Research Article

Institutions of Higher Education Pre-Service School Health Education Practices

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ABSTRACT

Background: *The quality of health education teachers is, in large part, dependent on the education they receive from their teacher preparation program.* ***Purpose:*** *This study assessed institutions of higher education (IHE) teaching practices in school health teacher preparation programs regarding the amount of time spent and content taught related to various health education tools and products (e.g. National Health Education Standards, the Health Education Curriculum Analysis Tool and the School Health Index).* ***Methods:*** *A survey (87 items) that demonstrated validity and reliability was mailed to the population of 225 lead school health education faculty at IHEs that offered school health licensure or certification programs.* ***Results:*** *The response rate was 59.6% (134/225). Faculty who taught how to use a variety of health education materials varied (30.6% to 89.6%), depending on the tools and products.* ***Discussion:*** *A primary responsibility of IHEs should be to help pre-service teachers utilize the tools and products described in this study. Many IHEs do not train their pre-service school health education majors to use these tools and products.* ***Translation to Health Education Practice:*** *Quality school health teacher preparation includes being trained on how to use these tools and products. To improve the quality of education provided by IHEs to pre-service school health education teachers, methods faculty need more training on incorporating these various tools into their curriculum.*

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BACKGROUND

Each day over 50 million students attend private and public schools across America.[1] Nationwide, most middle schools (86.3%) and high schools (90.2%) have adopted a policy requiring health education.[2] The health of these students can be impacted positively by having high quality health instruction from their health education teachers.[3] Health education has been shown to positively influence student health by reducing the prevalence of a variety of risky health behaviors.[4-6]

The quality of the health education teacher is partially dependent upon the education they receive from their school health teacher preparation program. Therefore, it is important that institutions of higher education (IHE) school health teacher preparation programs have quality programs and teach pre-service students the most current information, tools, products and skills available in health education. Pre-service health education teacher preparation programs play a significant role in preparing future school health educators. Frauenknecht best summarized this issue by stating, "Standards for teachers in all subject areas, including health education, were needed to specifically determine the competencies for professional development to be demonstrated." [7(p. 24)] Frauenknecht also noted that "professional standards for health education teachers have been developed based on the necessary content, pedagogical and professional knowledge and skills to teach both independently and collaboratively."[7(p. 24)] The National Council for Accreditation of Teacher Education (NCATE) is the primary

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organization that determines if teaching licensure programs in IHEs are meeting professional standards.[8] NCATE worked with the American Association for Health Education (AAHE) to determine the health education standards IHEs must meet to be accredited by NCATE.[8] Out of the 225 IHEs that have a school health licensure/certification program, only 34 have been accredited by NCATE. While achieving AAHE/NCATE accreditation is difficult, there are several advantages. For example, teacher candidates who graduate from NCATE-accredited schools will be better prepared for initial licensing and advanced board certification, graduates of NCATE-accredited colleges of education pass Educational Testing Services content examinations for teacher licensing at a higher rate than do graduates of unaccredited colleges and graduates of NCATE-accredited schools will generally find it easier to apply for licensure when they move out of state.[8]

The AAHE/NCATE standards are:

1. Content Knowledge: Candidates demonstrate the knowledge and skills of a health literate educator.

2. Needs Assessment: Candidates assess needs to determine priorities for school health education.

3. Planning: Candidates plan effective comprehensive school health education curricula and programs.

4. Implementation: Candidates implement health education instruction.

5. Assessment. Candidates assess student learning.

6. Administration and Coordination. Candidates plan and coordinate school health education.

7. Being a Resource. Candidates serve as a resource person in health education.

8. Communication and Advocacy. Candidates communicate and advocate for health and school health education.

Although the NCATE accreditation health education program standards include many important concepts and skills, they do not ensure that IHE school health teacher preparation programs utilize recently developed school health education tools and products.[8] One such tool is the National Health Education Standards (NHES). The NHES are a structure for building a health education curriculum that explains what a student should know and be able to do by specific grade levels.[9]

NCATE also does not require that products and tools developed by the Division of Adolescent and School Health (DASH) of the Centers for Disease Control and Prevention (CDC), be taught as part of their accreditation requirements. While it is not appropriate for these specific products and tools to be included as a part of the NCATE guidelines, they can be used as evidence to meet NCATE standards and guidelines. These products and tools include the School Health Index (SHI), Health Education Curriculum Analysis Tool (HECAT), Youth Risk Behavioral Surveillance System (YRBSS), Characteristics of Effective Health Education Curricula, the, the School Health Policies and Programs Study (SHPPS), School Health Profiles (Profiles), the School Health Education Resources tool (SHER), and the relationship between health and academic performance. These tools and products serve a variety of functions to help improve school health. The purpose of the SHI is a self-assessment tool and a guide to plan effective health education by assessing a school's health and safety policies and programs through the standpoint of a coordinated school health program.[10] The HECAT is a tool that is used to assess health education curricula. The HECAT is based on the NHES and the Characteristics of Effective Health Education Curricula.[11] The YRBSS is a survey conducted by various groups at different levels. It is used to examine youth and young adults' leading health-risk behaviors and the occurrence of obesity and asthma.[12] The Characteristics of Effective Health Education Curricula were created from a synthesis of school health education evaluation studies. When included in a health education curriculum, these characteristics have been shown to help improve the health behaviors of children and adolescents.[13] For example, curricula that have been based on these characteristics have been shown to improve health behaviors associated with being tobacco free, alcohol free and delaying sexual intercourse.[13] SHPPS and Profiles were created to periodically assess school health policies and practices at the state, district, school, and classroom levels.[14] The SHER tool is a searchable database that includes school health education materials available from the U.S. Department of Health and Human Services' Centers for Disease Control and Prevention.[15] Lastly, it is important for future school health educators to know the literature regarding the relationship of health and academic performance so they can advocate for their school health programs and positions.

To optimize preparation of health teachers, it is critical to learn about the current curricular practices at IHEs to improve the quality of future health teachers. A comprehensive review of the literature failed to find any research about the current practices at IHEs and the education provided to pre-service school health education students. This gap in knowledge is problematic because there is an absence of information regarding common practices occurring in IHE school health teacher preparation programs. Educating pre-service school health education teachers on tools such as the YRBSS, the SHI, the HECAT, and the NHES could help school health education majors improve the health of the children and adolescents they will be teaching in the future.

PURPOSE

The purpose of this study was to assess the current practices of school health education faculty members' use of various health education tools and products at IHEs that have school health teacher preparation programs. Specifically, this study determined the amount of time and the content taught related to the following school health education materials and tools: Youth Risk Behavior Surveillance System (YRBSS), School Health Profiles Survey (Profiles), School Health Policies and Programs Study (SHPPS), Characteristics of Effective Health Education Curricula, National Health Education

Standards (NHES), Health and Academic Performance, School Health Index (SHI), Health Education Curriculum Analysis Tool (HECAT), and the CDC's School Health Education Resources (SHER).

METHODS

Participants

A database of lead school health education faculty (the faculty who teaches school health education methods courses and/or supervises school health education student teachers) at colleges and universities in the United States that have school health education teacher preparation programs was created using a three-step process. First, all of the colleges and universities that had a school health teacher preparation program that were listed in the Directory of Institutions of the American Association for Health Education were used as a starting point to create the database (n=138).[16] Second, all of the NCATE accredited undergraduate school health education programs were included that were not listed in the Directory of Institutions of the American Association for Health Education (n=12).[8] Third, a search of university and college school health education programs on the internet was conducted to determine any missing programs not included on the two lists mentioned above (n=85). After the population list was completed, phone calls were made to all of the institutions of higher education to confirm both the existence of their school health education teacher preparation programs and the programs' lead school health education faculty members. The population of IHE school health education teacher preparation programs was used for this study (n=225). An *a priori* power analysis was conducted for this study. Based on a total population of 225 IHE school health education teacher preparation programs and a 50/50 split with regard to the practice of interest, it was determined that 143 responses would be needed to make inferences to the total population with a sampling error of $\pm$ 5% at the 95% confidence level.[17-18] One survey was sent to the lead school health education faculty member at each of the 225 IHE school health education teacher preparation programs.

Instrument Development

A four-page, 87-item questionnaire was developed from a comprehensive literature review to examine participants' pre-service education practices in preparing school health education students. Specifically, items were designed to assess if the following topics were taught in school health pre-service programs: Youth Risk Behavior Surveillance System, School Health Policies and Programs Study, School Health Profiles Survey, Health and Academics, Characteristics of Effective Health Education Curriculum, Health Education Curriculum Analysis Tool, School Health Index, National Health Education Standards, and the CDC's School Health Education Resources. Demographic and background items were included for descriptive purposes (e.g., level of educational attainment, academic rank, and number of year(s) taught full time at the college/university level). The questionnaire response formats included yes/no and open-ended responses.

Instrument Testing

A comprehensive literature review was used to establish face validity of the questionnaire. The questionnaire was given to a panel of experts on school teacher preparation and survey development (n=3) for review to establish content validity. Based on their review, minor revisions were made to the wording of some items and to questionnaire formatting.

Stability (test-retest) reliability was completed through testing and retesting with a convenience sample of respondents from the first wave mailing (n=8). The individuals in this convenience sample were mailed the same survey one week after receiving the completed first survey. Pearson product-moment correlation coefficients (r) were used to evaluate the test-retest reliability of the items examining teaching time on the survey. A positive correlation (+0.47 to +0.99) was found for all of the items that measured how class time was used to teach about each of the health education products and tools included in the survey. The HECAT (r = 0.47) had the lowest score in this section, and Profiles (r = 0.99) had the strongest positive relationship.

Stability reliabilities were calculated for the pre-service health education teaching areas using a percent agreement on the convenience sample responses (n=8) to the test-retest survey. The highest average percent agreement for a topic covered in the survey was the YRBSS items at 97%, while the lowest average percent agreement for a topic covered in the survey was the SHPPS items at 64%.

Procedure

Following approval of the study proposal by the University Human Subjects Committee, several techniques were used to increase the response rate. First, pre-notification via electronic-mailing was sent to all potential respondents notifying them of the survey that was being sent to them. Second, potential respondents were contacted by postal mail. A two-wave mailing procedure was used to ensure an adequate response rate. The first wave mailing included: an introduction to the study and the request of the recipient's confidential and anonymous participation via a hand-signed, personalized cover letter, a copy of the four-page color printed booklet survey instrument, a cash incentive ($1.00 bill) for participation was included, and a return envelope addressed to the principal investigator with a first-class postage stamp. For those who did not respond to the first wave mailing, a second wave mailing was sent out to the remaining potential respondents. The second wave mailing consisted of a revised cover letter, another copy of the survey, and a self-addressed stamped return envelope. The return of the completed survey served the purpose of implied consent. Finally, for participants who did not complete the first or second survey that was sent to them, surveys were distributed to pre-identified lead school health educators who attended a professional conference for school health education higher education faculty, collected and entered for data analysis.[19]

Data Analyses

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) 16.0. The following analyses were performed: descriptive statistics, t-tests, analyses of variance and Pearson product moment correlation coefficients.

Descriptive statistics (percentages, means and standard deviations) were calculated to describe the respondents and their responses to the questionnaire. Next, analyses were conducted to examine the amount of time spent teaching about YRBSS, Profiles, SHPPS, Characteristics of Effective Health Education Curriculum, NHES, Health and Academic Performance, SHI, HECAT and SHER during the degree program by the following independent variables: IHEs who offer a major and those who offer only a minor in health education, accreditation status (accredited versus non-accredited), the number of full time health education faculty, and the number of required field experience hours, for a total of 36 statistical tests. Continuous variables were analyzed using independent sample t-tests or ANOVAs. Level of significance was set *a priori* at $P \leq 0.05$.

RESULTS

Demographics and Background Characteristics of Participants

Surveys were mailed to 225 lead school health faculty at Institutions of Higher Education. The number of surveys that were obtained and were completed was 134, for a response rate of 59.5%. A post-hoc power analysis for the sample of 134 yielded a confidence level of 93%, instead of 95% that was originally proposed, with a sampling error of $\pm$ 5%.

The majority of respondents were female (67.9%) and had a Ph.D. or equivalent (76.9%) as their highest level of education (Table 1). A plurality of respondents had the academic rank of associate professor (29.9%). The majority of the lead school health faculty was tenured (56.0%). Additionally, a majority of the respondents had a state license/certification to teach health education (62.7%). A majority of lead school health faculty who belonged to a health education professional organization (83.6%).

Table 1. Demographic and Background Characteristics of Participants

Item	N (%)
What is your gender?	
Male	43 (32.1)
Female	91 (67.9)
What is your highest level of education?	
Masters	30 (22.4)
Ph.D. or equivalent	103 (76.9)
In which degree did you major in health education?	
Bachelor's	67 (50.0)
Master's	73 (55.2)
Ph.D. or equivalent	67 (50.0)
What is your academic rank?	
Lecturer/Instructor	21 (15.7)
Assistant Professor	37 (27.6)
Associate Professor	40 (29.9)
Professor	33 (24.6)
Other	3 (2.2)
Are you a tenured faculty member?	
Yes	75 (56.0)
No	35 (26.1)
Working toward tenure	23 (17.2)
Do you currently (or have you in the past) have a state license/certification to teach health education?	
Yes	84 (62.7)
Do you belong to any health education professional organizations?	
Yes	112 (83.6)
Is your school health education program accredited (NCATE or TEAC)?	
Yes	110 (82.1)
Does your college/university offer a:	
A. Stand alone school health education major?	
Yes	70 (52.2)
B. School health education minor?	
Yes	66 (49.3)
Does your university/college have a dual health and physical education program?	
Yes	65 (48.5)
Do you or one of your school health colleagues supervise health education student teachers?	
Yes	101 (75.4)

N = 134
Note: May not add to 100% due to non-response

The majority of the school health programs were NCATE/Teacher Education Accreditation Council (TEAC) accredited institutions (82.1%). Most of the institutions offered a stand alone school health education major (52.6%). Additionally, a plurality of the institutions offered a stand alone school health education minor (49.3%). In addition, half offered a dual health and physical education program (50.0%). A majority (75.4%) of the school health fac-

ulty supervise their own health education student teachers.

State of the Practice in Pre-service Health Education

Several items were used to query faculty at IHEs with pre-service school health education programs regarding the concepts/skills taught to their students regarding the surveillance tools: YRBSS and Profiles (Table 2). More than half of the respondents reported teaching about all of the YRBSS concepts whereas less than half taught concepts around Profiles.There were no statistically significant differences in the amount of time spent teaching about the surveillance tools by the number of full-time health education faculty, accreditation status of the program, or having a stand-alone health education major.

In regards to tools used focusing on coordinated school health program assessment, teaching concepts related to the SHPPS and the SHI were investigated. Between one-third and two-thirds of respondents reported that they included education about these tools in their pre-service school health education programs (Table 3). A t-test was calculated and found that there was a statistically significant difference in the amount of time spent teaching about SHPPS between NCATE/TEAC accredited IHEs and non-accredited IHEs ($t = 2.00$, df = 109, $P = 0.05$). Those IHEs that were NCATE/TEAC accredited taught for an average of 79.8 minutes (SD=137.9) whereas those IHEs without NCATE/TEAC accreditation taught for an average of 14.2 minutes (SD=31.1). A Pearson product moment correlation coefficient was calculated and found a statistically significant, weak positive correlation between the amount of time spent on teaching SHI and the number of full time health education faculty ($r = 0.22$, $P = 0.02$).

An assessment of the inclusion of the Characteristics of Effective Health Education Curriculum, the NHES, Health & Academic Performance, the HECAT, and the SHER into pre-service school health education was also examined. There was great variation in the likelihood of education regarding these curriculum tools being included in the IHEs

Table 2. Surveillance Tools

Item (yes)	N (%)
Does your program teach about:	
YRBSS	
General information about the YRBSS	108 (80.6)
Results and trends from the YRBSS to describe adolescent health behaviors	107 (79.9)
How to use YRBSS data to help promote healthy norms among middle and high school students	91 (67.9)
How to advocate for school programs using YRBSS data	90 (67.2)
Does your program teach about:	
Profiles	
General information about the Profiles	57 (42.5)
Results and trends from the Profiles to describe school health policies and programs	43 (32.1)
How to use Profiles data to advocate for improved school health programs and policies	41 (30.6)

N = 134
Note: May not add to 100% due to non-response

Table 3. Coordinated School Health Program Tools

Item (yes)	N (%)
Does your program teach about:	
SHPPS	
General information about the SHPPS	76 (56.7)
Results and trends from the SHPPS to describe school health policies and programs	64 (47.8)
How to use SHPPS data to advocate for improved school health programs and policies	54 (40.3)
SHI	
The purpose of the SHI	79 (59.0)
How to conduct a needs assessment using the SHI	53 (39.6)
How to use SHI results to create healthy changes in the school	51 (38.1)

N = 134
Note: May not add to 100% due to non-response

Table 4. Curriculum Tools

Item (yes)	N (%)
Does your program teach about:	
Characteristics of Effective Health Education Curriculum	
Describe the Characteristics of Effective Health Education Curricula	118 (88.1)
How to apply the Characteristics of Effective Health Education Curricula in a school health education setting	118 (88.1
National Health Education Standards (NHES)	
Describe the NHES standards, performance indicators, skills, and sub-skills	120 (89.6)
How to incorporate NHES standards and performance indicators in health education curriculum and instruction	115 (85.8)
How to align standards, curriculum and assessment	114 (85.1)
Health and Academic Achievement (H & A)	
The research on the relationship between H & A	83 (61.9)
How to use the summary of research between H & A to advocate for improved school health programs and policies	69 (51.5)
Does your program teach about:	
Health Education Curriculum Analysis Tool (HECAT)	
The purpose of the HECAT	60 (44.8)
How to analyze a health education curriculum using the HECAT	44 (32.8)
How to use HECAT results to improve a health education curriculum	41 (30.6)
CDC's School Health Education Resources (SHER) web tool	
Using SHER to conduct a search for CDC school health education resource	57 (42.5)

N = 134
Note: May not add to 100% due to non-response

training programs. The Characteristics of Effective Health Education Curriculum was most commonly taught with nearly nine in ten respondents reporting including education about this topic. The curriculum tools that were reportedly used by the fewest respondents were the HECAT and the SHER with about two in five respondents stating that these were taught in their program.

Several weak but significant relationships were found when analyses were conducted on the curriculum tools. First, a Pearson product moment correlation coefficient was calculated and found a statistically significant correlation between the number of full-time health education faculty and the amount of time spent teaching: on the NHES ($r = 0.21, P = 0.04$); on health and academic performance ($r = 0.28, P = 0.004$); and on the HECAT ($r = 0.22, P = 0.02$). A t-test was calculated and determined that there was a statistically significant difference ($t = 2.048$, df = 112, $P = 0.04$) in the amount of time spent teaching about the SHI between IHEs with and those without a major in health education. IHE's with a major taught about the SHI for an average of 86.9 minutes (SD=108.7) whereas IHE's without a major taught about the SHI for an average of 49.4 minutes (SD=79.3).

Assignments and Projects

A variety of projects were reportedly used in the responding pre-service school health education programs when teaching about these tools and products. For example, respondents most commonly indicated the incorporation of YRBSS results into lesson plans and in-class activities, using it for a needs assessment, planning a program, and identifying health risks. The most common projects that were used when educating about Profiles and SHPPS were the comparing of results with school districts and states, discussing the results in class, and incorporating the results in a research paper. Respondents reported incorporating the Characteristics of Effective Health Education Curriculum into lesson plan and unit plan development, and doing a research project in this area. Only one project was identified by the respondents regarding teaching about NHES. This was to use the NHES as a basis for unit and lesson plan development and design. In regards to health and academic performance, a variety of projects were reportedly used. These included reading and writing reflections, reviewing case studies, having in-class discussions and advocating for the justification of a health education program. For the SHI, the most common projects included completing mock SHIs, using the results to write an advocacy letter for change in a school, and using it to help conduct interviews at schools. Projects around HECAT included creating in-class activities, writing research papers, and using the HECAT to identify content that is needed in lesson plans. Finally, projects using the SHER included using it as an internet searching guide/tool, and finding and locating valid health information for lessons.

DISCUSSION

A primary responsibility of IHEs is to provide the tools necessary to pre-service

health educators, in-service educators and school leaders to encourage the implementation of the NHES in pre-K-12 curriculum, instruction, and assessment.[20] Beginning health education teachers should be able to incorporate the NHES into effective lessons.[21] The results from this study showed that a majority of IHEs were teaching about incorporating the NHES standards and performance indicators in health education curricula and instruction and were teaching how to align the standards, curricula and assessments. The high percentage of IHE faculty reporting that they teach about the NHES may be influenced by the number of years the NHES have existed (15 years) and that most states have used the NHES to create their state health education standards.[2]

The SHI, HECAT, YRBSS, Characteristics of Effective Health Education Curricula and student health and academic achievement materials are products that DASH has created to help improve school health education.[22] It is important for faculty at IHEs to know how to instruct their students on how to use these tools. This study found that the purpose of the SHI is taught at a majority of IHEs. However, a little more than one-third of IHE faculty taught about conducting a needs assessment using the SHI or how to use the results to create healthy changes in schools. These findings are important to improve pre-service school health education programs because it has been found that the SHI can be used to strengthen a school by making an improvement plan based on its results.[3]

The CDC's DASH has recently focused resources toward determining the relationship between health and academic achievement. Currently, there are a variety of health-related factors and health-risk behaviors that have an impact on academics.[23] Results from this study found that a majority of IHEs taught about the relationship between health and academic achievement and slightly more than half taught about how to use the summary of research between health and academic performance to advocate for improved school health programs and policies.

Results from using the HECAT can be used to strengthen a health education curriculum by selecting or developing the most suitable and valuable curricula for the program.[24] The HECAT also provides results necessary to improve the current curriculum being used. Finally, the way health education instruction is delivered can be improved based on the results of the HECAT. However, this study found that less than half of IHEs taught about the purpose of the HECAT. Additionally, the results from this study found that less than one-third of respondents taught their students how to use the HECAT results to improve a health education curriculum and taught their students how to analyze a health education curriculum using the HECAT.

Health education has been shown to have a positive impact on the health of students.[4-6] Additionally, it is important that the quality of education that health education teachers receive at IHEs be the most current and accurate information and skills. However, this study found that less than half of IHE faculty taught their students about all of the tools surveyed in this study. In addition, the programs most likely to teach about these tools were larger health education programs.

The findings of this study should be interpreted in light of its potential limitations. First, to the extent that the response rate was less than 100%, the more likely it is to be a threat to external validity because non-respondents may have different practices than respondents regarding the educational practices of pre-service health education major and minor students. Second, the survey was based on self reports by health educators, which may have impacted the internal validity of the study. Third, some respondents may have responded in a socially desirable manner, which may be a threat to the internal validity of the study. Fourth, because 36 statistical tests were conducted for this exploratory study, it is possible that one or two of the statistically significant findings were found by chance. Bonferroni-type adjustments were not made to the statistical analysis because of having such a small sample size. In addition, having such a conservative alpha level (P =0.001) would significantly increase the chance of making a Type II error. Last, to the extent that important questions on the current topic might not have been included on the final questionnaire, this too could have been a threat to the internal validity of the findings.

TRANSLATION TO HEALTH EDUCATION PRACTICE

The results of this study found that the majority of IHEs do not teach their students about how to use the results of current surveillance (SHPPS and SHI) tools created by the CDC. These tools can be used to help health teachers advocate for improving their school health programs and policies. For example, a health teacher might teach at a school where the administrators were thinking about not requiring students who failed their health education course to repeat it. Profiles data may reveal that the majority of school districts in that state do make students repeat a failed health education course, thus allowing the health teacher to use this information to advocate maintaining their current policy. If future school health teachers are not aware of these surveillance tools, and do not know how to use them, they will lack some of the advocacy skills needed to help maintain the integrity of their school health education.

This study also found that the majority of IHEs did not teach their pre-service school health education majors how to conduct a needs assessment using the SHI and how to use the SHI to create healthy changes in the schools. Two of the major "responsibilities" of health educators are to "access individual and community health needs" and "plan health education strategies, interventions and programs."[25] The SHI is a needs assessment and program planning tool specifically designed to improve school health education programs. If future school health education teachers do not know how to utilize this tool, they will not have the necessary skills needed to advance their school health programs.

This study also found that the majority of IHES were not teaching their students how

to utilize the HECAT. If school health education teachers do not know how to adequately analyze a health education curriculum, they will be at a disadvantage to select or develop appropriate and effective health education curricula, thus decreasing their ability to influence the health behaviors and outcomes of the students they teach.

The results from this study clearly demonstrate a need for national organizations to do more to educate IHE faculty on how to incorporate these tools and products into their curriculum so that future school health education teachers will be proficient at utilizing them. If pre-service health education majors are not able to use these tools, they will be less likely to adequately advocate for their programs, assess the needs of their program and plan and implement strategies and interventions to improve their programs.

Based on the results of this study, there are several recommendations that can be made.

• Additional research needs to be conducted regarding how to get all of the various tools taught at all IHEs.

• Additional research needs to be conducted on why these tools are or are not used at all IHEs with school health education teacher preparation programs. This may help provide the basis for getting the tools incorporated at IHEs who do not already use them in their curriculum.

• Additional education may need to be provided to IHEs that provide pre-service school health education programs about incorporating these various tools into their curriculum.

• Additional research needs to be conducted to determine if pre-service students are taught about these tools, are they more likely to put them to use when they begin to teach.

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