table 3).

Table 3. Sexual Attitude Test Scores by Gender by Age Group by Self-perceived Knowledge

Source of Variation	Sum of Squares	df	Mean Square	F	p
Gender	228.34	1	228.34	8.65	.004*
Age Group	140.04	3	46.68	1.77	.155

Self-perceived Knowledge	12.43	2	6.21	.235	.791
Gender/Age Group	125.63	3	41.88	1.586	.195
Gender/ Self-perceived Knowledge	6.07	2	3.04	.115	.891
Age Group/Self-perceived Knowledge	103.70	6	17.28	.654	.687
Gender/Age Group/Self-perceived Knowledge	170.07	6	28.35	1.07	.381

*significant at the .05 level

Discussion and Conclusion

University students in the present study were very knowledgeable (mean score at 83%) about human sexuality. In contrast to our findings, Synovitz and his colleagues (2002) obtained a score at 55.39%. Since the actual Kinsey test was a landmark study, the researchers decided to compare specific differences between our results and those of Kinsey. Our participants outperformed the participants of the 1989 Kinsey test. 55% of the participants in the 1989 Kinsey test failed; on the other hand, only 17% of our participants failed the test. Table 4 showed the portion of performance between the participants of our study and the Kinsey study.

Table 4. Sexual Knowledge Test Results of Current Study and Kinsey Report

Questions	Current Study %	Kinsey Report* %
Question: Average age of Americans having first sexual intercourse <i>Correct Answer: 16-17 years of age</i>	76.0	24.0
Question: Percentage of females who masturbate. <i>Correct Answer: 60% to 80%</i>	79.0	18.0
Question: Impotence usually cannot be treated successfully <i>Correct Answer: False</i>	81.1	64.0
Question: Petroleum jelly, Vaseline Intensive Care, and baby oil are not good lubricants to use with a diaphragm or Condon <i>Correct Answer: False</i>	75.5	50.0
Question: Most women prefer a sexual partner who has large penis <i>Correct Answer: False</i>	71.6	40.0
Question: woman cannot get pregnant if the man withdraws his penis before ejaculating. <i>Correct Answer: False</i>	93.0	65.0

*Reinisch, J.M., Beasley, R., & Kent ,D. (1990). *The Kinsey Institute New Report on Sex: What You Must Know to be Sexually Literate*. New York: St. Martin's Press.

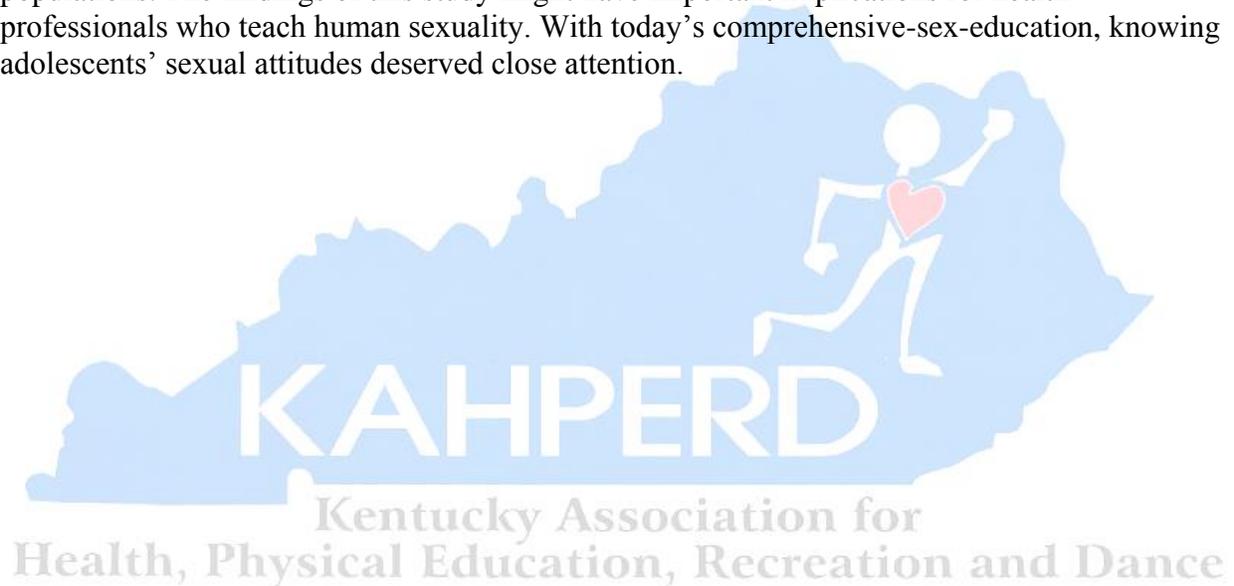
The differences of results of this study to the research of others can be due to regional differences, sample size, age of a person, kinds of questions asked, wording style, and the manner in which researchers presented themselves to the survey participants. In addition, it was not clear how much, if any, high school students or college students had enrolled in a human sexuality course. The literature, however, stated that half of high schools offered elective health classes (Kann, Brener & Allensworth, 2001). At this point, there was no way to know how many high school students have enrolled in these classes nationally was unknown and also unknown was the contents of the various sex curricula. Moglia (1994) reported that every year about 250,000 college students enrolled in a human sexuality course, which may partially explain the different results obtained from our study and that of Kinsey institute/Roper Organization (Reinisch, Beasley & Kent, 1990). More college students who took the human sexuality course, the better performance of the sexual knowledge test.

The researchers found that sources of students' sexual knowledge in descending order were friends, experience, school, and parents. The results of this study were consistent with previous research. Peers were often rated highest as source of sex information and parents were rated as the lowest source (Kisker, 1985). The finding in this study was consistent with other studies in that none of the students had a traditional view of human sexuality, although some researchers had shown adolescents were becoming more conservative in their sexual attitudes (Feltey, Ainslie, & Geib, 1991; Roche & Ramsbey, 1993).

The finding in this study revealed that there were no significant statistical differences in sexual knowledge between males and females as well as between younger and older students. This finding contradicted with the results of Synovitz and his colleagues (2002) that found sex knowledge increased with each year in college and also with those of Gunderson and McCarty (1980). Synovitz and his colleagues (2002) found that females scored significantly higher on the knowledge test than did males.

The researchers also discovered that female students were significantly more progressive and open minded than male students in their sexual attitude. The findings in this study were similar to Kite and Whitley's (1996) result that males tended to have a more negative attitude toward homosexuality than females. Oliver and Hyde (1993) reported in their study that males were more permissive than females toward causal sex. The researchers received mixed results, depending on the attitude statement. For example, half of both male and female students agreed to the statement that "having sex just for pleasure is ok". On the other hand, more males than females agreed with the statements "prostitution should be legalized" and "access to pornography should not be restricted for adults". Feltey and his colleagues (1991) found that more male than female responders believed that sexual intimidation was justifiable. The researchers obtained a similar result when more males than females agreed with the statement "A woman who is raped usually does something to provoke it."

Overall, the researchers achieved part of the research goals by reaffirming the results of several past studies. The methodological limitations of the present study should be noted. First, students were chosen from one Mid-Atlantic university which implied that the results might not be generalizable to all university students. Second, students were selected out of convenience. The participants were not randomly selected from a larger pool of potential subjects. Third, the majority of the participants were white (87.5%). Fourth, one thing to keep in mind was that participants may differ in their interpretation at commonly used sexual words, meanings, or behavior. More research still needed to determine the factors that affect people's sexual attitudes, since past research tended to support that attitude influences sexual behaviors, perhaps more so than knowledge. Further research was needed which used more diverse and larger samples in order to determine the extent to which the current results may be generalizable to other populations. The findings of this study might have important implications for health professionals who teach human sexuality. With today's comprehensive-sex-education, knowing adolescents' sexual attitudes deserved close attention.



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Crisis Communication in Sport Management: Research Aides Crisis Response Selection

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Abstract

Recent events (i.e. Boston Marathon bombing) suggest sport organizations are not immune to crises demanding communication with stakeholders. Communication during the crisis allows sport organizations to instruct stakeholders, help stakeholders adjust and assists sport managers in image damage containment (Coombs, 2012). Successful crisis management deems sport professionals must understand what defines a crisis, what potential crisis sport organizations may face and how to match crisis situational characteristics with crisis communication strategies. This article helps provide sport management professionals with a basic foundation of crisis communication planning, defines crises, outlines crisis types, and discusses communication response strategy.

Keywords: crisis, crisis communication planning, crisis communication strategy

Introduction

Sport industry is not immune to crises that potentially damage an organization's reputation in the eyes of their stakeholders and ability to conduct business. On July 9, 2013 the Denver Post reported the Broncos management spent time sorting out the details of a DUI arrest of their director of player personnel, Matt Russell (Legwold & Nicholson, 2013). New England Patriots owner Robert Kraft responded to events surrounding the arrest of former Patriot's tight end Aaron Hernandez, stating "If this stuff is true, then I've been duped and our whole organization has been duped" (Tao, 2013, par. 5). Mr. Kraft continued his statement explaining the steps taken by the Patriot's in an effort to distance their organization from the former Patriot tight end.

These incidents demonstrate the importance of developing and implementing a crisis communication plan. Stoldt, Dittmore, and Branvold (2012) express concern about the crisis readiness of sport organizations of all sizes. Large sport organizations may divide leadership into separate legal, public relations, and marketing departments. Smaller organizations may require a few leaders to assume many roles. To provide sport management professionals with a basic foundation of crisis communication planning, this paper defines crises, outlines crisis types, and discusses communication response strategy.

Defining Crisis

A crisis is an event, situation, or occurrence (Stoldt, et. al., 2012; Seeger & Ulmer, 2002; Seeger, Sellnow & Ulmer, 2003). Seeger et al. (2003) indicate the presence of a sense of surprise as a crisis trigger event catches the organization off-guard. Once triggered, a series of events disrupts normal organization operation. The crisis continues until the organization achieves a near normal operational state once more. Coombs (2012) echoes the sense of unpredictability associated with a crisis, but suggests a crisis should not represent an unexpected event. Smart leaders of an organization know crisis potential exists and plan accordingly. Coombs also emphasizes negativity and threat to an organization's ability to perform as characteristics defining a crisis. Seeger and Ulmer (2002) suggest a crisis represents devastating events that create urgency, threat and loss for an organization and its stakeholders. The crisis potentially jeopardizes an organization's ability to survive and profit. As the organization's foundation erodes, questioning begins and events surrounding the crisis threaten the organization's goal achievement. Within the context of sport management, Stoldt, et al. (2012) suggests similar devastating outcomes associated with a crisis include damaging effects on the organization's financial stability, credibility and reputation.

Crisis Classification

Crisis classification focuses on common characteristics. Seeger et al. (2003) discussed nine types of crises derived from the works of early researchers. These crisis types included public perception crises, natural disasters, product or service crises, terrorist attacks, economic crises, human resource crises, and industrial crises. Crises of public perceptions include negativity associated with rumors. Crisis of public perception stem from word-of-mouth, news reports, or electronic outlets. Natural disaster included events outside the control of the organization such as earthquakes, tornadoes, blizzards, etc. or accidents that resulted during these events. Crises related to product or services stemmed from food-borne illness, product recalls, or negative media stemming from undercover investigations of an organization's product or service. Hostile takeovers or economic downturns represent economic crises. Human resource crises include employee harassment, workplace violence, strikes, and discrimination. While industrial crises include explosions, facility collapses, and toxic substance release. Terrorist attacks include events such as the Boston Marathon bombing.

Favorito (2007) describe five types of crises that sport organizations potentially face. These include crises associated with physical plant, on-field events, family, corporate, and player personnel. A physical plant crisis includes natural disaster and terrorism categorized Seeger et al. (2003) along with security threats and construction problems. Major injury, or death of players or fans make-up the on-field crisis category. Issues such as after-hours legal issues or scandals compose the family crisis category. Layoffs, financial failures, compliance misdeeds, and actions causing political protest make up corporate crisis a sport organization may face. Finally, trades and/or releases of valuable coaches or players form the player personnel crisis.

Crisis Management

Researchers posited a staged approach to crisis management. These approaches include models with six, five or three stages (Augustine, 1995; Pauchant & Mitroff, 1992; Coombs, 2012). Coombs' (2012) crisis event stage specifically focusing on crisis response. Coombs suggests communication concerns in this stage focus on form and content.

Studies investigating how sport organizations respond to crises focus on image restoration and apology. Nelson (1984) examined the strategies used by Billie Jean King, her family and peers, when she responded to a relationship scandal involving her former secretary. Benoit and Hanczor (1994) studied the image restoration strategies Tonya Harding used during an Eye-to-Eye interview focusing on the attack on Nancy Kerrigan. Brazeal (2008) investigated the image repair strategies Terrell Owens employed during his Philadelphia Eagles controversy. Investigations of apology in sport include investigation of Tony Stewart (Jerome, 2008), Major League Baseball's steroid crisis (Smith, 2007) and Michael Vick (Meyer, 2007). Ware and Linkugel (1973) and Kruse (1981) provide a theoretical understanding of apology. Benoit and colleagues (Benoit & Lindsey, 1987; Benoit & Brison, 1994; Benoit, 1995) build on apology research to develop a theory of image restoration strategies.

Apologia

Ware and Linkugel (1973, p. 274) believed apology or the "public speech of self-defense" represents a form of rhetoric uniquely situated from other forms of rhetoric. They hypothesized four potential strategies employed as part of defensive speech. These strategies included denial, bolstering, differentiation and transcendence. Denial attempts to remove any association with the event resulting in criticism. Use of this strategy may involve denial of intent or denial of the act itself. Bolstering attempts to identify with something viewed positively by the audience. The scrutinized individual assumes a reformative (Ware & Linkugel, 1973 p. 275) position when using a denial or bolstering strategies. The final two strategies involve attempts to transform current meanings held by the scrutinizer (Ware & Linkugel, 1973). Differentiation attempts to distance the individual criticized from what the audience views negatively. Transcendence attempts to establish connections to a larger context thereby reframing the action from a different perspective for the audience.

Kruse (1981) examined the practice of apology in team sport suggesting four situations required apology. These situations include existence of threats to team harmony, minimizing the seriousness of the sport or your role, failing to give your best effort, or ethical misdeeds that violate both society's and sport ethical standards. Kruse found that sport apologists use similar strategies. Kruse also suggested a slight difference in transgression reaction in sport versus society at-large as reaction to transgressions may be tempered by sport's emphasis on winning.

Image Restoration Strategies

Benoit developed image restoration theory as part of a series of case studies examining the image repair efforts of organizations and individuals experiencing crises. His early works (Benoit & Lindsey, 1987) employed the typology of self-defense strategies proposed by Ware and Linkugel's (1973). Benoit and colleagues continued this line of investigation examining crises experienced by AT & T (Benoit & Brison, 1994), Sears Auto Repair (Benoit, 1995), Dow Corning (Brinson & Benoit, 1996), and Wal-Mart (Benoit & Dorries, 1996).

Benoit's (1995, 1997) typology of image repair strategies include five overarching categories with some message variations within categories. Available strategies include denial, evasion of responsibility, reducing the offensiveness of the act, corrective action, and mortification. The strategies as presented by Benoit build on previous apologia research. Denial strategies attempt to either deny involvement in or responsibility for the crisis. Two denial variations include simple denial or blame shifting. Evasion of responsibility strategies attempt to reduce the organization's responsibility for the act in question. Within this strategy organizations may choose to use one of four strategy variations including provocation (in response to someone else we had to act), defeasibility (organization lacked control over important crisis elements), accident (it was an accident), or good intentions (we meant well and didn't know this negative outcome would result). In an attempt to reduce the offensiveness of the act, organizations may select from six different variations. Bolstering refocuses the audience to past positive actions or the organization's good character as a means to reduce the offensiveness of the act. Minimization attempts to reduce negative feelings perceived to result from the crisis. Differentiation involves suggesting others have committed similar or more offensive acts. Transcendence attempts to reframe the offensive act from a positive perspective. Attacking the accuser calls into question the credibility of accuser to reduce the perceived offensiveness of the event. Compensation pays the victims of the crisis (Benoit, 1995, 1997).

In addition to the aforementioned two strategies, Bruce and Tini (2008) suggest a crisis communication strategy unique to sport based on the relationship between players and fans identified as diversion. Using this strategy, the sport organization generates empathy thereby reducing the negative impact of the crisis. The strategy frames the players and fans both as victims of the crisis. The researchers suggest diversion works best in situations where the players are innocent of crisis involvement. Players cannot have control of the events that transpired leading to the crisis. If successful, fan focus shifts from the team to the players thereby helping to reduce the negativity generated by the crisis.

Situational Crisis Communication Theory (SCCT)

Coombs and colleagues advanced our understanding of crisis communication by moving from case study analysis to empirical testing of crisis communication response strategy and crisis

situation. The resulting theory, situational crisis communication theory (SCCT), matches crisis situation and corresponding reputation threat with response strategy by examining three factors; crisis responsibility (Coombs & Holiday, 1996; Coombs, 1998), crisis history (Coombs & Holiday, 2001; Coombs, 2004), and prior reputation (Coombs & Holiday 2002; Coombs, 2007). Communication response strategies group into four categories that include denial, diminishment, deal later referred to as rebuilding (Coombs, 2012), and bolstering (Coombs, 2012). In these response strategies, Coombs begins by identifying response strategies previously proposed by others researching apologia and image restoration. Denial strategies include attacking the accuser, deny, and scapegoating. Diminishment strategies include excuses and justification. Rebuilding strategies include compensation and apology (Coombs 2006, 2012). Bolstering strategies include reminding, ingratiation and victimage (i.e. organization is victim too). Bolstering helps supplement the other communication strategies (Coombs 2012).

The theory contains three clusters of crisis type including a victim, accidental, and preventable (Coombs & Holladay, 2002). These clusters are grouped based on perceptions of crisis responsibility. The victim cluster includes natural disasters, rumors, workplace violence, and malevolence. The victim cluster presents minimal organization crisis responsibility. The accidental cluster includes two technical-errors, accidents and product tampering, and challenges. The accidental cluster represents low crisis responsibility for the organization. The preventable cluster includes two human errors, accidents and product harm, and organizational misdeeds. The preventable cluster presents strong crisis responsibility for the organization.

The theory's design allows crisis managers to conduct a two-step analysis as part of their crisis communication strategy decision making processes (Coombs, 2007). Step one involves typing the crisis. This typing process provides one with an initial understanding of the organization reputation threat caused by the crisis. The next step involves understanding the threat to the organization based on assessments of past crisis history and prior reputation (Coombs, 2007). Crisis managers need to understand these two factors serve to intensify stakeholder assessments of the organization's responsibility for the crisis (Coombs & Holiday, 2001). In practice, in step one; if the crisis type falls within the victim cluster, organization stakeholders attribute little responsibility for the crisis to the organization. However, if in step two, the organization uncovers a history of this type crisis and/or a prior negative reputation within the eyes of its stakeholders, the organization must assess the crises reputational threat equivalent to that of crises within the next crisis cluster (i.e. the accidental cluster). The organization then selects a crisis communication strategy that accounts for the increased threat (Coombs, 2007). As the level of crisis responsibility increases, the organization's level of accommodation increases requiring use of more accommodative crisis communication strategies (Coombs & Holladay, 2001). For example, Coombs (2006) suggests using deal/rebuilding communications strategies with crisis in the intentional cluster and diminish communication strategies with the accidental crisis cluster. Denial strategies help fight rumors or unfair challenges.

Implications and Conclusions

Works in crisis communication provide sport managers with a framework that their crisis communication team may use as part of their decision making process. Evidence based links between crisis situation elements and crisis communication strategy presented within SCCT help increase the likelihood organizations may contain crisis threats. The framework serves as a guide that presents ideas for analysis. Each crisis is unique hence it would be an over simplification to imply the researchers have created a cookbook of crisis communication failsafe steps to mitigate threats. Coombs (2012) suggests "SCCT provides guidelines, not absolute rules, to help crisis managers select the most effective response" (p. 168).



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An Examination of Behavioral Data and Testing Scores as Indicators of Student-Athletes' Academic Success

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Abstract

The researchers examined behavioral data and testing scores to verify the best indicators of student-athletes' academic performance for balancing academic achievement and athletic participation. One hundred eighty six student-athletes (125 males and 61 females) of a regional university (a NCAA Division-I affiliated institution) in the Appalachian region completed an 11-item daily life behavioral survey based on several studies (Becker, 1965; Csikszentmihaly & Larson, 1984; Lee, Park, & Shin, 2007) from spring of 2012. Predictive standard test scores were gathered with the support of the Enrollment Office and the Office of Institutional Analysis. Results of the inquiry indicated that the participants spent a daily average of six hours studying and attending classes and four hours in athletic practices and competitions. Their time spent in leisure and social activities also varied significantly based on their gender, racial background, academic status, and participatory sport. Participants' academic performance (grade point average) was found to be positively correlated ($p < .01$; Pearson $r = .497$) with the time spent attending classes and studying, and negatively correlated with the time spent in competition and practice and leisure activities ($p < .01$; Pearson $r = -.357$). Predictive standard testing scores yielded weak correlations with academic performance (Pearson $r < .300$). This sample group did not report more time spent in practices or competitions as reported by other studies. However, the need to balance student-athletes' academic and athletic life is important. The researchers provided further discussion and practical suggestions on how to work with student-athletes concerning this conundrum.

Introduction

University athletic administrators and academic advisors are constantly seeking and developing programs that help student-athletes navigate through the social, academic and personal intricacies of university life. In order to justify the mission of higher education, many universities take a proactive approach to recruiting high quality student-athletes and make a concerted effort to provide adequate academic support programs to ensure their student-athletes' academic success. Higher education institutions and their athletic governing bodies such as National Collegiate Athletic Association (NCAA) and National Association of Intercollegiate Athletics (NAIA) often emphasize the importance of academic preparation and personal well-

being of student-athletes. However, monitoring the development of student-athletes' academic performance and well-being is a complex and challenging task that many have not successfully achieved (Eitzen & Sage, 2008).

Collegiate student-athletes' academic role and performance are perennial controversial topics that are examined by academic researchers, sports pundits, and the general public. Traditionally, student-athletes have been negatively stereotyped. They have been criticized as lazy and unmotivated individuals who lack a positive perspective toward their academic studies (Meyer, 1997; Miller & Kerr, 2002; Miller, 2008; Simon, Bosworth, Fujita, & Jensen, 2007). Student-athletes are viewed as single-minded, narcissistic individuals who concentrate only on their athletic career (Miller, 2008; Miller & Kerr, 2003). They are also criticized for receiving preferential treatment, and getting a scholarship based on substandard test scores and poor academic records, and clustering around certain majors to maintain their athletic eligibility (Coakley, 2007; Eitzen & Sage, 2008). According to the reports by Thompson (2008) and Wieberg (2008), many American student-athletes indicated that they often spent no less than 40 hours per week in their sport-related activities (practices and competitions). One third of 1,600 football and 417 men's basketball players from top-tier Division-I institutions indicated that they consider themselves more athletes than students (Wieberg, 2008). For the student-athletes, there were as many or more hours recorded spent practicing and competing as there were recorded hours spent in class and study (City TownInfo, 2011; Thompson, 2008).

Student-Athletes' Academic Performance and Experience

Does participation in athletics and sports have any positive impact on student-athletes' academic learning and aspiration? Studies found that students who participated in Division-I and Division-III intercollegiate athletics did not have a better GPA or greater outcomes in cognitive learning and motivation (Hood, Craig, & Ferguson, 1992; Pascarella, Bohr, Nora, Terenzini, 1995; Pascarella, Truckenmiller, Nora, & Terenzini, Edison, & Hagendorn, 1999; Richard & Aires, 1999; Shulman & Bowen, 2001) when compared to non-athlete students. On the other hand, the findings of some studies tended to recognize the academic benefits from student-athletes' athletic participation and showed that athletes actually perform better than their non-athlete peers. Several studies showed that Division-I collegiate student-athletes were equally or more engaged in academic and campus social activities than their non-athlete peers (Umbach, Palmer, Kuh, & Hannah, 2006; Williams, Sarraf, & Umbach, 2006; Wolniak et al., 2001). Several past studies indicated that student-athletes, regardless of their race, consistently reported positive perceptions of personal gains in social and educational competencies and leadership skills (Bailey, Armour, Kirk, Jess, Pickup, & Standford, 2009; Blinde, Taub, & Han, 1993; Miller, Melnick, Barnes, Farrell & Sabo, 2005; Sellers, Kuperminc, & Damas, 1997; Shaffer & Wittes, 2006; Shiina, Brewer, Petitpas, & Cornelius, 2003; Weis, 2007; Williams et al., 2006; Woodruff & Schallert, 2008).

Hypothetically, Division-I athletic powerhouse programs are more likely to have well-staffed and comprehensive tutoring programs for their athletes. Mixon, Treviño, and Minto (2004) found that successful athletic programs that consistently win more games attract student-athletes and non-student-athletes with higher academic scores, hence improving academic standing of the institution. Despite numerous studies that have delved into the academic performance and impact of student-athletes' athletic participation experience, there was no consensus agreement on the methods for predicting or ensuring student-athletes' future academic success. Setting higher academic standards to recruit better prospects is a common practice implemented by college administrators and coaches to ensure the academic success of student-athletes. However, it seems the use of the standardized test scores is the only universal practice that is available to ensure future academic success of the student-athletes.

Student-athletes have been criticized with having low academic success and being admitted to college with low standardized test scores, thus the NCAA continues to raise academic requirements for sports scholarships (i.e., GPA, SAT, & ACT scores). There are some issues concerning the emphasis on the standardized test scores. Those issues usually centered on the potential biases and validity of the tests. For example, studies have shown that the SAT only had a moderate level of predictability on college students' GPA. Those standardized tests are especially unreliable for individuals who come from disadvantageous socioeconomic backgrounds (Fairest.org, 2010; Marsh, Vandehey, & Diekhoff, 2008; Sackett, Kuncel, Arneson, Cooper, & Waters, 2009; Thomas, 2008). Therefore, many schools and programs do not rely on the standardized test scores as the sole predictive and evaluative tool for their future applicants (Ashburn, 2009; Unknown, 1999; USA Today, 2007).

The Use of Behavioral Data in Daily Life

Since there was no definite consensus agreement on the methods for predicting or ensuring student-athletes' academic success, the researchers of this study would like to propose another useful indicator that the administrators may use to predict prospective students' academic performance. This indicator is the usage of behavioral data on academic related activities. As early as the 1960s, Becker (1965) had examined the amount of time that adults spent in a given activity context (i.e., schoolwork, labor, leisure, etc.) to analyze their socialization experiences. Csikszentmihaly and Larson (1984) further utilize the theory of time spent to recognize the differences in life style practices between adults and teenagers. Based on the aforementioned research, the researchers assumed that student-athletes who spend a great portion of their daily life in athletic activities must have a very different activity pattern compared to non-athlete students. The study of Lee, Park, and Shin (2007) was one of the recent empirical studies that examined Korean college student athletes' daily time use patterns. Their study records time-spent patterns of 42 student athletes and 36 non-athlete students by using the Experience Sampling Method (ESM), which requires participants to carry a signaling device to record their daily activities. In addition, the participants individually reported their activities

based on five broad activity categories modified from Csikszentmihaly and Larson (1984): schoolwork (i.e., class meetings, homework), discretionary activities (i.e., socializing, leisure), maintenance activities (i.e., eating, resting), sport activities (drill or practice related to athletics), and other activities. Lee et al. (2007) concluded that differences were clearly found in student athletes' and non-athletes' time spent in daily activities. For example, student athletes spent 6.4% and 31.4% of their waking hours in schoolwork and maintenance activities as opposed to 22.8% and 34% of non-athlete students' time spent. Korean athletes also spent at least 50 minutes more than their non-athlete peers per day in physical/sport activity.

Purpose of the Study

Due to the over-emphasis on the role of student-athletes' on college campuses (Thompson, 2008; Wieberg, 2008), in order to improve the quality of prospective student-athlete recruits and ensure their future academic success, the researchers would address two specific research goals. The research project examined the predictability of the traditional standardized test scores and daily behavioral data on student-athletes' academic performance. The findings would help the athletic administrators to develop practical strategies for advising student-athletes and produce a documentary film (about 15 minutes in length) to educate future prospective students about the life and learning experiences of intercollegiate athletics.

Method

Participants and Procedure

The participants of this study were 186 voluntary student-athletes (125 males, 67.2%; 61 females, 32.8%) of a NCAA Division-I affiliated regional institution located in the Appalachian region. They completed an 11-item daily life behavioral survey after receiving the researchers' invitation and instructional message for completing the survey. With the support of student-athletes' coaches and other athletic staff, the data were successfully collected from mid-October to the end of November, 2011. In addition to the completion of the survey, the participants were asked to submit their student identification number as well. This number was used to accurately match each participant's testing scores (American College Testing, ACT and Scholastic Assessment Test, SAT), grade point average (GPA), and the behavioral data. The process of matching the aforementioned data was executed by the administrators of the Office of Institutional Research and Analysis. When the researchers received the final data to analyze the results, all of the indicators that might possibly reveal a participant's actual identify were removed. The data form contained three types of numbers: (a) a designated number for each participant, (b) the behavioral data in number of hours, and (c) test scores.

Instrumentation

The 11-item daily life behavioral survey completed by the participants was created based on the framework of several past studies (Becker, 1965; Csikszentmihaly & Larson, 1994; Lee, Park, & Shin, 2007). It covered four demographic aspects including gender, ethnicity, type of sport played, and grade level and estimation of time spent in daily activities (please see Table 1 for more details). The participants must individually report their all daily activities (including those related to time spent in athletics and academics) as honestly and accurately as they can. A pilot group consisting of 24 students had been formed to test the internal reliability of the survey. More than 80% of students' behavioral data were identical after going through the test and retest process. SAT scores, ACT scores, and overall college GPA were used as the predictive standards for illustrating participants' academic performance. The testing records were gathered and supplied by the Office of Enrollment Services and Institutional Research and Analysis

Results

Table 1 displayed the participants' break down of time spent in daily activities. There were six types of activities that categorize the life of a student-athlete. Overall, the participants spent a daily average of six hours studying and attending classes and four hours in athletic practices and competitions. Participants' average sleep time was near seven and a half hours per day. Their time spent in leisure and social activities also varied significantly based on their gender, racial background, academic status, and participatory sport ($p < .05$). For example, football and basketball players studied less, but spent more time on practices and competitions and leisure and social activities than the rest of the athletes engaging in other sports (see Table 2). Typically, football and men's basketball are characterized by many as the revenue generating sports. In another word, athletes engaging in revenue-generating sports were shown to have different behavioral data in attending classes and studying than those of non-revenue generating sport athletes. Non-white athletes spent more time on leisure and social activities (3.87 vs. 3.37 hours daily). Male athletes spent significantly more time in "practices and competitions" and "leisure and social" activities and less time in class and studying than their female counterparts ($p < .05$).

Item	Mean	SD
Class time	3.22	1.26
Studying	2.88	1.21
Sleeping	7.48	1.08
Maintenance activities	2.74	1.01
Practices & Competitions	3.90	1.10
Leisure and Social	3.53	1.59

Table 2. Comparisons of time-spent in different activities among athletes (in hours)

Activity	Football and Basketball Players	Other Sports
Studying	2.57	3.23
Practices & Competitions	4.08	3.68
Leisure and Social	3.78	3.25

The SAT scores and ACT scores of the participants were listed in Table 3. These numbers were similar to those of their non-athlete peers according to the records given by the Office of Institutional Research and Analysis. While delving into the appropriate indicators of participants' academic performance, it was found that their overall college GPA was positively correlated with their time spent attending classes ($p < .01$; Pearson $r = .408$) and studying ($p < .01$; Pearson r exceeding $.497$), and negatively correlated with their time spent in competition and practice ($p < .01$; Pearson $r = -.231$) and leisure activities ($p < .01$; Pearson $r = -.357$). SAT score, as a traditional predictor of academic success at college, actually yielded a weaker correlation than time spent attending classes and studying ($p < .05$; Pearson $r < .300$). ACT Composition and ACT English score both were positively correlated with the GPA. However, the correlational strengths only showed a moderate relationship (as $r = .414$ and $.447$, respectively).

Table 3. Participants' standard testing scores and college GPA

	ACT – Composite	ACT - English	ACT - Mathematics	SAT Composite	Cumulative GPA
Score	21.76	20.94	21.44	981.56	3.09

Discussion and Conclusions

Based on the results of the behavioral data, this sample group did not report more time spent in practices or competitions than was reported in other studies (Thompson, 2008; Wieberg, 2008). Although the average weekly hours spent in practices and competitions have not reached the 40-hour extreme, it (23.4 hours) still exceeds the NCAA's recommendation of 21 hours. It is the researchers' belief that all NCAA affiliated institutions should abide the rule and their student-athletes not exceed 21 hours in practices and competitions weekly. It is imperative that a well-balanced academic and athletic life for student-athletes should be promoted and maintained. Athletic administrators and coaches must deal with the problem of insufficient time spent in studying and excessive time in practices and competitions. The daily behavioral data were self-reported information. The accuracy of the reported data may be heavily subjective to the honesty of the each participant. A good statistic for the athletic department to keep is to have someone monitor different sport teams' actual time spent engaging in practices and competitions and study hall sections.

A part of the researchers' original intent for this study was trying to eliminate some of the stereotypes relating to student-athletes. Those stereotypes include: they are in schools for athletic activities only; they all have bad grades; and they never get serious about their academic works (Miller, 2008; Miller & Kerr, 2003; Shulman & Bowen, 2001). This sample group clearly showed that they spent more total hours attending classes and studying than engaging in athletic activities daily. The findings of this study showed no indication of excessive time spent in practices and competitions causing the poor academic performance of students. Moreover, it appears that the relationship between GPA and time spent in study is stronger than those between GPA and either one of the standardized test scores (ACT Composition and ACT English). This finding convinces the researchers that maintaining a good academic performance is much like athletic practice. Students must spend time and effort to study effectively. If they are willing to do so, their academic performance can certainly improve. It may sound logical to avoid potential academic setbacks among student-athletes by simply recruiting students with strong academic backgrounds (with solid ACT or SAT scores). However, recruiting student-athletes with better standardized test scores does not guarantee academic success. The key to academic success is to teach students how to manage their time wisely and engage them in year round tutorial programs and study groups. College institutions are not in the business of "weeding out" academically unsuccessful students or becoming a pipeline to the professional leagues. The institutions' mission should be recruiting those who are willingly to learn and helping them with any available means.

In conclusion, the results suggest that the use of daily activity and behavioral data could reveal appropriate indicators of student-athletes' academic performance. However, the difficulty of gathering highly confidential testing scores from various institutions has made the expansion of the study's sample size quite challenging. This limitation certainly confines the generalizability of the study results. The followings are practical suggestions on how to work with student-athletes concerning this conundrum will be listed.

- Each institution should promote and extend its academic learning and counseling services to more student-athletes. Students must be encouraged to experience or learn about those programs as well.
- While recruiting prospective students, athletic coaches should actively learn more about those future students' study habits. Coaches and academic advisors should help their student-athletes develop daily study habits and teach them how to manage their time and prioritize the tasks.
- A good attempt to ensure the future academic success of prospective student-athletes is to educate them about the reality of life and responsibilities of being student-athletes at the collegiate level during the open-house sessions or orientation meetings.
- Administrations and counselors must allocate more time and resources to specifically monitor the academic progress of athletes engaging in football and basketball year around because of the increased time demands of those specific sports

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Contraceptive Use and Sexual Behaviors in Kentucky Adolescent Females

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Abstract

The purpose of this study was to assess the relationship between the use of contraceptive methods and sexual behaviors in Kentucky adolescent females. It was hypothesized that Kentucky adolescent females (grades 9-12) who used contraceptive methods would be less likely to engage in risky sexual behaviors. A secondary data analysis was conducted using the 2011 Kentucky Youth Risk Behavior Survey. Female participants included in the study (n=369) were from 49 public high schools in Kentucky. The practice of using contraceptive methods (i.e., condoms, hormonal contraceptives, intrauterine devices, and withdrawal) and data of sexual behaviors (age at first sexual intercourse, number of sexual partners, sexual partner's age, and oral sex) were compared using chi-squared analyses. The hypothesis was supported. Riskier sexual behaviors (i.e., initiation of sex at an early age, older sexual partners, multiple sex partners, and having oral sex) which can lead to negative health outcomes were associated with not using contraceptives, while individuals using contraceptives were less likely to participate in these behaviors.

Introduction

Approximately half (45.6%) of female adolescents age 15-19 in America have engaged in sexual intercourse (Centers for Disease Control; CDC, 2012). With the high percentage of adolescents having engaged in sexual intercourse, it is surprising that use of contraceptive services (birth control methods, birth-control check-ups or tests, and birth-control counseling) by adolescent females declined by 33% between 2002 and 2008 (2002 National Survey of Family Growth; Hall, Moreau & Trussell, 2011). Factors influencing this decline are not known, however it is suggested that declines in sexual activity and changes in contraceptive preference (i.e., emergency contraceptive, birth control, intrauterine device, no contraceptive use, etc.) may have had an influence (Hall et al., 2011).

Barriers such as poverty, living environment, race or ethnicity, and many other demographic characteristics may also have an influence on contraceptive use (Hall & Trussell, 2012). Even if adolescents obtain contraceptives, researchers have found that teens (15-19 years) are more likely to experience birth control failure compared to women age 30 and older (Kost, Singh, Vaughan, Trussell, & Bankole, 2008). Inconsistent contraceptive use has been associated with adolescence who have two or more partners in young adulthood (Scott, M.E., Wildsmith,

E., Welti, K., Ryan, S., Schelar, E., & Steward-Streng, N.R., 2011). Additionally, sexual partners have an influence regarding whether an adolescent will use a contraceptive (Manlove, Ryan, & Franzetta, 2003; Ryan, Franzetta, Manlove, & Schelar, 2008).

The purpose of the present study was to assess the relationship between contraceptive use (i.e., condoms, withdrawal, and hormonal contraception including; oral pills, vaginal rings, and injectable contraceptives, and intrauterine devices) and sexual behaviors of Kentucky adolescent females. Previous research has found the need for assessment of reproductive health service use and reproductive health outcomes (Hall, et al., 2011). Sexual intercourse among adolescents results negative outcomes such as unintended births and sexually transmitted diseases (STDs) in young adulthood. Determining the contraceptive methods used by female adolescents who participate in sexual risk behaviors will help to influence the educational topics that should be covered by individuals who work to educate female adolescents about safe sexual practices. Based on the results of previous studies, it was hypothesized that Kentucky adolescent females who used contraceptive methods would engage in fewer sexual risk behaviors.

Method

A secondary data analysis of the 2011 Kentucky Youth Risk Behavior Survey (KYRBS) was conducted to assess the possible relationships between the use of contraceptive methods and sexual behaviors of Kentucky adolescent females. The 2011 KYRBS was administered as a part of the 2011 Youth Risk Behavior Surveillance System (YRBSS) which is an initiative of the Centers for Disease Control and Prevention (Haddad, Ellis, Jewell, Peyton, Robeson, & Moses, 2011). The CDC had agreements with various state departments of education in order to obtain data; the agreement with KDE was established in 1989 (Department of Health and Human Services & Centers for Disease Control, 2004). Data collection was not mandated federally or by the state of Kentucky (Haddad et al., 2011). Although there were many purposes for the YRBSS, the main purpose was to assess the prevalence of health-risk behaviors among high school students. Leading causes of morbidity and mortality among youth and adults have been used to determine the areas that were assessed by the YRBSS.

Instrument

The Kentucky Department of Education (KDE) administered an anonymous 96-item survey (KDE, 2011) to 1,829 male and female high school students in grades 9 - 12 with parental permission (Haddad, 2011). The survey was administered to randomly selected classes and was completed in one class period. Students who were absent on the day of survey administration could take the survey when they returned to school (Department of Health and Human Services, & CDC, 2004).

Participants

Participants of the KYRBS included 1,829 high school students, of which 49% were females and 51% were males who attended 49 public high schools in Kentucky. The majority of participants were White (84.9%), followed by Black (9.9%), Hispanic/Latino (2.3%), multiple races (1.5%), and all other races (1.4%; Kentucky Department of Education, 2011). The sample population of this study only included female adolescents in Kentucky who responded “yes” on the KYRBS when asked, “Have you ever had sex?” (n =369).

Design and Analysis

To assess the relationship between the use of contraceptive methods and sexual behaviors in Kentucky adolescent females, a chi-square analysis was performed using SPSS software. Five demographic questions from the KYRBS were utilized to isolate the desired sample to assess only female adolescents: age, gender, race, Hispanic origin, and grade in school. Nine sexual behavior questions (see Table 1) in the 2011 KYRBS were used for the analysis. These questions included: “Have you ever had sexual intercourse?” (question 61), “The last time you had sexual intercourse, what one method did you or your partner use to prevent pregnancy?” (question 68), “The last time you had sexual intercourse, did you or your partner use a condom?” (question 67), and various sexual behaviors (“How old were you when you had sexual intercourse for the first time?”, “The first time you had sexual intercourse, how old was your partner?”, “During your life, with how many people have you had sexual intercourse?”, “During the past 3 months, with how many people did you have sexual intercourse?”, “Did you drink alcohol or use drugs before you had sexual intercourse the last time?”, and “Have you ever had oral sex?”: questions 62-66 and 69 consecutively).

Results

One hundred and three participants were 15 years old when they first had sex. The percentage of females who reported having one lifetime sex partner was 37% (n = 137), while 90% (n = 362) of females reported having one sex partner in the last three months. Alcohol and drugs were not an issue for the majority of this sample of sexually active female adolescents, as 88% (n = 325) answered “no” to whether or not drugs or alcohol were used at last sex (see Table 2). Table 3 summarizes the findings from the chi-square analyses conducted on the selected variables from the KYRBS. Figure 1 depicts the comparative descriptive analysis for contraceptive methods used at last sex by the age at last sex, whereas, Figure 2 depicts the a comparison of descriptive analysis for type of contraceptive methods used at last sex and whether or not the participants had oral sex.

Age at First Sex

Significant differences were found in the use of contraceptive method among different categorical groups of “use at last sex” and “age at first sex” (see Table 3; $\chi^2 = 53.07$, $df = 36$, $p = .03$). Female adolescents who were 11 years of age or younger when they first had sexual intercourse ($n=20$) were less likely to have used a condom or other contraceptive method the last time they had sex. Forty-percent of the 11 years old and younger age group did not use any contraceptive method the last time they has sex. The 13 year old age group ($n = 48$) had almost twice the number of students using no method of contraceptive (25%) compared to those using birth control pills (13%) at last sex.

Significant differences were found among different categorical groups of “ use at last sex” and “age at first sex” (see Table 3) ($\chi^2 = 16.70$, $df = 6$, $p = .011$) in the use of condom. The majority of participants (85%), who indicated that they were 11 years old or younger when having sex, did not use a condom during their sex. However, most of the 12 and 13 year olds (57% and 52% respectively) did use a condom at last sex. Condoms were not used at last sex by over 50% of the 14-17 years old and older age groups.

Age of Partner at First Sex

There was also a statistically significant difference (see Table 3) in the use of contraceptive method among categorical groups of “use at last sex” and “age of the partner at first sex” ($\chi^2 = 82.20$, $df = 30$, $p = .00$). Condoms were used most often by participants whose partners were 3 to 4 years older or partners who were about the same age. Of the participants with partners 5 or more years older, 28% did not use any method of contraceptive at last sex. Although, the relationship among different categorical groups of “condom use at last sex” and “age of partner at first sex” ($\chi^2 = 6.30$, $df = 5$, $p = .30$) was not a statistically significant relationship (see Table 3), those who indicated having had a partner 3 to 4 years younger or about the same age used a condom at last sexual intercourse.

Number of Sex Partners in the Past 3 Months

Significant differences were found in contraceptive method among the different categorical groups of “number of sex partners in the past three months” and “use at last sex” (see Table 3) ($\chi^2 = 70.20$, $df = 36$, $p = .001$). Participants who had 0-2 sex partners in the past 3 months were most likely to use condoms. The participants who indicated that they had 3 sex partners in the past 3 months 42% used no contraceptive method. Sex with four or 6 people in the past three months were indicated by 3 people in each group, 2 of which (in each group) used no contraceptive method.

No significant difference was found in the use of condom (see Table 3) among different categorical groups of “use at last sex” and “number of sex partners in the past 3 months” ($\chi^2 = 9.00$, $df = 6$, $p = .175$). Having no sex partners or having 5 partners (in the past 3 months), were

the only two categories that indicated a higher percentage of those who did use condoms than those who did not.

Number of Lifetime Sex Partners

Categorical groups of “number of lifetime sex partners” and “use at last sex” (see Table 3) did not show a statistically significant difference in the use of contraceptive method ($\chi^2 = 33.30$, $df = 30$, $p = .31$) relationship. Although not significant, the majority of participants who have had 5 sex partners in their lifetime were using birth control pills (38%) at last sex. In addition, thirty percent of participants with 6 or more partners were not using any contraceptive method at last sex.

Categorical groups of “use at last sex” and “number of lifetime sex partners” (see Table 3) showed significant difference in use of condom ($\chi^2 = 11.44$, $df = 5$, $p = .043$). The majority (58%) of those who indicated having 1 or 2 sex partners reported using a condom at last sex and the majority who had 3 or more partners were more likely not to have used a condom at last sex (majorities ranged from 56%- 63%).

Use of Alcohol/Drugs at Last Sex

Categories of “use at last sex” and “use of alcohol or drugs at last sex” (see Table 2) did not show significant difference in the use of contraceptive method ($\chi^2 = 3.17$, $df = 6$, $p = .787$). Twenty percent of participants who indicated that they did use drugs or alcohol at last sex ($n = 46$) used no method of contraceptive at last sex.

Categories of “use at last sex” and “use of alcohol or drugs at last sex” ($\chi^2 = .066$, $df = 1$, $p = .798$) did not show significant difference in the use of condom (see Table 3). Half of the respondents did use a condom and half did not for both those who did and those who did not use alcohol or drugs at last sex.

Ever Had Oral Sex

Not having oral sex (see Figure 2) was associated with a higher percentage of participants not using any form of contraceptive at last sex (18.5%) compared to those who have never had oral sex (8.3%). No significant difference in the use of contraceptive method was found (see Table 3) among different categories of “use at last sex” and “ever having had oral sex” ($\chi^2 = 10.67$, $df = 6$, $p = .099$).

Significant difference was found among the categories of “use at last sex” and “ever having had oral sex” (see Table 3) in the use of condom ($\chi^2 = 22.00$, $df = 1$, $p = .00$). Seventy-five percent of the participants, who have never had oral sex, used a condom at last sex. Over fifty-percent (56%) of participants who have had oral sex did not use a condom at last sex.

Discussion

The aim of this study was to assess the relationship between contraceptive use and sexual behaviors in Kentucky adolescent females. It was hypothesized that female adolescents who used contraceptive methods would participate in fewer sexual behaviors.

Participant Age

Participant age is a significant factor that determines the use of contraceptive methods. When examined more closely, the relationship showed that the age group most at risk was the 11 year old and younger age group. This suggests a need for early (i.e., 4th and/or 5th grade) sex education interventions.

Alcohol and Drug Use

Whether a participant used alcohol or drug or not, his/her use of contraceptive method was not significantly different from any others at the last time the sex. This was not surprising because most of the sample indicated that they did not use drugs or alcohol the last time they had sex. A possible explanation for this may be that interventions for drug and alcohol use have occurred at early ages and have been effective.

Age and Number of Sex Partners

The pattern of contraceptive use was significantly different within two categorical groups, both the age of the partner and the number of partners in the past three months. However, there was no significant difference in use of contraceptive use among different groups of number of lifetime sex partners. These findings may suggest something about the participant, possibly how they were influenced during the three-month timeframe by their partners. In this sample, 60% of participants had one partner in the past three months and these participants were more likely to be using contraceptives the last time that had sex. Whether the partner was 3 to 4 years older or was similar in age was a factor that appeared to encourage contraceptive use, whereas a partner who was five or more years older discouraged contraceptive use.

Two groups of participants (those who have multiple sex partners (3 or more) and partners with 3 or more years older) seemed to engaged in riskier behaviors. They were more likely not to use a condom the last time they had sex. The lack of condom use but the use of other forms of contraceptives when having multiple and older partners meant that an adolescent was protected against pregnancy but not protected against STDs. These findings indicate a vital need to educate young people regarding the health and lifesaving benefits of condom use. One

venue to provide STD prevention education would be when health care professionals (health departments, physicians' offices, etc.) suggest and/or provide adolescents contraceptives.

Oral Sex

The practice of oral sex seemed to impact the decision of using condom use, but not contraceptive use. Condom use was higher among those who had not had oral sex than for those who have had oral sex. This phenomenon exposed a risk for attracting STDs among those did use condom during their oral sex. Those who were having oral sex could benefit and protect themselves by using condom. There was no sign showing that those who had oral sex used any other contraceptive method. The participants who had oral sex might not be using any pregnancy or STD prevention methods at all, which presents a greater risk.

Conclusion

The hypothesis was supported by the findings. Participation in riskier sexual behaviors was associated with not using contraceptive methods, whereas those who were using contraceptive methods were not participating in these behaviors. A limitation of this study was that the data only included a sample of adolescents in Kentucky. However, this study had a sample size large enough to produce statistically significant findings that can be utilized by health professionals to address the need of female adolescents in Kentucky. These findings suggest a need for future research to explore why female adolescents in Kentucky who have older partners, initiated sex at a young age, have multiple partners, and are having oral sex are less likely to use pregnancy and/or STD prevention methods.

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TABLE 1. 2011 KYRBS Questions

<p>61. Have you ever had sexual intercourse? A. Yes B. No</p> <p>62. How old were you when you had sexual intercourse for the first time? A. I have never had sexual intercourse B. 11 years old or younger C. 12 years old D. 13 years old E. 14 years old F. 15 years old G. 16 years old H. 17 years old or older</p> <p>63. The first time you had sexual intercourse, how old was your partner? A. I have never had sexual intercourse B. 5 or more years younger C. 3 to 4 years younger D. About the same age E. 3 to 4 years older F. 5 or more years older G. Not sure</p> <p>64. During your life, with how many people have you had sexual intercourse? A. I have never had sexual intercourse B. 1 person C. 2 people D. 3 people E. 4 people F. 5 people G. 6 or more people</p> <p>65. During the past 3 months, with how many people did you have sexual intercourse? A. I have never had sexual intercourse B. I have had sexual intercourse, but not during the past 3 months C. 1 person D. 2 people E. 3 people F. 4 people G. 5 people H. 6 or more people</p> <p>66. Did you drink alcohol or use drugs before you had sexual intercourse the last time? A. I have never had sexual intercourse B. Yes C. No</p> <p>67. The last time you had sexual intercourse, did you or your partner use a condom? A. I have never had sexual intercourse B. Yes C. No</p> <p>68. The last time you had sexual intercourse, what one method did you or your partner use to prevent pregnancy? (Select only one response.) A. I have never had sexual intercourse B. No method was used to prevent pregnancy C. Birth control pills D. Condoms E. Depo-Provera (or any injectable birth control), Nuva Ring (or any birth control ring), Implanon (or any implant), or any IUD F. Withdrawal G. Some other method H. Not sure</p> <p>69. Have you ever had oral sex? A. Yes B. No</p>
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TABLE 2. Descriptive Results of KYRBS Questions

Variable	Category							Total
	11 years or younger	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 years or older	
Age at First Sex								
n	20	14	48	94	103	64	26	369
%	5.4	3.8	13	25.5	27.9	17.3	7	100
Age First Sex Partner	5 or more years younger	3 to 4 years younger	about the same age	3 to 4 years older	5 or more years older	Not Sure	Total	
n	3	8	229	104	18	7	369	
%	0.8	2.2	62.1	28.2	4.9	1.9	100	
Number of Lifetime Sex Partners	1	2	3	4	5	6 or more	Total	
n	135	74	50	35	32	43	369	
%	36.6	20.1	13.6	9.5	8.7	11.7	100	
Number of Sex Partners Past 3 Months	none during past 3 months	1	2	3	4	5	6 or more	Total
n	82	221	47	12	3	1	3	369
%	22.2	59.9	12.7	3.3	0.8	0.3	0.8	100
Did You Use Alcohol or Drugs at Last Sex	yes	no	Total					
n	46	323	369					
%	12.5	87.5	100					
Did You Use a Condom at Last Sex	yes	no	Total					
n	186	183	369					
%	50.4	49.6	100					

TABLE 3. Association between contraceptive method use and condom use at last sex and select variables

Variable	Condom Use			Contraceptive Method Use		
	χ^2	df	p-value	χ^2	df	p-value
age at first sex	16.70	6.00	0.01*	53.07	36.00	0.03*
age of partner at first sex	6.30	5.00	0.30	82.20	30.00	0.00*
number of lifetime sex partners	11.44	5.00	0.04*	33.30	30.00	0.31
number of sex partners past 3 months	9.00	6.00	0.18	70.20	36.00	0.00*
use of alcohol/drugs at last sex	0.07	1.00	0.80	3.17	6.00	0.79
ever had oral sex	22.00	1.00	0.00*	10.67	6.00	0.10

The chi-square significance level is $p < .05$ *

Figure 1. Percentage of participants' contraceptive methods used at last sex and age at first sex

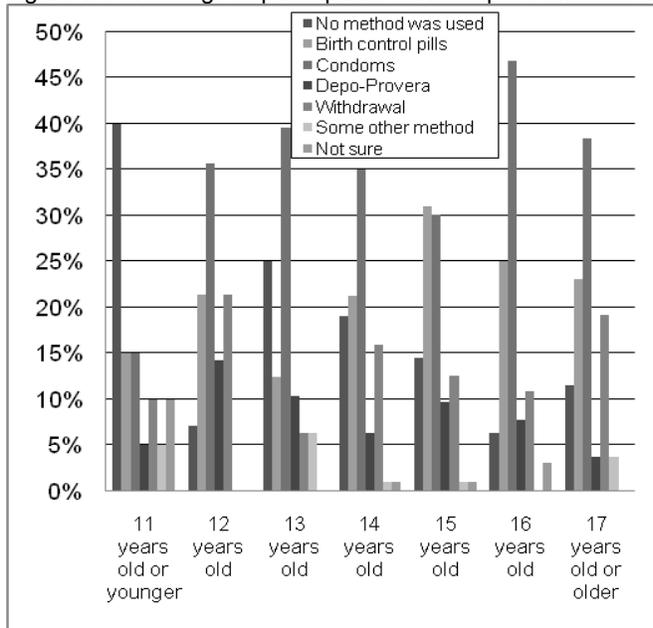
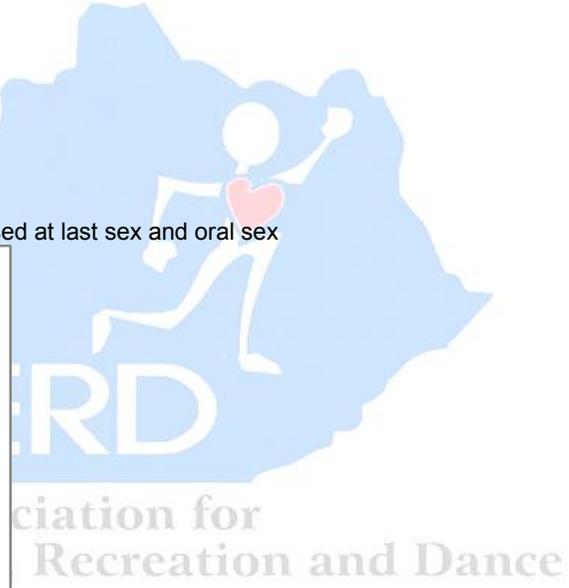
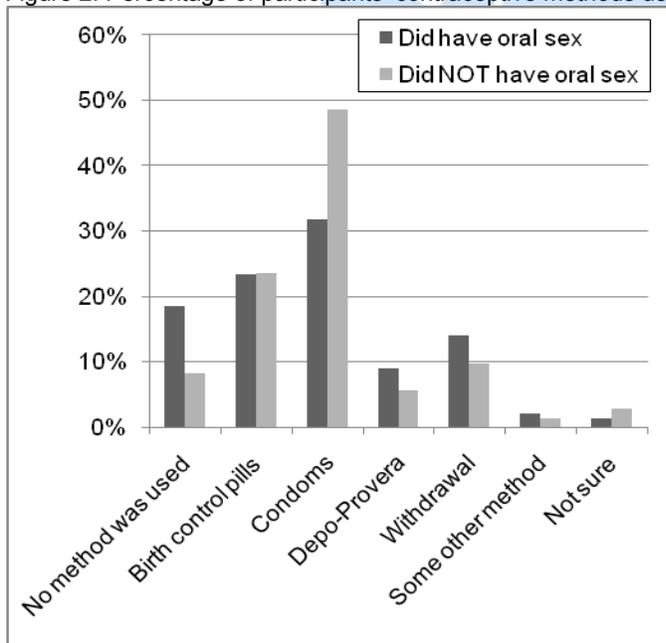


Figure 2. Percentage of participants' contraceptive methods used at last sex and oral sex



Outdoor Ethics and Appalachian Trail Hikers: An Investigation of Leave No Trace Practices

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Introduction

'Environmental ethics' are actions taken relating to the state of the natural environment based on a personal philosophy of right and wrong (Jordan, 2007). Throughout the last two decades, the Leave No Trace Center for Outdoor Ethics (LNT) has developed an official national curriculum for educating people about how to responsibly care for our natural environment. The Leave No Trace Center for Outdoor Ethics is a nonprofit organization with a mission to "teach people how to enjoy the outdoors responsibly" (Leave No Trace, 2013, p. 1). The members of this organization believe that awareness and skills in environmental ethics can lead people to leave outdoor recreational areas in as good, or better, shape than when they arrived. The Leave No Trace Center for Outdoor Ethics created seven guiding principles shaping its educational curriculum. These principles also serve as the foundation for the instrument used in this study:

1. Plan Ahead and Prepare
2. Travel and Camp on Durable Surfaces
3. Dispose of Waste Properly
4. Leave What You Find
5. Minimize Campfire Impacts
6. Respect Wildlife
7. Be Considerate of Other Visitors (Leave No Trace, 2013b).

The LNT principles were originally created in 1990 by a joint partnership between the National Outdoor Leadership School (NOLS) and the U.S. Forest Service (USFS) to address problems associated with the overuse of natural resource areas for recreational purposes. In 1993, the Bureau of Land Management, the National Park Service, and the U.S. Fish & Wildlife Service joined the USFS and NOLS to promote LNT as a wilderness ethics training program. The curriculum has been modified over the years to match the growth of the organization's scope by including research as well as education (Tilton, 2003).

Information and education about low impact camping, such as the principles and curriculum taught by LNT, can be important tools in maintaining the quality of outdoor recreation resources (Marion & Reid, 2007). Manning's (2003) research showed two areas of

problem behaviors among wilderness visitors can be minimized by making individuals aware of less impactful techniques. Those two problem behaviors are “unskilled actions” such as selecting improper campsites or building improper fires and “uninformed actions” such as camping too close to another group or gather firewood from improper areas. Manning (2003) also showed that education and information would have moderate effectiveness on positive changes of those “careless actions” such as littering and shouting as well.

Other variables, besides “the lack of impact camping skills,” sometimes may play roles in initiating negative visitor behaviors. Those variables can be associated with the nature, characteristics, and visiting experience of specific group of visitors. Christensen and Cole (2000) found that horse users, generally inexperienced wilderness users, and individuals with a high level of wilderness experience in a specific wilderness location were more resistant to adopting LNT recommendations about the use of campfires and campsite locations. A study comparing day-use visitors and overnight visitors to wilderness areas found that day users were more tolerant of larger groups and less likely to support limiting visitor numbers in areas (Cole, 2001).

The Appalachian National Scenic Trail (AT) is a footpath approximately 2,180 miles long connecting national forests, national parks, and state parks, forests, and wildlife areas in 14 states from Maine to Georgia. Various types of hikers who use the trail may include day hikers, overnight hikers, section-hikers, and thru-hikers. It has been suggested that the complexity and length of the trail lead to challenges in providing information and education programs to participants (Downs, 2012). When testing the knowledge of AT policies as well as LNT principles, Newman, Manning, Bacon, Graffe, and Kyle (2003) found that thru hikers scored highest overall, but the results were very similar to section and overnight hikers. Day hikers tended to give more “incorrect” responses to the questionnaire items, especially related to campsite selection in remote areas (when camping at a hut is not possible), fire building recommendations, how far to dispose of human waste from streams, and what to do when encountering visitors on horseback. Less than 75% of hikers from all categories answered correctly on two items related to campsite selection in remote areas. This study was conducted to examine the Leave No Trace outdoor ethic practices of AT travelers. The investigators were also interested in understanding if differences existed between different groups of hikers.

Method

Participants

In this study, one hundred and four hikers self-reported their Leave No Trace outdoor ethic practices while on the Appalachian Trail (AT). The sample of hikers (basing on 101 total responses) was predominantly male (65.4%) with reported ages ranging from 18-70 with a mean of 33 and SD of 15.53. The hikers’ races (basing on a total of 102 responses) included White (92%), Black (2%), Chinese (2%), Other/Asian (1%), and Other (3%). According to the

definition established by the Appalachian Trail Conservancy (2013), respondents classified themselves in one of the following three categories as: a) overnight, b) section, or c) thru-hikers (See Table 1). The sample identified themselves as comprising overnight hikers (39.4%), section hikers (31.7%), and thru-hikers (28.8%). The mean number of weeks spent on the trail was 4.98 with an SD of 7.075 and a range of 0-32 weeks.

Instrument

The survey instrument was designed using material from the Leave No Trace website (www.lnt.org) and demographic questions derived from the U.S. Census Survey. The 41-item questionnaire included seven demographic items (hiker classification, weeks on trail, sex, year of birth, race, education, yearly income) and 34 items directly related to the seven LNT principles. These 34 items were adapted directly from the components of the seven principles of LNT including: (1) Plan ahead and prepare (5 items); (2) Travel and camp on durable surfaces (5 items); (3) Dispose of waste properly (5 items); (4) Leave what you find (6 items); (5) Minimize campfire impacts (5 items); (6) Respect wildlife (4 items); and (7) Be considerate of other visitors (4 items). Each of these items was rated in a 7-point Likert scale representing a continuum of behavior from: Never (1) to Always (7). For example, an item in the Plan ahead and prepare section read, "How often were you prepared for extreme weather, hazards, and emergencies?"

For the classification of the hikers, the Appalachian Trail Conservancy (2013) offers the following trail user definitions.

Table 1. Classification of the AT users

Category	Definition
Thru-hiker	Thru-hiker is a hiker or backpacker who has completed or is attempting to walk the entire Appalachian Trail in one uninterrupted journey. Completing the entire estimated 2,180 miles of the Appalachian Trail in one trip is a mammoth undertaking. Each year, thousands of hikers attempt a thru-hike; only about one in four make it all the way.
A section-hiker	An individual who completes the A.T. in multiple trips over a period of years. Responsibilities at work or at home can make a thru-hike unfeasible for many people, but section hiking provides an alternative way to enjoy everything the Appalachian Trail has to offer, and it can have other advantages as well.
Overnight hiker	An overnight hiker is someone who hikes for less than a week and does not intend to complete the entire length of the trail.
Day hiker	A day hiker does not camp overnight on the trail.

Data Collection and Analyses

The PI administered the survey in the evening at trail shelters and campsites. This approach (surveying individuals in the evening rather than during the day on the trail) was utilized to avoid interfering with the respondents' trail progress/flow. An informed consent form was provided to each potential respondent. Respondents were provided with a survey after expressing an interest in participating. All data collection was conducted on-site.

The PI mailed completed surveys to a co-investigator periodically throughout the five-month hike. After obtaining approval from the institutional review board, the principal investigator (PI) administered paper surveys during a five-month thru-hike of the AT. The study was conducted along the trail from Hanover, NH to Springer Mountain.

The data from the 104 useable surveys (those with complete data on all LNT items – not necessarily complete demographic data) were screened prior to analysis. Descriptive statistics including frequencies, means, standard deviations, and Z-scores were used to screen for missing data, out-of-range data, skewness, and kurtosis. Statistical Package for the Social Sciences (SPSS) Version 21 was used for data analysis.

Results

Responses related to outdoor ethics skewed toward 'appropriate' behavior as prescribed by LNT principles. Responses for all items related to a) Leave what you find; b) Minimize campfire impacts; and c) Respect wildlife appeared to closely follow recommended LNT practices (see Table 2). Considerably dispersed responses were recorded for the other four LNT principle areas: a) Plan ahead and prepare; b) Travel and camp on durable surfaces; c) Dispose of waste properly; and d) Be considerate of other visitors (see Table 3).

Five separate MANOVAs were subsequently conducted to test for potential differences in the seven LNT practices based on each of the following independent variables: a) Hiker type; b) Income; c) Weeks on trail; d) Age; and e) Education. Prior to multivariate analysis, the descriptive results of respondents' rating on seven LNT principles were calculated (see Table 4). Multivariate tests of significance (Hotellings and Wilks Lambda) determined whether possible differences were present based on the aforementioned independent variables (see Table 5). No statistical significant differences were found basing on variables such as Hiker classification, Income, and Education. This finding suggests the absence of differences in LNT practices based on the levels of the independent variables. The multivariate tests for Age and Weeks on the trail were statistically significant though. For the independent variable Weeks on the trail, the examination of the correlations between dependent and canonical variables suggested the Plan ahead and Waste principles were the primary contributing factors for subject differences (see

Table 6). The respective influencing factors for Age were the Plan ahead and Travel and Camp LNT principles.

Discussion/Conclusion/Implications

The Appalachian Trail is an established trail (2,180 miles). When considering the seven principles of LNT, the reported practices of the AT hikers were different in some areas. These differences are rooted in fundamental differences found in backcountry vs. “established” environments. For example, the use of AT designated shelters and established campsites appears to be contrary to the LNT principle of “Be considerate of other visitors.” LNT principles recommend getting off of the trail at least 100 feet to take a break or make camp, but AT hikers are encouraged to use the shelters and stay on the trail when possible. Differences are bound to exist between the LNT principles one would ideally follow in a more remote, less used area, and those practiced on a higher use trail like the AT which is being managed differently to permit many users to enjoy the resource.

Data did not suggest Overnight, Section and Thru-hikers were different in their response regarding outdoor ethics; however, significant differences on ratings in “Planning ahead” items were found based on variables such as “Weeks on trail” and “Age”. This important finding suggests that planning, a critical LNT principle, is utilized by older and extended duration trail users. Similarly, age appears to influence application of traveling and camping on durable surfaces. Many on the AT congregate and utilize shelters along the trail – perhaps this is part of the planning and preparation that occurs before trail use.

While the study is limited due to the convenience sample and self-reporting technique for data collection, the findings are important because they reveal differences in recommended LNT practices and behaviors of AT hikers. The differences are mostly likely the result of AT management practices and infrastructure more than the hikers not demonstrating outdoor ethics. Future research efforts should examine the unique aspects of high-use trails such as the AT and consider that in developing survey instrumentation. An acknowledgment that such trails may simultaneously include elements related to the ‘backcountry’ and the ‘front country’ will likely assist researchers in understanding deviations from the basic principles examined in this study. When adjusting for the unique nature of the setting, the hikers were mostly exhibiting the practices of LNT and the norms of the AT, which is in line with the intended outcomes of educational programs. Leave No Trace principles are the preeminent approach to teaching people how to advocate for and be stewards of our natural resources – a critical perspective for the AT with its mix of backcountry setting, front country access, culture, and established recommended practices.

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Table 2. Example responses closely following LNT principles

Questions (how often...)	Never – Always (%)							Mean
	1	2	3	4	5	6	7	
Did you take/remove cultural structures or artifacts?	95.2	3.8	0	0	1.0	0	0	1.08
Did you take/remove historical structures or artifacts?	96.2	2.9	0	0	0	0	0	1.03
Did you take/remove rocks, plants, or other natural objects?	69.2	20.0	4.8	4.8	1	0	0	1.48
Did you rearrange rocks, plants, or other natural objects?	64.4	21.2	9.6	2.9	1.9	0	0	1.57
Did you build furniture or structures?	91.3	7.7	0	1.0	0	0	0	1.11
Did you dig trenches around your tent?	95.2	4.8	0	0	0	0	0	1.05
Did you use campfires for cooking?	60.6	19.2	11.5	1.9	2.9	3.8	0	1.79
Did you have a campfire?	32.7	17.3	17.3	15.4	6.7	5.8	4.8	2.83
Did you start a new fire ring?	83.7	5.8	3.8	2.9	0	1.0	0	1.28
When having a campfire how often did you use sticks that you couldn't break with your hands?	45.2	13.5	11.5	9.6	4.8	4.8	4.8	2.46
When having a campfire how often did you burn all wood and coals to ash, put out campfire completely, then scatter the ashes?	30.8	3.8	8.7	6.7	10.6	14.4	15.4	3.74
Did you knowingly approach wildlife within 100 feet?	56.7	20.2	5.8	6.7	4.8	1.9	2.9	1.99
Did you feed animals?	89.4	4.8	2.9	0	1.9	0	1	1.24
Did you secure your food before going to sleep?	5.8	1.9	4.8	1.9	2.9	16.3	66.3	6.09
If hiking with a pet, was your pet under control?	12.5	1.9	0	2.9	1.0	3.8	19.2	4.60

Table 3. LNT Principles Receiving Considerably Dispersed Responses

Questions (how often...)	Never – Always (%)							Mean
	1	2	3	4	5	6	7	
Did you know local regulations and/or special concerns for that area?	3.8	7.7	5.8	13.5	29.8	25	13.5	4.88
Did you carry a map and compass?	16.3	4.8	4.8	6.7	8.7	13.5	42.3	5.02
Did you use your map and compass?	22.1	7.7	8.7	5.8	9.6	16.3	27.9	4.36
Did wet or muddy conditions require walking somewhere other than the middle of the trail?	17.3	13.5	13.5	32.7	16.3	5.8	1	3.38
Did you leave your campsite better than you found it (with regard to litter)?	3.8	3.8	3.8	16.3	15.4	22.1	33.7	5.39
Did you pack out toilet or hygiene products?	28.8	7.7	5.8	8.7	9.6	10.6	27.9	4.07
When washing yourself, how often were you 200 feet away from lakes and streams?	8.7	4.8	6.7	20.2	15.4	13.5	27.9	4.86
When washing dishes, how often were you 200 feet away from lakes and streams?	6.7	2.9	7.7	14.4	19.2	15.4	30.8	5.12
Did you get off the trail at least 100 feet to take a break?	38.5	21.2	11.5	16.3	6.7	3.8	1.9	2.51
Did you get off the trail at least 100 feet to make camp?	16.3	2.9	11.5	9.6	15.4	19.2	25	4.63
Did you avoid unnecessary loud voices or noises?	6.7	2.9	5.8	13.5	12.5	22.1	36.5	5.35

Table 4. Seven LNT Principles Composite Means

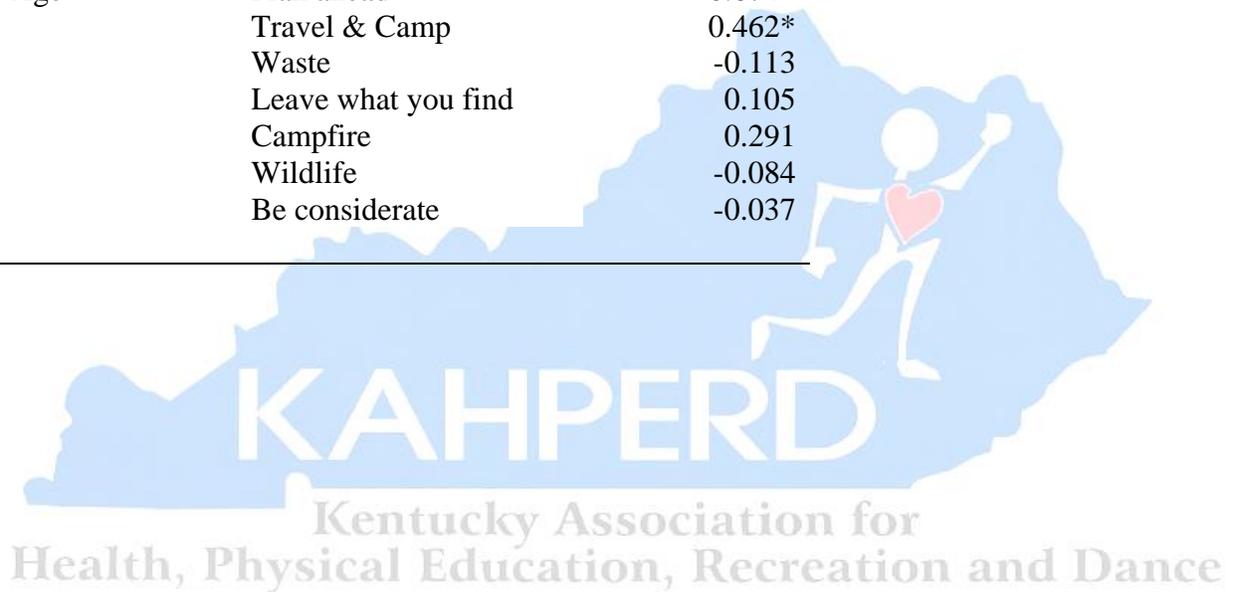
LNT Principle	N	Mean	SD
Plan ahead	104	5.12	1.21
Travel & Camp	104	2.59	1.11
Waste	103	5.18	1.15
Leave what you find	104	1.22	0.33
Campfire	104	2.58	1.06
Wildlife	104	3.99	0.85
Be considerate	104	4.70	1.15

Table 5. MANOVA Multivariate Tests of Significance for Five Independent Variables

Variable	Test	Value	Approx. F	Sig. of F
Hiker Class	Hotellings	0.205	1.364	0.175
	Wilks Lambda	0.824	1.365	0.174
Income	Hotellings	0.202	1.268	0.232
	Wilks Lambda	0.826	1.274	0.227
Education	Hotellings	0.193	0.834	0.677
	Wilks Lambda	0.833	0.833	0.687
Age	Hotellings	0.413	1.742	0.025*
	Wilks Lambda	0.686	1.732	0.026*
Weeks on Trail	Hotellings	0.268	1.779	0.044*
	Wilks Lambda	0.782	1.753	0.049*

Table 6. Correlations Between Dependent and Canonical Variables

Variable	LNT Principle	Correlation
Weeks on Trail	Plan ahead	0.841*
	Travel & Camp	-0.043
	Waste	0.369*
	Leave what you find	-0.135
	Campfire	0.102
	Wildlife	-0.266
	Be considerate	-0.064
Age	Plan ahead	0.674*
	Travel & Camp	0.462*
	Waste	-0.113
	Leave what you find	0.105
	Campfire	0.291
	Wildlife	-0.084
	Be considerate	-0.037



Physical Activity for Rural, Low-Income Children

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Introduction

According to the Centers for Disease Control and Prevention (CDC), regular physical activity helps improve one's overall health and fitness, and reduces the risk for many chronic diseases (CDC, 2011). The recommended amount for children and adolescents is sixty minutes or more each day of moderate to vigorous physical activity. This should include aerobic activity, muscle strengthening, and bone strengthening. Also, the consumption of five to nine fruits and vegetables per day is recommended (Fruits and Vegetables More Matters, 2013).

People in rural areas are more likely to be obese than people living in non-rural areas (Lutfiyya, Garcia, Dankwa, Young, & Lipsky, 2008; Morgan, 2002; Shores, Moore, & Yin, 2010). Rural areas have less access to quality healthcare and physicians, thus being deemed medically underserved (Eberhardt & Pamuk, 2004). Since over two-thirds of the population in Kentucky is overweight or obese (CDC, 2011), the prevention of obesity-related, chronic diseases is key in rural areas. The lifestyle diseases associated with overweight and obesity include high blood pressure, type II diabetes, cancer, and heart disease (Kelishadi, Razaghi, & Gouya, 2006; Ogden, Carroll, & Flegal, 2008).

Developing healthy habits at a young age, as well as providing children with the knowledge, attitude, skills, and opportunities to be physically active, are crucial when promoting health and preventing disease ("Education", 2004). Children should not only be educated on the quantity and quality of physical activity but be given equal opportunities to participate in physical activity programs, regardless of their income or access to consistent transportation. *Healthy People 2020*, the nation's health agenda, recognizes that rural residency is a leading health indicator linked to health inequity, and suggests that communities create social and physical environments to improve public health (Healthy People 2020, 2013).

Kentucky consistently scores low on national health scores. For example, on the national physical activity behavioral indicators list, Kentucky is among the states that scores the lowest. The case begins with sedentary lifestyles, with over 30% participating in zero physical activity (CDC, 2013). Only 41.4% of adults are physically active and 21.4% of children are physically active in Kentucky (CDC., 2013). Additionally, body mass index (BMI) determines if a person is overweight (BMI 25.0-29.9) or obese (BMI 30.0 or higher). In Kentucky, 31.3% of the adults are obese and 15.5% of children and adolescents are obese (Trust for America's Health and Robert Wood Johnson Foundation, 2013). Finally, 49.7% of adolescents reported consuming fruits less

than one time daily and 43.2% of adolescents reported consuming vegetables less than one time daily (CDC, 2013).

It is recommended that communities recognize and address their health needs (Healthy People 2020, 2013). In the fall of 2008, parents and community leaders of Meade County assembled to discuss the lack of a public swimming pool for their children. From that meeting, the residents determined that a broad range of community needs existed. They realized that access to recreational facilities and health-related programming was not available in Meade County. The community members also recognized that health is significantly influenced by lifestyle-related behaviors often adopted during childhood, so they needed to address the lack of access to physical activity programming and places for youth. Recreational facilities are non-existent in Meade County and the opportunity to be physically active in schools, through physical education and sports teams, are minimal. Since Meade County is a rural county in Kentucky with a population of 29,237 residents, a change needed to be made (U. S. Census Bureau, 2011).

Addressing the lack of physical activity facilities and resources in the community became the primary goal for community members, thus forming the Meade Activity Center, Inc. They realized that addressing their communities' health disparities, "health differences linked with social, economic, and/or environmental disadvantages", may be key in improving public health (Healthy People 2020, 2013). A main community disadvantage is the socioeconomic status of Meade County. Of the students attending public schools, 49% are eligible for free or reduced-priced meals, indicating low socioeconomic status (Kentucky Youth Advocates, 2011). To date through the MAC, there are over 40 youth sports and physical activities, community events, and summer camps, reaching over 800 children annually. Several physical activity programs occur simultaneously on Saturdays for eight-week sessions, five rounds per year.

Although there are several purposes within the entire Meade Activity Center (MAC) study, the primary research questions for this portion of the study are:

1. What are the demographic, health behavior, and health access characteristics of children in Meade County?
2. Do differences in physical activity participation exist among children with different socioeconomic backgrounds?
3. Do children with different socioeconomic backgrounds perceive they are physically active due to Meade Activity Center programs differently?

Methods

Data Collection

This study employed a cross-sectional survey research design. In May 2013, the MAC Executive Director mailed an invitation letter, the Children's Health Survey (CHS), two parental/guardian informed consent forms, two child assent forms, and a pre-stamped, MAC-addressed envelope to all children's home addresses ($N = 766$, ages 5-18 years) who were previously or currently enrolled in any MAC programming. Parents/guardians were invited to sign the parental/guardian informed consent form, ask their child to sign the child assent form, ask their child to complete the CHS, and mail the three items to the MAC. Of the 50 packets returned, 42 were complete and eight were incomplete due to missing either a parental/guardian consent and/or child assent (5.5% response rate).

Instrumentation

The CHS included eight demographic items, two access to physical activity opportunities items, ten nutrition behavior items, 17 physical activity self-efficacy items, 14 physical activity behavior items, and four television and computer gaming "screen time" items. Items were modified from the Youth Risk Behavior Surveillance Survey and Children's Physical Activity Correlates Survey. Socioeconomic status (SES) was measured by "Do you receive free or reduced-price lunch when you're at school?" While this may not have captured all low SES children (i.e. those not enrolling in the lunch program), it did ensure that those selecting yes were not in the high SES category. Number of physical activity opportunities was measured by "Place a checkmark beside ALL physical activities or sports that you participated in this past summer and this current school year (include any activities run by your school or other community groups)." Access to physical activity opportunities was measured by answering yes or no to the item "Are you physically active because you participated in Meade Activity Center Programs?"

Data Analysis

Descriptive statistics were employed to illustrate the demographic, access, and health behavior items. An independent sample t-test using SES as the group variable (low and not-low) and number of opportunities for physical activity as the test variable was conducted. Pearson product moment correlation was employed to determine if there was a relationship between socioeconomic status and whether children perceived that they were physically active because of the MAC.

Results

Of the 50 participant sample 42 students turned in the parental/guardian informed consent form and the child assent form. The demographic breakdown of the sample was 59.50% ($n = 25$) female, 100% ($n = 42$) White, and 16.70% ($n = 7$) with a low SES. The mean age was 10.7 years ($SD = 3.25$). Only 24.39% ($n = 10$) of the sample met the recommended amount of "5 or more" fruits and vegetables per day. Over two-thirds (66.67%, $n = 28$) consumed French fries or chips one or more times and 57.14% ($n = 24$) ate one or more servings of sweets in one day. Children

were more active in the summer than during the school year and on the weekends more so than the weekdays. During the school year weekdays 61.90% ($n = 26$) of children were physically active, 83.33% ($n = 35$) were physically active during school year weekends, 85.71% ($n = 36$) were physically active during summer weekdays, and 97.62% ($n = 41$) were physically active during summer weekends.

Low SES children ($n = 7$) from this sample were less active than not-low SES children ($n = 35$). There was a statistically significant difference in mean number of sports or physical activity programs participated in for low SES ($M = 1.57$, $SD = 0.79$) and not low SES ($M = 4.23$, $SD = 2.00$), $t(40) = -3.432$, $p = 0.001$. However, Pearson's correlation revealed there was not a statistically significant difference between SES and children's perception of access to MAC physically active programs, $r(40) = 0.064$, $p = 0.688$.

Conclusion & Discussion

With the limited sample size in mind, the results from this study showed low income children participated in fewer physical activities than their more affluent peers. However, it cannot be concluded whether the children with different socioeconomic backgrounds perceived they were more active because of their participation in MAC programs differently. The low sample size does not allow for the results to be generalizable but indicates future research needs to be conducted in these areas for confirmation and further findings.

One factor that serves as a limitation to this study was an incredibly low response rate (5.5%) due to three potential reasons: burden, trust, and language. For rural areas, such as Meade County, where residents have a limited experience with research, informed consent protocols, and surveys, the mailing of the Children's Health Surveys to each child's home address may have posed an undue stress or burden to the parent/guardian and/or child. Each survey packet contained a sizable amount of documents: list of directions from the Meade Activity Center's Executive Director, two parental/guardian informed consent forms written in technical, university-language (one to sign and return, one to keep), two child assent forms (one to sign and return, one to keep), the 6-page, 55-item Children's Health Survey, and a stamped, addressed return envelope. To the parent/guardian and/or child, the materials in the packet may have seemed like a time-consuming task of filling out all of the paperwork and mailing it back, causing a low return rate. Previous research has also indicated that surveys are more likely to be returned if it is delivered by someone the participants trust (Edelman, Yang, Guymon, and Olson, 2013). Since the documents were written by someone the participants are not familiar with, they may not have felt comfortable completing them. Literacy and language constraints are also important factors that contribute to participation in research studies (Sinclair, O'Toole, Malawaraarachchi, & Leder, 2012). Together these issues could have played a role in producing a low response rate.

For the future, it has been proposed and confirmed by the Principal Investigator and the Meade Activity Center's Executive Director that the collection procedures will include face-to-face intercept survey data collection conducted by the Principal Investigator and a Meade County resident volunteer. A higher response rate may be obtained by attending the first few sessions of each Meade Activity Center program to pass out forms and surveys while parents/guardians are registering their child(ren), addressing the trust issue by building rapport and reducing burden. By being physically present during data collection as opposed to mailing the surveys, the Principal Investigator and/or community volunteer can explain the purpose of the study, the parental/guardian informed consent form, and the child assent form, eliminating the language barrier. Further, the Principal Investigator can ensure all forms are filled out correctly by the parent/guardian and/or child and answer any questions or concerns about the study. This change in data collection will hopefully increase the response rate and parent/guardian and child's comfort with study participation.

A group of community members recognized their fellow low-income families did not have local places for their children to engage in physical activities. They adopted the loft goal of creating a health equitable community by offering physical activity opportunities for children and adolescents within the county in borrowed spaces until an actual facility could be built. In 2011, the MAC was awarded a prestigious three-year grant with required matching through the Kentucky Healthy Futures Initiative, an award granted from the U.S. Social Innovation Fund, administered through the Foundation for a Healthy Kentucky. A comprehensive, longitudinal, match-comparison study design is being conducted as part of the requirement for the SIF. Cardiovascular and body mass index (BMI) data for over 1,700 children; physical activity, nutrition, and sedentary "screen time" behaviors for 700 children; perceptions of the need of physical activity for over 300 community members; and coalition effectiveness of key stakeholders are among a few of the data being collected, analyzed, and reported. Although the study reported in this paper is a small portion of the larger Meade Activity Center project, its implications are suggestive.

Rural communities must have access to physical activity opportunities and facilities so their residents can be physically active (Dunton, Kaplan, Wolch, Jerrett, & Reynolds, 2009; Trost, Pate, Saunders, Ward, Dowda, and Felton, 1997). A greater variety in opportunities increases the likelihood that children will be more active than if they are only presented with one option (Shores et al., 2010). An increase in both program offers and participants indicates a demand for the Meade Activity Center. The overall enrollment of physical activity programs from the Spring 2012 session to the Spring 2013 session more than doubled from 107 participants to 250 participants. Additionally, from the Summer 2012 session to the Summer 2013 session participants grew from 284 to 306. Furthermore, from the Spring 2012 session to the Summer 2013 session five additional programs were offered and from the Summer 2012 session to the Summer 2013 session three additional programs were offered.

The ultimate goal of MAC is to create physical activity opportunities and places for children who would not have otherwise been able to engage in physical activity. Without the MAC the Meade County children must spend excessive time and money to travel to the closest metropolitan area, Louisville, Kentucky, 42.8 miles away from Meade County, to participate in sports teams and physical activity programs. Considering that children with a low SES cannot afford to travel outside the county to participate in physical activities, the MAC provides all children equal opportunities to be physically active with convenient access and a variety of activities. Further, a sliding fee scale ensures all Meade County children who would not have otherwise had access to physical activity opportunities can participate. Overall, the MAC is a successful program that is highly needed in a rural county. Opportunities are provided for both low SES children and not low SES children to positively help them develop healthy behaviors now for lifelong health.



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