Analyses of Higher Education Conceptual Physical Education Courses

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Abstract

This study examined conceptual physical education (CPE) course syllabi in order to better understand how such courses were taught in higher education. In total, 86 syllabi were collected with 43% of them emanating from colleges. The syllabi were analyzed to ascertain the course credits, formats, content, assignments and assessments. Chi-square tests were employed to explore the differences between colleges and universities in the aforementioned aspects. The data from our study suggested that knowledge remained the focus of such courses. Physical activity, fitness, and nutrition assignments and assessments were not widely employed. Furthermore, universities had fewer CPE credits than colleges. There were CPE content differences between colleges and universities while no significant discrepancy of assignments and assessments was found.

Key words: fitness education, university, college, course content

Introduction

The importance of addressing obesity among university students cannot be overstated (Keating, Castelli, Castro-Pinero, & Guan, 2011; Strand, Egeberg, & Mozumdar, 2010). A number of researchers have suggested that higher education is one of the best settings to change young adults' behaviors because university settings have professionally trained personnel and facilities (Corbin & Cardinal, 2008; Sailors et al., 2010). Of more importance, unlike any other non-educational settings, higher education has easy access to a large segment of young adults. Thus, higher education is believed to have the potential to require instead of just recommend students to master the knowledge and skills needed to establish a healthy lifestyle. Furthermore, physical activity (PA) interventions in higher education are invaluable due to the critical time period for young adults and the carry-over effects of young adulthood PA (Casebolt, 2009; Keating, Guan, Castro, & Bridges, 2005). As widely known, any behavioral changes occurring during this time period in higher education have profound effects on their adult lifestyle (Cardinal, Jacques, & Levy, 2002; Keating et al., 2005).

Unlike physical education courses offered in K-12 programs, many researchers suggest that higher education should offer effective conceptual physical education (CPE) courses, which usually focus on acquiring health-related fitness (HRF) knowledge, skills, and values; experiencing regular participation in PA; and promoting healthy nutritional choices to achieve life enhancing HRF (Corbin & Cardinal, 2008; Strand et al., 2010), to help students adopt healthy lifestyles (Casebolt, 2009; Kulinna, Warfield, Jonaitis, Dean, & Corbin, 2009). Indeed, shifting away from offering various PA courses, higher education has widely used CPE courses to physically educate students (Beck et al., 2007; Kulinna et al., 2009; Strand et al., 2010). To date, such courses have constantly caught the attention of health and physical education professionals in the last two decades (Kulinna et al., 2009; Strand et al., 2010; Trimble & Hensley, 1990). Trimble and Hensley (1990) surveyed 682 American colleges and universities and found that 52% offer a CPE course to all students. This course was required for graduation in 34% of those institutions surveyed. About a decade later, Hensley (2000) conducted the same study and reported similar results -- 60% of the respondents offered CPE courses with 33% of them requiring CPE for graduation. Also using a self-developed survey, Kulinna and colleagues (2009) reported their findings about CPE courses in American colleges and universities. The authors found that, since Hensley's work in 1998, the popularity of CPE courses had risen significantly with 90% of the 161 universities that responded to the survey offering CPE courses, and that 44% of the institutions, an increase of 11% from 1998, required such a course for graduation. In addition, a similar result was found by Strand and colleagues (2010) just a year later, who also found that there was a statistically significant difference in required CPE courses between 2-year and 4-year programs. Overall, the reported data concerning CPE courses over more than three decades seemingly suggests that the popularity and social demand for such courses continues to grow.

Considering that CPE courses have been implemented in higher education for more than three decades, it is crucial to examine whether such courses have generated any positive effects on changing student behaviors towards health on campuses. In fact, a number of studies have reported positive results of CPE courses for improving student attitudes toward fitness/PA and increasing the amount of PA (Altun, 2008; Beck et al., 2007; Boyle, Mattern, Lassiter, & Ritzler, 2011; Cardinal et al., 2002; Jenkins, Jenkins, Collums, & Werhonig, 2006). Moreover, behavior change strategies used as a method of promoting lifelong adherence to healthy lifestyles have also been included in CPE courses and significant results have been reported (Boyle et al., 2011; Dale, Corbin, & Cuddihy, 1998). Besides the aforementioned results, descriptive research indicated that the title of CPE courses has been diversified, and some universities have named such courses HRF, or health for life, or conceptually based fitness/wellness, or fitness for life (Corbin & Cardinal, 2008; Strand et al., 2010). The objective for offering students a fitness-related course with both conceptual and lab components, however, remains similar (Ermler, Kovar, & Reinders, 1993; Strand et al., 2010). Regarding CPE course content, an array of topics has been reported. The content most often included were PA benefits, methods for improving the HRF components (i.e., endurance, muscular strength and endurance, body composition, and flexibility), nutrition, stress management, relaxation and time management (Kulinna et al., 2009; Strand et al., 2010).

In order to help readers fully understand research on the topic, it is important to point out that previous studies have employed self-designed surveys to collect data (e.g., Corbin & Cardinal,

2008; Kulinna et al., 2009; Strand et al., 2010). This research methodology may have some inherent limitations as self-designed surveys might have missed some key elements of such a course because participants would just answer questions included in the survey. Additionally, none of the previously reported studies has examined the assignments used in CPE courses, yet assignments are found to be an important component in the quality of student learning in general (Heinrich, Milne, Ramsay, & Morrison, 2009; Tang & Byrne, 2007). A number of studies have indicated that assignments are not only used as a way of assessing student learning, but also provide a valuable collegiate experience (Tang & Byrne, 2007; Waldmann, 2010). The lack of such information hinders our understanding about the overall status of CPE courses. As a result, there is a need to further examine the assignments used in CPE courses in order to help faculty members in higher education use assignments to facilitate the reduction of obesity among young adults more effectively. Furthermore, no studies have investigated the use of textbooks in CPE courses. Research has pointed out that textbooks are important to student learning in higher education (Gurung & Martin, 2011; Ryan, 2006). It remains unknown, however, to what extent the latest research outcomes have been integrated into textbooks and what textbooks have been widely used. As a result, CPE textbooks may be one of the most under investigated topics.

Higher education usually requires instructors to create class syllabi to guide student learning (Bentz, Fynewever, & Ludwig, 2011; Cullen & Harris, 2009). While the content varies greatly among universities and/or instructors at the same universities because of academic freedom (Ermler et al., 1993; Kulinna et al., 2009) and the lack of research-based guidance on what information must be included in a course syllabus (Parkes & Harris, 2002), class syllabi contain relatively accurate information concerning how the course is taught. A thorough investigation of CPE class syllabi would help us better understand how such a course is taught in higher education settings. This information could provide baseline data for future CPE course reform. The data about CPE will shed light on what fitness knowledge and skills have been emphasized and help us to better understand the CPE course improvements that are necessary in higher education. Therefore, guided by grounded theory, which enables researchers to elucidate key patterns, themes, and categories from documents (Corbin & Strauss, 2008), our study aimed to understand how CPE courses for general undergraduate students were offered in higher education. The secondary purpose was to identify CPE course differences by types of institutions. The following hypotheses were developed to guide the study: (a) most CPE courses consisted of both lecture and lab; (b) HRF knowledge, instead of skills, remained the focus of such courses; (c) common assignments and assessments were used in the courses across the nation; and (d) there were CPE content differences between colleges and universities.

Method

Collection of Class Syllabi

Human subject approval was obtained before any data collection was conducted because some instructors had to be contacted for their CPE course syllabi. Overall, two strategies were employed to collect class syllabi. First, one college and two state university websites in each state were searched using the following key words: syllabus for health for life class, or fitness for life, CPE class, wellness, and fitness course. Some of the selected colleges and universities did not offer a CPE course, therefore, different colleges or state universities within the state were selected. Secondly, emails were sent to the instructors to solicit syllabi at colleges or universities that mentioned such a course, if the syllabus was not available on their university websites. Phone calls were also made to instructors of CPE courses to collect their syllabi. In total, 86 college (n = 37) and university (n = 49) syllabi from 36 states were utilized. Refer to Table 1 for detailed information concerning the sample.

Data Analyses

There were two stages of data analysis. The first stage was the content analysis of syllabi. Following grounded theory (Corbin & Strauss, 2008; Patton, 2002), the content list was engendered through the core process of constant comparison, where each topic was compared with all existing concepts and constructs to figure out if it added any new properties to existing constructs or emerged as a new one. To ensure coding consistency, group discussion and emails were used among the research team members to discuss discrepancies. Using the list of content topics, an SPSS coding file was developed to code the frequency of CPE content.

The second stage focused on the statistical analysis. The frequency of syllabi content was calculated. Chi-square tests were performed to investigate content differences between colleges and universities using categorical data. An independent t-test was employed to examine differences of course credits in both types of institution. Cohen's d was calculated for effect size (ES), with 0, .2, .2, .5, and greater than .5 for small, medium, and large ES, respectively (Salkind, 2008). The percentage of included content was also compared with previous research on the topic. All data analyses were performed using SPSS 18th ed. (SPSS, 2011).

Results

Overall Status of CPE

Types of course format and credits. Similar to the findings reported in the literature on the topic, three types of course format or structure existed across the syllabi including lecture only, lab only, and a combination of both lecture and lab. The lecture-lab or combination type course dominated the syllabi, followed by lecture only, then lab only. Regarding course credits, the mean credits were less than 3, which is the most commonly used number of credits for a semester long course. The independent t-test revealed there was a significant difference in credits by types of institution, indicating that colleges had more CPE credits than universities (see Table 1).

Textbook. In total, 16 textbooks were used in 86 syllabi. The majority of the textbooks reported were used by only one instructor. The most frequently (25.63%) employed textbook was *Fit & well: Core concepts and labs in physical fitness and wellness* (Fahey, Insel, & Roth, 2006). The only other textbooks used at more than one university and/or college were *Lifetime physical fitness and wellness: A personalized program* (10th ed.) (3.49%) (Hoeger & Hoeger, 2009), and *Concepts of fitness and wellness: A comprehensive lifestyle approach* (8th ed.) (2.33%) (Corbin, Welk,

Table 1. ***Basic Information of Conceptual Physical Education Courses offered in Colleges and Universities***

Category	Mean (SD)	Frequency (%)
Type of university		
Colleges		37 (43.0%)
University		49 (57.0%)
Course credits	2.05 (.82)	
College	2.67 (.50)**	
University	1.87 (.81)**	
Credits required in general education		
0		72 (83.70%)
1		7 (8.13%)
2		3 (3.49%)
3		3 (3.49%)
4		1 (1.16%)
Type of course		
Lecture only		11 (12.8%)
Lab only		8 (9.3%)
Lecture and lab		56 (65.1%)

Note. ** p <.001.

Corbin, & Welk, 2008).

Content included. It is clear that the CPE content focused on providing students with knowledge and skills needed to be physically fit - ranging from understanding PA benefits to skills or strategies useful for maintaining fitness. The most frequent content category listed was basic fitness concepts, followed closely by general nutrition information, PA benefits, and health related fitness knowledge. Skill related content featured weight management and time management. It is important to note that less than 10% of the universities and colleges included social support for PA in CPE courses (see Table 2).

Table 2. ***Content Topics Covered in CPE Courses***

Content	*N* (%)
Basic concepts	72 (83.7%)
Nutrition (general)	70 (81.4%)
Weight management	69 (80.2%)
Strength training	68 (79.1%)
PA benefits	64 (74.4%)
Time management	64 (74.4%)
Health-related fitness	63 (73.3%)
PA prescription	61 (70.9%)
PA assessment	59 (68.6%)
Health-related fitness assessment	54 (62.8%)
Nutrition assessment	53 (61.9%)
Stress management	48 (55.8%)
Cardiovascular fitness	31 (36.0%)
Flexibility	29 (33.7%)
Injury prevention/safety	28 (32.6%)
Behavioral modification strategies	27 (31.4%)
Goal setting/planning	27 (31.4%)
Lifestyle management	26 (30.2%)
Motivation	25 (29.1%)
Consumerism	23 (26.7%)
Skill-related fitness	17 (19.8%)
Skill-related fitness assessment	15 (17.4%)
Social support/interaction	8 (9.3%)

Assignments. The assignment type and grade weight varied. Fitness assessment was most common followed by PA participation logs. Nutrition assessment was the only assignment used for nutrition and the percentage was relatively low. PA prescription or planning was not commonly employed as an assignment. Refer to Table 3 for more detailed information concerning the use of assignments.

Table 3. ***Frequency of Assignments and Assessment Used in CPE Courses***

Assignment	Frequency (%)
Fitness assessment	46 (53.5%)
Physical activity participation log	39 (45.3%)
Nutrition assessment	20 (23.3%)
Physical activity planning	16 (18.6%)
Pre- and post-test physical activity	15 (17.4%)

Comparison of CPE Courses between Colleges and Universities

The mean credits of CPE for colleges and universities were 2.67 and 1.87, respectively. Independent t-test results revealed that the difference was significant ($t38 = 2.8$, $p < .01$) with a large ES (i.e., Cohen's $d = 1.19$). In addition, chi-square test results indicated that there were seven content areas (i.e., general HRF, skill-related fitness assessment, general nutrition, nutrition assessment, stress management, time management, and weight management) that were significantly different between colleges and universities (see Table 4). No differences, however, were found for the reported assignments/assessment.

Table 4. ***Percentage Differences of CPE Content between Colleges and Universities***

Content	Colleges	Universities	Chi-square Value
Weight management	94.6%	69.4%	8.4**
Nutrition general	94.6%	71.4%	7.5**
Health-related fitness	86.5%	63.3%	5.8**
Nutrition assessment	75.7%	51.0%	5.4*
Stress management	73.0%	42.9%	7.8**
Skill-related fitness assessment	27.0%	11.4%	4.1*
Time management	5.4%	40.8%	13.9**

Note. * = p < .05. ** = p < .01.

Discussion

CPE courses can help students develop the knowledge, skills, attitudes, and behaviors needed to adopt healthy behaviors (Dale & Corbin, 2000; Kulinna et al., 2009). The wide implementation of such courses, however, has not offset the increase of obesity in the university student population considering that empirical data have suggested that no significant decrease of obesity has been found among university students (Keating et al., 2011). To our

knowledge, our study extends this line of research by providing new information regarding the use of textbooks, assignments and assessment through analyzing the class syllabi rather than using self-designed surveys. This approach enables us to better understand CPE courses in practical settings. The results of this study provide a descriptive picture of the status of CPE at colleges and universities across the country.

Overall Status of CPE Courses

In order to understand the topic in depth, it is important to examine all the relevant aspects of CPE courses such as the course format, the number of credits, course status (i.e., required or elective), content, assignments and assessments. In general, the content, assignments and assessments are determined by the number of credits as time dictates what and how a course can be taught, partly indicating the importance of a course.

Types of course format. As noted by Ermler and colleagues (1993), the structure of CPE courses might affect the outcome of student learning because students would have different educational experiences. It is still unclear, however, which class structure is optimal due to the lack of empirical information reported in the literature. Similar to previous studies on the topic (Corbin & Cardinal, 2008; Ermler et al., 1993), the data from this study confirmed the hypothesis that most CPE courses consisted of both lecture and lab in which students are not only provided with HRF knowledge by an instructor, but also receive opportunities to be physically active and put their knowledge into practice. The assumption for implementing such a class structure is that students might learn best if both knowledge and hands-on experience are offered in class (Ermler et al., 1993). More research, however, is needed to explore effect differences in the acquisition of knowledge and skills resulting from various CPE course structures.

Course status. Although many factors may be taken into consideration for determining the status (i.e., required or elective) of a course in higher education, the importance/need of the course must play an important role. A number of courses are included in the general education program for undergraduate students to provide them with a well-rounded education, which is considered as fundamental in the training needed for undergraduate students and has been greatly controlled at the state level (Holloway, 2005). However, it seems that many states still do not believe there is a need to include physical education/health education in general education in higher education given that 83.7% of colleges and universities had CPE as an elective course. Many university students are potentially not receiving this type of education as it remains as an elective. This result could provide the evidence indicating why, according to Keating and colleagues (2011), university students have not increased PA levels for 10 years since the American College Health Association (ACHA, 2002) issued calls for changing student PA levels on campus. While the social demand for quality fitness education continues to increase and is corroborated by a number of universities and colleges providing CPE, the fact that CPE is an elective continues to limit the effects of higher education in helping students halt physical inactivity and obesity. Future research is needed to examine why states/higher education have not made the CPE course a requirement in order to echo the call for PA promotion on campus by ACHA (2002, 2012).

The number of course credits. Along with the course status, the number of credits is another indicator of course importance. It is also one of the factors that determine what and how much content can possibly be covered in the course, which, in return, influences the quality of the course. However, the relationship between the quality of the course, and the number of course credits has been neglected by researchers. To date, no experimental studies on the topic have been found. Furthermore, due to the lack of previous data concerning CPE course credits and the information suggesting how many credits are needed for CPE, it is impossible to indicate if the number of CPE credits has increased or declined, nor if the mean credits are optimal to teaching CPE. The mean credits (2.05) found by our study, however, is less than 3 credits which is the most common number of credits for major courses in higher education. More investigation is necessary to examine how many credits are needed in order to effectively teach the course.

Textbooks. Textbooks used in courses are often viewed as major resources of knowledge. As such, there are certain qualities that make some texts more useful than others. Textbook content, readability, interest, and structure all play a role in the effectiveness of a textbook (Chambliss, 1994) in that these qualities make the content accessible and attainable by all readers. Therefore, the fact that previous studies on CPE lack a discussion of the textbooks currently in use at colleges and universities across the nation is cause for concern. Future efforts on examining CPE courses should address this issue.

The data from our study revealed that three textbooks emerged as the most popular and most frequently used in these types of courses. One textbook, *Fit & well: Core concepts and labs in physical fitness and wellness* by Fahey and colleagues (2006), is clearly the favorite among instructors of CPE with 22 responding colleges and universities identifying this as their textbook of choice. Each of the textbooks used, in its own way, provides information that is helpful in leading a healthy lifestyle. After reviewing the table of contents of each of these texts, certain qualities stand out in their portrayal of physical fitness and wellness. In general, these texts provide the basic principles of HRF, including discussions of the five components of fitness, as well as nutrition and stress management. Considering the goal of most CPE courses is to promote positive behavioral change, three of the reported textbooks (i.e., Corbin et al., 2009; Fahey et al., 2006; Hoeger & Hoeger, 2009) provide specific and detailed chapters on the construction of personal fitness programs. These chapters outline the comprehensive nature of individualized fitness programming and provide the skills necessary for self-management and self-planning for success within one's own program. The textbook by Hoeger and Hoeger (2009) provided content knowledge in the areas of assessing one's physical fitness and evaluating fitness activities. There are no chapters, however, dedicated to the construction of a personal fitness program. While goal setting is a major component of fitness planning, there are many more components that are left out of the discussion.

Content of CPE. As might be expected, content varied from course to course. The result of our study supported our hypothesis that knowledge is the focus of such courses (Beck et al., 2007; Hensley, 2000; Kulinna et al., 2009; Strand et al., 2010). It is

encouraging to note that many of these content areas (see Table 5) coincide with the leading health indicators that are major health concerns on college campuses indicated by ACHA (2012). For instance, CPE courses covered the content of nutrition, weight control, physical activity and fitness, which were also specified in the *Healthy Campus 2020* (ACHA, 2012). This indicated the effort of universities to enhance students' health behaviors. Furthermore, it is important to note that the content regarding nutrition and stress management have remained two of the most commonly reported course content areas over the last three decades. However, it is puzzling that the content area of PA goal setting and planning was cited very little as only about one third of the sample included it in their syllabus. This result is unexpected because recent studies have suggested that goal setting and planning are critical to behavioral changes (Shilts, Horowitz, & Townsend, 2009). It is logical to assume that CPE courses would have placed a strong emphasis on PA goal setting and planning in order to respond to calls for promoting PA among students on campus (ACHA, 2002, 2012). Similarly, social support is found to play an important role in changing PA behaviors by both cross-sectional and prospective studies (Courneya, Plotnikoff, Hotz, & Birkett, 2000; Hamilton & White, 2010). However, this topic was also not widely taught considering only 9.3% of the sample listed it in their syllabus.

Table 5. ***Percentage of CPE Course Content Reported in Four Studies***

Course content	Trimble/Hensley (1990)	Hensley (2000)	Kulinna et al. (2009)	Current Study
Nutrition	95%	96%	95%	81.4%
Stress Management	80%	91%	89%	55.8%
Self-responsibility/ management skills	61%	67%	62%	
Movement fundamentals/body mechanics	41%	43%	47%	

Additionally, consumerism has become a new widely addressed topic in both health and fitness fields in K-12 programs. The contention was made based on the inclusion of such content in the national health education standards (i.e., national health standard 3: National Health Standards, 2011) and the instructional framework for fitness education sponsored by the National Association for Sport and Physical Education (NASPE: 2012). It is certainly inappropriate to assume that CPE in higher education should also teach consumerism simply because it has been taught in K-12 programs. Given the fact that PA/fitness information and products have been increased dramatically in recent years and students in colleges and universities are the first-time independent consumers of such merchandise, it is reasonable to suggest that the topic of consumerism is also important to students in higher education. The low percentage of consumerism found in our study might indicate that the need for teaching consumerism has not been widely recognized by CPE instructors. As noted earlier, effort is needed to explore what should and should not be taught in CPE courses in order to better help students adopt healthy behaviors.

Given the consistency of CPE content over the years while students in higher education continue to exhibit low levels of PA and poor nutritional habits (ACHA, 2011; Keating et al, 2011), there is a need to question whether the current CPE courses can actually accomplish the intended purposes – promoting more PA and a healthy diet among university students (Erlmer et al., 1993). Albeit a number of studies have found that university students, who have completed a conceptually-based HRF course, presented significant gains in actual HRF knowledge (Beck et al., 2007), it appears that the knowledge gained has not translated into actual behaviors as few empirical data are available to demonstrate the causal relationship between HRF knowledge and fitness behaviors.

Assignments/Assessments

The role of assignments/assessments in student learning has been long recognized. Most instructors use assignments/assessments to help students master knowledge and skills effectively. To our knowledge, however, it is unclear what assignments are useful for facilitating students learning in CPE courses. This study is the first of its kind to investigate assignments/assessments included in CPE. Since most CPE courses include both a lab and lecture component, many of the syllabi included various assignments and assessments that were in line with our hypothesis. When distinguishing between these two categories, assignments usually require students to practice independently outside of class time. Assessments, on the other hand, are generally performed in class with the instructor present. The information gleaned from the current study found the most frequently reported assignment was the PA participation log, while the least mentioned was PA planning. Although it is certainly important to track PA levels, it is equally, if not more important to be able to prescribe and effectively plan PA programs. More research is needed to examine why PA planning is not one of the most commonly used assignments. In terms of assessments, the most frequently mentioned were fitness assessments followed by nutritional analysis. This compares favorably with the results found by Strand and colleagues (2010) in their analysis of HRF courses in colleges and universities. However, pre and post assessments with practice in PA prescription have not been widely reported (see Table 3). The lack of this PA assignment might suggest that the current CPE course has not focused on actually monitoring student PA change created by the course.

Comparison of CPE Courses between Colleges and Universities

Course credits. It is apparent that there is a dramatic increase of knowledge in all subject areas while the number of years for undergraduate studies remains the same. Due to the time limit, higher education has to select the most valuable knowledge and skills required for graduation. Therefore, credits are generally determined by the course's importance. Because colleges have given more credits to CPE courses than have universities, it may suggest that colleges have viewed such courses to be more important. It is also possible that the above discrepancy was caused by the mission differences between colleges and universities. In general, colleges focus more on fostering well-rounded individuals with a smaller class size, while universities tend to provide more specialized training to their students and the class size is generally

larger (Hanstedt & Amorose, 2004). Unfortunately, no studies have examined if the differences in CPE course requirements result in differences in PA and/or obesity rates between colleges and universities. Given that health is important to students in higher education, empirical research is needed to investigate whether the CPE reduction in universities has any negative effects on educating their students about PA. Data concerning student PA levels and obesity rates between the two types of institution might help us better understand the effects of CPE courses.

Content and assignments. Content and assignments are two of the most important elements determining the quality of a course. As commonly practiced in higher education, content and assignments are chosen by instructors and vary greatly among universities. Unfortunately, our study did not contain data concerning instructors and thereby the role of instructors in determining content and assignments remains unknown. To date, it is also unclear what content and assignments must be included in CPE courses to foster physically active students. Overall, the data from our study suggested that there are many similarities between colleges and universities. First, both placed an emphasis on HRF components, nutrition, and weight management (see Table 4). Secondly, both colleges and universities did not seem to focus on skill-related fitness assessments with only 27% of universities and 11.4% of colleges including it in their class syllabi. Finally, both had low percentages of nutrition, PA, and HRF assessments. This result was expected as assessment has always been a weak component in physical education settings (Silverman, Keating, & Phillips, 2008). Studies have suggested that assessment or evaluation must be a part of teaching in order for students to learn better (Miller, 2010). Therefore, the relatively low percentage of assessments included in such courses is a cause of concern. Reform of CPE courses by adding more required assessments is urgently needed.

There was a 35.4% gap in time management between colleges (i.e., 5.4%) and universities (i.e., 40.8%), indicating that universities placed a higher priority than colleges on time management. Lack of time has been found to be one of the primary reasons for students not to engage in PA on a regular basis (Keating et al., 2005; Nelson, Kocos, Lytle, & Perry, 2009). Therefore, time management is an extremely important skill that students need to have in order to be physically active on a regular basis (Corbin & Lindsey, 2007). Logically, CPE courses should have placed a stronger emphasis on teaching time management, and it is puzzling why time management has not been widely taught in general and why there was a significant difference between colleges and universities in teaching this content. The data from our study suggested that there is a need for higher education to teach students the most recent understandings about knowledge and skills needed for lifetime fitness. Although colleges and universities taught significantly different content, the use of assignments/assessments between colleges and universities did not significantly vary. This matter warrants further investigation because it is puzzling why colleges and universities utilized similar assignments and/or assessments to reflect the content differences.

Limitations

Random sampling was not used due to the difficulty of recruiting participants, thus the majority of syllabi were collected online. As information included in the syllabi may not be what was actually taught in class, caution needs to be exercised when generalizing the results. The information concerning instructors was absent, limiting the ability to study the effects of instructors on gains in knowledge and skills in CPE courses.

Conclusion

CPE courses in higher education have been examined periodically by researchers in the fields of health and physical education. Information concerning how the courses are taught will help higher education offer better CPE courses for students, focusing on helping students adopt a healthier lifestyle. This study is the first attempt to examine CPE syllabi to gain knowledge about the pedagogical elements of such courses. Considering the potential effects of CPE courses on helping university students improve their health related behaviors, this line of research warrants further attention from professionals in our field.

The data from our study suggested that higher education has continuously offered CPE courses for undergraduate students. However, the focus of the courses is still knowledge mastery. There is a need to strengthen skill teaching and learning, which requires students to be able to solve practical problems in their daily lives. In addition, although assessments and assignments are an important component of teaching CPE courses, few studies on the topic are available. It still remains unknown how assessments and assignments have been used to facilitate student learning. Finally, while academic freedom should certainly be respected, the selection of CPE content ought to reflect the needs of society, in demanding a reduction of obesity in the general population. Research on how instructors decide what should be taught in CPE courses warrants more attention in the future.

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