A National Assessment of the Impact of the Institutes for Higher Education Academy on School Health Faculty

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ABSTRACT

BACKGROUND: *Many school health teacher preparation programs do not train teacher candidates in the use of online resources available through the Centers for Disease Control and Prevention (CDC). Some CDC resources, such as the School Health Index, could significantly improve the quality of school health programs. To address this, the CDC and the American Cancer Society collaborated to train school health faculty to integrate these resources into teacher preparation programs.* **PURPOSE:** *This study evaluated the effect of the Institutes for Higher Education Academy (IHEA), a professional conference intended to train school health faculty in the use of the CDC online resources and to facilitate resource integration into health teacher preparation.* **METHODS:** *This mixed methods study had two data collection phases. The quantitative phase used an online survey to determine the number of changes made in participants' programs. All school health faculty members who attended an IHEA were recruited via e-mail to participate (N = 151). After three rounds of reminder e-mails, an acceptable participation rate was reached (68%). Descriptive statistics and inferential statistics (Pearson correlations) were used to analyze data. In the qualitative phase, all participants who completed the survey were recruited to complete a follow-up phone interview (n = 103).The interview was tailored to each participant based upon survey responses to elicit examples of program changes made as a result of IHEA attendance, as well as benefits and barriers to change. Fifty-four interviews were conducted and recorded, then transcribed and coded. An inter-rater coded 15% of the transcripts to ensure inter-rater reliability. Qualitative data were triangulated with participant survey data.* **RESULTS:** *The majority of IHEA attendees surveyed made changes to their teacher preparation programs, and subsequently trained an estimated 2,800 pre-service school health educators to use the CDC online resources. Through participant outreach, more than 7,000 school health faculty and in-service K-12 health educators were also trained.* **CONCLUSIONS:** *IHEA is an effective and sustainable approach to improving the quality of K-12 school health education.*

KEYWORDS: Professional Development, School Health, Teacher Education

INTRODUCTION

Professional development (PD) has long been used to add to teacher repertoires to meet the demands of perpetually changing classroom contexts. PD allows educators to keep abreast of best practices beyond graduation from teacher education programs and encompasses in-service training, graduate coursework, and professional learning communities. Many educators in K-12 schools perceive they have limited resources to develop pedagogy and increase content knowledge (Makopoulou & Armour, 2011; Schlager & Fusko, 2003).This is particularly true in instances where a school has only one health educator in a building. This suggests PD is critical to the success of health educators, who struggle to find sufficient support in their schools or districts. For faculty members in teacher education programs, consistent participation in PD could be just as critical as it is for K-12 educators. For faculty members who train pre-service teachers, PD is vital to keep teacher preparation programs aligned with administrator and state department of education expectations of effectiveness. Teacher prep-aration coursework that is not well aligned with best practices and innovations in education is unlikely to produce highly successful teacher candidates. Because many teacher educators have been employed outside of K-12 schools for years, and many others were never employed in K-12 settings before entering academia, they may be too isolated from the evolution of primary and secondary education to keep courses current without PD.

Professional development in schools and universities has taken many forms, and definitive answers to questions about effectiveness are difficult to find. Unfortunately, there are significant challenges separating effective PD programs from programs that are a waste of time and resources, because any program intensive enough to produce results typically occurs in only one specific context (Guskey, 2000). Although many factors contribute to the effectiveness of PD programs, PD for teacher education faculty comes with a unique set of challenges not typically seen at the K-12 level. For example, because faculty members may be pressured to devote time to research and publications, the time they can devote to developing teaching practices may be adversely affected (Hickson & Wilson, 2009; Korthagen, Loughran, & Lunenberg, 2005; Martinez, 2008). Many universities emphasizing research may be willing to overlook lower levels of accomplish-ment in teaching and learning, even when a lack of teaching expertise in faculty members results

in lower student enrollment and retention (Drew & Klopper, 2014; Hickson & Wilson, 2009; Martinez, 2008).These problems can be particularly worrisome for teacher educators, who are expected to produce as many publications as faculty members in other departments, while also meeting high expectations to model innovative teaching strategies and set a standard for best practices.

Contributing further to a lack of support for quality teaching and pedagogy-related PD, universities often have few requirements for teacher educator qualifications, such as experience in K-12 classrooms, or evidence transferring K-12 experience into success working with adult learners (Korthagen et al., 2005). Korthagen et al. (2005) suggested teacher educators are often simply assumed to be effective teaching adult learners to teach others: "The fact that becoming a teacher educator is assumed to *not* be problematic, suggests that the work of teacher educators themselves is neither particularly specialized nor highly valued" (p. 110). This is troublesome, because university leadership is unlikely to allocate resources to develop skills perceived as neither specialized nor valuable.

This is unfortunate, because to build a uniformly effective teaching force, PD for teacher education faculty may actually be the most sustainable strategy. It has been suggested teacher education faculty members may be too isolated from the culture of K-12 education, resulting in a lack of information about current teaching strategies, technological innovations, and policy changes (Smith, Potts-Datema, & Nolte, 2005; Zeichner, Payne, & Brayko, 2015). If school health educators in K-12 classrooms are to maintain a strong grasp of best practices and continue to teach in ways that engage young, technology-literate audiences during their careers, then there exists a critical need for teacher educators to integrate a variety of tools and resources into curricula to facilitate innovation after graduation. The Institutes for Higher Education Academy (IHEA) provides training in the integration of online school health tools and resources available through the Centers for Disease Control and Preventions (CDC). This training is open to lead faculty members from institutions of higher education that offer school health teacher preparation programs, and intends to improve the quality of school health teacher preparation, thereby improving program quality. IHEA was first implemented in 2009, and since then, more than 150 school health teacher educators have been trained. While program feedback solicited from IHEA attendees has been positive, the proportion of IHEA attendees who have, as a result of attendance, made modifications to school health teacher preparation programs at their respective institutions has never been studied.

PURPOSE

The purpose of this study was to determine:
1. the proportion of IHEA attendees who made course or curricular modifications to school health teacher preparation programs as a result of IHEA training,
2. the nature of modifications made by IHEA attendees,
3. the barriers to change in school health teacher preparation programs perceived by IHEA attendees.
4. whether the number of benefits perceived by faculty members as a result of changes made to programs was correlated with the magnitude of changes implemented, and
5. what proportion of IHEA attendees participated in outreach related to IHEA training, such as presentations or professional development opportunities for colleagues or K-12 health educators.

METHODS

This study used mixed methods. An online survey was used to collect quantitative data, and semi-structured follow-up phone interviews were used to collect qualitative data.

Subjects

Due to the small size of the study population, which was the 151 school health education faculty members who have attended at least one IHEA, every eligible member of the study population was recruited to participate. Individuals not eligible to participate were past IHEA attendees who had not been involved in teaching school health education coursework since attendance, and past IHEA attendees involved in the facilitation of this study. Interviews were conducted until the supply of willing participants was exhausted. The sponsors of the program evaluation suggested a sample of 120 and this served as the target sample size. Multiple contacts were made with

each past IHEA attendee by e-mail and phone in an effort to recruit 120 participants. About two-thirds of eligible IHEA attendees (*n* = 103) completed the online survey for a participation rate of 68% for the quantitative data collection phase. Fifty-four of the IHEA attendees who completed the survey completed a follow-up phone interview.

Instruments

This mixed methods study involved the use of two data collection phases, each with a separate instrument. In the first phase, quantitative data were collected through the use of an online survey developed using Qualtrics. In the second phase, an interview guide was used to elicit details and examples to clarify responses from the online survey. Both instruments were developed in collaboration with evaluation stakeholders to ensure all research questions of interest were addressed during data collection.

The online survey had 49 items. Built-in skips allowed follow-up questions to be omitted if they were not relevant to a participant. The first 12 questions determined the size and scope of the school health education program at a participant's institution. Question 1 asked for an estimate of the number of students enrolled at a participant's institution. Question 2 asked for participant years' experience teaching school health education coursework at the university level, and Question 3 asked for a participant's academic rank. Question 4 determined whether a program offers a school health education major, minor, or both. Question 5 assessed the credit hours needed at a participant's institution to be eligible for a license to teach school health education. Question 6 determined whether a program was combined with physical education teacher education. Question 7 assessed the number of school health education faculty members. Questions 8 and 9 assessed the number of current school health education majors and minors respectively. Question 10 asked for an estimate of the number of school health teacher candidates graduating from a participant's institution over the past 5 years. Question 11 determined the school health teacher preparation courses taught by a participant, and Question 12 asked participants to estimate the percentage of teaching load devoted to school health teacher preparation courses.

The next seven items explored the magnitude of the effect IHEA had on participant professional practices, including networking (Question 13), presentations at professional conferences related to IHEA training (Question 14), and the provision of in-service training or continuing education related to IHEA training (Question 15). Follow-up questions determined which topics covered at IHEA were included in presentations or trainings (Question 16), and approximately how many individuals were reached (Question 17).

The majority of the remaining survey items were to elicit details about which tools and resources covered in IHEA training had been integrated into a participant's school health education program, and how much class time is now devoted to each resource. These items were followed by a set of Likert-type scales to determine the magnitude of benefits perceived by faculty members from program changes related to IHEA training. Perceived benefits included improvements in teacher candidate content knowledge, teacher candidate skill levels, teacher candidate performance in field placements, relevance of coursework, and faculty member confidence in teaching school health teacher preparation coursework. The remaining two questions assisted in scheduling a follow-up phone interview.

The interview guide had 13 items, all of which were to serve as a follow-up to a completed online survey. The interview items were tailored to each participant based upon survey responses. The first eight items elicited examples of how participants had integrated each of the IHEA topics into their school health education curriculum. However, any of the items could be omitted from an interview, depending on how many of the topics from the IHEA had been integrated since a participant's attendance. Any topics already covered in the curriculum prior to a participant's attendance were not discussed during an interview, nor were topics not currently covered.

The remaining interview items elicited examples of barriers to program change, additional changes made that were not mentioned in the survey, most memorable and most useful aspects of the IHEA training, and examples of improvements participants had noticed in their self-confidence and the performance of their teacher candidates.

Instrument Testing

Evaluation stakeholders assessed content validity and face validity for both instruments. Face validity for the interview guide was ensured through a comprehensive literature review. Both the interview guide and the survey instrument were pilot tested with IHEA attendees ineligible to participate due to their involvement with this study, or with implementation of the IHEA conference. Piloting the interview guide ensured questions did not compromise richness of the data. No stability reliability testing was conducted for the interview guide, as any form of reliability testing is generally considered inappropriate for qualitative studies (Golafshani, 2003).

For the set of Likert-type scales in the survey, Cronbach's alpha was used to determine internal consistency reliability (a = .986). Because one item (perceived improvement in teacher candidate skill level) correlated perfectly with another item (perceived improvement in teacher candidate content knowledge), it was removed from analysis, resulting in a slightly lower Cronbach's alpha (r = .979). Perfect correlation between items indicates that although wording of items was different, participants perceived them to mean the same.

Study Protocol

The researcher made initial contact with each past IHEA attendee in spring of 2015 via e-mail, using contact information furnished by the American Cancer Society (ACS). In the notification e-mail, the researcher explained the purpose of the IHEA evaluation, the intended uses for the findings, and the value of the information past attendees could provide. Within 48 hours of this notification, a second e-mail was sent to each participant. This second e-mail included an informed consent form approved by the IRB.

IHEA attendees who completed and returned the form were sent a third e-mail with a link to the online survey, as well as an outline of the survey questions and a copy of the interview guide. Potential participants were encouraged to review the questions in advance. Each participant was required to complete the survey prior to participating in a follow-up phone interview, as interview questions were tailored to each participant based on survey responses. To ensure a participant's survey was completed prior to an interview, scheduling was initiated at

the end of the survey. Final items asked participants to provide two potential dates and times convenient for an interview, as well as a phone number a researcher could call on the confirmed interview date. Any past IHEA attendees who did not return a signed informed consent form within two weeks of receipt were sent reminder e-mails. The researcher also attempted to locate telephone numbers for potential participants who did not respond to the individualized reminder e-mails. These individuals were contacted by phone, if possible. The final participation rate for the online survey was 68% (n = 103).

For participants who completed the online survey, responses were used to omit interview questions that did not apply. This streamlined the interview and saved participants time. The researcher took written notes during each interview to capture qualitative data. To ensure important details were not missed, interviews were recorded using a voice recorder application (Tape-a-Call). A researcher used Dragon voice recognition software to transcribe recorded interviews. The interview transcripts ensured descriptive validity. To achieve higher interpretive validity, the researcher e-mailed a copy of written interview notes to each participant within 24 hours of an interview. This gave each participant an opportunity to make additions to the notes, and if necessary, to correct any misinterpretations.

Data Analysis

All quantitative data were exported from Qualtrics into SPSS. Descriptive statistics described characteristics of participants' school health education programs, such as number of school health education majors and minors, number of credit hours required to obtain a school health education license, and number of faculty members in a department. Descriptive statistics were used to describe participants in terms of years of experience and courses taught. Descriptive statistics were also used to describe the effect of IHEA training on school health teacher education programs, including the nature of program changes implemented, such as curricular and course modifications, as well as the number of students affected by changes. Finally, descriptive statistics were used to estimate the number of individuals trained through any form of outreach conducted by the participants, such as conference presentations and PD opportunities for colleagues and K-12

school health educators.

For the set of Likert-type scales to assess the magnitude of participants' perceived benefits, inferential statistics were used to determine if a relationship existed between participants' perceived benefits and the number of program changes implemented as a result of IHEA training. For all qualitative data collected during the interviews, the researcher transcribed responses and coded data to identify common themes in participant responses. An additional coder was used to ensure inter-rater reliability. This inter-rater independently read and coded a random sample of the interview transcripts, totaling 15% of the entire qualitative data set. The researcher then compared her coded data against the inter-rater's codes to determine the correlation between the two. Inter-rater reliability was considered adequate, with a correlation coefficient of .79. A correlation coefficient of .75 is considered generally acceptable (Hartmann, 1977; Watkins & Pacheco, 2001).

IRB APPROVAL

IRB approval for this study was granted in March 2015, through the research institution's Office of Research. All study protocol, data collection instruments, participant recruiting measures, and confidentiality measures were approved by the IRB in advance.

INFORMED CONSENT

The informed consent form approved by the IRB was sent to participants prior to data collection. All participants agreed to the terms in the informed consent form and all participants agreed to have phone interviews recorded for purposes of descriptive validity. Signed informed consent forms are currently stored in a locked file cabinet in the researcher's office at the University of North Carolina, Wilmington. Only the researcher has access to this file cabinet.

RESULTS

Quantitative Results

This section provides a summary of the descriptive statistics used to analyze the survey data (mean, standard deviation, etc.).

Institutional Characteristics
Of the IHEA attendees surveyed, 31% indicated they came from small institutions serving fewer than 5,000 students; 25% of attendees surveyed came from large institutions serving more than 20,000 students. The remaining 44% of institutions represented had enrollments of 5,000 - 20,000 students. At the institutions surveyed, 23% offer both a school health major and minor; 22% offer only a health minor. A majority offers only a school health major (54%). About a quarter (27%) of institutions offer the option of combining health and physical education for dual licensure, while 38% do not, and for an additional 35%, dual licensure is required.

Among the surveyed institutions' school health programs, a majority (53%) employed three or fewer fulltime faculty members while 18% employed only one full-time faculty member, and 4% employed only part-time faculty. The remaining 25% of institutions employed 4 or more full-time faculty members. The number of teacher candidates graduating in the last 5 years varied widely across institutions, with 20% of institutions graduating more than 50 school health teacher candidates in that time, while 19% graduated fewer than nine, and the remaining 61% of institutions graduated 10-49 school health teacher candidates. The number of credit hours required to be eligible for teacher licensure varied from as few as zero credit hours (teacher candidates need only pass a licensure exam to be eligible), to as many as 128 credit hours.

Faculty Characteristics
A plurality of faculty members participating in the survey had 10-14 years of experience (24%). Of faculty members who took the survey, 32% identified themselves as associate professors, 24% as assistant professors, 19% as full professors, and 14% as lecturers or instructors. The remaining 10% indicated they were retired, part-time adjunct faculty, or curriculum coordinators. The majority of participants (64%) teach a Health Methods course, and a large percentage (40%) teaches a School Health Programs course. The majority of participants (60%) devote half or less than half of a teaching load to school health education courses. The remaining 40% devote more than half of a teaching load to school health education courses.

Effect of IHEA
This program evaluation has shown the effect of the IHEA on school health teacher education

programs to be significant in a number of ways. Many participating faculty (81%) indicated they are now better able to network with other school health education faculty as a result of IHEA attendance. A majority (58%) made at least one presentation at a national, state, or regional conference that pertained to a topic they were trained on at IHEA. Of participants who made presentations, 44% presented to fewer than 50 individuals, but 30% estimated they presented to 50-99 people, and the remaining 26% presented to 100 people or more. About half (47%) of participants reported providing in-service training to other school health faculty, or to K-12 school districts related to IHEA topics.

The topics covered at IHEA have been consistently integrated, either for the first time, or to a greater degree than previously, at many of the participants' institutions. For example, many participants (80%) reported they now cover the School Health Index (SHI). 76% reported the SHI was covered in less detail, or was not covered at all prior to IHEA attendance. Although 92% of participants were previously covering the National Health Education Standards (NHES) that percentage is now 100%, and 42% of participants spend more time on the NHES than before IHEA attendance. Most participants (78%) reported they now cover the Health Education Curriculum Analysis Tool (HECAT), compared with less than 50% prior to IHEA attendance. Refer to Figure 1 and Figure 2 for details on the increased coverage of all IHEA topics.

Perceived Benefits

While a majority of surveyed IHEA participants (68%) reported at least moderate gains for all of the perceived benefits included on the scale, no significant relationships were found between perceived benefits and number of program changes implemented. Improved teacher candidate content knowledge was found to have a very weak positive relationship ($r = .204$) and improved relevance of coursework had an even weaker positive correlation ($r = .200$). It may be more likely that perceived barriers to implementing program changes are more strongly related to participants' likelihood to integrate a greater number of CDC resources into teacher preparation curricula, but because perceived barriers were explored qualitatively during interviews, there are no quantitative data to describe the severity of participants' perceived barriers. This makes it impossible to determine

whether a relationship exists between the magnitude of perceived barriers, and a participant's likelihood to implement program change.

Qualitative Results

Codes for all qualitative data collected were developed using inductive analysis. A single set of codes was developed for all interview questions addressing integration of CDC resources into school health teacher education programs and frequencies for each code were tallied (see Table 1).

The most common method of integrating IHEA content into school health teacher education was to devote lecture or discussion time to content. It appears most faculty members prefer to use direct instruction to introduce a new tool or resource, and while some faculty members will stop at direct instruction and consider the topic covered, others will use additional strategies to ensure higher comprehension and information retention. The second most common strategy for integrating IHEA content was the use of an assignment or other assessment to measure student ability to use a tool or resource, followed by the use of an in-class activity. Some faculty members adapted learning activities used at IHEA to fit the needs of students. The most popular was an activity to teach the Characteristics of an Effective Health Curriculum, which used a *sticky wall* and required participants to align different teaching practices to characteristics. Not many faculty members mentioned giving students documents or hard copies of CDC resources, which is not surprising given the presence of technology in classrooms. What is surprising, however, is that a fairly low number of faculty members mentioned demonstrating how to access the tools and resources online. A possible explanation for this could be that many faculty members who were interviewed simply assumed it went without saying that they show students how to access the online resource when they provide direct instruction.

Separate sets of codes were developed for participants' perceived barriers to change, any additional changes made and most memorable or most eventful parts of the IHEA experience. Frequencies for these codes were tracked (see Table 2 and Table 3 for examples).

Faculty members interviewed were asked to describe any additional changes they may have made to teacher preparation programs as a result of IHEA training. Examples of additional changes include the addition of new courses or altering existing courses to make them more content-specific for school health education. The most commonly cited change not pertaining to the integration of IHEA content into existing coursework was an increase in outreach efforts. Seventeen faculty members interviewed stated they now spend more time in K-12 schools providing in-service to school health educators on implementing the SHI, providing improvement plans, and presenting new health programming. One participant made the following statement concerning increased community outreach after IHEA training:

"Really all of the training I received at the Academy has really supported me to be more useful as a professional development provider for in-service teachers and in-service school professionals. And since the Academy, I am now serving on two district wellness committees, and I have had an instrumental role in utilizing the HECAT in one, in all the ways that the HECAT is meant to be used, from analyzing the current curriculum, to using it to develop a scope and sequence in the planning process. I would not have been able to do that had I not had the training at the Academy."

Faculty members gave widely varying responses to the question of whether they confronted barriers to changes in their school health teacher education programs. The single greatest barrier to program changes was lack of time to cover all of the content. Twenty faculty members stated that they do not have enough credit hours to train teacher candidates in the use of all the CDC resources. A significant percentage (19%) also stated their institution or program had been unable to establish strong relationships with local school districts, and that there tends to be mistrust by school administrators when university faculty attempt to provide training or services to local K-12 schools. Nearly a quarter (24%) stated they have faced no barriers to implementing program changes.

It is also worth noting that resistance, or a lack of support from administrators, colleagues, or politicians, although coded separately, became the next most significant barrier when these frequencies are combined ($n = 8$). One

participant stated, "We have not had consistent leadership in our program. In the last five years we have changed department heads or program directors four times. So the lack of leadership has been a problem because these changes need to come from the leader. If that person is not on board and supporting it, then it doesn't happen."

Although the final two interview questions were similar (addressing most memorable and most useful aspects of IHEA), and responses to these questions were the same for some of the participants, two distinct sets of codes emerged, indicating that what was most memorable for participants was not necessarily the most profound. Some codes did, however, emerge in both sets. Making professional connections with others in the field was the most memorable part of the IHEA experience for the largest proportion of participants and the most useful. One participant stated, "Primarily, it's about networking. Connecting with people who had some of the same questions. But some of those people had answers to the questions. So it was really more about informal break room, sitting outside, just chatting with each other. It showed us that the things we were doing were the right things."

Large numbers of participants interviewed also cited the HECAT, the SHI, and time provided for creating action plans as the most useful parts of IHEA. One in five participants interviewed ($n = 11$) stated the entire experience was profound, and that they could not pick just one part of IHEA that had been the most useful.

CONCLUSIONS

The results of this program evaluation suggest the IHEA has had far-reaching effects. IHEA participants are working across institutions all over the United States to integrate the CDC tools and resources into school health teacher education coursework, and a majority indicated they have completed at least one presentation on one or more of the CDC resources at national, state, or regional conferences, reaching school health faculty and K-12 health educators who have not had the opportunity to be trained at the IHEA. Through these presentations, IHEA attendees have reached an estimated 4,500 individuals. Additionally, almost half of IHEA attendees surveyed indicated that they have provided professional development for

in-service K-12 educators on the use of one or more CDC resources, reaching another estimated 3,000 individuals. Given the numbers of school health educators graduating from institutions where IHEA attendees are employed, it is estimated over the last 5 years, approximately 2,800 school health teacher candidates have been trained in the use of CDC resources by participants. This means the total number of school health teacher candidates trained could be larger, as the participation rate for the survey was 68% of the total number of faculty members trained.

RECOMMENDATIONS

According to the survey data, only 10% of IHEA attendees who participated in this evaluation had fewer than 5 years' experience as a school health teacher educator prior to IHEA training. Although it is also important to train more experienced educators to ensure all school health teacher education programs integrate the CDC resources into coursework, it is likely that younger, less experienced faculty members are in a better position to have an even greater effect on K-12 health education, as they have more remaining time in the profession, and thus will train a larger number of future K-12 health educators following IHEA attendance. Several of the veteran faculty members trained at IHEA have already retired and are no longer active in the field. Previous efforts to target school health faculty earlier in their careers have been reported by the ACS Program Director as only marginally successful. Previous IHEA initiatives have included school health graduate students preparing for careers in health education teacher preparation. Future IHEA initiatives should continue to target pre-service school health faculty to see a larger return on investment.

Nearly 20% of the faculty members trained at IHEA are the sole full-time faculty within their school health teacher education programs. Given that the interview data suggested networking opportunities are the most memorable aspect of the IHEA experience and the most useful, it may be helpful to many isolated faculty to require participation in a professional online community of IHEA attendees. Such an online community was created in the past, and although participation was encouraged, it was not required. Voluntary participation in the online community was

deemed too low by IHEA organizers to warrant continued maintenance. However, this kind of support community could provide a forum for attendees to network, share ideas and challenges, and support one another long after IHEA training. Because lack of follow-up has been shown to be one of the most detrimental aspects of many PD opportunities (Cormas & Barufaldi, 2011; Gulamhussein, 2013; Lauer, Christopher, Firpo-Triplett, & Buchting, 2013; Odden Archibald, Fermanich, & Gallagher, 2002), it may behoove program planners to require participation in an online community for a specified length of time. This way, even IHEA attendees who would not have voluntarily devoted time to discussions, webinars, or other online activities could have access to more organized, reliable follow-up.

According to the qualitative data, a fairly common barrier for interview participants was a lack of access to K-12 schools. Nearly 20% of IHEA attendees interviewed stated that weak relationships with K-12 schools or a sense of mistrust by K-12 administrators was a significant barrier to improving school health teacher education programs or providing training and services to K-12 schools. One participant stated, "I think the one thing we probably have run into, (…) in our state with the political stuff going on, it has taken away the ability for the University to work with K-12 programs because right now all the K-12 schools are having to adjust to the common core teaching standards. And so they're spending all their time on that versus trying to get new curriculum, or working with us."

Another participant made the following statement, referring to attempts to assist local schools by using the SHI to create an action plan to improve the district's alignment with the Whole School, Whole Community, Whole Child Model. "I couldn't get them to buy into it for some reason. They thought I was using them as part of a research project and was planning to come up with some sort of proposal and make it public knowledge."

Another participant said, "The thing that is probably most problematic is the resistance of school health personnel to be 'graded' on the SHI. They worry that it will reflect poorly on their schools. I think there really needs to be some effort to get out and communicate that this is just a health assessment. I know that would really help. I know when my students go out into the

schools they broach the subject by explaining in their introductory narrative that this is just a spot check. It is just for the benefit of the school, so they can identify things they are doing well that you can share with your community, and then highlight some areas where you might consider improvement."

Several participants suggested it would be helpful for the CDC or the ACS to reach out to K-12 school administrators and provide the names of nearby institutions and affiliated IHEA trainees who could be of service to local districts. Another participant suggested training IHEA attendees on how to better communicate with K-12 administrators, and possibly on how to train school health teacher candidates to effectively approach administrators with ideas for improving the health of students. This participant stated, "So often I hear people say things like, 'I'm just a PE teacher.' And I think that's a real problem when people don't feel like they have enough authority as a professional to speak. I heard it over and over and over. (…) These people (K-12 educators) don't know how to communicate. They're not confident communicators." Training focused on improving communication skills could help empower school health faculty members and K-12 school health educators to intensify the effects of IHEA.

Delimitations

This study excluded certain IHEA attendees, such as graduate students who are not yet working in a school health teacher education program. Although the opinions of these attendees may have provided suggestions to improve future IHEA trainings, they have not been included here because these individuals are not yet in a position to have an effect on pre-service teachers.

Additionally, this study did not use individuals from the sampling frame to determine the online survey instrument's stability reliability. Because the sampling frame was relatively small, using individuals from this pool of potential participants would have further reduced the frame.

Limitations

This study used self-reported data to assess the effectiveness of a professional development program. While all participants were assured responses were strictly confidential, it is possible that some of the participants responded to items in ways that they perceived to be more socially

desirable than the truth. Additionally, because participants were fully informed of the purpose of the study, it is possible that participation rates and responses were affected by the participants' personal interest in the outcome of the study. Participants who enjoyed IHEA and thought it was worthwhile and effective may have been more inclined to participate, and may have been more inclined to provide more extremely positive responses than if they were unaware that the results of the study could be used to make decisions regarding IHEA funding, or to make changes to IHEA. Potential participants who were indifferent regarding the future of IHEA may have been more likely to decline to participate, resulting in non-response bias.

Future Research

In the event future IHEA trainings are implemented, research could focus on the effects of any change made to the conference format. The effects of adding an online support network or intentionally targeting less experienced school health faculty for participation in IHEA could be explored through ongoing program evaluation. Future research could also explore strategies to address common barriers to improving school health teacher preparation program quality, such as strategies for more successful collaboration with K-12 schools.

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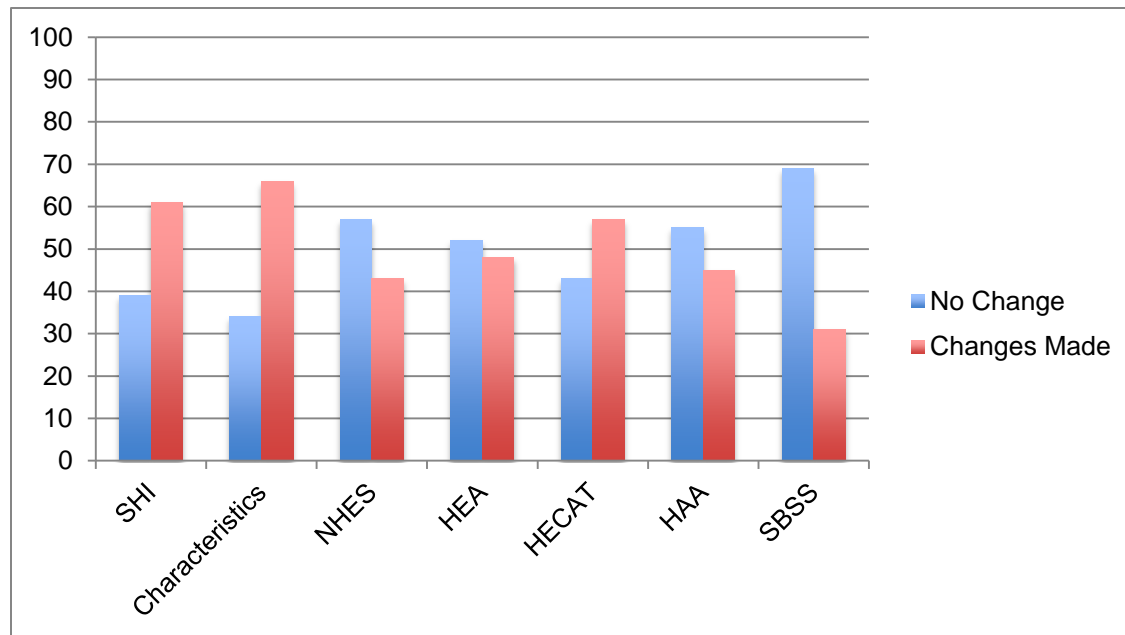**Figure 1: Proportion of Academy Attendees Who Made Changes in Each Topic Area (by percent)**

Figure 2: Proportion of Academy Attendees Covering Academy Topics in Their School Health Teacher Preparation Programs (by percent)
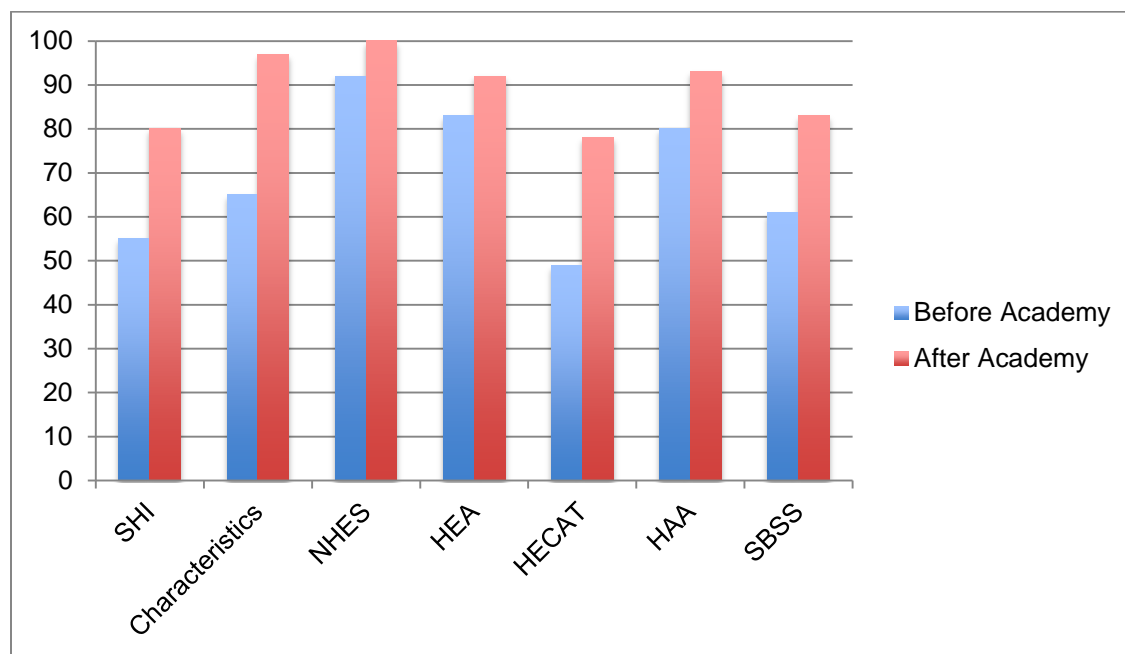
Table 1: Code Frequencies for Methods of Academy Topic Integration

Code	Method of Integration	SHI	CEHC	NHES	HEA	HECAT	HAA	SBSS
1	Devoting lecture or discussion time to a CDC tool or resource.	24	29	19	12	15	19	12
2	Providing students with documents or hard copies of a CDC tool or resource.	7	7	3	1	8	1	0
3	Showing students the online version of a CDC tool or resource.	6	3	1	1	3	5	7
4	Creating an in-class learning activity to teach a CDC tool or resource.	13	7	6	5	10	4	5
5	Integrating an activity that was used in an IHE Academy session.	6	9	0	4	5	0	1
6	Creating a graded assignment or other form of assessment that directly assesses students' abilities to utilize a CDC tool or resource.	10	14	12	7	10	8	4
7	Integrating a CDC tool or resource into the field experience or practicum.	8	0	1	3	1	0	0
8	Participant is uncertain how a CDC tool or resource is being covered, but is certain that a colleague covers it in a course that he or she teaches.	3	0	3	0	5	1	1
9	A CDC tool or resource has been used as a springboard for new research.	0	0	0	0	0	1	1

SHI = School Health Index, CEHC =Characteristics of Effective Health Curricula, HECAT =Health Education Curriculum Analysis, NHES = National Health Education Standards, HAA = Link Between Health and Academic Achievement, HEA = Health Education Assessment, SBSS = School Based Surveillance Systems

Table 2: Code Frequencies for Additional Program Changes Made

Code	Change	Frequency
1	Greater involvement in outreach efforts, such as conference presentations and in-service trainings provided to other school health professionals	17
2	Addition of new courses to the curriculum	8
3	Altering existing courses to make them more content-specific	5
4	Using the CDC tools and resources in courses for non-school health majors, such as community health majors, counseling majors, etc.	8
5	No additional changes made	11
6	Creation of a new health major or health minor	3
7	Addition of new field experiences	2
8	Using a CDC tool or resource for grant writing or advocacy efforts	4
9	Checking the entire program curriculum for gaps that might be filled using the CDC tools and resources	3

Table 3: Code Frequencies for Barriers to Implementing Program Changes

Code	Barrier	Frequency
1	Lack of time to cover content	20
2	Lack of personnel	4
3	Lack of administrative support	4
4	Lack of support from colleagues	3
5	Budget cuts or lack of funding	4
6	Decreasing enrollment	4
7	Cuts in the number of health education courses offered	2
8	Change in participant's job or professional role	1
9	Lack of follow-up after Academy training, or uncertainty about how to proceed	1
10	Weak or unhealthy relationships with local school districts, resulting in difficulty gaining entry into the schools to provide in-service training, or to place teacher candidates in the field.	10
11	Change in program focus	2
12	Political resistance	1
13	No barriers to change	13