

# Health-Related Fitness and Physical Activity Courses in U.S. Colleges and Universities

by Brad Strand, Ph.D., North Dakota State University; James Egeberg, Ph.D., Inver Hills Community College; Arupendra Mozumdar, Ph.D., North Dakota State University

## Abstract

The purpose of this study was to determine the prevalence and characteristics of health-related fitness (HRF) and physical activity (PA) courses at U.S. institutions of higher learning. Data were obtained from 116 two- and four-year colleges and universities. The results show that health-related fitness courses were offered at many 2-year (89.2%) and 4-year institutions (82.0%), while physical activity courses were also widely available with 86.5% of 2-year schools and 87.2% of 4-year schools offering such courses. There was no significant association between the type of institutions and the prevalence of HRF or PA courses, and there were more similarities than differences between 2-year and 4-year institutions regarding other aspects of HRF and PA courses. It was found, however, that a large portion of both 2-year and 4-year institutions provided HRF courses involving the use of the Internet. The results also indicate that the prevalence of HRF courses has increased at U.S. institutions in the past 10 years.

**Key words:** basic instruction programs

American colleges and universities have been interested in the health and fitness of students since Dr. Edward Hitchcock taught the first physical fitness and hygiene education classes at Amherst College in 1860 (Swinford, 2002). From this early beginning, physical education grew to a point in the mid 1960s where almost 90% of 4-year colleges and universities in the United States (U.S.) included physical education as a condition of graduation (Hensley, 2000). The majority of U.S. colleges and universities in 2000 still required students to complete a physical education course even though the requirement had lessened since 1960s (Hensley, 2000).

The physical education courses of the past were mainly activity based, involved sport and lifetime activities (Adams & Brynteson, 1995), and were commonly referred to as basic instruction programs (BIP). Curricula now offered involve health-related fitness (HRF) courses that combine lectures on fitness and wellness concepts and a physical activity/laboratory component. These multi-dimensional courses are often titled "Lifetime Fitness", "Fitness and Wellness" or similar variations. The offering of courses in health and physical education represents an important opportunity for institutions of higher learning because this may be the only exposure college students have to structured and organized health, wellness, and/or physical activity during their course of study (Adams, Graves, & Adams, 2006).

The extent and status of BIP at U.S. colleges and universities has been an ongoing research interest to physical educators since the mid 1950's (Hunsicker, 1954), and relevant studies continued periodically thereafter (Boroviak, 1989; Cordts & Shaw, 1958;

Miller, Dowell, & Pender, 1989; Oxendine, 1961; Oxendine, 1969; Oxendine, 1972; Oxendine & Roberts, 1978; Trimble & Hensley, 1984; Trimble & Hensley, 1990; Stier, Quarterman, & Stier, 1993) until 2000 (Hensley, 2000). Beginning in 1961, it was reported that 84% of U.S. colleges and universities required physical education for graduation (Oxendine, 1961), and that percentage had increased to 87% in 1969 (Oxendine, 1969). Trends observed during this period included an increase in coeducational classes, an increase in individual and dual sports, and an increase in using skill level as a grade factor.

By 1972 it was reported that 94% of U.S. colleges and universities offered physical education to the general student body and 74% of the institutions required physical education for graduation (Oxendine, 1972), a decrease in physical education requirements for graduation from the 1960s. In addition, there was a movement of reducing the physical education requirement from two years to one year, a change towards allowing academic credit for physical education, a continuation of the trend towards lifetime sports as opposed to team sports, and an increase in coed classes during the period. In 1978, 94% of the institutions offered physical education to the general college student but only 57% of them required physical education (Oxendine & Roberts, 1978). The movement towards coed classes, individual sports, dual sports, outdoor sports, and fitness courses continued.

In 1984 it was reported that 94% of U.S. colleges and universities continued to offer physical education while those that required physical education for graduation increased to 60% (Trimble & Hensley, 1984). In 1989 a study reported that 92% of the institutions surveyed offered physical education programs and that only 45% of the institutions required physical education for graduation (Miller et al., 1989), whereas another study reported that undergraduate BIP was found in 97% of the institutions (Boroviak, 1989). Approximately 70% of the institutions indicated that the physical activity (PA) courses were chosen as electives.

Studies conducted in the 1990's reported that 92% of U.S. colleges and universities offered physical education with 65% reporting required physical education for graduation. The downward trend in credit hours had apparently leveled off with institutions typically requiring two hours of credit. This was also the first time one noticed the reporting of multi-dimensional courses that were described as a "health-related fitness course with cognitive components" (Trimble & Hensley, 1990, p.68). These "health-related fitness courses" were replacing the former requirement of activity courses. It was also reported that PA classes were required in 94% of the historically black colleges and universities (Stier, Quarterman, & Stier, 1993).

The most recent study related to BIP reported that 63% of U.S. institutions required physical education for graduation (Hensley, 2000). It was also noted that 60% of the institutions reported having a multi-dimensional "health-related fitness courses" that emerged in the 1980s. According to Hensley, "Fitness for Life" was the most

common title used for these courses that combined health concepts with physical activity. Frequently used descriptors in the course title were: “wellness,” fitness,” and “health” (Hensley, 2000).

The purpose of this study was to update current knowledge regarding the prevalence and characteristics of HRF and PA courses offered to students at U.S. colleges and universities. More specifically we sought to understand the current status of health-related fitness courses and how the offering of these courses differ at two-year and four-year institutions. As the health and wellness of college students becomes more important on campus settings, it is essential that departments offering HRF and PA courses evolve and grow based on contemporary practice and the health needs of students.

**Methods**

A 25-item survey was used to collect data to describe the prevalence of HRF and PA courses at U.S. institutions. Questions in the survey were developed around previous research themes (Hensley, 2000; Trimble & Hensley, 1990) and recommendations from health and physical education faculty in a research university who had research expertise in PA and HRF education. The survey was pilot tested with a team of experts and face validity was determined. The survey was distributed using SurveyMonkey.com, a web based survey tool that enabled the survey to be emailed and the results to be collected on-line.

Participating institutions were selected from a university (University of Texas) web page that had links to regionally accredited U.S. institutions of higher education. Specialized institutions that offered degrees in a single field and institutions with specialized vocational tracks were eliminated from the list because they typically did not have general education courses. Email addresses of the individuals responsible for the administration of HRF and PA courses were acquired from the institutions’ web sites and these individuals were emailed a link to the survey. The email also included a cover letter explaining the purpose of the study, a statement of IRB approval, and a consent agreement.

The survey was emailed to 242 (101 two-year and 141 four-year) institutions. The initial launch of the survey resulted in 53 responses, a second email reminder sent 10 days after the initial launch resulted in 33 more responses, and a third reminder sent 14 days later brought 42 additional responses, totaling 128 returned surveys. The overall response rate was 53% (128 out of 242); however, twelve respondents skipped the survey item asking for their type of institution. Thus, the valid response rate was 48% (116 of 242), and 38 were 2-year and 78 were 4-year institutions.

After the surveys were completed and returned, the data were downloaded to Microsoft Office Excel, and then loaded to SPSS 15.0 for statistical analysis. Chi-square analysis and Fisher’s exact test were used to assess the association between the prevalence of HRF or PA courses and the institutional type (2-year vs. 4-year institutions). A significance level of  $p < 0.05$  was set for determining significant association. Descriptive statistics were also used to report frequency and percentages of the variables. Some respondents did not answer one or more of the questions and some questions had more than one response; therefore, the percentage reported was based on the number of responses to each question rather than the 116 participating institutions.

**Results**

*Health Related Fitness Courses*

Approximately 89.2% of the 2-year institutions and 82.0% of the 4-year institutions reported to offer one or more HRF courses. A Fisher’s exact test ( $p = 0.42$ ) determined that there was no difference in the prevalence of HRF courses between the two institution types. To determine the HRF course prevalence by enrollment, institutions were placed in six enrollment categories (1,000 students or less; 1,001-2,500; 2,501-5,000; 5,001-10,000; 10,001-20,000; more than 20,000). A chi-square test ( $\chi^2 = 4.874$ ,  $df = 5$ ,  $p = 0.431$ ) indicated no association between the prevalence of HRF courses and enrollment for both 2-year and 4-year institutions.

**Table 1. HRF Course Prevalence by Enrollment**

Enrollment	Two-year N=33		Four-year N=64	
	n	%	n	%
1,000 or less	6	18.2	11	17.2
1,001-2,500	8	24.2	20	31.3
2,501-5,000	13	39.4	14	21.9
5,001-10,000	4	12.1	8	12.5
10,001-20,000	1	3.0	7	10.9
More than 20,000	1	3.0	4	6.3

Table 2 summarizes the prevalence of HRF course associated with the use of Internet offered by 2-year and 4-year institutions respectively. Although a greater percentage of 2-year institutions tended to offer HRF as web-enhanced, hybrid or blended, and online courses than were 4-year institutions, a Fisher’s exact test revealed that 2-year institutions offered significantly more online HRF courses only ( $p = 0.001$ ), but not web-enhanced or hybrid courses, than did 4-year institutions.

**Table 2. HRF Online Course Delivery**

Online Course Types	Two-year N=33		Four-year N=63		p
	n	%	n	%	
Web-enhanced	22	66.7	35	55.5	0.389
Hybrid or blended	9	27.3	9	14.3	0.165
Online	21	63.6	18	28.6	0.001

Also, a Fisher’s exact test found that a significantly larger percentage ( $p < 0.01$ ) of 4-year institutions (57.8%) had the HRF course as a graduation requirement for all students, as compared to 2-year institutions (18.2%, Table 3). Other graduation requirements were not significantly different between the two types of institutions. For the number of credits required for graduation, a chi-square test indicated no significant difference between the institution type ( $\chi^2 = 6.91$ ,  $df = 3$ ,  $p > 0.05$ ).

A listing of the conceptual topics often included in HRF courses is shown in Table 4. A Fisher’s exact test was utilized to identify association between the use of conceptual topics and the institution type. Only one topic (injury and violence) was found to be significantly associated with the type of institution. That is, two-

**Table 3. HRF Course Graduation Requirements**

Graduation Requirement	Two-year N=33		Four-year N=64		p
	n	%	n	%	
Required by all students	6	18.2	37	57.8	<0.01
Required by some majors	4	12.1	10	15.6	0.77
Required by some departments	4	12.1	3	4.7	0.22
One of the choices among a menu	10	30.3	9	14.1	0.06
Elective	7	21.2	7	10.9	0.22
HRF Credits Required for Graduation					
1	8	34.8	24	46.2	
2	14	60.9	17	32.7	
3	0	0	7	13.5	
4 or more	1	4.3	4	7.7	

year institutions were more likely to include injury and violence as a topic in their HRF course than were 4-year institutions.

**Table 4. HRF Course Conceptual Topics**

HRF course concepts	Two-year N=33		Four-year N=64		p
	n	%	n	%	
Physical activity	32	97.0	63	98.4	1.0
Components of fitness	32	97.0	62	96.9	1.00
Overweight and obesity	30	90.9	59	92.2	1.00
Stress management	31	93.9	54	84.4	0.21
Nutrition	28	84.8	57	89.1	0.54
Tobacco use	29	87.9	45	70.3	0.08
Substance abuse	25	75.8	46	71.9	0.81
Responsible sexual behavior	19	57.6	38	59.4	1.00
Mental health	20	60.6	36	56.3	0.83
Chronic disease	22	66.7	32	50.0	0.14
Communicable disease	20	60.6	28	43.8	0.14
Injury and violence	15	45.5	14	21.9	0.02
Environmental quality	11	33.3	15	23.4	0.34
Access to health care	9	27.3	16	25.0	0.81
Immunizations	7	21.2	12	18.8	0.79

Table 5 lists the prevalence of health-related assessments included in HRF courses by two types of institution. Fitness testing, nutritional analysis, chronic disease risk factors, and stress assessment were features of HRF courses. A Fisher's exact test found no significant association between any of the assessments and the institution type.

While over 50 different course titles were listed for the HRF courses, the most common titles were "Concepts of Fitness and Wellness", "Fitness and Wellness", "Fitness for Life", "Lifetime Fitness", "Lifetime Wellness", and "Personal Wellness".

**Table 5. Health Assessments in HRF Courses**

Student Assessments	Two-year N=33		Four-year N=64		p
	n	%	n	%	
Fitness testing	22	66.7	46	71.9	0.419
Nutritional analysis	26	78.8	45	70.3	0.213
Chronic disease risk factors	21	63.6	29	45.3	0.119
Stress Assessment	26	78.8	45	70.3	0.303

*Physical Activity Courses*

Physical activity classes were present at a similar percentage of 2-year institutions (86.5%) and 4-year institutions (87.2%), and the percentages were also similar in 2-year institutions (43.8%) and 4-year institutions (41.2%) regarding requirement of PA courses for graduation. Table 6 provides a comparison of the number of PA credits required for graduation at two-year and four-year institutes. No significant association was found between the graduation requirement of credits and the institution type ( $\chi^2 = 1.83$ ,  $df = 4$ ,  $p = 0.77$ ).

**Table 6. PA Credits Required for Graduation**

PA credits required for graduation	Two-year N=18		Four-year N=33	
	n	%	n	%
1	9	50.0	15	45.5
2	8	44.4	14	42.4
3	1	5.6	1	3.0
4	0	0.0	1	3.0
5 or more	0	0.0	2	6.1

**Discussion**

One focus of analysis for this study was the difference between 2-year and 4-year institutions in the prevalence and characteristics of HRF and PA courses. The analyses of data revealed that there were no significant statistical associations between institution type and the prevalence of HRF or PA courses. Both HRF and PA courses are in place in the majority of both 2-year and 4-year campuses. The findings more specifically indicated that 89% of 2-year institutions and 82% of 4-year institutions offered HRF courses. This is an increase in the number of institutions that offered HRF courses from the numbers previously reported (Hensley, 2000; Trimble & Hensley, 1990).

There appear to be more similarities than differences between 2-year and 4-year institutions regarding HRF and PA courses, and only a few aspects were found to be significantly different between the two institution types. Specifically, a significantly larger portion of 4-year institutions (57.8%) required HRF courses for graduation for all students compared to 2-year colleges (18.2%). A significantly larger portion of 2-year institutions (63.6%) offered online HRF courses than the 4-year institutions (28.6%), and a significantly larger percentage of 2-year institutions (45.5%)

included injury and violence as conceptual topics than did 4-year institutions (21.9%).

One new finding in this study is that a large portion of HRF courses were offered via the Internet. In addition to the online HRF courses discussed above, most institutions, both 2-year (66.7%) and 4-year (55.5%) ones, offered web-enhanced HRF courses. Web-enhanced courses are campus-based courses involving the use of the Internet to enhance the learning experience. That is, in a web-enhanced course, students meet in a classroom like a traditional class with an instructor at the regularly scheduled day, time, and location, but contents or materials of the course are made accessible to students via the Internet for them to study after class. In addition, 27.3% of two-year institutions and 14.3% of four-year institutions delivered the HRF course via a hybrid or blended format, which reduced the amount of classroom seat time by moving a significant part of the course learning online. All this reflects the trend that Internet related courses have become an important forum for delivering instruction at colleges and universities (Davidson-Shivers, 2009).

Healthy Campus 2010 (American College Health Association, 2006) identified 10 leading health indicators that reflect health concerns on the college campus. These 10 indicators were all chosen as conceptual topics of the HRF course by the participating institutes of this study. Of the 10 leading health indicators, five were chosen by relatively more institutions as conceptual topics and they were physical activity, overweight and obesity, tobacco use, substance abuse, and responsible sexual behavior. The other five leading health indicators were chosen with relatively less frequency and they were mental health, injury and violence, environmental quality, access to health care, and immunization. However, the least five chosen indicators may need a greater focus in HRF courses given their importance. For example, injury and violence are the leading causes of death for the college-student age group (National Center for Health, 2008), yet only 30.2% of the participating institutions (2-year and 4-year combined) included injury and violence as a conceptual topic in their HRF courses. Also, environmental quality and access to health care were the eighth and ninth ranked conceptual topics chosen by the participating institutions, but it is likely that these topics will become more prevalent in the future given today's issues with health care and global epidemics of infectious disease.

In 1969 it was reported that 87% of institutions required physical education (Oxendine, 1969), whereas 63% of institutions required physical education for graduation by 2000 (Hensley, 2000). In this study it was found that approximately 44% of 2-year institutions and 41% of 4-year institutions required PA courses for graduation. In 1990 researchers first mentioned that HRF courses were beginning to replace PA courses as required physical education (Trimble & Hensley, 1990). By 2000, 60% of institutions offered multi-dimensional "health-related fitness courses" (Hensley, 2000). In this study it was found that approximately 89% of 2-year and 82% of 4-year institutions offered HRF courses.

Although the type of courses used to meet college and university physical education requirements is changing, most institutions (86.5% of 2-year and 87.2% of 4-year institutions) continue to offer PA classes and many still require PA courses for graduation. It may be a trend, however, that HRF courses are replacing PA courses as required physical education courses in colleges and universities.

Finally, it is desirable to discuss some thoughts on future

research. As the offering of HRF courses via or partially via the Internet continues to increase, it is important that researchers investigate the effectiveness of such courses. Since one purpose of HRF courses is to teach the "why" and the "how" of fitness, it must be determined if web-based education actually achieves this end. In addition, it also needs to be determined if self-directed physical activity, as required or encouraged in web based courses, is as successful in leading to improved health as is activity conducted in on-campus HRF courses. Also, as HRF courses continue to become more popular on campuses and serve as the required PA/physical education/wellness course, institutional leaders and researchers need to determine the future of traditional PA courses.

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