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Research

Adherence to appropriate instructional practice guidelines in U.S. colleges’ and universities’ physical activity programs
Drue Stapleton* and Sean M. Bulger
Full Length Research Paper

Adherence to appropriate instructional practice guidelines in U.S. colleges’ and universities’ physical activity programs

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Higher education physical activity programs (HEPAP) have existed in U.S. colleges and universities for over 100 years. Initially used to teach physical education and promote physical activity to prepare students for potential wartime conflicts, they have evolved in response to changes in societal and educational purposes and needs. In 2008, SHAPE America published its updated Guidelines for Appropriate Instructional Practice in Higher Education Physical Activity Programs. The guidelines educate professionals about effective physical education for post-secondary students, but knowledge of their use is limited. The purpose of the study was to examine familiarity and adherence to these HEPAP guidelines in U.S. colleges and universities. An electronic survey was developed to assess familiarity and adherence with the guidelines specific to curriculum and instruction. The survey, which included 61-items arranged in pre-existing content areas, was distributed to HEPAP representatives at colleges/universities offering a physical education teaching degree (N=596). 159 participants (26.7%) initiated the survey with 90 (15.1%) providing usable responses. The data were transformed into categorical levels indicating high degrees of overall familiarity (96.7% full or partially familiar) and adherence (99% full or partially adherent). Significant associations between Administration/Support and location (SHAPE America district) ($\chi^2$ (10, n=71) = 23.98, p=.008) and Assessment and location ($\chi^2$ (10, n=90) =19.39, p=.036) were observed. College physical education programs have been called on to provide students opportunities to develop an appreciation for, and increased participation in, lifetime physical activity. While overall adherence to the guidelines appears high, there is room for improvement in selected areas.

Key words: Program evaluation, college physical activity program, college students.

INTRODUCTION

The physiological and psychological benefits associated with a physically active lifestyle have been well documented in the literature over the past two decades with respect to reduced risk of premature death, cardiovascular disease, diabetes, colon cancer, obesity, orthopedic ailment, depression, and anxiety (Centers for Disease Control and Prevention and American College of Sports Medicine, 1995; U.S. Department of Health and
Human Services, 1996, 2001). Despite the well-established benefits associated with a physically active lifestyle, only 25 percent of U.S. adults engage in regular moderate physical activity (PA) and 29 percent report no leisure time for PA (Centers for Disease Control and Prevention, 2001).

This pattern of inactivity has been shown to worsen in college-aged individuals (Caspersen et al., 2000) with 80.5 percent of college students not meeting American College of Sports Medicine (ACSM) and American Heart Association (AHA) recommendations for moderate exercise and 73.7 percent not meeting recommendations for vigorous exercise per week (American College Health Association, 2011). The documented decline in PA that occurs as age and year in school increases is particularly disconcerting as when one considers the persistence of sedentary behaviors through childhood and adolescence into adulthood. Declines in both moderate and vigorous physical activity have been reported (Leslie et al., 2001) and PA levels, both high and low, during the senior year of college persists into adulthood (Sparling and Snow, 2002). A number of personal, psychological, social, and environmental factors have been shown to influence PA levels and provide insight into the previously described trends among college students and other segments of the population (Buckworth and Dishman, 2002; Trost et al., 2002).

Despite the sedentary lifestyle that defines college living for many students and the barriers to healthy lifestyles that exist on campus (Nahas et al., 2003; Sallis and Owen, 1999), institutions of higher education are thought to be well positioned to provide a social and physical environment that is conducive to establishing positive health-related behaviors including regular PA (Sparling, 2003). The interaction of environmental and social influences available on most campuses illustrates the potential contributions colleges and universities can make in facilitating the development of physically active lifestyles. In addition to the “built environment” (i.e., sidewalks and cross-walks, recreation facilities and green spaces, bike lanes and racks, facilities and equipment), most colleges and universities also provide students access to a range of recreational and instructional opportunities including structured physical education courses.

Higher education physical activity programs (HEPAP), have the potential to positively influence college students of all backgrounds and interests (McLeroy et al., 1988; Sallis et al., 2006; Stokols, 1992, 1996). Institutional policies governing the administration of HEPAPs, university degree requirements, curricular aspects, and personnel decisions can also affect the environment on campuses. Given these contextual advantages, college physical educators may have “the best opportunity to prepare students to maintain patterns of regular physical activity” (Sallis and McKenzie, 1991, p. 134). Hensley (2000) supported this assertion, highlighting the unique ability of HEPAPs to influence knowledge, attitudes, and behavioral skills of college students related to developing and maintaining a physically active lifestyle.

Physical education programs in college and universities have been in existence for over 100 years. Initially designed to provide students with a break from “the rigor of academics,” they have evolved over the past 60 years in response to changing societal demands and student needs. Most of the literature investigating HEPAPs has focused on “periodic monitoring of status and practices” of these programs (Trimble and Hensley, 1990, p. 65). The majority of these surveys have focused on a range of issues including availability of programs, requirements for graduation, curricular offerings, budgeting, personnel, credit hour value, and grading and assessment practices (Cardinal et al., 2012; Hensley, 2000; Hunsicker, 1954; Lumpkin and Avery, 1986; Miller et al., 1989; Oxendine, 1961, 1969, 1972, 1985; Oxendine and Roberts, 1978; Trimble and Hensley, 1984, 1990). More recent investigations have examined the trend of concepts-based health and wellness (CBFW) courses (Hodges-Kulinna et al., 2009), while others have focused on the impact of these course offerings on college students (Adams and Brynteson, 1995; Brynteson and Adams, 1993; Slava et al., 1984). In its entirety, this research indicates that HEPAPs have changed significantly since their inception in the late 1800’s. Despite an overall decrease in the number of college and universities requiring physical education for graduation and a reduction in the actual number of programs, it appears HEPAPs remain firmly established on college and university campuses. The mere presence of a HEPAP, however, does not necessarily indicate the level of program quality or effectiveness. The potential of HEPAPs to be an optimal venue for PA interventions due to their ability to influence large numbers of individuals has not yet been realized. For HEPAPs to remain viable, administrators must be able to demonstrate their value to students, alumni, and institutional leaders.

Given the lack of attention to the evaluation of program quality, an appropriate starting point may be the utilization of guidelines from professional organizations about HEPAPs. Investigations to determine the optimal

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appropriate professional practices in the preparation of future physical education teachers, and as a result, appropriate professional practices would carry over to their PA programs. Due to the small size, the entire population of key department contacts was surveyed excluding those randomly selected to participate in the pilot study.

Research design

A non-experimental, cross-sectional descriptive survey research design was used. Researchers established a target response rate of 15-17% for this study (Hodges-Kulina et al., 2009). The use of an Internet-based survey delivery and management application, combined with the rigorous development of the population database, survey instrument, and follow-up procedures, addressed potential concerns inherent to the design.

Survey instrument development

Researchers developed the survey for the specific purpose of this study based on the Appropriate Instructional Practice Guidelines for Higher Education Physical Activity Programs (SHAPE America, 2008). In the original format the guidelines are grouped in the following categories: (a) Administration and Support, (b) Assessment, (c) Instruction Strategies, (d) Professionalism, (e) Learning Environment, (f) Program Staffing, and (g) Curriculum. Prior to their inclusion in the survey instrument for this study, each individual guideline was critiqued by the researchers and revised, re-written, or divided as needed into multiple statements to improve clarity and avoid the use of double-barreled statements. The resultant 107 prospective survey items were reviewed by another researcher for clarity and ease of understanding.

Given the rather extensive list of prospective survey items and the current research focus on curriculum and instructional environment, a panel of two reviewers with expertise in the area of HEPAP was purposefully selected to evaluate each survey item for content validity. “Curriculum and Instructional Environment” (C&I) was operationally defined as those guidelines that have a direct influence on student behaviors, student outcomes, student knowledge, student abilities, and/or student skill development. Items included, but were not limited to guidelines related to areas such as effective teaching, lesson structure, practice opportunities, maximizing PA, instructional strategies, instructor behaviors, and so forth. “Administration and Institutional Support” (A&IS) was operationally defined as those guidelines which are departmental, program, or institutional administrative functions and/or those statements which do not have a direct influence on student behaviors, outcomes, knowledge, abilities, and/or skill development. Items included, but were not limited to guidelines related to areas such as program position, marketing, promotion, staffing, professional development, program evaluation, assessment, policy and procedures, and so forth. Researchers provide reviewers with a third category of “unclassified” for those items determined not to fit one of the previously provided definitions (Hinkin, 1998). The definitions identified reflect revisions made throughout the survey instrument development process.

The panelists were asked to sort 107 items into the corresponding

Program variables, such as faculty roles, institutional demographics, and program and course format, may be the first step in maximizing the effectiveness of PA interventions delivered using HEPAPs. In 2008, the Society of Health and Physical Educators (SHAPE America), formerly the National Association for Sport and Physical Education (NASPE), published the

Appropriate Instructional Practice Guidelines for Higher Education Physical Activity Programs which are intended to “educate professionals about effective programming and teaching within a higher education curriculum” (p. 3). The guidelines provide students, faculty, administrators, and policy makers with a template for “program administration,” a tool to assess the “quality of instruction,” and a framework to develop an effective program (p.3).

Topic areas such as administration and support, assessment, instructional strategies, professional development, learning environments, staffing, and curriculum evaluation are presented as a series of statements. The guidelines “represent expert consensus about appropriate and inappropriate practices observed in colleges/university instructional physical activity programs” (SHAPE America, 2008, p. 3), with the goal of ensuring that HEPAPs develop physically educated persons.

Purpose statement

The SHAPE America guidelines for HEPAPs provide a social ecological framework for evaluating the individual, intrapersonal, environmental, and policy influences of HEPAPs to promote college students’ participation in lifetime PA. Adherence to the SHAPE America guidelines may provide valuable information regarding the quality of HEPAPs. To date, researchers have not conducted investigations to determine the extent to which colleges and universities are adhering to the HEPAP guidelines.

Therefore, the purpose of this study was to examine the level of familiarity with and the level of adherence to the SHAPE America guidelines for appropriate instructional practices in HEPAPs.

METHODS

Population identification

Following Institutional Review Board (IRB) approval, the researcher recruited participants from an existing database of key department contacts at colleges and universities offering an undergraduate degree in physical education teacher education (PETE). The database was constructed for the purpose of a previous study and included Internet searches to identify all four year institutions of higher education that offers an undergraduate degree in PETE (N=644). Mailing addresses, departmental contact information (name, phone number, and email address), unit or college affiliation, and institutional contact information (admissions office phone number and email address) were obtained from the website of each respective institution. Following the compilation of the initial listings, email or telephone contact was made to confirm the information found on each website. Inaccurate or outdated information was corrected and the data base was modified accordingly.

It was presumed that college and universities offering a PETE degree would model appropriate professional practices in the preparation of future physical education teachers, and as a result, appropriate professional practices would carry over to their PA programs. Due to the small size, the entire population of key department contacts was surveyed excluding those randomly selected to participate in the pilot study.
categories using the definitions provided. Those items which both
reviewers categorized in the C&I category were selected for
inclusion in the final survey. Content validity was established when
both reviewers sorted a statement as belonging to the C&I category.
An overall interobserver agreement (IOA), calculated using the
point-by-point agreement ratio, of greater than or equal to 80
percent was used (Hinkin, 1998; Kazdin, 2011).

Three rounds of categorization were completed prior to achieving
the target level of agreement. The final round of selection resulted in
the reviewers agreeing that 61 of the statements were related to
C&I (IOA of 88 percent). The reviewers were not asked to provide
any additional statements or comments for inclusion as the intended purpose of the research study was to evaluate adherence
to the guidelines as they are written. The resulting 61 items were
organized into a survey format that asked participants to rate their
program’s level of adherence to each guideline for best practice
using a 5-point Likert scale, anchored at 5 (Fully Adhered To) and 1
(Not At All Adhered To) and an option of not applicable for each item. Participants selected one score, indicating the level of
adherence of their respective institution, to that particular statement.
Familiarity with the guidelines was assessed using a single
question in which participants were asked to rate their level of
familiarity using a three point Likert scale, with 3 indicating full
awareness, 2 indicating partial awareness, and 1 indicating no
awareness at all. Demographic information including the size of the
institution, the affiliation (public versus private), the number of full-
time faculty teaching in the HEPAP, the number of part-time faculty,
and the number of graduate teaching assistants teaching was also
collected. Finally, participants were also asked to identify if physical
education was a requirement for graduation at their respective
institution. Each of the sixty-one items included was then linked
back to the corresponding statement from the guidelines. The final
61 item survey was distributed to an additional panel of survey
design experts for pre-testing and review of grammar, clarity of
instructions, and other general administrative procedures (Kahanov
et al., 2003; McInnis et al., 1997).

Survey pilot testing
A pilot study was conducted and Survey Monkey™ (Menlo Park,
CA, USA) was used to manage survey administration and collection
of participant responses. The purpose of the pilot testing process
was to check the functionality of the electronic survey, procedures
for survey administration, and systems for data collection,
management, and analysis. Researchers included a hyperlink
unique to the survey in the informational/recruitment/instructional email sent to
all participants. The electronic survey was then distributed to a
random sample of approximately 40 participants (Johanson and
Brooks, 2010) from the previously described database. A follow-up
reminder email was sent two weeks following the initial contact.
Participants identified their consent to participate via answering a
single question prior to completing the electronic instrument. If the
department representative identified in the database was not the most qualified individual to respond to the
survey, he or she was asked to forward the information/
recruitment/instructional email to the appropriate individual for
completing. Follow up emails were sent 14 days and four weeks,
respectively, after the initial recruitment email.

Data analysis
The data from the completed surveys were downloaded from
Survey Monkey™ and converted for use in SPSS™ (version 19) for
analysis. Descriptive statistics, including frequency of responses
(and percentages) were calculated for all items using SPSS. To
address the research question related to the identification of
familiarity with the SHAPE America guidelines, frequencies for each
level of familiarity, median, and mode were determined. To address
the research question related to identifying the level of adherence
to the SHAPE America guidelines the overall adherence level was
calculated for each completed survey. Likert-scale questions were
analyzed by establishing a categorical level of adherence. Items
rated a 5 or 4 on the Likert-scale were considered fully adhered to,
3 partially adhered to, and 2 or 1 as not at all adhered to. Utilizing the six categories represented in the final survey, an
adherence level for each category was determined. The Likert-type
data were transformed and re-coded into categories of “Fully
Adhered to,” “Partially Adhered to,” and “Not at All Adhered to.” A
category was considered fully adhered to if adherence to 80%
of the items in the particular category were rated as such. Lack of
adherence (not at all adhered to) was defined as adherence to 80%
of the items in the particular category being rated not at all adhered to.
Partial Adherence was defined as not being fully adherent nor
lacking adherence. Chi-squared (χ²) analyses were conducted in
order to make comparisons based on (1) overall familiarity and
institutional variables, (2) familiarity and overall adherence, (3)
overall adherence and institutional variables, and (4) category
adherence and institutional variables.

RESULTS
Table 1 describes the institutional demographics (location,
enrollment, and affiliation). One hundred and fifty-nine
(n=151) participants initiated the survey (26.3%) with
89 providing usable responses (14.9%). One hundred and thirty
(81.7%) of responding institutions that initiated the
survey offered a HEPAP; 77 (48.4%) required physical
education for graduation. One-hundred and twenty-six
(79.2%) HEPAPs were housed in the same department as
the PETE program, with exercise science, health science,
Table 1. Description of respondents based on institutional demographic variables.

<table>
<thead>
<tr>
<th>Institutional demographic</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of HEPAP*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>130</td>
<td>82</td>
</tr>
<tr>
<td>No</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>Unsure</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Graduation requirement**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>53</td>
<td>60.9</td>
</tr>
<tr>
<td>No</td>
<td>34</td>
<td>39.1</td>
</tr>
<tr>
<td>Affiliation**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public</td>
<td>48</td>
<td>53.9</td>
</tr>
<tr>
<td>Private</td>
<td>41</td>
<td>46.1</td>
</tr>
<tr>
<td>Student enrollment**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small (500-2500)</td>
<td>38</td>
<td>42.7</td>
</tr>
<tr>
<td>Medium (2501 - 10,000)</td>
<td>26</td>
<td>29.2</td>
</tr>
<tr>
<td>Large (&gt; 10,000)</td>
<td>25</td>
<td>28.1</td>
</tr>
<tr>
<td>AAHPERD district**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern</td>
<td>4</td>
<td>4.5</td>
</tr>
<tr>
<td>Southern</td>
<td>38</td>
<td>42.7</td>
</tr>
<tr>
<td>Midwest</td>
<td>21</td>
<td>23.6</td>
</tr>
<tr>
<td>Central</td>
<td>14</td>
<td>15.7</td>
</tr>
<tr>
<td>Southwest</td>
<td>5</td>
<td>5.6</td>
</tr>
<tr>
<td>Northwest</td>
<td>7</td>
<td>7.9</td>
</tr>
</tbody>
</table>

Note. * indicates data from all respondents. ** indicates data only from those respondents who completed the survey.

and recreation as the most commonly reported alternative if not in the same department (data not shown).

Familiarity with guidelines

The results for overall familiarity with the guidelines indicated fifty (55.6%) participants reported being fully aware, 37 (41.1%) were partially aware, and 3 (3.3%) were totally unaware of the guidelines, indicating a moderate to high level of awareness overall. A similarly high level of overall familiarity, independent of affiliation, student enrollment, location, and/or the presence of a physical education requirement for graduation was determined; the $\chi^2$ analyses revealed no significant associations. However a pattern of higher percentages of full or partial awareness of the guidelines was observed among institutions requiring physical education and among those with smaller enrollments.

Adherence to guidelines

Collectively, the majority of items were rated as being either fully or partially adhered to. Fifty (53.8%) of respondents indicated their institution was fully adherent to the guidelines; forty-two (45.2%) were partially adherent, and one (1.1%) was completely non-adherent. Comparisons of overall adherence and institutional variables revealed similar patterns of high percentages of institutions partially or fully adhering to the guidelines. Institutions with smaller enrollments had the highest percentages of partial (n=17, 18.9%) and full (n=20, 22.2%) adherence. As with familiarity, a pattern was observed among institutions that require physical education for graduation having higher partial (n=24, 26.7%) and full (n=30, 33.3%) adherence compared to those institutions not requiring PE for graduation (n=17, 18.9%; n=18, 20%); no such patterns were evident with respect to location or affiliation. However, no significant associations between overall adherence and the institutional variables were observed.

Association of overall adherence and familiarity

There was a significant association ($\chi^2 (4, n=90) = 11.16,$
between overall adherence and familiarity with the guidelines (Figure 1). This association confirmed the relationship between the high level of awareness and high levels of adherence observed in the data. It is reasonable to expect institutions reporting higher levels of awareness would also report higher levels of adherence. It is interesting to note that institutions that reported a lack of knowledge of the guidelines (n=3) were at least partially adherent to them.

**Adherence by category**

A high percentage of institutions either partially or fully adhere to all categories (Figure 2). Higher percentages of institutions that require physical education for graduation fully adhere to the Administration and Support (n=42, 59.2%), Assessment (n=25, 27.8%), Professionalism (n=42, 48.3%), Learning Environment (n=40, 46%), and Curriculum (n=40, 46.5%) categories than those institutions that do not require physical education; the percentages did not, however, reach statistical significance.

Public institutions had higher percentages of partial adherence to the Professionalism (n=13, 14.6%), Learning Environment (n=19, 21.3%), and Curriculum (n=17, 19.3%) categories than private institutions. There appears to be a pattern of decreasing frequencies of full adherence from smaller institutions to larger institutions, overall and across all categories. There was a significant association between adherence to the Administration and Support category and location ($\chi^2 (10, n=71) = 23.98$, p=.008; Figure 3). This association may be related to the two (40%) institutions in the Northwest SHAPE America district being in full adherence with the Administration and Support category, compared to other districts which reported 89% full adherence or higher.

Institutions within the Northwest district also had a higher percentage of partial adherence (n=2, 66.7%) to the administration and support category compared to institutions from other districts.

There was also a significant association between adherence to the Assessment category and location ($\chi^2 (10, n=90) = 19.39$, p=.036; Figure 4). This association may be related to institutions within the Eastern SHAPE America district having the highest percentage of full adherence. 

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**Figure 1.** Association of Overall Adherence and Familiarity with the Guidelines. $\chi^2 (4, n=90) = 11.16$, p=.025.
adherence to the Assessment guidelines (n=3, 75%) compared to other districts, and institutions in the Northwest district having the lowest percentage (n=1, 14.3%). Additionally, there was a trend toward a significant association between adherence to Learning Environment guidelines and affiliation ($\chi^2 (2, n=90) =$}
4.64, p=.099; Figure 5), but was not large enough to reach statistical significance. This trend may be related to the larger number of public institutions partially adhering to the guidelines (n=19, 38.8%) compared to private institutions (n=8, 20%). Collectively, these data indicate a high level of adherence (full or partial) to the SHAPE America guidelines.

**DISCUSSION**

The results of this study indicate a high level of familiarity and adherence to the SHAPE America’s *Appropriate Instructional Practice Guidelines for Higher Education Physical Activity Programs* related directly to C&IE. The geographic location of an institution appears to have an association with adherence in the areas of Administration/Support and Assessment. The results also support an association between awareness of and adherence to the guidelines.

**Higher adherence: administration and support and professionalism**

The guidelines, in their entirety, were developed with the intent of providing a framework for optimizing HEPAP effectiveness, and, as such, adherence is not mandatory. The high level of awareness of the guidelines suggests HEPAP administrators are interested in promoting best practice and making a concerted effort to provide physical education opportunities that are developmentally appropriate, instructionally sound, and aligned with professional recommendations (SHAPE America, 2008). The association between awareness of and adherence to the guidelines supports the importance of advocacy efforts for quality physical education programs (McKenzie, 2007; SHAPE America, 2008). Continued advocacy, through the use of interdisciplinary teams composed of city government officials, city planners, community members, and faculty, has been suggested to further advance HEPAPs (Sweeney, 2011).

The high percentage of institutions fully adherent to the guidelines in the critical area of Administration and Support re-affirms the stability of HEPAPs on many college and university campuses (Hensley, 2000) and suggests an administrative culture across institutions supportive of existing programs. While the majority of guidelines related to Administration and Support were not included in the current study, the positive administrative culture displayed through these results may be valuable should HEPAP administrators attempt to implement changes to the program to address weaknesses related to areas such as assessment and effective instruction.
discussed below.

High adherence to the guidelines for Professionalism supports that, when given support and expectations, instructors within HEPAPs engage in appropriate professional practice. The high percentage of institutions adherent to the single item related to Administration and Support may be associated with the high percentage of institutions fully adherent to those items pertaining to Professionalism due to the emphasis on "standards of professionalism" explicitly stated in Guideline 1.3.1. Additionally, while adherence to the items related to Professionalism was high, closer examination of the wording of specific items may fit better with the items within the Instruction Strategies category. Shifting these items into the Instruction Strategies category may result in a reduction in the high level of adherence observed in the Professionalism category and a subsequent increase in the Instruction Strategies category.

Partial adherence: learning environment and curriculum

Adherence to the guidelines related to Learning Environment and Curriculum did not have the highest level of full adherence, nor the lowest, potentially indicating HEPAPs are proficient, but have yet to demonstrate mastery in these areas. Five of the ten guidelines with the highest percentages of institutions with full adherence are related to Learning Environment. These guidelines focus on environmental control, inclusivity, and safety of the learning environment, emphasizing management of the physical education setting. The moderate level of full adherence to these guidelines is consistent with the low level of full adherence and the high degree of partial adherence to the guidelines related to Instruction Strategies as effective class management is a component of effective teaching. The discrepancy, however, may be linked to the courses offered in the individual HEPAPs. For example, outdoor pursuit or adventure courses, such as rock climbing, hiking, backpacking, and kayaking require inherently higher levels of class management to maintain overall safety. It is plausible that programs offering these courses are likely to have well-managed classes, despite a lack of effective teaching.

Adherence to the guidelines related to Curriculum followed a similar pattern of adequacy, but lacking mastery. The items within the Curriculum category appear to be more related to administrative aspects of the curriculum, such as program philosophy and program
evaluation as opposed to instructional aspects. The guidelines within this category do not prescribe a particular curricular model to follow, but rather, provide a general guide for the overall HEPAP curriculum. There is a strong connection between the development of course and program outcomes and assessment that is consistent throughout these guidelines. Adherence to these guidelines may serve as an opportunity for HEPAP administrators to forge a connection between the high administrative support and the lower levels of adherence seen in the Assessment and Instruction Strategies guidelines. It is possible that adoption of a particular curricular model (i.e., Sport Education) may inherently promote effective instructional strategies and increased assessment (Meeteer et al., 2011).

Adherence to the guidelines within the Curriculum category have a high potential to influence the PA of college students and are therefore of vital importance. This set of guidelines specifically addresses barriers to PA among college students including the development of social support networks, reasons for participation in PA (other than competition), and both cognitive and affective outcomes associated with PA (Buckworth and Dishman, 2002; Nahas et al., 2003). The moderate level of adherence to these guidelines is promising, as HEPAPs appear to be meeting recommendations for health and fitness, including promotion of skill development, and affording students with opportunities to develop behavioral skills, knowledge, and supportive social networks, however, this has yet to be elucidated.

**Lower adherence: instruction strategies and assessment**

The percentage of responding institutions fully adherent to the guidelines related to Instruction Strategies (n=0, 0%) highlights a previously identified problem: the lack of effective teaching in HEPAPs (Housner, 1993; Poole, 1993). The three individual guidelines with the highest levels of non-adherence of all items were from this category. Additionally, the extremely high level of partial adherence to this category indicates a variety of less than ideal instructional practices is taking place. The shift in course offerings to meet the changing needs of students and society, the trend of fewer full-time, tenure-track faculty teaching, and increased usage of activity specialists and graduate teaching assistants (Evaul and Hilsendanger, 1993; Hensley, 2000) may be having a deleterious effect on the physical education of the general college student. Activity specialists, coaches, and graduate teaching assistants may be more knowledgeable about the specific activity in which they specialize, but may lack adequate training in effective pedagogical techniques. Alternate approaches to traditional, command style teaching may be necessary to further the development of behavioral skills, knowledge, and the affective domain. Quality, in-service training and effective supervision have been suggested to assist graduate teaching assistants develop effective teaching skills (Poole, 1993; Russell, 2011) and may be appropriate not only for graduate teaching assistants but for all HEPAP instructors to develop effective teaching practices.

The increase in frequency and popularity of CBFW courses (Hodges-Kulinna et al., 2009) may also be contributing to the low level of full adherence to the Instruction Strategy guidelines. While these courses include a PA laboratory, they also include didactic educational sessions. The wording of the guidelines is consistent with traditional physical education courses and settings, and may not be interpreted to be applied only during the laboratory portion of the CBFW courses. The lack of adherence to the Assessment guidelines corresponds with the lack of adherence to the Instruction Strategy guidelines, as a fundamental tenant of effective teaching is the provision of feedback and assessment. The practices recommended highlight the use of objective, regular, evaluation with the intent of providing students with the information necessary to develop more educated consumers of and participants in PA. However, adherence to these recommendations is lacking, providing evidence that assessment practices may not have changed significantly over the past 30 years.

Despite the continued evolution in HEPAPs over time (Cardinal et al., 2012; Hensley, 2000; Lumpkin and Avery, 1986; Miller et al., 1989; Oxendine, 1961, 1969, 1972, 1985; Oxendine and Roberts, 1978; Trimble and Hensley, 1984, 1990), the lack of focus on assessment and program evaluation may be contributing to a lack of effective teaching. This pattern may be partially attributed to the individuals teaching HEPAP courses lacking training in effective teaching strategies as previously discussed. Additional in-service training, supervision, and professional development, as discussed above, may serve dual purposes: increasing teaching effectiveness, while simultaneously, improving assessment practices. Incorporating electronic learning management systems (LMS) may promote improved teaching effectiveness through increased instructor training capability, increased student assessment, and assist with program evaluation (Melton and Burdette, 2011). Greater use of technology, such as pedometers and heart rate monitors, within HEPAP offerings, would further assist instructors with the assessment of student activity and greater ability to track student achievements.

One of the underlying assumptions of this study was that institutions offering an undergraduate major in PETE would be more likely to be familiar with and adhere to recommendations for best practice due to the emphasis on preparation of future physical education teachers. However, the results of adherence to the guidelines from these two areas provide an opportunity to question this
assumption. Institutions offering an undergraduate major in PETE may have lower adherence in these areas due to an emphasis on instruction and assessment within the PETE program, potentially due in part to less focus on the practices within the HEPAP. Conversely, it is possible that institutions without an undergraduate PETE program may have higher adherence to the guidelines related to Instruction Strategies and Assessment as attention and resources would be channeled to the HEPAP. While these guidelines are intended to be a model of best practice for HEPAPs, the results indicate best practices are not occurring in two major areas of college-based physical education.

Limitations

The use of an internet-based survey facilitated the administration and analysis of this research study. However, it contributed to a major constraint, low response rate. While lower than desired, the target response rate was reached (15-17% target, 14.9% actual) and was consistent with published response rates for electronic surveys (Hodges-Kulinna et al., 2009). It is possible, however, that participants that did not respond, or did not complete the survey fully, had lower familiarity and adherence to the guidelines. It is also possible that those participants that did respond have greater familiarity and adherence, and as such, were more likely to respond, contributing to a response bias. No significant associations between response group time and familiarity with the guidelines, overall adherence, nor adherence by category, were revealed, thus increasing the generalizability of the current results (Miller and Smith, 1983).

Future directions

This study expands the foundation evaluating HEPAPs, contributing to an understanding of the extent to which these guidelines are utilized. The current results demonstrate a high level of familiarity with and moderate levels of adherence to the SHAPE America guidelines that focus on C&I. This study was limited, however, to those guidelines identified as being oriented toward C&I leaving adherence to those related to A&IS for future examination. Investigations identifying adherence to the guidelines related to A&IS may provide additional evidence of the influences of environmental variables such as facilities, budgeting, institutional culture or philosophy, institutional mission, strategic planning, and advocacy approaches. Investigations to examine program philosophy, goals, and outcomes would contribute additional evidence for HEPAP administrators to inform decisions made to restructure, revise, or maintain current practices. These guidelines provide HEPAP administrators with a tool to use in the assessment of program quality. Higher education physical activity program administrators with higher levels of understanding of their program, who are better equipped and prepared to evolve due to changing educational and societal environments, may have programs that are less likely to face elimination and may flourish.

Conclusion

Adherence to the SHAPE America guidelines for appropriate instructional practice related to “Curriculum and Instructional Environment” is moderate to high, as is familiarity with these guidelines. The high level of awareness and adherence indicates HEPAPs at institutions offering an undergraduate PETE program are engaging in appropriate instructional practice. College physical education programs have been called on to provide students with opportunities to develop an appreciation for and increased participation in, lifetime PA; it appears that HEPAPs, with minor adjustments, are well prepared to provide these opportunities.

Conflict of Interests

The authors have not declared any conflict of interests.

REFERENCES


Journal of Physical Education and Sport Management

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