An Exploration of Participants' Experiences after Completion of an Extensive Workshop to Strengthen Sexuality Education in Texas Schools

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Abstract

School-based sexuality education provides a means of disseminating valuable information about decision making and avoidance of risky behaviors that may result in an unplanned pregnancy or sexually transmitted infection; however, effective teacher training is required for efficacious sexuality education programs. The purpose of this paper is to describe changes in participants' perceptions and adoption of evidence-based sexuality education after attending a unique professional development opportunity for teachers of sexuality education using a Diffusion of Innovation Theory framework. METHODS: A non-representative sample of 20 public school health education teachers (85% female) from across the state of Texas participated in the Sexuality Education Academy (SEA), and completed pre-, post-, and six-month follow-up Web-based surveys. Descriptive statistics and Wilcoxon signed-rank tests were used to measure change in perceptions and adoption of evidence-based sexuality education. RESULTS: Statistically significant changes were found between pre- and post-test scores in *relative advantage, compatibility, complexity, and observability*. At six-month follow-up, participants indicated increased advocacy for and implementation of evidence-based sexuality education practices. CONCLUSIONS: Teacher training can improve sexuality education teachers' understanding, confidence and effectiveness in delivery of evidence-based sexuality education within school settings.

Introduction

Current trends in adolescent sexuality behavior suggest that adolescents are engaging in sexual behaviors at earlier ages, and adolescents aged 13-24 accounted for 22% of new HIV cases in 2015 (Agius, Dyson, Pitts, Mitchell, & Amith, 2006); CDC, 2017a); conversely, the teen pregnancy rate in the United States reached a record low of 22.3 per 1000 women in 2015 (CDC, 2017b). These findings demonstrate both the need for and effectiveness of evidence-based sexuality education. While adolescent sexually transmitted infection rates indicate some continued unsafe sexuality practices, Lindberg, Santelli, and Desai (2016) stated that abstinence and improved contraceptive use have significantly contributed to lower STI and teen pregnancy rates. Collectively, these trends suggest a continued focus on evidence-based sexuality education is warranted, and schools remain a venue where valid and reliable information can be disseminated to adolescents to inform decision making and other factors related to reducing engagement risky sexual behaviors (Wilson & Wiley; 2009; Wilson, Goodson, Pruitt, Buhi, Davis-Gunnels, 2005). The purpose of this study was to investigate changes in participants' perceptions and adoption of evidence-based sexuality education after attending a unique training for teachers of sexuality education using a Diffusion of Innovation Theory framework.

In recent years, a noticeable shift in the professional and public discourse about sexuality education in schools has occurred. Much of the discussion has shifted from what type of education (i.e., abstinence-only-until-marriage, comprehensive sexuality education, teen pregnancy prevention education, HIV education) should be provided to youth and adolescents, to a focus on the medical accuracy of sexuality education curricula and materials. Professionals in sexual health have supported and expanded efforts focused on teenagers' ability to access medically accurate and comprehensive reproductive health information (Santelli, 2008; Lindberg, Santelli, & Singh, 2006). As such, some state and federal legislation has since required medical accuracy in sexuality education that is intended to decrease HIV, STDs and teen and unplanned pregnancies. Evidence-based sexuality education has been defined as the use of medically accurate, age-appropriate sexuality education (MAAA) methods that are supported by empirical evidence (Eisenberg, 2013).

Availability of MAAA sources of information about sexuality and sexual behaviors along with delivery of evidence-based sexuality education have demonstrable impact on rates of unplanned pregnancy and sexually transmitted infections among adolescents (Heller & Johnson, 2013); however, effective sexuality education requires well-trained sexuality education teachers that understand their role(s) in delivery of sexuality education and its influence on young people's responsible sexual decision-making (Wilson & Wiley, 2009; Rhodes, 2014). This concept is also supported in the discussion that teachers, regardless of certification area, are "classroom-ready" and are able to critically address knowledge, skills, and dispositions as part of teacher preparation programs (National Council on Teacher Quality, 2017); however, sexuality educators need to be trained differently than teachers of other subjects as they, unlike teachers of many other subjects,

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often deal with emotional responses to instruction (Eisenberg, Madsen, Oliphant, Sieving, & Resnick, 2010). Given the unique factors associated with teaching sexuality education, those who teach sexuality education require unique training, not only in content delivery, but also in controversy management, advocacy, and communication skills necessary to navigate the myriad of complex and sensitive issues that often accompany sexuality education instruction in schools.

Sexuality teachers' ability to deliver effective sexuality education is affected by numerous external and internal influences including classroom and financial resources, adequate class time, administer support, teaching background, practical experience, and self-efficacy in delivery of sexuality education. While teachers are unable to control many external factors, teacher training, professional development, and continued education can improve teachers' confidence and capacity in delivery of effective evidence-based sexuality education (Barr, Goldfarb, Russell, Seabert, Wallen, & Wilson, 2014). In this investigation, we measured changes in school health teachers' perceptions and adoption of evidence-based sexuality education using a Diffusion of Innovations Theory (DI) framework.

Sexuality Education Academy

The purpose of the Sexuality Education Academy (SEA) was to strengthen sexuality education in schools by providing a unique professional development opportunity for classroom teachers who may be assigned to teach sexuality education or coordinate these programs. Objectives of the SEA were to enhance the capacity of classroom teachers of sexuality education to: (1) utilize multiple resources that support effective sexuality education, (2) use best practices in sexuality education, and (3) advocate for effective sexuality education program in public schools.

The SEA was comprised of two phases: (1) an information/knowledge phase conducted via Web-based workshops, and (2) a face-to-face meeting with experts in sexuality education. The Web-based workshops included online professional development (*Sexuality ABC's* and *STD Basics*) were conducted through utilizing the Sexuality Education Training Initiative developed by Answer, an organization whose mission is to help youth-serving professionals create effective sexuality education for young people (Answer, 2018).

Sexuality ABC's: This course was designed to (1) help participants understand trends in teen sexual behavior, (2) provide a refresher on contraceptive methods, (3) provide examples of effective lesson plans for middle and high school students, (4) practice answering frequently answered questions, and (5) discover the most current resources (Answer, 2018).

Table 1.
Sexuality Education Academy Workshop Session Descriptions

Topic	*Description*
Moving beyond the puberty lesson & youth's need for sex education	In this session, we will focus on how teachers can strengthen sexuality education in schools, examine the need for sexuality education, and examine programs for an asset development perspective
Linking youth sexual health behavior data to support the need for sexuality education in schools & practical data applications	In this session, we will provide an overview of data from the Youth Risk Behavior Surveillance System related to sexual health and offer practical examples of how these data can be used in the classroom to promote sexual health among youth, set program goals, and support sexuality education legislation development.
Incorporating characteristics of effective health education curricula into sexuality education	We will provide an overview of the characteristics of effective evidence-based health education curricula and offer multiple practice-based examples of how these characteristics can be reflected in sexuality lessons. Functional health information including shaping personal values and group norms that value a healthy lifestyle and development of essential health skills necessary to adopt, practice, and maintain health enhancing behaviors will be emphasized.
Developmentally appropriate practice guidelines: Meeting learner needs in sexuality education	We will explore a variety of learner needs in the classroom, specifically in relationship to sexuality education. Participants will explore ways to ensure that instructional content is age and developmentally appropriate. Participants will explore resources and guidelines for age appropriate sexuality education.
Working with your stakeholders: Parents, communities, school board, school administrators, students, and public health/education professionals	There is a growing body of evidence that documents the connection between student health risk behaviors and measures of academic achievement, an end educational goal for most stakeholders. Participants in this session will explore this evidence by engaging in a series of activities designed to enrich teaching practice of sexuality education and support for sexuality education programs.

STD Basics: This course was designed to: (1) increase participants' knowledge and competence for teaching about sexually transmitted diseases, (2) provide information about the transmission and prevention of STD's, (3) provide a platform for interactive discussions about common concerns and questions posed by health professionals and students, and (4) provide lessons and resources related to STD's (Answer, 2018). *Face-to-Face Workshop:* The face-to-face workshop was conducted over a two-day period (12 contact hours), and consisted of: (1) explanation of how to use the functions and content on the project website (specifically designed for the SEA initiative), (2) development of skills to evaluate curricular materials from reputable sources to ensure medical accuracy and content appropriateness for sexuality lessons, (3) development of skills to actively implement and advocate for medically accurate, age-appropriate sexuality education, and (4) explanation of how to document new medically accurate, age-appropriate strategies and activities they implement in the classroom. Session topics and descriptions are displayed in Table 1.

Theoretical Framework and Research Questions

Diffusion of Innovations Theory. Concepts from Diffusion of Innovations Theory (DI) were used to guide the research in the changes that occurred in SEA participants' perceptions of MAAA after attending the SEA. Diffusion of an innovation (new idea, practice, or object) has been described as the process by which an innovation "moves" through specific communication channels over time; that is, adoption of an innovation is influenced by communication channels, time, social systems, and innovation characteristics (Rogers, 2003). Innovations have inherent characteristics that impact one's perception of the innovation, including: (1) *relative advantage* (is the innovation better than what was there before), (2) *compatibility* (does the innovation fit the intended audience), (3) complexity (is the innovation easy to use), (4) *trialbility* (can the innovation be tried before making a decision to adopt), and (5) *observability* (are the results of the innovation visible and easily measureable). According to DI, individual or group perceptions of an innovation's characteristics impacts whether or not the individual or group chooses to adopt the innovation.

Rogers also argues that members of social systems, or adopters, do not embrace new ideas at the same time; therefore, it is important to understand individual characteristics that affect one's adoption of an innovation. Within the framework of DI, adopters are categorized into five degrees of innovativeness, including *innovators, early adopters, early majority, late majority, and laggard*. *Innovators* are those with innate interest in new ideas who often venture outside of the local social systems to form relationships with others based on mutual interest in new ideas or products. *Early adopters* are likely to adopt new ideas ahead of the majority and are more connected local social system innovators. According to DI, this group is especially important to the adoption of innovations because they are generally respected within the social group; thus, members of the majority look to early adopters for advice and guidance. The *early majority* tend to adopt new ideas just before the average member of a social system and frequently interact with their peers. Members of the early majority rarely hold leadership positions in a system, but are an important link in the diffusion because they provide interconnectedness with a social system' interpersonal networks. The *late majority* are generally cautious and skeptical of new ideas. Members of the late majority tend to adopt new ideas based on economic necessity or increased networking pressure from peers and the weight of social norms is in factor of the innovation. *Laggards*

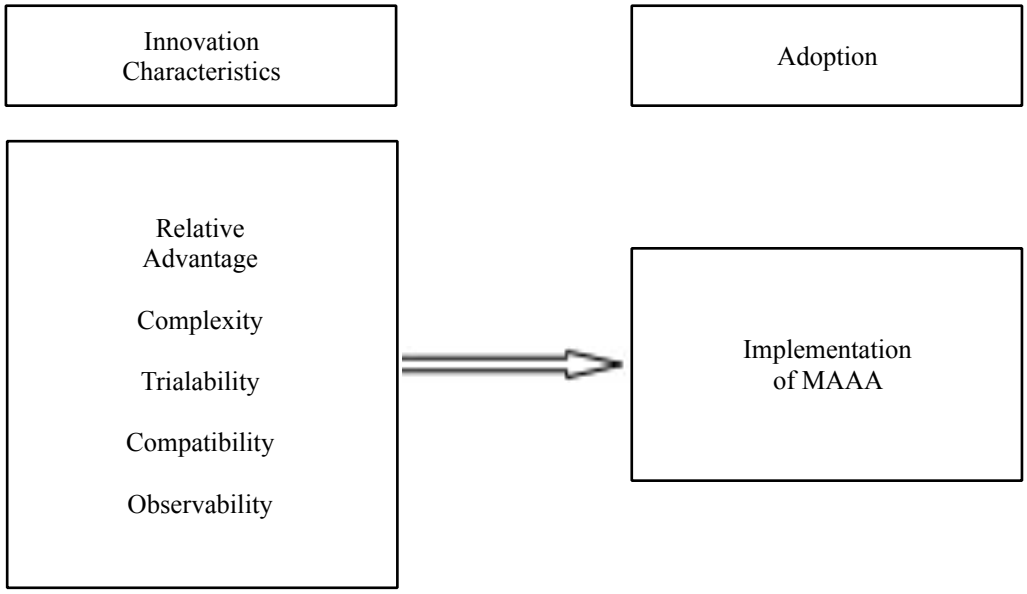

Figure 1.

Theoretical framework for understanding changes in public school teachers' perceptions and adoption of MAAA.

are the last members of a social system to adopt a new idea and prefer to wait until they are certain the new idea will not fail before adoption of the innovation. Laggards tend to look to the past for guidance and generally have few contacts within the social system.

The proposed framework suggests that teachers with positive perceptions about the characteristics of MAAA are more likely to adopt and subsequently implement MAAA. Based on the proposed theoretical framework, the research questions posed were the following: (1) What changes were observed in participants' perceptions of the characteristics of the MAAA after completing the SEA? (2) What changes were observed in participants' adoption of MAAA after attending the SEA? and (3) What types of interactions did participants have with stakeholders after attending the SEA?

Methods

Design and Participants

Participants in this study were a sample of public school teachers in Texas who were responsible for teaching sexuality education and fully participated in the SEA. Teachers from across the state of Texas were invited to submit an application for participation in the SEA. Of the 25 applications, 20 participants were selected to participate in the SEA based on available funding and current professional responsibilities in providing direct teaching of sexuality education to youth and adolescents. Approximately 20% of participants were clustered in the El Paso region and remaining participants were from geographically diverse locations across Texas. Those attending the SEA completed a survey on three separate occasions: (1) before beginning the face-to-face workshops (pre-test), (2) after completion of the face-to-face meeting (post-test), and (3) six months after completion of the entire SEA (the follow-up survey contained only adoption items and open-ended questions related to stakeholder interactions). This study was approved by the Texas State University institutional review board

Measures and Instrument

The six scale survey was developed specifically for this study, and was used to measure teachers' perceptions of MAAA. Participants' scores for each scale were calculated by summing responses to each item into a single score. A description of each scale measuring specific constructs of the Diffusion of Innovations Theory is provided below. Reliability estimates for each scale at pre-test, post-test, and six-month follow-up are displayed in Table 2.

Relative Advantage (RA) Scale. This scale consisted of four items (seven-point scale), and items were scored from one (strongly disagree) to seven (strongly agree). An example of an item from this scale is "Medically accurate, age-appropriate sexuality education provides better information to students than the currently sexuality education curriculum at my school." A higher score on this scale meant participants viewed MAAA as a better option for sexuality education than the curriculum they were currently using.

Complexity (CPX) Scale. Six items formed this scale to discriminate between those that viewed the use and implementation of MAAA as complex or not complex. Questions included "It is easy for my students to understand medically accurate, age-appropriate sexuality education" and "It is easy for me to find educational resources for medically accurate, age-appropriate sexuality education." Items were scored on a seven-point scale, anchored by 1 (strongly disagree) and 7 (strongly agree).

Table 2.

Internal Consistency Measures for Each Scale at Pre-test, Post-test, and Six-month Follow-up

Scale	Items	Scale	Internal Consistency Level		
			Pre-test	Post-test	Follow-up
RA	4	4-28	0.97	0.98	a
CPX	6	6-42	0.82	0.74	a
TRI	2	2-14	0.98	0.79	a
OBS	6	6-42	0.94	0.97	a
COMP	12	12-84	0.82	0.71	a
A	4	4-28	0.91	0.87	0.91

(a) indicates data were not collected at six-month follow-up.

Trialability (TRI) Scale. Participants were classified based perceptions of their ability to try MAAA prior to its implementation. The scale consisted of two items including "I can experiment with medically accurate, age-appropriate sexuality education lessons before presenting them to my students" and "I can experiment with medically accurate, age-appropriate sexuality education resources before presenting them to my students." The items were scored on a seven-point Likert-type scale (1 = strongly disagree, 7 = strongly agree). A higher score on this scale represented participants' belief they were able to "try out" MAAA prior to using it in their classroom.

Observability (OBS) Scale. Six items assessed participants' perceptions of stakeholders' ability to observe MAAA's impact on student behavior. A higher score on this scale represented participants' belief that stakeholders in their school and community would be able to observe positive outcomes related to the use of MAAA. An example of an item for this scale is "If I taught medically accurate, age-appropriate sexuality education, the parents of my students would be able to see changes in student sexual behavior."

Compatibility (COMP) Scale. This scale consisted of 12 items. Examples of items in this scale are "Teaching medically accurate, age-appropriate sexuality education would increase the likelihood that sexually active students will use a condom" and "My principal thinks I should teach medically accurate, age-appropriate sexuality education." Items were scored as 1 (strongly disagree) to 7 (strongly agree). A higher score indicated the participant believed MAAA was compatible with their personal beliefs and the beliefs within their respective school and community.

Adoption (A) Scale. Four items formed this scale to assess use or implementation of MAAA. Examples of items from this scale are "I have taught medically accurate, age-appropriate sexuality education information about condoms during the current or past school year" and "I have taught medically accurate, age-appropriate sexuality education information about birth control during the current or past school year." Scores from the seven-point Likert-type (1 = definitely have, 7 = definitely have not) items were summed to create a teacher behavior score. A higher score indicated implementation of MAAA during the current or past school year.

Stakeholder Interaction Questions. In addition to the adoption scale, the six-month follow-up survey also contained open-ended items related to stakeholder interactions. Participants were asked to describe any interactions or communications they had with key stakeholders in their school or community, including: (1) members of the local school health advisory council, (2) their principal, (3) members of the local school board, (4) fellow teachers, (5) parents/guardians of their students, and (6) their students.

Analyses

Scores for each measure were calculated by summing participant item responses into a single score at pre-test, post-test, and follow-up. Descriptive statistics for each measure were calculated at each interval, respectively. To assess changes in participant scores, post-test and follow-up scores were compared to pre-test scores using a series of paired-sample t-tests. All analyses for this study were conducted using IBM SPSS 24.0. Responses to stakeholder interaction questions were coded and examined using frequency distributions.

Results

Mean values for each observed variable at pre-test, post-test, and follow-up along with their tests of statistical significance are presented in Table 3. Statistically significant differences were found between participant pre-test and post-test scores for relative advantage, complexity, observability, and compatibility. Of these measures, the greatest changes were found for the relative advantage ($\Delta = 5.89$) and compatibility ($\Delta = 12.1$) measures. A statistically significant change in behavior (implementation of MAAA) was also observed between post-test and follow-up. Table 4 contains frequency distribution illustrating changes in participant responses about characteristics of the innovation (MAAA).

Table 3.

Descriptive Statistics for Participant Scores at Pre-test, Post-test, and Follow-up

Measure	Mean (SD) Pre-test	Post-test	P	Mean (SD) Follow-up	P
RA	20.16 (7.30)	26.05 (4.78)	0.000[a]	b	c
CPX	28.31 (4.92)	31.84 (2.81)	0.005[a]	b	c
TRI	10.47 (3.47)	11.68 (1.97)	0.197	b	c
OBS	31.12 (4.83)	35.21 (4.67)	0.014[a]	b	c
COMP	66.16 (10.76)	78.21 (7.50)	0.001[a]	b	c
A	11.74 (8.41)	18.63 (8.45)	0.437	21.60 (8.41)	0.005[a]

(a) indicates a statistically significant change
(b) indicates the variable was not measured at follow-up
(c) indicates the statistic could not be calculated at follow-up because data were not collected

Table 4.

Percentage Frequency Distribution of Participants Who Agreed with Innovation Characteristics Statements at Pre- and Post-test

Relative Advantage Items
Item
MAAA sexuality education is better than the currently sexuality education curriculum at my school.
MAAA sexuality education provides better information to student than the current sexuality education curriculum at my school.
MAAA sexuality education is better than the current sexuality education curriculum at my school for preventing unintended pregnancies.
MAAA sexuality education is better than the current sexuality education curriculum at my school for preventing sexually transmitted infections
Complexity
Item
It is easy for me to develop MAAA sexuality education lessons.
It is easy for me to present MAAA sexuality education lessons.
It is easy for my students to understand MAAA sexuality education.
It is easy for me to understand MAAA sexuality education.
It is easy for me to find education resources for MAAA sexuality education.
Triability
Item
I can experiment with MAAA sexuality education lessons before presenting them to my students.
I can experiment with MAAA sexuality education resources before presenting them to my students.
on.
Obeservability
Item
If I taught MAAA sexuality education, my school health advisory council would be able to see changes in student sexuality behavior.
If I taught MAAA sexuality education, my school board would be able to see changes in student sexuality behavior.
If I taught MAAA sexuality education, my principal would be able to see changes in student sexuality behavior.
If I taught MAAA sexuality education, my fellow teachers would be able to see changes in student sexuality behavior.
If I taught MAAA sexuality education, my students would be able to see changes in their peers' sexuality behavior.
If I taught MAAA sexuality education, the parents of my students would be able to see changes in student sexuality behavior.
Compatibility
Item
Teaching MAAA sexuality education would increase the likelihood that students will have sex.
Teaching MAAA sexuality education would increase the likelihood that sexually active students will use a condom.
Teaching MAAA sexuality education would increase the likelihood of unintended pregnancy among sexually active students.
Teaching MAAA sexuality education would increase the likelihood that sexually active students will use birth control.
Teaching MAAA sexuality education would decrease the likelihood that sexually active students will get a sexually transmitted disease.
My school health advisory council thinks I should teach MAAA sexuality education.
My school board thinks I should teach MAAA sexuality education.
My principal thinks I should teach MAAA sexuality education.
My fellow teachers think I should teach MAAA sexuality education.
The parents of my students think I should teach MAAA sexuality education.
My students think I should teach MAAA sexuality education.

Qualitative data gathered at follow-up also indicated adoption of MAAA by public school health education teachers. At follow-up, most participants had engaged in meaningful communication about inclusion of MAAA with parents, students, principals, and SHAC in their school district (Table 5). Furthermore, most participants had begun the process of implementing components of MAAA in their sexuality lessons.

Table 5.

Response Frequencies Describing Participant Stakeholder Interactions After Attending the SEA

Question
Please describe any conversations or other communications you have had regarding MAAA sexuality education with your SHAC since attending the SEA
I have not spoken to my SHAC
We have discussed introducing an abstinence plus program or adding evidence-based components to our current curriculum
My SHAC is continuing to support abstinence only sexuality education
We are making plans to incorporate evidence-based methods into our curriculum
Please describe any conversations or other communications you have had regarding MAAA sexuality education with your principal since attending the SEA
I have not spoken to my principal
My principal supports inclusion of evidence-based sexuality education
My principal is supportive of including evidence-based sexuality education as long as we get parental approval
My principal is supportive of including evidence-based sexuality education as long as we financial resources
Please describe any conversations or other communications you have had regarding MAAA sexuality education with your school board since attending the SEA
I have not spoken with members of my school board
My school board supports inclusion of evidence-based sexuality education
My school board is concerned about the financial cost of changing the curriculum
Please describe any conversations or other communications you have had regarding MAAA sexuality education with your fellow teachers since attending the SEA
I have not spoken to any of my fellow teachers
My fellow teachers see the need for evidence-based sexuality education and support its inclusion
I've had general discussions about student needs, but no specific to evidence-based sexuality education
Please describe any conversations or other communications you have had regarding MAAA sexuality education with the parents/guardians of your students since attending the SEA
I have not spoken to the parents/guardians of my students
I sent permission slips to parents to inform them of the methods that will be used in our sexuality education lessons
I spoke with parents during open house or during parent meetings
Most parents are "on board" with including evidence-based sexuality education
Please describe any conversations or other communications you have had regarding MAAA sexuality education with your students since attending the SEA
My students are receptive and thankful that I am being open and honest with them about sexuality
The pregnant and parenting teens in our program have been receptive to accurate information
I have had no issues with my students and they are eager to learn accurate information

Discussion

Results from this study suggest that teachers responsible for providing sexuality education instruction had more favorable perceptions towards and were more likely to adopt MAAA after attending the SEA. This reflects the effectiveness of other health education in-service training for school teachers; however, some studies indicate that following training, teachers need to continue to teach the material in a classroom setting (Rhodes, Kirchofer, Hammig, & Ogletree, 2013; Smith, Flaherty, Webb, & Mumford, 1984; Telljohann, Everett, Durgin, & Price, 2006). In this study, we found significant changes in participants' perceptions of the relative advantage, compatibility, observability, complexity and implementation following SEA. The mechanisms underlying SEA participants' perceptions and adoption can be explained using the DI framework.

Diffusion of Innovations Theory hypothesizes individuals who perceive the characteristics of an innovation as desirable are more likely to adopt the innovation. In this investigation, participants demonstrated a change toward more favorable perceptions of MAAA, including perceptions of relative advantage, complexity, observability, and compatibility. Changes in participants' perception of the relative advantage and complexity of MAAA suggest that information provided and practices conducted as part of SEA contributed to teachers' belief that MAAA was "better" than their current curriculum, and that MAAA was not difficult to implement. This reflects similar attitudes toward sexuality education documented among teachers across the United States (Bleakley, Hennessy, & Fishbein, 2006). As professional discussions emerge and important components of sexuality education have been identified, there is consensus that effective strategies should be multi-faceted and focus on decreasing sexual risk-taking among adolescents (Lavin & Cox, 2012). According to DI, innovations perceived as advantageous over status quo and are viewed as uncomplicated are more likely to be adopted by the observer.

Further, one's perceptions of the compatibility of an innovation with their personal values, as well as the values of those in their community, and one's beliefs that outcomes of adoption of an innovation are easily observable increases the chance of adoption. In this case, after completion of the SEA, participants believed that positive outcomes associated with implementing MAAA (e.g. abstaining from sex, correct use of contraception) would be easily observable by significant stakeholders in their community (i.e. administrators, parents, teachers), and MAAA did not conflict with personal or community values, which aligns with existing research suggesting that most parents support evidence-based sexuality education (Eisenberg, Barnat, Bearinger, & Resnick, 2008; Gizlice, Owen-O'Dowd, Foust, Leone, & Miller, 2006). Our findings suggest that, after completion of SEA, participants believed MAAA aligned with community values; thus, according to DI, participants were more likely to adopt MAAA.

Results from this study suggest trainings that focus on professional resources and evidence-based practice rather than sexual health content alone are important to facilitate changes in perceptions that increase the probability of MAAA implementation. Implementing trainings for educators, with sustained efforts, can influence changes in teacher knowledge, skills, attitudes, and perceptions that lead to substantial improvements in the area of school-based sexuality education. Furthermore, given the intensive nature of the SEA, research suggests trainings should ensure that those stakeholders involved have a basic knowledge about sexuality content and evidence-based sexuality education. A supportive school and/or school district culture and leadership at schools may also enhance a teacher's self-efficacy beliefs in addressing the implementation of MAAA (Rasberry, Goodson, Buhi, Pruitt, Wilson, & Suther, 2007).

Overall, this study extends the research on professional development provided to teachers responsible for delivering sexuality education in public schools. Changes in SEA participants' perceptions towards MAAA after attending the SEA were demonstrated, and participants of the SEA actively pursued implementation of MAAA methods upon returning to their respective work-school environments. Moreover, findings from this study provide initial insight into the impact of training workshops designed specifically for public school personnel charged with teaching sexuality education to students. Further study on the professional training, continuing education, and professional development of teachers responsible for delivering sexual health content could enhance the overall understanding of the use of sexuality education and sexuality-related programs.

Limitations

The sample was purposive, and therefore, may not represent the general views of all educators teaching sexuality education in Texas. Furthermore, participants of the SEA were required to apply and be accepted to the SEA; therefore, it is possible those participating in the academy had greater concern about sexuality education practices than those not participating in the SEA. Given the small sample size, it was not possible to examine the collective relationships (e.g. perform regression analyses) between DI variables and adoption of MAAA. Finally, we were unable to control for all factors that may have contributed to changes in participant perceptions of MAAA; thus, the SEA may not have been solely responsible for these changes.

References

Agius, P.A., Dyson, S., Pitts, M.K., Mitchell, A., & Amith, A. (2006.) Two steps forward and one step back? Australian secondary students' sexual health knowledge and behaviours *Journal of Adolescent Health, 28*, 247-252.

Barr, E., M., Goldfarb, E.S., Russell, S., Seabert, D., Wallen, M., & Wilson, K.L. (2014). Improving sexuality education: The development of teacher-preparation standards. *Journal of School Health, 84*, 396-415.

Bleakley, A., Hennessy, M., Fishbein, M. (2006). Public opinion on sex education. *Archives of Pediatric and Adolescent Medicine, 160*(11), 1151-1156.

Centers for Disease Control and Prevention. (2017a). Adolescent and School Health: Sexual risk behaviors: HIV, STD, & teen pregnancy prevention. Retrieved from: https://www.cdc.gov/healthyyouth/sexualbehaviors/

Centers for Disease Control and Prevention. (2017b). Reproductive health: Teen Pregnancy in the United States. Retrieved from: https://www.cdc.gov/teenpregnancy/about/index.htm

Eisenberg, M.E., Bernat, D.H., Bearinger, L.H., & Resnick, M.D. (2008). Support for comprehensive sexuality education: Prespectives from parents of school-age youth. *Journal of Adolescent Health, 42*(4), 352-359.

Eisenberg, M.E., Madsen, N., Oliphant, J.A., Sieving, R.E., & Resnick, M. (2010). Am I qualified? how do I know? A qualitative study of sexuality educators' training experiences. *American Journal of Health Education, 41*(6), 337-343.

Eisenberg, M.E., Madsen, N., Oliphant, J.A., & Sieving, R.E. (2013). Barrier to providing the sexuality education that teachers believe students need. J*ournal of School Health, 83*, 335-342.

Gizlice, Z., Owen-O'Dowd, J., Foust, E., Leone, P.A., & Miller, W.C. (2006). Parent opinion of sexuality education in a state with mandated abstinence education: Does policy match parental preference? J*ournal of Adolescent Health, 39*(5), 634-641.

Heller, J.R., & Johnson, H.L. (2013). Parental opinion concerning school sexuality education in a culturally diverse population in the USA. *Sex Education, 13*, 1-12.

Lavin, C., & Cox, J.E. (2012) Teen pregnancy prevention: Current perspectives. *Current Opinion in Pediatrics, 24*(4), 462-469.

Lindberg, L.D., Santelli, J.S., & Singh, S. (2006). Changes in forma sex education: 1995-2002. *Perspectives on Sexual and Reproductive Health, 38*(4), 182-189.

National Council on Teacher Quality. (2017). State teacher policy yearbook database: Improving teacher preparation national summary. Retrieved from: https://www.nctq.org/yearbook/home#tab2

Rasberry, C.N., Goodson, P., Buhi, E.R., Pruitt, B.E., Wilson, K, & Suther, S. (2007). Texas abstinence educators' self-efficacy to motivate youth sexual abstinence. *American Journal of Sexuality Education, 2*(3), 59-78.

Rhodes, D.L., Jozkowski, K.N., Hammig, B.J., Ogletree, R.T. & Fogarty, E. (2014). Influence of professional preparation and class structure on HIV, STD, and pregnancy prevention education. *Health Education Journal, 73*, 403-414.

Rhodes, D.L., Kirchofer, G., Hammig, B.J., & Ogletree, R.J. (2013). Influence of professional preparation and class structure on sexuality topics taught in middle and high schools. J*ournal of School Health, 83*, 343-349.

Rogers, E.M. (2003). *Diffusion of innovations* (5th ed). New York, NY: Free Press.

Santelli, J.S. (2008). Medical accuracy in sexuality education: Ideology and the scientific process. *American Journal of Public Health, 98*(10), 1786-1792.

Smith, P.B., Flaherty, C., Webb, L.J., & Mumford, D.M. (1984). The long-term effects of human sexuality training programs for public school teachers. *Journal of School Health, 54*,157-159.

Telljohann, S.K., Everett, S.A., Durgin, J., & Price, J.H. (1996). Effects of an inservice workshop on the health teaching self-efficacy of elementary school teachers. *Journal of School Health, 66*(7), 261-265.

Wilson, K.L., Goodson, P., Pruitt, B.E., Buhi, E., & Davis-Gunnels, E. (2005). A review of 21 curricula for abstinence-only-until-marriage programs. *Journal of School Health, 75*, 90-98.

Wilson, K.L., & Wiley D.C. (2009). Influence of materials on teacher adoption of abstinence-only-until-marriage programs. *Journal of School Health, 79*,565-574.

Editor Notes

As I close out my time as the Editor for *The Health Educator*: *Journal of Eta Sigma Gamma,* I want to thank all of the ESG Officers, Board Members, Editorial Associates, Executive Directors and authors who have helped shaped this Journal. The unique subject matter of any one discipline is built upon the knowledge base generated by the researchers and then taught by the faculty scholars and ultimately applied by the practitioners. This willingness to learn and our passion for sharing this knowledge with our clients and students while serving our communities is what makes Eta Sigma Gamma a foundation for the health education/health promotion discipline. I am honored to have had the opportunity to serve as the Editor for these last few years. I would like to extend a monumental thank you to Nickie Kosan who has served as Copy Editor throughout this time and helped keep us all on task. Many thanks to our CHES Editor, Sara Fehr. Thank you to the many editorial associates who have provided their expertise and time without compensation and little visibility. I welcome Dr. Kelly Wilson as the Interim Editor and have no doubt that the Journal is in good hands.

I leave you with one of my favorite quotes about writing from the popular fiction writer, Jodi Picoult: "You can always edit a bad page. You can't edit a blank page."

Dr. Sheila Patterson