

Academic Majors and Subject-Area Certifications of Health Education Teachers in the United States, 2011-2012

Author:

Dr. Catherine Cardina, PhD

Associate Professor of Health Science

Department of Health Science

The College at Brockport

Brockport, NY 14420

Telephone: 585-395-5906

E-mail: ccardina@brockport.edu

ABSTRACT

Purpose: The purpose of this study was to identify academic preparation and subject-area certifications of K-12 public school staff teaching at least one health education class during 2011-2012 academic year. In general, teachers who are well qualified to teach a subject area are more likely to positively affect student achievement. **Methods:** Data reported for this study were extracted from the 2011-2012 U.S. Schools and Staffing Survey, a comprehensive nationally representative survey of school employees conducted periodically by the National Center for Educational Statistics. Descriptive statistics were used to identify health education teachers' academic majors and subject-area certifications. **Results:** Among health education teachers, 35.5% reported an academic major in health education, 30.3% reported a major of physical education, and 34.2% reported majors in other academic subjects. Approximately 60% of health education teachers were certified in health education. Among the 39.7% of health teachers not certified in health education, 35.0% reported their primary area of certification was physical education and 22.6% reported certification in elementary grades – general. **Conclusions:** Data revealed that in the U.S. most health education teachers did not have an academic major in health education. In addition, nearly 40% of health teachers were not certified in health education. Health education teachers that were not certified in health education were most often certified in physical education. **Recommendations:** A number of initiatives to consider were presented in order to have the most qualified teachers of school health education, which included a state certification, licensure, or endorsement to teach health education and an academic major in health education.

INTRODUCTION

As noted by the Centers for Disease Control and Prevention (CDC) (2013), scientific reviews have documented that school health programs can reduce risk-behaviors among youth and have a positive effect on academic performance. According to the CDC (2014), one strategy that contributes to these behavioral and academic successes is comprehensive school health education, which provides students with knowledge and skills to make healthful decisions, adopt healthy behaviors, enhance personal health literacy, and advocate for the health of others. These goals are most likely to be achieved with the implementation of state-of-the-art health education curricula that includes

four components; teaching functional knowledge, shaping personal beliefs, influencing group norms towards a healthy lifestyle, and developing health-enhancing behaviors and skills.

By reviewing effective programs and curricula, and consulting with experts in the field of health education, the CDC (2013) describes fifteen characteristics of an effective health education curriculum. Characteristics include a curriculum that provides functional health knowledge that directly contributes to health-promoting decisions and behaviors; instructional strategies that are research-based and theory-driven; instruction that is age-appropriate, developmentally appropriate, and presented in a

logical sequence; and, teacher training that enhances effective instruction and student learning. Overall, implementation of a state-of-the-art health education curriculum that includes all fifteen characteristics of an effective curriculum requires leadership from a school health educator with in-depth knowledge of health content and pedagogy. Teacher preparation programs that lead to state licensure or certification traditionally include coursework in both subject-specific content and pedagogy.

In general, teachers who are well-qualified to teach in a subject area are more likely to positively affect student achievement. Stronge (2007) summarized notable research outcomes related to teacher certification and effective teaching and found that positive student outcomes were related to teaching within one's field. Conversely, students achieved far less when taught by teachers who teach a subject for which they were not prepared. Moreover, teachers who were effective in their own fields became ineffective in teaching a subject for which they were not prepared. The need for well-qualified health education teachers to implement effective health education curricula is supported by two *Healthy People 2020* Objectives for Early and Middle Childhood (EMC) (U.S. Department of Health and Human Services, 2014):

Objective EMC-4.1 Increase the proportion of [elementary, middle and high] schools that require newly hired staff who teach required health education to have undergraduate or graduate training in health education.

Objective EMC-4.2 Increase the portions of [elementary, middle and high] schools that require newly hired staff who teach required health instruction to be certified, licensed or endorsed by the state in health education.

The latter Objective (EMC-4.2) is a challenging national goal to achieve. According to the School Health Policies and Practices Study (SHPPS) (Kann, Telljohann, Hunt, Hunt, & Haller, 2013), approximately three-quarters (76.5%) of U.S. states offered certification, licensure, or endorsement for health education for grades K-12. Nearly 60 percent of states offered certification, licensure, or endorsement for middle school and high school health education; and, 37.5 percent of states for

elementary school. Some U.S. states also offered combined health education and physical education certification for grades K-12 (29.4%), middle school (28.6%), and high school (26.0%). Although states offered various types of certification, licensure and endorsement for health education, a nationally representative sample of school districts from the SHPPS (Kann et al., 2013) indicated that more than one-half of districts had showed a commitment to hiring highly qualified health teachers by adopting policies stating that "newly hired staff who teach health education at the middle school level (61.6%) and the high school level (79.8%) have certification, licensure, or endorsement by the state to teach health education". p. 28. The greatest improvement with regard to hiring decisions is needed at the elementary level with 35.1 percent of districts requiring health teachers to have certification, licensure, or endorsement by the state.

A previous SHPPS (Kann, Telljohann, & Wooley, 2007) provided nation-wide, classroom-level estimates of health certification among staff teaching required health education classes. For example, 67.8 percent of elementary teachers and 67.1 percent of secondary (middle and high school) teachers covering required health education classes were certified, endorsed, or licensed by the state to teach health education at the appropriate grade level. In addition, the 2007 SHPPS described undergraduate and graduate training among health education teachers. Teachers of elementary school classes covering required health education classes reported undergraduate degrees in education (56.0%), physical education (18.4%) and health education (11.4%). Less than 5 percent of respondents with a minor area of study (48.8%) reported health education. Among respondents with graduate degrees (40.7%), most reported a major in education (71.6%) and less than six percent reported a major in health education.

At the secondary level, teachers of required health education courses reported undergraduate majors in physical education (45.8%), health education (27.4%), education (19.8%), and biology or other science (14.8%). Approximately 17 percent of respondents with a minor area of study (56.5%) reported health education. Among respondents with a graduate degree (42.5%), academic majors reported were in education (47.0%), physical education

(19.7%), and health education (10.9%) (Kann et al., 2007).

The 2007 SHPPS (Kann et al., 2007) also reported that almost three-quarters of graduate degrees were earned at the elementary level, over one-half of undergraduate degrees earned at the elementary level, and nearly one-half of graduate degrees were earned at the secondary level. Just under one-half of respondents at the secondary level reported physical education as their undergraduate major. This is compared to about one-quarter of respondents at the secondary level with a major in health education and few numbers of respondents at the elementary level with an undergraduate and graduate degree in health education. Conversely, nearly three-fourths of respondents at the elementary and secondary levels were certified in health education. The remaining educators teaching required health education courses were not certified in health.

PURPOSE

Based on these findings by the 2007 and 2013 SHPPS, efforts were made to increase the overall percentage of health education courses taught by highly qualified health education teachers in the U.S. For example, a number of reports (Demissie et al., 2013; Healthy Schools Champaign, 2012; U.S. Department of Health and Human Services, 2011, 2014; Valois, et al., 2011) recommended that school staff who were teaching health education have undergraduate or graduate training in health education, including a state certification, licensure, or endorsement in health education. Therefore the purpose of this study is to use the most current nationally representative teacher survey data to identify academic preparation and subject-area certifications of public school staff in the United States who were teaching at least one health education class during the 2011-2012 academic year. In describing the professional qualifications of these health teachers, the academic major for bachelors and masters degree will be described, along with state certification area and the extent to which health teachers were working outside of their state certification area. For this study, two research questions were investigated. During the 2011-12 academic year, what percentage of K-12 staff in the U.S. that were teaching health education had an academic major in health education? During the 2011-12 academic year, what percentage of

K-12 staff in the U.S. that were teaching health education were certified, licensed, or endorsed to teach health education?

METHODS

Data reported for this study were extracted from the most recent U.S. Schools and Staffing Survey (SASS), a comprehensive national survey of school employees conducted by the National Center for Educational Statistics (NCES). The SASS is administered as a large, nationally representative survey of public, private and charter school teachers, including administrators and library media specialists administered every 3 years since the late 1980's, depending on funding. The survey contains sections related to class organization, education and training, certification, professional development, working conditions, school climate and teacher attitudes. For this study, questions about education, training, and certification were analyzed.

Subjects

Teachers were defined as staff members in U.S. public schools who teach regularly scheduled classes to students in any of the school grades K-12. Teachers were selected for inclusion in this study on the basis of their teaching at least one class of health education during the 2011-2012 school year. A total sample size of 898 was obtained.

Instrumentation

Data for this study were from the *Teacher questionnaire: Schools and staffing survey 2011-2012* (U.S. Department of Education, 2011). During the initial data collection phase of the survey, staff in the Special Surveys and Analysis Branch of the Elementary and Secondary Education Statistics Division performed checks for validity and reliability. Frequency analysis, bivariate correlations, and multivariate statistics were reviewed, and comparisons were made to the Common Core of Data and the Private School Survey to insure internal consistency. Data collection was the responsibility of the U.S. Bureau of the Census personnel who were responsible for editing entries for clerical mistakes, preliminary interview status classification, and edits related to categorical fields. Skip pattern validity in the questionnaire was established for each SASS questionnaire during the processing of the data

and out of bounds responses were imputed and documented.

Teachers listed each subject they taught per class period if they instructed several classes of different students most or all of the day in one or more subjects (sometimes called Departmentalized Instruction) or were elementary school teachers who taught only one subject to different classes of students (sometimes called Elementary Subject Specialists). Any teacher who indicated teaching one class of health education was included in this study.

To assess undergraduate training, teachers were asked their major field of study and if they had a bachelor's degree, and a second major field of study. In addition, they were asked if they had a second bachelor's degree and in what field of study. To assess graduate training, teachers were asked if they had a master's degree and their major field of study. In addition, they were asked if they had a second master's degree and in what field of study. To assess teachers' subject-area certifications and licensures, they were asked to indicate the content area of their teaching certificate and what other content areas that certificate allowed them to teach. Teachers were also asked if they had another current teaching certificate and what other areas that certificate allowed them to teach.

Procedure

For the most recent SASS (2011-2012), a total of 11,000 public schools from 5798 districts were included in the sample, from which 37,497 teachers were surveyed. A stratified complex design was used to select sample elements and subsequently weight them to correct for sampling bias due to deliberate oversampling of certain elements of the population. The first stage involved schools as the frame. Teachers in schools selected for the study were subsampled to produce a nationally representative sample of public school teachers using a complex cluster sampling methodology. Because of the great variations in district sizes across the country, NCES employed a multi-stage stratified sampling design. Districts in Maryland, Florida, Nevada and West Virginia each have a small number of county-level districts with a large number of school buildings. To ensure that these states were appropriately represented in the frame, school units were aggregated at the state level for sampling

purposes. Schools were selected from the universe of public schools included in the 2009-10 Common Core of Data school universe file. Schools from all 50 states were included in the frame, while overseas and Department of Defense schools were excluded. Additional schools from alternative and juvenile justice system schools in California, Pennsylvania, and New York were added to include a total frame of 90,530 public schools. For this study, the separate charter school sample was not included for analysis. Selection is defined as follows:

To be eligible for SASS, a school was defined as an institution or part of an institution that provides classroom instruction to students, has one or more teachers to provide instruction, serves students in one or more of grades 1–12 or the ungraded equivalent, and is located in one or more buildings apart from a private home. It was possible for two or more schools to share the same building; in that case, they were treated as different schools if they had different administrators (i.e., principal or school head) (Goldring, Taie, Rizzo, & Fraser, 2013, p. 5)

Schools were systematically selected using an algorithm that selected sample units based on established criteria. The systematic selection was determined by the following variables: state, urbanicity code, collapsed ZIP code, percent free or reduced-price lunch, highest grade in the school, percent minority enrollment, and total enrollment. About 5,800 public school districts were included into the sample by being associated with sampled public schools.

Teachers were defined as staff members who teach regularly scheduled classes to students in any of grades K–12. Sample members were stratified into four strata: (1) Beginning teachers (2) early-career teachers (in their second or third years of teaching), (3) mid-career teachers (4 through 19 years of teaching), and (4) experienced teachers (20 or more years of teaching). Beginning and early-career teachers were systematically over-sampled to provide a subsample that can be generalized to all national teachers in their first three years of teaching. Districts selected within the sample were asked to provide electronic teacher rosters for the selected schools. Survey data was collected via online, mail,

telephone and in-person administration to minimize non-response bias. Data collection ended in June 2012.

Weights developed by NCES were applied to the SASS data set to approximate the population of public school teachers. As a result, the final weighted sample of the public school teachers was 3,385,171. This weighted sample was nationally representative of public school teachers and therefore generalizable to the national population of public school teachers in the U.S.

Data Analysis

For this study, final sample weights were used in data analysis. As a result, the final weighted sample of teachers (N=49,902) reported teaching at least one class of health education during the 2011-2012 school year. Descriptive statistics were used to identify health education teachers' academic majors and subject-area certifications. Tables and discussion in this article used these weighted data for the presentation of frequencies and calculation of percents.

Human Subjects Approval Statement

The College at Brockport SUNY IRB Office provided human subject approval for this study effective July 29, 2014.

RESULTS

Table 1 identifies the academic preparation of public school staff in the United States who were teaching at least one health education class during the 2011-2012 academic year (N = 49,902). Specifically, the table identifies the percentage of respondents sorted by their academic major (n=47,282; 94.7% response rate) who indicated they had an undergraduate or graduate academic major in health education (35.5%). The remaining teachers of health education (64.5%) did not have an undergraduate or graduate major in health education. Of this group without an academic major in health education, 30.3% reported an academic major of physical education and the remaining 34.2% reported other subject areas for their academic majors. For example, 6% (n=2,819) included the natural sciences (e.g. biology, earth sciences, etc.) and 8% (n=3,882) included social sciences (e.g. psychology, history, etc.). Academic training of elementary subject specialists (5.5 % of subjects) and teachers of

departmentalized instruction (94.5% of subjects) were also presented in Table 1.

Next, Table 2 identifies subject area certification of staff that were teaching at least one health education class (N=49,902). Specifically, the percentage of K-12 respondents (n=49,452; 97.3% response rate) who reported they were certified in their state to teach health education (n=28,745) was 57.6 percent. The remaining 39.7 percent of health education teachers (n=19,812) were not certified to teach health education. Of this group, 35.0 percent (n=6772) reported their primary area of certification was physical education and 22.6 percent (n=4368) reported elementary grades – general. The remaining teachers reported other subject area certifications; for example, 11.5 percent (n=1,444) were certified to teach natural sciences (e.g. biology, earth sciences, etc.).

DISCUSSION

SASS (2011-12) was conducted by NCES, which is the primary federal entity of the U.S. Department of Education for collecting and analyzing data related to education. Results from this study, which analyzed SASS (2011-2012) data provide the most current estimates of the percentage of health teachers who have an academic major in health education at the undergraduate or graduate level and the percentage that are certified to teach health education. Findings contribute empirical support for two *Healthy People 2020* (U.S. Department of Health and Human Services, 2014) objectives which aim to increase the proportion of schools that require newly hired staff who teach required health education to have undergraduate or graduate training in health education (EMC-4.1) and to increase the portions of schools that require newly hired staff who teach required health instruction to be certified, licensed or endorsed by the state in health education (EMC-4.2) (U.S. Department of Health and Human Services, 2014).

Despite the clear methodological differences between the 2007 and 2013 SHPPS and the SASS (2011-12), making comparisons between these two nationally representative surveys can provide a descriptive profile of the academic preparation and certifications of health education teachers. Among secondary health education teachers, the 2007 SHPPS (Kann et al., 2007) estimated that approximately 30 percent of

required health education classes were taught by teachers with an undergraduate or graduate degree in health education. Similar estimates were found in this study with slightly more than one-third of secondary health teachers reporting an academic degree in health education. In addition, both studies found that secondary health education teachers often had academic degrees in physical education. In general, more respondents of the SHPPS reported academic degrees in education, as compared to findings from this study.

When investigating health education certification, the 2007 SHPPS (Kann et al., 2007) found that approximately 70 percent of required elementary and secondary health education classes were taught by certified health teachers. This study found that nearly 60 percent of school staff teaching a K-12 health education class were certified in health education; furthermore, health education teachers who were not certified in health were most likely certified in physical education or in elementary education - general.

Results from both the SHPPS (Kann et al., 2007) and the current study were generalizable nation-wide, however sampling procedures and data analysis differed. Despite these basic differences, some comparisons and conclusions were made with regard to ensuring health education classes are taught by the most qualified teachers. For example, continued efforts are needed to increase the percentage of health education classes that are taught by staff certified in health education, and to increase the percentage of certified health teachers who have an academic major in health education.

Limitations

NCES used a cluster sampling design to produce a sample that would support generalization to the entire population of K-12 public school teachers in the United States. The complex design of the sampling strategy and subsequent assignments of replicate weights allowed for generalization of subsamples down to the state level. The sample used in this study was a subsample of the larger national frame. As such, generalization was at the national level, but there was a higher possibility that design-related bias was introduced into the results.

CONCLUSIONS

Although this study found just 35.5 percent of health education teachers had a college academic major in health education, nearly 60 percent were certified to teach health education. Therefore, having an academic major in health education was not an essential requirement for earning a teaching certificate, license or endorsement in health education. Among health teachers that were not certified in health education, over one-third (35.5%) listed physical education as their primary certification area and just under one-fourth (22.6%) identified elementary education - general as their primary certification area.

RECOMMENDATIONS

Results from this study estimate that approximately 60 percent of K-12 public school health education teachers in the United States do not have an undergraduate or graduate major in health education; however, data show that nearly 60 percent of health education teachers hold a teaching certification or licensure in health education. In order to have the most qualified teachers of health education, who have both an academic major in health education and who hold a state certification, licensure, or endorsement to teach health education, a number of recommendation are warranted. Recommendations include: (1) requiring an undergraduate or graduate major in health education for state certification, licensure, or endorsement in health education so that health education teachers have functional knowledge related to health information and pedagogical knowledge specific to health education; (2) collaborating between state departments of education who have the responsibility of establishing certification standards (i.e. require an academic major in health education in order to be certified, licensed, or endorsed in health education) and institutions of higher education so that teacher candidates may earn an academic major in health education at their institutions, which would provide school districts that have health education teacher vacancies with highly qualified health education teacher applicants; (3) establishing a commitment from principals, who ultimately have the decision-making authority with regard to hiring decisions and subject-area teaching assignments, to employ the most qualified health education teachers, which includes teachers who are

certified in health education and who have an academic major in health education (Valois et al., 2011) rather than a health education teacher who lacks health education certification, licensure or endorsement, or an academic major in health education; (4) holding principals accountable through state or federal school accountability and reporting systems (i.e. school report cards) for employing health teachers with both state certification, licensure, or endorsement in health education and also an academic degree in health education (Healthy Schools Campaign, 2012); (5.) Using school health education evaluation tools, self-assessments and planning guides, such as the Health Education Module of School Health Index (Centers for Disease Control and Prevention, 2013) to increase the number of certified health education teachers with a major in health education by emphasizing these criteria as a foundational requirement of an effective school health education program rather than just one criteria that contributes to an effective school health education program; and, (6) Updating *Healthy People 2020* (U.S. Department of Health and Human Services, 2014) objectives, EMC-4.1, by eliminating “required” health education and replacing “training” with “majors” so that it states: Increase the proportion of schools that require newly hired staff who teach health education to have undergraduate or graduate majors in health education, which would promote hiring of the most qualified teachers of school health education who have both health content knowledge and pedagogical knowledge of health education. These recommendations were designed in response to findings from this study, which suggest most health education teachers do not have an academic major in health education and are often not certified, licensed, or endorsed by their state to teach health education. The purpose of these recommendations is help to ensure that the most qualified health education teachers would teach health education.

National Health Education Standards (CDC, 2013) provide a framework for school health education curricula; in general, what K-12 youth should know and be able to do to promote, adopt and maintain a healthy lifestyle. In addition, creating and implementing effective school health education curricula should reflect a number of characteristics, including curricula that are research-based and use theory-driven instructional strategies that will most likely

influence healthful behavior change among youth (CDC, 2013). Therefore, the most qualified staff to teach health education are certified, licensed, or endorsed health education teachers who have an academic major in health education to ensure they have functional knowledge of health information and state-of-the-art pedagogical knowledge of health education. Data from this study found that among the nearly 40 percent of health teachers who were not certified to teach health, most were certified to teach physical education. However, teacher education preparation in physical education, which emphasizes the development of physically literate youth who have the knowledge, skills, and confidence to enjoy a lifetime of healthful physical activity (Society of Health and Physical Educators - America, 2013), would lack the necessary functional knowledge related to health information and lack pedagogical knowledge of health education needed to implement effective health education curricula and instruction. Similarly, teacher preparation in other subjects, such as, elementary education – general, biology, or other sciences would not prepare a teacher to successfully implement effective health education curricula and instruction. Policy changes at the state level are needed to ensure that certified, licensed, or endorsed health education teachers have an academic major in health education and subsequently, only those teachers are teaching health education in order to increase the likelihood that effective curriculum development, selection, instruction, and assessment in health education are designed to help K-12 students adopt, practice, and maintain health-enhancing behaviors.

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Table 1: Academic Major of Staff Teaching Health Education as a Percentage of the Sample – SASS 2011-12

Undergraduate or Graduate Major	Elementary Subject Specialist ^a (<i>n</i> = 2,616)	Departmentalized Instruction ^b (<i>n</i> = 44,666)	K-12 Instruction ^c (<i>n</i> = 47,282)
Health Education	41.6	35.1	35.5
Physical Education	34.7	30.1	30.3 ^d
Other Subjects	23.7	34.8	34.2
Total	100.0	100.0	100.0

^aElementary school teachers who teach only one subject to different classes of students. ^bTeachers instructed several classes of different students most or all of the day in one or more subjects. ^cIncludes both elementary subject specialist and departmentalized instruction. ^dK-12 teachers who reported teaching health education with an academic major in physical education.

Table 2: Subject Area Certification of Staff Teaching Health Education as a Percentage of the Sample – SASS 2011-12

Subject Area Certification or Licensure	K-12 Instruction ^a (<i>n</i> = 49,452)
Health Education	57.6
Other Academic Subjects	39.7 ^b
Missing Responses	2.7
Total	100.0

^aIncludes elementary school teachers who teach only one subject to different classes of students and teachers that instructed several classes of different students most or all of the day in one or more subjects. ^bAmong staff with other subject area certification or licensure, 35.0 percent reported their primary area of certification was physical education and 22.6 percent reported elementary grades – general.