



P-ISSN: 2394-1685  
E-ISSN: 2394-1693  
Impact Factor (RJIIF): 5.38  
IJPESH 2024; 11(5): 253-266  
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<https://www.kheljournal.com>  
Received: 13-07-2024  
Accepted: 16-08-2024

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# International Journal of Physical Education, Sports and Health

## The prevalence of physical education in elite public universities of the United States of America

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**DOI:** <https://doi.org/10.22271/kheljournal.2024.v11.i5d.3528>

### Abstract

Since the 1800s, physical education (PE) has been used to improve college students' health. In the 1920s, it was a cornerstone to American academe, and 97 percent of colleges and universities required it. Over the last century, that number dropped to 31.7% nationally, but specific data on elite public institutions are unknown. We examined PE in the top-25 public institutions of higher education in the USA. Each institution offered PE, and 96% partially required while 12% required PE for undergraduate students. The 96% far surpasses the 43.7% found nationally, but the 12% is below the national rate. As such, PE is more prevalent in American elite institutions, but fewer require it of all undergraduates. Future research should examine PE programming in all tertiary educational institutions, on both regional and state bases as well as for elite private colleges and universities and those institutions serving specific populations.

**Keywords:** Basic Instruction Programs, Service Programs, Physical Activity Programs

### 1. Introduction

Efforts to improve the health and wellness of American college students via physical education trace their beginnings to the 1820s, where the faculty at Harvard University and later the faculties at institutions such as Dartmouth College, Yale University, and Amherst College, introduced gymnastics training for students, mirroring the existing practice at many German and Scandinavian institutions of higher education at the time <sup>[1]</sup>. In 1830, the Reverend Dr. Edward Hitchcock, a professor at and later the president of Amherst College in Amherst, Massachusetts, offered some of the first physical education instruction in American academe by lecturing on topics such as diet and exercise to college students <sup>[2-4]</sup>. By 1860, his son, Dr. Edward C. Hitchcock, Jr., would be instrumental in leading the newly founded Department of Hygiene and Physical Education, generally recognized as the first such program in the country – N.B., the United States Military Academy had physical training since its inception and gymnastics by 1839, confounding the issue of primacy <sup>[5]</sup> – when the original holder of the professorship, Dr. John W. Hooker, after only one year in the position, took ill, resigned, and sadly, succumbed to his ailments <sup>[6-8]</sup>. The position Hitchcock assumed was well defined by the trustees of the college and involved the following:

The duties of the professor shall be: ...To take a general oversight of the health of the students, ...give lectures... pertaining to the laws of life and health, ...and distinctly understand that *the health of the students* shall at all times be an object of his special watch, care, and counsel. ...The exercises in the gymnasium should be conducted according to the following ideas: First. The main object shall not be to secure feats of agility and strength, or even powerful muscle, but to keep in good health the whole body. Second. That all the students *shall be required* [emphasis added] to attend on its exercises... The instructor shall assign to each individual such exercises as may be best adapted to him...Time shall be allowed...for those volunteer exercises which different men, according to their tastes, may elect for recreation <sup>[9]</sup> (p. 47).

These words are as fitting today in developing the overall health of an institution's student populace as they were in the 19<sup>th</sup> century, especially considering substantial research since that time indicates physical activity is a key component to sound health, both physiologically [10-14] and psychologically [11, 15, 16]. Further, *required* physical activity programming is "as relevant now as ever" [17] (p. 77) and has been shown to be superior to elective programming in fostering students to be physically active, regardless of factors such as sex or body composition [18]. Supporting recreational activities for students in a collegiate environment, as originally suggested by Amherst College's trustees back in 1859 [8, 9] is vital in cultivating each student's overall health and wellness. The original premise of required physical education coupled with ample recreational opportunities, relevant to each student's preference, was profound, prescient, and foundational, and now is supported by much research [19-26]. In essence, it promotes what, today, is termed physical literacy, which is described as follows:

Physical literacy develops from three domains: Affective, physical, and cognitive. At the macro level, physical literacy emphasizes the inseparability of body and mind, with several dimensions interacting with one another. At the micro level, physical literacy emphasizes lifelong movement and positive attitudes [27] (p. 2).

Despite the overwhelming evidence that physical activity is necessary in developing and maintaining the health of college students, many institutions of higher education do not require students to complete physical education courses as part of their curricula [17, 28]. In fact, the most-recent national study on the topic indicates a majority (56.2%) of American tertiary educational institutions do not require students to complete physical education courses to earn their undergraduate degrees, and only 31.7 percent fully require it, while another 12.1 percent partially mandate it [29]. According to the American College Health Association [30], 57 percent of students in college do not engage in enough physical activity, and 57 percent is eerily similar to 56.2 percent. Of course, correlation does not equal causation, but these data led Szarabajko and Cardinal [29] to ask:

Since it is widely known that physical activity is associated with a plethora of positive academic, cognitive, emotional, physical, and social outcomes, one might question: Are tertiary institutions in the United States losing sight of their duty to *cura personalis* [the Latin phrase that denotes 'care for the whole person' in all aspects of a person's health, including the physical, mental and spiritual]? [29] (p. 6).

The answer to this question, unfortunately, seems to be a resounding, but qualified, *yes*. Yes, in that the tertiary educational institutions are "losing sight of their duty" because required physical education programming is diminishing on campuses, but it is qualified because many institutions have shifted the responsibility to elective, academic programming or to auxiliary, and almost always voluntary, recreational programming [28]. A closer examination of the literature reveals this progression. Over the last 100 years, required physical education has been studied numerous times on the national level [29, 31-44], and its

station has gone from being a cornerstone in the curricula of American colleges and universities, with some 97 percent of institutions requiring it, to now being fully required by slightly fewer than one-third (31.7%) of the tertiary educational institutions (See Figure 1) [29].

In response to the historical research on the national level, which often involved accurate, yet limited results because of statistical sampling, Heumann and Murray [45] put forth a call in 2019 for more precise assessments of physical education service programming (also called basic instruction programs, physical education requirements, college and university instructional physical activity programs, etc.) in each college or university, on a state-by-state basis. Several efforts have been undertaken to examine physical education service programming on the state level, with the goal of examining the curricula of every traditional institution of higher education within a respective state; to our knowledge, six such studies have been published, to date, on the following states: Arizona [28], Colorado [45, 46], Oregon [47], Texas (two-year institutions only) [48], and Utah [49]. These efforts have yielded interesting and useful results, especially for comparison and advocacy purposes. For instance, as of 2023, not a single Arizonan institution of higher education required physical education as a graduation standard; however, almost 83 percent of the colleges and universities in Arizona offered courses of that type to their students, and nearly 52 percent of the institutions partially required physical education for graduation [28]. These data are profoundly dissimilar from the recently reported national data of Szarabajko and Cardinal [29], where 31.7 and 12.1 percent of institutions, either required or partially required, respectively, physical education courses, indicating that physical education service programming may have regional and institutional trends. In fact, every state studied individually thus far over the past five years has had a lower rate of its tertiary educational institutions requiring physical education than the current purported national rate, i.e., Arizona (0%) [28], Colorado (15.6%) [45], Oregon (14.29%) [47], Texas (6%, two-year institutions only) [48], and Utah (10%) [49]. These statistics are most concerning, especially with the fact that research indicates the efficacy of physical education programming in enhancing students' health and wellness via physical literacy, and this paradox is best described by Cardinal [50], as follows:

Having to continually justify and prove the worth of one's discipline and its curricular offerings [e.g., physical education service programming] is tiresome, and at times shockingly disappointing, though, especially with the preponderance of the evidence-evidence beyond a reasonable doubt, really-that has been accumulated over the past sesquicentennial [50] (p. 535).

More data are needed regarding the prevalence of physical education service programming in American institutions of higher education, as trends surely exist. For example, Szarabajko and Cardinal [29] reported approximately four percent of large institutions and roughly 35 percent of public institutions mandated physical education requirements for earning a baccalaureate degree. Considering that most large, tertiary educational institutions are public rather than private, that is a substantial difference based on enrollment size. The researchers did not distinguish between the private and the public institutions by size in their paper, but one of the authors (A. Szarabajko, personal communication, March 4,

2024) indicated that one private and 40 public institutions comprised their sample of large institutions. Bearing in mind that public institutions of higher education enroll roughly 73 percent of all college students in the United States of America (USA) each year<sup>[51]</sup>, and that the larger institutions often are the flagship schools of their respective states and commonly viewed as elite institutions nationwide in addition to the ones frequently driving curricular changes in all of academe, investigating the physical education service programming in elite public institutions seems prudent. Examining how those institutions compare to the national data together with the specific state-level information can be useful for faculty and administrators, alike, potentially to assess trends and, particularly, to determine the best practices moving forward for curricular development to enhance students' health and wellness. As such, the purposes of this study were to investigate the prevalence of physical education service programming in elite public universities of the USA and to gather information regarding the availability of campus recreational programming, academic units offering courses in dance, a traditional form of physical education, and other concomitant academic departments that may be offering physical education courses within those institutions.

## 2. Materials and Methods

### 2.1 Sample

To determine the elite public institutions of higher education to be assessed for this study, the rankings reported by *U.S. News & World Report*<sup>[52]</sup> were used, and the top-25 schools were chosen as the representative sample (see Table 1). The use of the top-25 schools was arbitrary, as that is the customary number of institutions ranked for comparison purposes for many collegiate athletic leagues, but it is a cut-off of convenience and not a statistically analyzed and determined measure. Also, the data from *U.S. News & World Report* are not without controversy, as the rankings have been criticized for numerous reasons<sup>[53]</sup>; nonetheless, the top-25 schools are all well-known and highly respected institutions in American academe.

According to the Carnegie Classification of Institutions of Higher Education<sup>[54]</sup>, each institution listed is classified under the label "Doctoral Universities," with 24 (96%, i.e., 24 of 25) listed as "Very High Research Activity", and one (4%, i.e., 1 of 25) ranked as "High Research Activity", Twenty-one (84%, i.e., 21 of 25) of the institutions are members of the Association of American Universities [AAU]<sup>[55]</sup>, a "status coveted by major U.S. institutions because it is considered to be the pinnacle recognition of the stature of a research university,"<sup>[56]</sup> or, in a word: Elite. Lastly, 24 (96%, i.e., 24 of 25) of the institutions would be classified as large by the criterion used in Szarabajko and Cardinal<sup>[29]</sup>, i.e., an enrollment of 15, 001 or greater students, and one would be considered medium, i.e., 5, 000 to 15, 000 students enrolled.

### 2.2 Procedure

Institutional Review Board (IRB) approval was not needed because the data examined were publicly available, and human subjects were not used. For this study, the methodology of content analysis<sup>[57]</sup> was used, just as in the previous studies involving the topic<sup>[28, 29, 32, 45-49]</sup>, where the publicly available information on each campus's website and catalog was obtained and examined for physical education

requirements. To be consistent with the aforementioned studies, the same operational definition for physical education was used:

Physical education was considered any activity or academic course pertaining to health, wellness, sports, or physical activity. For the course to be considered 'required,' it had to be listed by the institution as a requirement for graduation. If not, it was considered an elective<sup>[46]</sup> (p. 10).

The 2023-2024 institutional catalogs were reviewed for the graduation requirements and course listings, and partial requirements were defined according to Szarabajko and Cardinal's<sup>[29]</sup> definition, "courses were considered 'partially required' when only some degree programs at the institution listed the course as a requirement or it was an option among other choices" (p. 3). Other institutional characteristics were collected and examined, including undergraduate enrollment data, physical education requirements, associated academic departments (e.g., kinesiology, exercise science), academic units offering dance courses (e.g., theater, dance, music), campus recreation centers, and elective, for-credit physical activity programming. Examining the dance course offerings on the campuses is a novel concept for this line of research, as few researchers have looked at those courses, even though dance in American academe has its origin in physical education<sup>[58]</sup>. We agree with the membership of the Society of Health and Physical Educators [Shape] America<sup>[59]</sup> that "dance is both a physical activity and an art form", and as such, is considered a form of physical education.

### 2.3 Statistical Analyses

The data analysis was identical to Murray *et al.*,<sup>[49]</sup> "After reviewing the catalogues, the total number of programs that required these courses was calculated. The percentage was then calculated by reporting the total number required out of the total number of institutions at that level" (p. 86).

## 3. Results and Discussion

### 3.1 Results

The descriptive information of the top-25 public institutions of higher education in the USA and their physical education requirements are presented in Table 1. All elite public institutions examined (100%, i.e., 25 of 25) offered physical education service programming of some type. Twelve percent (i.e., 3 of 25) of the institutions required physical education courses, either activity courses (8%; i.e., 2 of 25) or lecture courses (4%; i.e., 1 of 25), as a graduation requirement, and another 96 percent (i.e., 24 of 25) partially required such courses for graduation. Twenty-one universities (84%, i.e., 21 of 25) had an academic department offering a degree, minor, or program in kinesiology, physical education, exercise science, or a similarly related subject, and every institution (100%, i.e., 25 of 25) had a recreational facility and associated recreational programming (See Table 2). Ninety-two percent (i.e., 23 of 25) of the institutions had schools or departments which featured dance as an academic discipline, offering studio courses, typically in multiple genres of dance, and some institutions offered dance courses only by audition, but most had a few courses open to any student (See Table 3).

**Table 1:** Institutional characteristics and physical education requirements of the top-25 public institutions of higher education in the USA.

Rank	Institution	UG Enrollment	AAU	Research	SHAPE America District	Physical Education Requirement	
						Activity Course	Lecture Course
T <sub>1</sub>	University of California, Berkeley	33,078	Yes	Very High	Western	Partial; Electives	Partial; Minor
T <sub>1</sub>	University of California, Los Angeles	32,423	Yes	Very High	Western	None; Electives	Partial; Gen Ed
T <sub>3</sub>	University of Michigan	32,695	Yes	Very High	Midwestern	None; Electives (D)	Partial; Major
T <sub>4</sub>	University of North Carolina at Chapel Hill	19,743	Yes	Very High	Southern	Yes	Partial: Major/Minor
T <sub>5</sub>	University of Virginia	16,793	Yes	Very High	Southern	None; Electives	Partial: Minor
T <sub>6</sub>	University of California, Davis	31,797	Yes	Very High	Western	None	Partial; Gen Ed
T <sub>6</sub>	University of California, San Diego	33,343	Yes	Very High	Western	None	Partial; Major
T <sub>6</sub>	University of Florida	41,180	Yes	Very High	Southern	None; Electives (D)	Partial; Gen Ed
T <sub>9</sub>	University of Texas at Austin	42,444	Yes	Very High	Southern	None; Electives	Partial: Gen Ed
T <sub>10</sub>	Georgia Institute of Technology	19,505	Yes	Very High	Southern	None	Yes
T <sub>10</sub>	University of California, Irvine	27,519	Yes	Very High	Western	None; Electives (D)	Partial; Gen Ed
T <sub>12</sub>	University of California, Santa Barbara	23,232	Yes	Very High	Western	None; Electives	None
T <sub>12</sub>	University of Illinois Urbana-Champaign	35,000	Yes	Very High	Midwestern	None; Electives	Partial; Major/Minor
T <sub>12</sub>	University of Wisconsin-Madison	35,665	Yes	Very High	Midwestern	Partial; Electives	Partial; Gen Ed
T <sub>15</sub>	Rutgers University-New Brunswick	44,019	Yes	Very High	Eastern	None; Electives	Partial; Major
T <sub>15</sub>	University of Washington	33,973	Yes	Very High	Western	None	Partial; Gen Ed
T <sub>17</sub>	The Ohio State University	51,078	Yes	Very High	Midwestern	None; Electives	Partial; Gen Ed
T <sub>17</sub>	Purdue University	39,170	Yes	Very High	Eastern	None; Electives	Partial; Gen Ed
T <sub>19</sub>	University of Maryland, College Park	30,608	Yes	Very High	Eastern	Partial; Electives	Partial; Gen Ed
T <sub>20</sub>	Texas A&M University	60,729	Yes	Very High	Southern	None; Electives	Partial; Gen Ed
T <sub>20</sub>	University of Georgia	30,166	No	Very High	Southern	Yes	Partial; Major/Minor
T <sub>20</sub>	Virginia Polytechnic Institute and State University	30,400	No	Very High	Southern	Partial; Gen Ed	Partial; Major
T <sub>23</sub>	Florida State University	31,933	No	Very High	Southern	None; Electives	Partial; Major
T <sub>23</sub>	University of Minnesota, Twin Cities	30,469	Yes	Very High	Central	Partial; Electives	Partial; Gen Ed
T <sub>23</sub>	The College of William & Mary in Virginia	6,716 <sup>a</sup>	No	High	Southern	None; Electives	Partial; Gen Ed

<sup>a</sup>Medium-sized institution; Enrollment is undergraduate (UG) only; AAU = Association of American Universities Membership; Research = the subset for Carnegie Classification for Doctoral Universities; (D) = Electives offered in a dance academic unit, which would be considered physical education activity courses; Gen Ed = General Education requirement or option; Major, Minor, or Major/Minor indicates a course is part of a specific academic program.

**Table 2:** Kinesiology-related academic units, health/wellness courses, and recreation center status at the top-25 public institutions of higher education in the USA.

Rank	Institution	Kinesiology-related Academic Unit <sup>1</sup>	Health/Wellness Course <sup>2</sup>	Recreation Center
T <sub>1</sub>	University of California, Berkeley	Physical Education Program	Wellness for Life	Yes
T <sub>1</sub>	University of California, Los Angeles	None <sup>3</sup>	Integrative East-West Medicine for Health and Wellness	Yes
T <sub>3</sub>	University of Michigan	Department of Kinesiology	Physical Activity and Health	Yes
T <sub>4</sub>	University of North Carolina at Chapel Hill	Department of Exercise and Sport Science	Personal Health	Yes
T <sub>5</sub>	University of Virginia	Department of Kinesiology	Contemporary Health Issues	Yes
T <sub>6</sub>	University of California, Davis	None <sup>4</sup>	Health Behaviors Across the Lifespan	Yes
T <sub>6</sub>	University of California, San Diego	None <sup>5</sup>	Health Behavior and Chronic Diseases*	Yes
T <sub>6</sub>	University of Florida	Department of Applied Physiology and Kinesiology	Personal and Family Health	Yes
T <sub>9</sub>	University of Texas at Austin	Department of Kinesiology and Health Education	Physiological Basis of Conditioning	Yes
T <sub>10</sub>	Georgia Institute of Technology	None <sup>6</sup>	The Science of Physical Activity and Health	Yes
T <sub>10</sub>	University of California, Irvine	None <sup>7</sup>	Health, Wellness, and Conception of the Body	Yes
T <sub>12</sub>	University of California, Santa Barbara	Department of Exercise and Sport Studies	Introduction to Wellbeing	Yes
T <sub>12</sub>	University of Illinois Urbana-Champaign	Department of Kinesiology and Community Health	Physical Activity and Health	Yes
T <sub>12</sub>	University of Wisconsin-Madison	Department of Kinesiology	Living Well: Lifestyle Redesign and Health Promotion for College Students	Yes
T <sub>15</sub>	Rutgers University-New Brunswick	Department of Kinesiology and Health	Principles of Healthy Lifestyle	Yes
T <sub>15</sub>	University of Washington	None <sup>8</sup>	Personal and Public Health	Yes
T <sub>17</sub>	The Ohio State University	Sport, Fitness, and Health Program	Introduction of Fitness and Wellness	Yes
T <sub>17</sub>	Purdue University	Department of Health and Kinesiology	The Science of Wellbeing	Yes
T <sub>19</sub>	University of Maryland, College Park	Department of Kinesiology	Principles of Physical Activity	Yes
T <sub>20</sub>	Texas A&M University	Department of Kinesiology and Sport Management	The Science of Basic Health and Fitness	Yes
T <sub>20</sub>	University of Georgia	Department of Kinesiology	Health and Wellness	Yes
T <sub>20</sub>	Virginia Polytechnic Institute and State University	Department of Human Nutrition, Foods, and Exercise	Moving Body, Moving Mind	Yes
T <sub>23</sub>	Florida State University	College of Health and Human Sciences	Wellness and Risk Reduction	Yes
T <sub>23</sub>	University of Minnesota, Twin Cities	School of Kinesiology	Lifetime Health and Wellness	Yes
T <sub>23</sub>	The College of William & Mary in Virginia	Department of Kinesiology	Public Health and Physical Activity	Yes

<sup>1</sup>Schools and Departments of Public Health and Biological Sciences are excluded, but specific programming in a kinesiology-related area within them are noted.

<sup>2</sup>These are just examples; multiple courses are offered at many institutions.

<sup>3</sup>UCLA's Geffen School of Medicine offers an undergraduate course in Integrative East-West Medicine for Health and Wellness which fulfills a general education requirement.

<sup>4</sup>UC Davis has numerous health-related courses in the College of Agricultural and Environmental Sciences under Human Development, and many count for general education credit.

<sup>5</sup>UC San Diego offers courses in public health, particularly in healthy aging and human longevity science.

<sup>6</sup>The wellness requirement at Georgia Tech requires all students to take one of three health/wellness courses housed in the School of Biological Sciences.

<sup>7</sup>UCI offers a BS in Exercise Science via the School of Biological Sciences. Health, Wellness, and Conception of the Body is taught within the School of Humanities. UCI's Department of Dance offers Scientific Concepts of Health, and its description is as follows: "Introduction to the scientific foundations of health, emphasizing those pertaining to success in college and lifetime wellness."

<sup>8</sup>University of Washington offers Personal and Public Health within the School of Public Health.

\*Requirement for the major in public health

**Table 3:** Dance academic units and their physical education courses at the top-25 public institutions of higher education in the USA

Rank	Institution	Dance Academic Unit	Dance Courses for Physical Education/Physical Activity
T <sub>1</sub>	University of California, Berkeley*	Department of Theatre, Dance, and Performance Studies	None; Modern and African Dance in Hip Hop reserved for majors; Multiple genres offered in the Physical Education Program
T <sub>2</sub>	University of California, Los Angeles	Department of World Arts and Cultures/Dance	Martial Arts, Yoga; Multiple genres, e.g., Ballet, Hip-Hop
T <sub>3</sub>	University of Michigan	School of Music, Theatre, and Dance	Wellness: Yoga for Performers, Dancers, & Athletes; Introduction to Dance (non-majors)
T <sub>4</sub>	University of North Carolina at Chapel Hill*	None	Multiple genres of dance, e.g., Ballet, Jazz, Modern, are offered in the Department of Exercise and Sport Science
T <sub>5</sub>	University of Virginia	Department of Drama	Multiple genres, e.g., Ballet, Jazz, Modern
T <sub>6</sub>	University of California, Davis	Department of Theatre and Dance	Multiple genres, e.g., Ballet, Modern, Improvisation
T <sub>7</sub>	University of California, San Diego	Department of Theatre and Dance	Yoga for Dance; multiple genres, e.g., Ballet, Jazz, Tap
T <sub>8</sub>	University of Florida	School of Theatre and Dance	Dance courses are open to all, with placement; multiple genres, e.g., Fundamental of Dance Technique, West African, Broadway Styles
T <sub>9</sub>	University of Texas at Austin	Department of Theatre and Dance	Ballet and Modern for non-dance majors
T <sub>10</sub>	Georgia Institute of Technology	None	None
T <sub>10</sub>	University of California, Irvine	Department of Dance	Social Dance, Studio Workshops in multiple genres, e.g., Ballet, Modern, Jazz, Hip-Hop
T <sub>12</sub>	University of California, Santa Barbara	Department of Theater and Dance	Multiple genres, e.g., Ballet, Modern, Jazz
T <sub>12</sub>	University of Illinois Urbana-Champaign	Department of Dance	Multiple dance forms, e.g., Ballet, Capoeira, Contemporary, Hip-Hop
T <sub>12</sub>	University of Wisconsin-Madison	Department of Dance	Pilates; multiple dance forms, e.g., Ballet, Social, Hip-Hop
T <sub>15</sub>	Rutgers University-New Brunswick	Department of Dance	Yoga for Wellness; Pilates; multiple dance forms, e.g., Street and Club Dances, Modern Dance, Ballet
T <sub>15</sub>	University of Washington	Department of Dance	Multiple dance forms, e.g., Ballet, Capoeira, Salsa and Afro-Caribbean, Swing, Tango, Tap
T <sub>17</sub>	The Ohio State University	Department of Dance	Yoga; Pilates; multiple genres, e.g., Ballet, Contemporary, Hip-Hop, Jazz, Tap, Social Dance
T <sub>17</sub>	Purdue University	Division of Dance	Multiple genres, e.g., Ballet, Contact Improvisation, Jazz, Modern
T <sub>19</sub>	University of Maryland, College Park	School of Theatre, Dance, and Performance Studies	Multiple genres, e.g., American Social Dance, Ballet, Modern
T <sub>20</sub>	Texas A&M University*	School of Performance, Visualization, & Fine Arts	Dance courses are by audition; Pilates; Multiple genres offered by the Physical Education Activity Program
T <sub>20</sub>	University of Georgia	Department of Dance	Pilates; Yoga: Asana Practice; Aerial Yoga Trapeze Multiple dance forms, e.g., Ballet, Ballroom, Contemporary, Folk
T <sub>20</sub>	Virginia Polytechnic Institute and State University	School of Performing Arts	Introduction to Dance Techniques; Moving Body, Moving Mind
T <sub>23</sub>	Florida State University	School of Dance	Courses for non-majors in multiple genres, e.g., Ballet, Contemporary
T <sub>23</sub>	University of Minnesota, Twin Cities	Department of Theatre Arts and Dance	Tai Chi Chuan; Yoga; Multiple dance courses, e.g., Ballet, Jazz, Tap
T <sub>23</sub>	The College of William & Mary in Virginia	Department of Theatre, Speech, and Dance	Modern I is "designed for the student with little or no dance background"; other forms by placement

\*Dance courses are offered in a kinesiology-related unit and open for any student to enroll.

### 3.2 Discussion

Required physical education in the college and university environment is viewed as a means of improving the amount of physical activity in which the typical undergraduate student regularly and habitually engages all the while helping students to develop skills, pertinent knowledge, and a positive attitude for the development of physical literacy. The expectation is that each student's overall health and wellness will be enhanced, [17, 18, 60-66] and public health be improved [67] with these efforts, but the current prevalence of such programming in elite public institutions is unknown. This study now provides such information.

Previous research regarding physical education as a general education requirement in the top-25 liberal arts and the top-25 doctoral-granting tertiary educational institutions in the USA (N.B., technically 26 institutions of the latter because of a tie) indicated that 17 of 25 (16.68%) and 9 of 26 (34.61%) institutions, respectively, required it [68]. Direct comparisons to these data to the data from the current study would be

flawed because most of the institutions (47 of 51, or 92.15%) evaluated by Bourke *et al.* [68] were private instead of public, but the data do give a general idea of the prevalence of physical education requirements in elite, albeit private, institutions. The reported rationale for the physical education requirement within general education was "to provide for a more holistic or whole-body approach...and to ensure a healthy, well-rounded student" [68] (p. 230). This justification is important to note, as it has historical relevance, being analogous to Amherst College's trustees' motivation back in the mid-1800s when they approved a Department of Hygiene and Physical Education that targeted "the health of the students" [9] (p. 258). The focus on students' overall health is considered the ideal today, with the principle of *cura personalis* at its core.

The results of this study indicate that three (12%, i.e., 3 of 25) of the top-25 public universities in the USA require physical education courses as a graduation requirement. They are the Georgia Institute of Technology (henceforth referred to as

Georgia Tech), the University of Georgia (UGA), and the University of North Carolina (UNC), with the first mandating a lecture-based course, and the other two requiring physical activity courses. Georgia Tech's requirement reads as follows: "All undergraduate students attending Georgia Tech must satisfactorily complete a wellness requirement" by passing one of three courses: Scientific Foundations of Health; The Science of Physical Activity and Health or Flourishing: Strategies for Well-being and Resilience [69]. UGA requires "all students...who matriculate for their first baccalaureate degree are required to pass one semester credit hour of basic physical education," [70] and UNC mandates that "all students must successfully complete one Lifetime Fitness course" [71]. While the 12-percent rate is substantially short of the recently reported national rate of 31.7 percent, it corroborates the national rate (12.19% i.e., 5 of 41) for large universities that Szarabajko and Cardinal [29] found. The value of 12 percent is similar to the percentages found for Colorado (15.6%; i.e., 5 of 32) [45], Oregon (14.29%, i.e., 5 of 35) [47], and Utah (10%, i.e., 1 of 10) [49]. More research is needed on additional states to see how this trend maps, both on state-by-state and regional bases, but trends most likely exist and would be helpful for future curricular development. Recent research on historically black colleges and universities (HBCUs) indicates that 94 percent (i.e., 81 of 86) of them offer students courses in physical education, and 42 of 86, or 48.8%, of the institutions require physical education for a graduation requirement [72].

All three of the elite public institutions requiring physical education are in the southern USA and thus SHAPE America's Southern district (see Table 1) with two in the state of Georgia and one in the state of North Carolina. Southern colleges and universities have been shown to be more likely to have required physical education, either fully or partially, than tertiary educational institutions in other areas of the country [29]; Szarabajko and Cardinal [29] report:

The distribution of Institutions mandating [physical education requirements] to receive a baccalaureate degree was unequal across the five SHAPE America districts. Tertiary institutions from the Southern district were most likely to fully and/or partially require [physical education] (58%), followed by Central (42.5%), Western (40%), Eastern (37%), and Midwest (35%) [29] (p. 5).

Why are the faculties at the southern colleges and universities of the USA more likely to require physical education in their curricula? This question necessitates further research to be answered properly, and the answer most likely is multifaceted; however, one possible explanation could be related to the sedentariness of the region's populace. Many southern states have between 20.9 and 31.9 percent of their populations reporting no physical activity outside of their jobs, and all but one of the southern states ranks below the national median with respect to physical activity [73]. A lack of physical activity is known to be a leading risk factor for numerous diseases [74-76], so the most charitable answer to the preceding question would be that the faculties at these colleges and universities value efforts to encourage students to develop physical literacy through their tertiary educational endeavors, with the ultimate hope that the students would live active lifestyles to reduce their risks for developing hypokinetic diseases [77]. This is ideal supposition, of course, but it does align with several recommendations which have been promoted by the U.S. Department of Health and Human

Services [78] and reiterated by numerous scholars and professional organizations calling for collegiate graduation requirements in physical education [29, 79-81]. Specifically, the former Secretary of Health and Human Services, the Honorable Donna E. Shalala, wrote, "...universities need to reintroduce daily, quality physical activity as a key component of a comprehensive education" [79] (p. pretext). The Physical Activity Alliance a coalition of the National Physical Activity Plan, the National Physical Activity Society, and the National Coalition for Promoting Physical Activity in its updated *National Physical Activity Plan*, clearly advocates for college and universities to promote physical education by:

Providing physical activity opportunities through credit-bearing courses that contribute to minimum credit requirement for graduation for undergraduate students [and] offering a broad spectrum of health-enhancing physical activity courses and programming that are available on both academic credit and non-credit bases [81] (p. 33).

Moreover, numerous scholars have advocated for physical education to be a foundational role in the curriculum of higher education [17, 18, 28, 29, 82], and Mak and Cheung [83] provide one of the most succinct rationales for this position:

[Physical activity courses] not only emphasize physical fitness and sport, but also provide students with opportunities to develop their knowledge, motor skills and exercise patterns to become a physically literate person, regardless of their personality, initial motivations and skill-proficiency levels. Physical activity courses encourage students to choose a healthy lifestyle while providing them opportunities to engage in new and different physical activities. These courses also cultivate positive values and attitudes for the development of an active and healthy lifestyle [83] (p. 7).

With respect to physical activity and a state's residents' likelihood of being active outside of work, it is curious that both Georgia (23.8%, rank 28<sup>th</sup>) [84] and North Carolina (23.1%, rank 21<sup>st</sup>) [85] are ranked higher than every other southern state except Virginia (20.9%, rank 9<sup>th</sup>) [86]. Are their higher rankings somehow related to their tertiary educational requirements? That answer is unknown and suppositional, at best, but it is a fertile area for research. Nonetheless, what is known is that several elite public universities still have requirements for physical education which is promising, irrespective of the region and the possible causes but it is concerning that only a few institutions have a universal mandate for physical education.

On the other hand, and most surprisingly, 96 percent (i.e., 24 of 25) of the top-25 public universities either partially require (84%, i.e., 21 of 25) or require (12%, i.e., 3 of 25) physical education as a graduation standard. The 96-percent mark dwarfs the purported current national rate of 43.8 percent (i.e., 31.7% required, and 12.1% partially required) [29] and is the most important finding of this study. It indicates that the faculties at elite public universities in the USA still value physical education for their students, but only inasmuch as providing options for students to take these courses as part of a general education requirement or for a major or minor, rather than mandating every student take them while earning

their respective undergraduate degrees. Examining the full-requirement rate by enrollment size, the currently claimed national rate for large institutions is 12.19 percent (i.e. 5 of 41), and for medium institutions it is 29.03 percent (i.e., 54 of 186) <sup>[29]</sup>. Those numbers compare to the elite universities, favorably, with 12.5 percent (i.e., 3 of 24) for the large institutions, and 100 percent (i.e., 1 of 1) for the medium college, although the latter comparison is of modest value because of the small sample size.

Each (100%, i.e., 25 of 25) of the top-25 public institution of higher education offered physical education service programming, either as activity courses or lecture courses, matching the percentage found in Utah (100%, i.e., 10 of 10) <sup>[49]</sup> and surpassing the percentages for Arizona (82.75%, i.e., 24 of 29) <sup>[28]</sup>, Colorado (84.4%, i.e., 27 of 32) <sup>[45]</sup>, Oregon (85.7%, i.e., 30 of 35) <sup>[47]</sup>, and Texas (98%, i.e., 49 of 50 [two-year institutions only]) <sup>[48]</sup>. Additionally, 100 percent (i.e., 25 of 25) of the top-25 public institutions of higher education also had recreation centers, with attendant programming. This perfect rate was identical to Utah (100%, i.e., 10 of 10) <sup>[49]</sup>, but superior to the other states for which known values exist, Arizona (89.65%, i.e., 26 of 29) <sup>[28]</sup> and Oregon (65.71%, i.e., 23 of 35) <sup>[47]</sup> and the national rate of 86 percent <sup>[29]</sup>.

Regarding dance, 92 percent (i.e., 23 of 25) of the top-25 public universities had an academic department, division, or school housing dance as a discipline, and 24 (96%, i.e., 24 of 25) of the institutions offered dance, of some form, to their students (see Table 3). Although dance in American academe originated in departments of physical education across the nation in the early 20<sup>th</sup> century <sup>[58, 87, 88]</sup>, dance and physical education have had, at times, a contentious relationship, <sup>[89]</sup> mostly stemming from the philosophical notion that dance must be taught solely as an art form and not as a physical activity <sup>[90, 91]</sup>. This debate is long running <sup>[58, 92, 93, 94]</sup>, and even highly contentious, at times, with one dance scholar being adamant about dance not being labeled a physical activity course:

Dance educators have objected to the listing of dance courses under the physical education “activity” heading for years. When dance courses are offered as physical education classes, the impression of dance as a mere physical education “activity” is generated <sup>[95]</sup> (p. 79).

While this philosophical viewpoint may be understandable, especially for the preparation of professional dancers, we respectfully disagree with this opinion for the general undergraduate student and agree with Murray *et al.* <sup>[88]</sup> that dance can and should be taught both as an art and a physical activity, where and when appropriate. It is not an either-or proposition. Furthermore, we believe that a “mere physical education ‘activity’” is meaningful in higher education, if not a *sine qua non*, for a well-rounded, quality education. Sparling <sup>[96]</sup> made one of the most compelling arguments for physical activity courses in higher education.

The evidence that regular physical activity Improves health is Indisputable. The evidence that our society is insufficiently active is equally strong. Future research will further elucidate the impact that college physical education has in combating the widespread sedentariness of our college students. Yet, given the excellent immediate and short-term benefits of

exercise (To self-development, learning, emotional well-being, and physiological health) and the potential long-term preventive effects of activity-based courses, who can really argue against college physical education? <sup>[96]</sup> (p. 585).

Regrettably, it seems many in academe can and do argue against requiring physical education in the collegiate environment, leading to the majority (56.2%) of faculties in higher education today choosing not to require physical education within their curricula <sup>[29]</sup>.

While reviewing the data of this study, a noteworthy trend was observed regarding dance. Several of the academic dance units examined offered courses that typically would be considered physical education courses (e.g., yoga, Pilates), and four units even offered martial arts courses, with capoeira, a “dancelike martial art of Brazil,” <sup>[97]</sup> and tai chi chuan, an “ancient and distinctive Chinese form of exercise,” <sup>[98]</sup> being popular choices (See Table 3). One institution, however, really stood out for its uniqueness. The University of California, Los Angeles (UCLA), offers a two-unit course titled Beginning Martial Arts in its Department of World Arts and Cultures/Dance, where “beginning-level study of Tai Chi Chuan and other martial arts forms” are taught <sup>[99]</sup>. This is noteworthy for three reasons: Firstly, UCLA, in 1962, was the first American institution of higher education to house a Department of Dance within a College of Arts, transferring courses and faculty from the Department of Physical Education to form the new department <sup>[87, 100]</sup>; secondly, martial arts courses are historically related more to traditional physical education courses rather than dance courses <sup>[101-103]</sup> and, thirdly, UCLA neither requires nor offers for-credit physical education activity courses in its other academic units. UCLA is repeating its history, with physical education activity courses being offered side by side with dance courses, from a departmental perspective, but from a department focused on arts, culture, and dance instead of one targeted for physical education. The purpose of these courses is focused on the health of the general student, with the development of the whole individual as the goal, which essentially is a revitalization of the ideal “to keep in good health the whole body” originated in American academe by the trustees of Amherst College <sup>[9]</sup> (p. 47). As such, physical education, albeit in the forms of martial arts and dance, are alive and well at UCLA, which tied as the most prestigious public university in the country <sup>[52]</sup> Its sister institution and the one it tied for the top spot, the University of California, Berkeley, conversely, offers an expansive program in physical education, which includes roughly 100 courses per semester on topics such as aquatics, dance, and other sports and physical activities, including both yoga and martial arts <sup>[104]</sup>. Another important finding of this study is that all 25 institutions examined offer at least one traditional lecture-based course in physical education (see Table 2). These courses generally are centered on individual health and wellness, with titles such as “Health and Wellness,” “Introduction to Wellbeing,” “Health behaviors across the lifespan,” “Personal Health”, etc., and they reflect the push for conceptual physical education (CPE) over a more sports-skill model <sup>[20, 32, 105-107]</sup>. CPE essentially is a resumption of the original purpose of physical education that was so succinctly defined by the trustees of Amherst College when they detailed the purpose of the founding professorship in hygiene and physical education in American academe thus: “The main object shall not be to secure feats of agility and strength, or

even powerful muscle, but to keep in good health the whole body”<sup>[9]</sup> (p. 47).

The philosophical underpinning “to keep in good health the whole body” squarely relates to John Locke’s, c. 1693, famous aphorism, “A sound mind in a sound body”<sup>[108]</sup> (p. 1) published in *Some Thoughts Concerning Education*, which, as Romanell noted, “is the goal of all education”<sup>[10]</sup> (p. 551). Of course, Locke’s dictum is a shortened English translation of the ancient Roman poet, Juvenal’s<sup>[110]</sup>, Latin quote, “‘*Orandum est ut sit mens sana in corpore sano*’ – You should pray for a healthy mind in a healthy body<sup>[111]</sup>” (p. 435). The dictum was preceded by the ancient Greeks and their principle of *areté* (*ἀρετή*), the ancient Greek term describing a maximum of ability and potency for action, virtue, and excellence, and was “a goal to be sought and reached for by every Greek”<sup>[112]</sup> (p. ix) and their “value of a harmony of the mind, body, and spirit”<sup>[113]</sup> (p. 2), along with Plato’s edict, in his *Republic*, “to give the body and the soul all the perfection of which they are capable”<sup>[114]</sup> (p. 50). Philosophically each served as the archetypal basis for Dunn’s modern-day principle of wellness “as an integrated method of functioning which is oriented toward maximizing the potential of which the individual is capable, within the environment where he is functioning<sup>[115]</sup>” (p. 447). Wellness centers on self-responsibility, which serves as the “the philosopher’s stone, the mariner’s compass, and the ring of power to a high-level wellness lifestyle”<sup>[116]</sup> (p. 102) and functions as the basis for much of modern physical education courses, as seen in the top-25 public institutions of American higher education (See Table 2).

The principle of wellness pervades the typical lecture-based courses offered in physical education at the top-25 public institutions of higher education (See Table 2). Every institution offers a wellness or health course of some type, and 24 of the 25 (96%) partially require a wellness-type course for a graduation requirement (See Table 2). One of the most interesting courses listed is Virginia Polytechnic Institute and State University’s [Henceforth referred to as Virginia Tech] “Moving Body, Moving, Mind” course, and it is cross listed as both a dance course and a course from the Department of Human Nutrition, Foods, and Exercise<sup>[117]</sup>. The course focuses on “mind/body practices to develop connections between neuroscience, movement, and meditative practices ... [with an] emphasis on holistic perspectives of the body<sup>[117]</sup>”. In other words, Virginia Tech’s “Moving Body, Moving Mind” course is a practical application of the basic tenet of Dunn’s principle of wellness<sup>[115]</sup> the integration of the mind, body, and spirit, or the functioning of an individual, for one to reach one’s full potential.

The focus toward wellness, however, has had less-than-ideal consequences in higher education, at times, especially with respect to physical activity courses. A perfect example can be found at The College of William & Mary in Virginia [henceforth referred to as William & Mary], the institution that tied for 23<sup>rd</sup> in the national rankings<sup>[52]</sup>. In 2017, William & Mary’s then-president, Taylor Reveley, released a statement regarding the future of activity courses at the college, where he indicated his support for them, but that the college would offer them “in the broader context of ‘wellness’ rather than Kinesiology”, and that the Kinesiology faculty chose “to no longer offer activity courses.” Moreover, he reiterated that “a full range of non-varsity physical activities” were available to students “under the aegis of The Office of Student Affairs” via campus recreation, and “formal activity courses will remain...a valuable, if small, part of a much

larger whole<sup>[118]</sup>”. In our view, it is the “small” part that makes this situation so worrisome, especially with the fact that voluntary recreational programming is known to cater more to those already fit and active<sup>[119-121]</sup>, has limited participation rates<sup>[122]</sup>, thus is lower in efficacy for developing the whole student populace’s health, and often fails to reach<sup>[66]</sup>, or even neglects, students often already marginalized<sup>[123-125]</sup>.

The situation at William & Mary is emblematic of a worsening condition in higher education with respect to physical education. Having a focus on the overall student population’s health via wellness programming is worthwhile and should be promoted, but, in our view, it should not be at the expense of quality physical education with respect to physical activity courses. The fact that at William & Mary, according to the president, the faculty within the Department of Kinesiology willingly chose to discontinue hosting and teaching physical activity courses is not only counterintuitive to the mission of kinesiology as a discipline but is incredibly troublesome philosophically because the faculty members are abdicating their duty to the students with respect to the principle of *cura personalis*. We believe a decision such as this is the precise opposite of what should be occurring in higher education and is incongruent with the official position of The National Association for Kinesiology in Higher Education, or NAKHE, where “students, society, and an institution’s best interests are served by retaining the sub-units of this multi-faceted field in one department, named kinesiology<sup>[126]</sup>”. In our view, physical education service programming (Also called basic instruction programs, physical activity programs, etc.) should serve as a foundational purpose of any kinesiology program, and abandoning this responsibility is a pernicious act that weakens the discipline and negatively affects the students.

A similar situation occurred recently at the University of California, Davis, the sixth-ranked public institution nationally<sup>[52]</sup>, where for-credit physical education activity courses were eliminated in favor of voluntary recreational activities, albeit by administrators instead of faculty<sup>[127]</sup>. The administrative decision was met with much resistance from students<sup>[128]</sup> and faculty,<sup>[129]</sup> alike, for numerous reasons, from the importance of the mind-body connection to stress relief to offering “students a unique opportunity to make friends and interact across lines of race, religious belief, and sexual orientation<sup>[129]</sup>”. Further, the Executive Board of the Davis Faculty Association wrote:

There are many students who, for one reason or another, have grown up without the opportunity for much learning and participation in sports broadly defined. Elimination of Physical education unfairly singles out these, typically less wealthy, students who, for example, are not able to afford a membership and lessons at a golf club, but who can, in a [University of California, Davis physical education] class, learn under the tutelage of a Cy Williams [a highly decorated instructor and coach at the university]. Physical education courses offer all our students the opportunity to learn, at no cost, new skills as a beginner, and from talented and outstanding instructors<sup>[129]</sup>.

Unfortunately, even objections from both students and faculty seem to have fallen on deaf ears, because, as of this writing,



the courses have not been reinstated. Actions such as these appear to be occurring more frequently in higher education, and recently, Murray and Heumann<sup>[28]</sup> suggested that the reasoning for these actions is related to both funding<sup>[130]</sup> and a proposed “new model”<sup>[131]</sup> for campus health and recreation, with the latter seemingly being incorporated into student affairs, potentially to supplant formalized physical education for voluntary recreational activities. Murray and Heumann<sup>[28]</sup> penned.

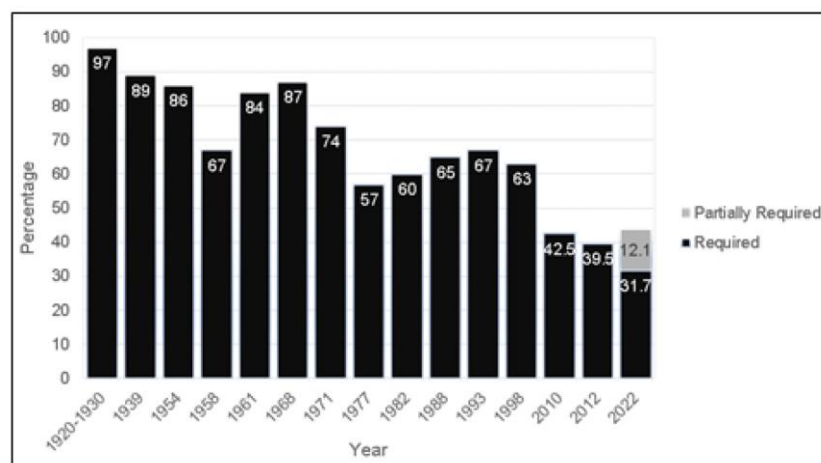
It seems the faculty and administrators...are replacing required or elective physical education with voluntary recreational programming to meet their students' health and wellness needs. We suppose that because recreational programming is frequently supported by auxiliary student fees...administrators are more than happy to go along with this model, especially because of the fiscal benefits. With students willing to essentially tax themselves with a recurring fee for recreational programming, administrators can then reduce or eliminate required physical education and reallocate funding to enhance other academic disciplines. However... the research regarding the effectiveness of voluntary recreational programming has shown it to have modest efficacy, often only for a minority of students, and generally serving mostly the already fit and highly motivated<sup>[23]</sup> (p. 41-42).

Another worrying repercussion to actions such as the deletion of for-credit physical education activity courses is that even traditional lecture courses in wellness or health-related areas are moved to other academic units. For example, at the University of California, Davis, numerous health-related courses are offered in the College of Agricultural and Environmental Sciences instead of the College of Biological Sciences or the College of Letters and Science (See Table 2). While we support these courses being offered, the elimination of departments and programs in traditional physical education (or kinesiology), especially physical activity courses, is far from ideal and, in our view, should be met with strong resistance from faculty and the memberships of related professional organizations. The trend of reducing or eliminating physical education courses in favor of voluntary recreational programming in

American higher education is worrisome. Fortunately, 96 percent of the top-25 public colleges and universities still partially require physical education courses for undergraduates to earn degrees, and all offer physical education courses to their students. Reducing or eliminating physical activity courses and promoting voluntary recreational programming in their place is neither acceptable nor effective in promoting physical literacy in *all* college students. Invariably, some students are overlooked<sup>[119, 129, 121]</sup> with many, unfortunately, being from already marginalized groups<sup>[123-125]</sup>. We believe both required physical education and voluntary recreational programming are requisites for an ideal learning environment in a college or university, and this philosophical viewpoint is best summarized by the following quote.

Our philosophical view is that physical education should be provided and required of every undergraduate student. In addition, voluntary recreational programming should also be available so that the students can work on the skills they are learning in their physical education courses and make them lifelong habits. We believe educational and recreational programming should work symbiotically and neither be an “either-or” situation nor a parasitic relationship; one should not take away from the other. Instead, the two should work in unison to develop the whole individual, enhance individual student wellness, and help tertiary educational institutions return to the *cura personalis* mission of education<sup>[28]</sup> (p. 42).

More research is needed on the physical education requirements and service programming in all tertiary educational institutions, preferably by state, so that specific information can be gathered to assess specific trends, but also by institution type. Future studies should be conducted on the status of physical education service programming in elite private universities and colleges as well as tertiary educational institutions serving specific populations, such as Delk and Johnson's work on HBCUs,<sup>[72]</sup> and as delineated by the Carnegie Classification of Institutions of Higher Education<sup>[54]</sup>. Hispanic-Serving Institutions; minority-serving institutions; tribal colleges and universities; and women's colleges.



**Fig 1:** The percentage of American institutions of higher education requiring physical education from 1920 to 2022. *Note.* Adapted from Szarabajko A, & Cardinal BJ (2023). Are tertiary institutions losing sight of their duty to *cura personalis*? *Research Quarterly for Exercise and Sport*, DOI: 10.1080/02701367.2022.2153785. N.B., the studies used different methodologies, limiting comparisons.

#### 4. Conclusion

Physical education has played a foundational role in American higher education since the mid-1800s, with its purpose to help each student “to keep in good health the whole body”. Required physical education in colleges and universities has trended lower over the last few decades, but little was known about the status of physical education in elite public universities. The top-25 public tertiary educational institutions do value physical education, with each offering physical education programming of some sort. Twelve percent of the institutions required physical education as a graduation standard, and 96 percent partially required either a physical activity course or a lecture course on health or wellness for an undergraduate degree to be earned. The results are promising, but leaders within the discipline of kinesiology need to be vigilant to combat the ongoing decline of required physical education in academe. More advocacy is needed for required physical education in higher education, and further research should be conducted on the prevalence of physical education in elite private institutions as well as those institutions serving targeted populations such as women’s institutions and tribal colleges and universities.

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