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UNIVERSITY OF SAN DIEGO

Hahn School of Nursing and Health Sciences

DOCTOR OF PHILOSOPHY IN NURSING

CALIFORNIA SCHOOL NURSES' KNOWLEDGE, ATTITUDE, AND INTENTION TO PARTICIPATE IN SEXUALITY EDUCATION

by

Maria G. Matza RNC, MSN

A dissertation presented to the

FACULTY OF THE HAHN SCHOOL OF NURSING AND HEALTH SCIENCES

UNIVERSITY OF SAN DIEGO

In partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY IN NURSING

April, 2012

Dissertation Committee

Mary Rose Mueller, PhD, RN, Chairperson

Ann Mayo, DNSc, RN

Susan Instone, DNSc, CPNP

ABSTRACT

A critical need exists to provide adolescents with sexual health education as demonstrated by our nation's position in having the highest adolescent pregnancy rates among all the developed nations. The critical need is further pronounced by California's changing demographic profile of young Latinos who are projected to be the majority in 2042 and continue to demonstrate higher pregnancy and birth rates than other racial and ethnic groups. Currently, there is limited evidence to confirm if California's students are receiving sexual and reproductive health as required by law, nor is there evidence to link school nurses as teachers or consultants in sexuality education (SE). The purpose of this study is to describe the degree of knowledge, attitude, and subjective norm with intent to participate in SE. Three articles evolved from the dissertation: 1) a historical research article about the history and politics of adolescent sexual education policy and collaborative opportunities for bi-national nurses, 2) a methods article on the process of utilizing the content validity index on a pre-existing, theoretically-based instrument, and 3) the analysis of the research findings that resulted from a survey with California school nurses utilizing the adapted and recently validated questionnaire that describes the variables that lead to intention and participation in SE. This research is the first of its kind to describe the perspectives of school nurses as educators of sexual health content in the U.S. This study takes a step towards addressing gaps in research about school nurses and their contribution in sexual health education. This study will be instrumental in defining the role of the school nurse as sexual health educator and provides foundational data to advance school nurse research, translate knowledge into evidence based practice, and supports the need to incorporate sexuality education into nursing's core curriculum.

DEDICATION

My dissertation is dedicated to all children, as you are each precious in my life.

"We are guilty of many errors and many faults, but our worst crime is abandoning the children, neglecting the fountain of life.

Many things we need can wait. The child cannot.

Now is the time his bones are being formed, his blood is being made, his mind is being developed.

To him we cannot say tomorrow,

his name is today."

Gabriela Mistral

Chilean Poet, Educator, Nobel Laureate (Le Guin, 2003).

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As a child I believed in fairy tales. Completing this dissertation and obtaining a doctoral degree is the fulfillment of "a dream come true." But I had a lot of magic along the way and the magic came by through the love and support of family, friends, and professional colleagues who believed that I could accomplish my goal to obtain a doctoral degree.

First I must thank Nathan Matza, my beloved husband, best friend, and partner who has been supportive throughout this journey and has in essence earned his doctoral degree. I couldn't have done this without his love and support.

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I want to thank my very special dissertation committee; each and every one represents the virtues of faith, hope, and charity. Dr. Mary Rose Mueller, my chairperson, cheerleader and support, whose guidance and confidence in my ability to persevere got me to the finish line. Dr. Ann Mayo, who always answered the phone, no matter what coast she was visiting. Thank you for helping me to see clearly. Dr. Instone, who understands what school nurses do. She promised me she would keep things real- and she did! I want to also thank Dr. Jane Georges and Dr. Andrea Hazen who helped me over the bumps in the road.

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Introduction

The academic success of America's youth is consistently linked to their health behaviors (Commission to Build a Healthier America, 2009; Marx, Wooley & Northrop, 1998; Murray, Low, Hollis, Cross, & Davis, 2007; Vinciullo & Bradley, 2009). Health-risk behaviors such as substance use, violence, physical inactivity, and unprotected sex are associated with academic failure and often affect students' school attendance, grades, test scores, and ability to pay attention in class (Kann, Telljohann, & Wooley, 2007). In turn, academic success is an excellent indicator for the overall wellbeing of youth and a primary predictor and determinant of adult health outcomes (Franks, Kelder, Dino, Horn, Gortmaker, Wiecha, et al., 2007; Freudenberg, 2007; Marx, Wooley, & Northrop, 1998). Research shows that knowledge alone does not change behavior (Prochaska, Norcross, & DiClemente, 1994); for learning to occur, effective teaching must take place (Bankert & Kozel, 2005; McFayden, 2003). Health education, as an integral component of the educational curriculum, provides young people with the knowledge and skills they need to be successful learners and healthy and productive adults (Center for Disease Control and Prevention [CDC], *ca.* 2006; Franks et al., 2007; Marx, et al., 1998).

In California, health content standards and curriculum recommendations for kindergarten through twelfth grade (K-12) are found in the Health Framework for California Public Schools (HFCPS) (CDE, 2003). The HFCPS addresses the following nine content areas: personal health; consumer and community health injury prevention and safety; alcohol, tobacco, and other drugs; nutrition; environmental health; family living; individual growth and development; communicable and chronic diseases (CDE, 2003). Sexuality education (SE) falls under the domain of several of these categories.

Despite the availability of health standards and curricula, the evidence for effectiveness of SE in California is sparse and where available provides mixed results. To some degree, studies about the effectiveness of SE show inconsistent implementation of the curriculum. This may be attributed to the manner in which SE is defined, mandated, and who is accountable for teaching and monitoring the curricula in California public schools. The gaps in the literature include limited published studies about 1) who actually is teaching SE and 2) the participation level of school nurses in SE curricula. A 2003 study funded by a Northern California collaborative and headed by the ACLU determined that only 11% of the sexuality educators in that region were school nurses (Burlingame, 2003). On the other hand, there is a growing body of research that suggests that school nurses, when present every day, advance the twin goals of improving health and educational outcomes (CDC, *ca.* 2006; Robert Woods Johnson, 2010, p.4). The purpose of this study is to describe the degree of knowledge, attitude, subjective norms, intention and level of participation of California school nurses in delivering sexuality education to California's school age and adolescent students.

Background

The implementation of a SE curriculum would seem important, given the U.S. rates of teen pregnancy rates, birth rates, and rates of sexually transmitted infections (STIs) remaining among the highest of the industrialized world (Santelli & Schalet, 2009; Terry-Humen, Manlove, & Cottingham, 2006). By 12th grade, nearly two-thirds of U.S. high school students have engaged in sexual intercourse (Tessler Lindau, Tettah, Kasza, & Gilliam, 2008; Eaton Kann, Kinchen, Ross, Hawkins, Harris, et al. 2005). It is expected that every year in the U.S. over 4 million girls, ages 15-19, become pregnant (Chandra, Martinez, Mosher, Abma, & Jones, 2005; Finer, 2010; Finer & Zolna, 2011). Although the adolescent birthrate

continues to decrease annually, the birth rates of Latina and African American adolescent females remains significantly high as compared to other ethnic and racial groups (Guttamacher, 2012; Hamilton, Martin, & Ventura, 2011).

Sexual debut or initiation has been scientifically identified as a natural part of adolescent sexual development, but is viewed as problematic by U.S. cultural standards (Santelli & Schalet, 2009; Spriggs Madkour, Farhat, Tucker Halpern, Godeau, & Gabhainn, 2010). The prevalence of sexual debut during adolescence is high: according to nationally representative surveys conducted in 2001, 61% of 12th graders and almost 90% of young adults aged 18-27 report ever having had sexual intercourse (Brener, 2006; Halpern, 2006). Sexual debut/initiation is considered problematic because sexual debut has been related to: 1) poor educational outcomes, (Spriggs & Tucker Halpern, 2006), 2) a decrease in self-rated academic performance (Sabia, 2007), 3) a lower than average completion of educational goals (Driscoll, Briggs, Brindis, & Yankah, 2001), 4) an increase in risk of pregnancy (Kovar & Salsberry, 2012), and 5) an increase in risk for sexually transmitted infections (STIs) (CDC, 2012; Forhan, Gottlieb, Sternberg, Xu, Datta, McQuillen, et al., 2009; UNESCO, 2010).

Defining Sexuality Education (SE). SE is difficult to define without bias; there are political, cultural, and religious values ascribed to the emotionally charged content (Irvine, 2002; Mehlman, 2007). SE is defined as the lifelong intentional processes by which people learn about themselves and others as sexual gendered beings from biological, psychological and sociocultural perspectives (Goldfarb & Constantine, 2011). For purposes of this study "sexuality education" will be the term inclusive of any type of sexual, reproductive, and

relationships education that is presented by school nurses to school age and adolescent children in the state of California.

California Mandates. The California Department of Education (CDE, 2010; 2011) authoritatively describes SE in its legal codes, but California defines SE in different categories and ascribes legal mandate only to HIV/AIDS education, forbids the teaching of abstinence-only education, but does not require schools to teach comprehensive sexuality education (CSE). This leads to ambiguity in defining what is or is not considered standardized sexuality education. As an example, the state of California defines CSE as "education regarding human development and sexuality, including education on pregnancy, family planning, and sexually transmitted diseases" (EC 51931). CSE is a combination of sex education content including mandated HIV/AIDS, social, emotional, physiologic, and anatomic instruction along with an abstinence message with information about condoms and contraception and opportunities to practice communication and refusal skills (Sexuality Information and Education Council of the United States [SIECUS], 2004; 2007).

Public schools choosing to teach CSE must follow certain guidelines in grades kindergarten through twelfth grade, and in addition are required to teach HIV/AIDS education to students at least once in middle school and once in high school (California Education Code [CEC] Sections 51930-51939, Chapter No. 602; CDE, 2003). According to California law, public schools may not provide abstinence-only education (EC Section 51933), however, the CEC does require that instruction and materials teach abstinence from sexual intercourse as the only certain way to prevent unintended pregnancy and sexually transmitted infections (STIs). The importance of abstinence is taught, but must include medically accurate information on methods of prevention of pregnancy and STIs. Again the

law requires instruction to be medically accurate, and as such it must cover both the effectiveness and ineffectiveness of condoms and other contraceptive methods (CDE, 2011). In addition, the law does offer parental notification of instruction and opportunities to excuse their child from instruction (CEC, 5930-51939).

Laws exist to protect the confidentiality of minors and offer adolescents access services. All 50 states and the District of Colombia allow minors to consent to STI services without parental involvement, although 11 states require minors to be a certain age (generally 12 to 14) to do so. Thirty-one states include HIV testing and treatment as part of STI services. California law permits minors as young as twelve years of age to seek and receive confidential services related to contraception, pregnancy, diagnosis and treatment of STIs, abortion, (Gudeman, 2006) and mental health (Gudeman, 2010). Yet the availability of these services may not be effectively communicated to adolescents in their schools and communities due to administrative, political, and societal barriers.

Monitoring of Sexuality Education. The Joint Committee on National Health Education Standards (NHES) recommends that students in Pre-K to grade 2 receive a minimum of 40 hours and students in grades 3 to 12 receive 80 hours of instruction in health education per academic year (Joint Committee, 2007, p.2, paragraph 5). These guidelines are proposed as Healthy People 2020 (HP2020) objectives as recommended by NHES in 2007. Based on 2006 School Health Policy and Programs Study (SHPPS) data, the percentage of U.S. schools currently meeting these recommendations are: elementary schools (cumulative for grades K-5) were 7.5%; the percentage of middle schools (cumulative grades 6-8) were 10.3%; and the percentage of high school students (cumulative grades 9-12) were 6.5%

(Kann, et al., 2007). Currently, the majority of California public schools are not meeting hours dedicated to school health education.

The implementation of California's legally referenced health framework is unclear, as it does not offer a method to measure if effective learning has taken place. At this time, outcome measures relevant to learning health education are not included as part of the California High School Exit Exam (CAHSEE). Some school districts do require one semester of health education; other school districts offer less hours or only what is required of the HIV/AIDS mandate. By 2012 one of the largest K-12 school districts in California eliminated the health education class graduation requirement due to budget reductions (LBReport, 2011 @ http://www.lbreport.com/schools/feb11/marcuts.htm), without a required health course, it is difficult to monitor the delivery and quality of the SE curriculum. California Department of Education (CDE) monitors compliance of HIV/AIDS instruction through the CDE's Categorical Program Monitoring (CPM) process (CDE, 2010). Monitoring may be compromised by the lack of resources devoted to the task, given that accountability for monitoring of compliance rests on one person in the Coordinated School Health and Safety Office who is responsible for coordinating sex education for over 1,000 school districts (Burlingame, 2003; Burlingame, 2010; O'Connell, 2006). Data on compliance in any category except HIV/AIDS education is limited.

Authorization to Teach SE. There is a lack of clarity in the CEC that designates who is to provide sexuality education, which leaves educators, including school nurses, with too little authority to provide the critical sexual health education that is needed by California's school age and adolescent populations. A California study is presented to illustrate this point. In 2003, a Northern California-based survey of school districts, funded by the American Civil

Liberties Union (ACLU) and multiple, diverse community-based and professional organizations, was conducted (Burlingame, 2003). The study purpose was to learn about the effectiveness of CSE, and in particular, to identify which educator group was providing instruction for CSE. The results were unexpected: 96% of districts reported teaching CSE, but only 35% of those instructing were reported to be credentialed school health educators, and only 11% were reported to be credentialed school nurses. Other persons reported to be teaching CSE curriculum were teachers with different or non-health subject-related credentials, community-based health representatives, and guest speakers (Burlingame, 2003). This single study poses the question, are California schools doing an adequate job in teaching students sexuality education? This single study demonstrates that only 11% of SE educators were credentialed school nurses, but that study is limited to one region in California and cannot be generalized to the population of California credentialed school nurses who provide instruction and consultation to school-age children and adolescents in a variety of other health-related topics.

Research is requisite to understand, from the perspective of the school nurse, their knowledge of, comfort with, and their willingness to teach and/or consult the sexual health curriculum. Limited studies about school nurse participation in SE have been conducted internationally (de Vries, Mayock, Higgins, Sherlock, Doyle, Andrews, et al., 2009) and in the U.S. (Gorosh, 1981; Saewyc, Bearinger, McMahon, & Evans, 2006). All studies were descriptive and lacked rigor; further studies were not pursued. The majority of exploratory and descriptive studies about the involvement of school nurses as educators of sexual health have been done in the U.K. (Johnston, 2009; McFayden, 2004; Wainwright, Thomas, & Jones, 2000; Westwood & Mullan, 2006a). Governmental policies prompted by the U.K.'s

National Health Service (NHS) identified school nurses as key contributors to sexual and reproductive health education; these policies were initiated without empirical evidence. Nurse researchers in the U.K. were motivated to investigate this assumption made by the public health service about school nurses; the assumption may have evolved because of their access to school age children and their work in the community. However, all studies were consistent in providing evidence that school nurses lack sufficient knowledge, skill, motivation, and support to participate in SE. To date, no studies of this kind have been conducted in the United States, and in particular in California, to measure the perspective of school nurses as educators of sexual health content.

Theoretical Framework/Conceptual Framework

The conceptual framework for this study was derived from Ajzen and Fishbein's (1980) Theory of Reasoned Action (TRA). This study will utilizes the elements of the TRA, along with knowledge and select demographics to describe how school nurses' attitudes and subjective norms affect their intention to teach SE, and predict whether or not school nurses are engaging in SE. The TRA is based on the concept that attitude is a trigger and predictor of human behavior in decision-making (Rew, 2005, p.237). TRA assumes that human behavior is under voluntary control of the individual. Because school nurses (or other professional group) are not specifically mandated to teach SE, the behavior of teaching/participating is considered volitional and supports the basic assumptions of TRA. TRA assumes a causal chain that links attitudes with subjective norms, and together effect behavioral intent, and subsequently produces a change in behavior (Montaño & Kasprzyk, 2008, p.72).

Key Variables and Definitions

Knowledge. School nurse knowledge is defined as nursing knowledge about sexuality education inclusive of: developmental aspects of sexual and reproductive health, including skills that promote healthy relationships and prevent disease transmission. This knowledge may be acquired from informal/formal instruction.

Attitude. Attitudes are defined by behavioral beliefs that have a positive or negative value associated with teaching/counseling/ participating with teaching.

Subjective norm. Subjective norm is defined as social pressure from important others (school nurse colleagues; managers/coordinators) that affect a school nurse's behavior to teach or participate in sexuality education.

Intention. For the purpose of this study, intention is defined as school nurses' motivation to involve themselves in a voluntary activity associated with teaching, counseling, and/or participating in sexuality education.

Level of Participation. A measure of school nurses' self-reported level of participation (in number of hours) in teaching, counseling, and/or participating in sexuality education.

Research Questions

The research questions directing the study were:

1) What is the level of a) knowledge, b) attitudes about, c) effect from subjective norm, d) intention to participate (teach/consult), and e) participation in SE among California school nurses?

2) What are the relationships between 1) knowledge, 2) attitudes, and 3) subjective norm and intention to teach SE among California school nurses?

3) What are the relationships between 1) knowledge, 2) attitudes, and 3) subjective norm and the level of actual participation in SE among California school nurses?
4) What is the relationship between intention to teach and level of participation in sexuality education among California school nurses?
5) Is there a relationship between select demographics of California school nurses and a) knowledge, b) attitude, c) subjective norm, d) intention to teach/participate, and e) level of participation in sexuality education?
6) Do a) knowledge, b) attitude, c) subjective norm, d) intention to teach/participate, and e) select demographics of California school nurses predict level of participation in sexuality education among California school nurses?

Methods

Study Design and Setting

A descriptive, cross-sectional, correlational study was conducted over a 6-week period. The population targeted for this study was the 2,276 school nurses in California, of which 1,400 school nurses were current members of the California School Nurses Organization [CSNO] (CSNO, n.d.). After receiving permission from the Executive Board of CSNO to access subscribers of the organization's E-newsletter, a convenience sample of 110 credentialed school nurses was recruited. CSNO is comprised of five regional sections that cover the entire state of California: Northern, Bay Coast, Central, Southern, and San Diego/Imperial. The newsletter is shared by CSNO members, along with other non-CSNO affiliated school nurses that are interested and eligible for participation in the study. Criteria for participation in the study included 1) current and active possession of a California school health services credential, 2) valid RN license to practice registered nursing in the state of California, and 3) a history of employment (active or retired) as a credentialed school nurse

in the state of California. Nurses in California schools who do not meet all elements of the eligibility criteria were excluded. The institutional review board (IRB) of the University of San Diego approved the study protocol.

Measures

The California School Nurses Sexuality Education Questionnaire (CSNSEQ), was subsequently developed from an adapted questionnaire made available for this study by the original U.K nurse researchers (Mullan, personal communication, 2010; Westwood & Mullan, 2006a). The original school nurse questionnaire was developed by Westwood & Mullan (2006a) to elicit school nurses' responses about their knowledge, attitudes, and subjective norm that affect their intention to teach sexual and reproductive health (SRE). Justification for using this particular instrument in this study was that the original instrument used by Westwood & Mullan was the first to make use of the Theory of Reasoned Action (TRA) to measure the variables of knowledge, attitudes, social norms, and intentions by school nurses to engage in sexuality education (Mullan &Westwood, 2009). Until this study was conducted, there had been little data to link these variables to behaviors of volitional intention to teach or consult in SE.

The validity of the instrument was scrutinized utilizing a content validity index process to examine each item content for relevance, clarity, and importance. In this process, the original survey was shared with five content experts (school nurse experts in adolescent health), whose recommendations were analyzed by the principal investigator and revised to reflect the language and content of California school nurse standards and California state educational and legal requirements. Five revisions and a pilot test occurred before the instrument was ready to be distributed to participants via the Internet.

Aims of the Research Study

This research will describe the current state of sexual health knowledge from a sample of California school nurses. It will also describe the attitudes that school nurses identify while teaching sexual health curriculum. Data collected from this study will examine the influence of important others (subjective norms) on school nurses' intentions to participate in SE, and the extent that these relationships effect intent to participate in teaching the curriculum. The study will determine if there is a relationship between select knowledge, attitude, subjective norms, and select demographic items with intention to teach SE and actual participation.

Implications

Outcomes obtained from this study are critical in guiding school nurse practice in the area of adolescent health by providing direction in curriculum planning, continuing education, workforce development, and opportunities for further research. In preparing this dissertation three articles have been written. The first article describes the Content Validity Index (CVI) process, a traditional approach to determining the validity of content domain of an existing research instrument as perceived by content experts. This is the first step in validating an original British instrument that will be used by a sample of California school nurses to measure school nurses' knowledge, attitude, subjective norms, and intent to teach or consult in sexuality education. The intent of the article is to provide clear instruction and example of how to utilize the CVI process, so other nurse researchers can replicate the process and conduct valid and reliable research.

The second article was inspired by personal experiences as a participant in a university-sponsored service-learning project that involved teaching sexual and reproductive health education to middle school and high school adolescents in Mexico. I considered the questions and responses that adolescents from Mexico communicated to the nursing students and nurse educators, and found their answers to be equivalent to queries of U.S. secondary students. As a practicing school nurse in California, this international experience motivated me to explore the historical, political, cultural, and religious underpinnings that influence educational and social policy along the U.S. and Mexico border. This historical research explored bi-national nursing's involvement in sexuality education. Conclusions derived from this study include opportunities for academic collaboration between U.S. and Mexican nursing faculty, as well as creating bi-border visibility of professional nursing by being at the policy table when adolescent healthcare is being created.

The third article describes the research findings of the doctoral dissertation that describes the knowledge, attitude, influence of subjective norms, and the intent to participate in sexuality education. Ultimately, this study provides evidence of school nurse participation in SE. Baseline data from this study will be useful to California school nurses in determining workforce responsibilities, changes in nursing curricula, and integration of evidence-based practice in teaching/participating in SE. This study provides direction to school nurses in our effort to provide health promotion and disease prevention to California's school-aged and adolescent population.

Research Papers

Utilizing the Content Validity Index in the Revision of an Original School Nurse Questionnaire

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Abstract

The professional literature reveals a lack of research instruments designed for and by school nurses to measure their actual involvement in teaching or consulting sexuality education at the K-12 level. An original school nurse questionnaire was developed by British researchers, Westwood & Mullan (2006a) to elicit school nurses' responses about their knowledge, attitudes, and subjective norm that affect their intention to teach sexual and reproductive health. This instrument approximates the needs for a research study using a sample of California school nurses. In order to validate the original instrument for utilization in the United States, the first phase of psychometric testing (content validity using the content validity index) was conducted to measure school nurses' knowledge, attitude, and intent to teach/participate in California sexuality health education. Content Validity Index (CVI) is a traditional approach to determining the validity of content domain of an instrument as perceived by experts in the field (Waltz, Strickland & Lenz, 2010). Five school nurse experts in adolescent health measured all 131 items for content relevance, item clarity, and item importance using three different scales. After analysis of the recommendations by the content experts, and further revision by the researcher, the California School Nurse Sexuality Education Questionnaire (CSNSEQ) became the primary research tool in a study conducted in 2012. The outcomes provided by the CVI will ensure that the school nurse questionnaire is a valid instrument that can be used with reliable results in other areas of the country in order to provide accurate baseline data.

Introduction

School nurses provide instruction and consultation to school-age children and adolescents in many health related topics, including sexuality education, therefore, it is important to understand, from the perspective of the school nurse, their knowledge of, comfort with, and their willingness to teach and/or consult the sexual health curriculum. Published studies on who teaches sexuality education (SE) are limited; and data for the participation levels of school nurses in sexuality education are almost non-existent (Burlingame, 2003; Burlingame, 2010; Irvine, 2002; McFayden, 2003; Westwood & Mullan, 2006a; 2006b; 2007). There is little empirical evidence in California to support the effectiveness of SE in California, as provided by school nurses and other educators; this leaves educators, including school nurses, with little evidence of their work in providing the critical sexual health education that is needed by California's school age and adolescent population. Until the work of nurse researchers Westwood & Mullan (2006a; 2006b; 2007), school nurses did not have an instrument specific to the investigation of school nurse practice in the content area of sexuality education. This instrument approximates the needs for a research study using a sample of California school nurses. In order to validate the original instrument for utilization in the United States, the first phase of psychometric testing (content validity using the content validity index) was conducted to measure school nurses' knowledge, attitude, and intent to teach/participate in California sexual health education. This article reports on the process of conducting a content validity index (CVI) on the instrument.

Background

The professional literature reveals a lack of research instruments designed for and by school nurses to measure their actual involvement in teaching or consulting sexuality

education at the K-12 level. An original school nurse questionnaire was developed by British researchers, Westwood & Mullan (2006a) to elicit school nurses' responses about their knowledge, attitudes, and subjective norm that affect their intention to teach sexual and reproductive health. Further justification for using this particular instrument was that the original instrument used by Westwood & Mullan was the first to use the Theory of Reasoned Action [TRA] (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) with school nurses who engage in teaching or consulting SE (Mullan &Westwood, 2009). The use of instruments such as the Sex Knowledge and Attitude Test [SKAT](Gamel, et al., 1993; Lewis & Bor, 1994) and Sexual Attitude and Behavior Survey [SABS] (Magnan & Norris, 2008; Magnan& Reynolds, 2006; Reynolds & Magnan, 2005) that measure sexuality knowledge, attitudes, and behavior have not been used to describe the role of the school nurse. These instruments were developed from the perspective of nurses working in acute care with clients that have chronic illness rehabilitation or palliative care (Krebs, 2007), and not from school nurses' perspective of health promotion and disease prevention in the school setting. School nurse researchers have created their own instruments to measure school nurse phenomena: to assess school nurses' need for evidence-based practice (Adams & Barron, 2010), to measure self-efficacy of school nurses in providing care to diabetic children (Fisher, 2006); and a revision of an original school nurse questionnaire (Price, Desmond, Ruppert, & Steltzer, 1987) to measure the perceptions of school nurses regarding obesity in school age children (Moyers, Bugle, & Jackson, 2005). One study conducted in New Jersey (Gorosh, 1981) used a questionnaire to describe school nurse attitudes and involvement with adolescents and sexuality education. Since then, no studies to measure the perspective of school nurses as

educators of sexual health have been conducted in the United States, and in particular in California.

Origin of the California School Nurse Sexuality Education Questionnaire (CSNSEQ)

This original questionnaire measures the variables of knowledge, attitude and intent using the Theory of Reasoned Action [TRA] (Ajzen & Fishbein, 1980). The majority of exploratory and descriptive studies about the involvement of school nurses as educators of sexual health have been done in the U.K. (Johnston, 2009; Westwood & Mullan; 2006a; McFayden, 2004; Wainwright, et al., 2000). These studies were motivated by National Health Service (NHS) policies, the U.K.'s public health service that identified school nurses as key contributors to sexual health education because of their access to school-age children and their work in the community. In the United States, to date, no research studies have been commissioned by state or federal agencies to describe school nurses, as educators of sexuality education. As a result, the original instrument was revised by the primary investigator, using the content validity index (CVI) process to create the CSNSEQ as the primary research instrument tool for the proposed study in order to 1) provide an opportunity to gather data that measure school nurse involvement in teaching/participating in sexuality education curricula and to 2) reflect the language, standards, and policies of U.S./California school nurses.

Methodology

Content Validity Index

Validity is defined as the extent to which an instrument measures what it is supposed to measure (Lynn, 1986). There are three basic approaches to the validity of tests and measures content validity, construct validity, and criterion-related validity. The content validity index

(CVI) is the preliminary step (Lynn, 1986) to ensure that the revision of the original questionnaire is valid in a different population (Polit & Beck, 2006; Beck & Gable, 2001; Grant & Davis, 1997). Content validity is the determination of the content representativeness or content relevance of an instrument by application of a two-stage process: 1) development of domain identification, item generation, and instrument formation, and 2) judgment quantification by content experts so items are valid and that the entire instrument is valid (Beck & Gable, 2001; Lynn, 1986; Waltz, et al., 2010). The judgment quantification stage is based upon a select panel of content experts who evaluate the instrument and rates item relevance to content domain, using a Likert-type rating scale (Wynd, Schmidt, & Atkins Schaefer, 2003). The CVI is calculated by tallying the results of the expert reviewers. The degree to which the expert panelists agree on the relevance determines whether the items are relevant or irrelevant. The CVI provides a quantitative measure of content validity (Sharp, 2010).

The CVI is the preliminary step to ensure the revision of the original questionnaire meets the needs of California school nurses and provides clarity of language, deletion of irrelevant content with reference to U.S. school nurse policies, and the addition of demographic data not present in the original instrument. As previously described, the research of Westwood & Mullan (2006a) generated the development of the original instrument; therefore this article will focus on the process of judgment quantification by California school nurses who are experts in adolescent health. Ten (10) school nurse experts were recruited to complete the CVI. The content experts are practicing school nurses, school nurse managers or administrators, and school nurse faculty. After analysis and consideration of the recommendations made by the content experts, this researcher made changes and the

instrument was titled as the California School Nurse Sexuality Education Questionnaire (CSNSEQ). It was utilized in the aforementioned research study of California school nurses as the primary instrument in carrying out the proposed research study. The outcomes provided by the CVI support the CSNSEQ as a valid instrument accessible to researchers interested in school nurse research and sexuality education.

Instrument Design

Developed by Westwood & Mullan (2006a), the original 119-item "School Nurse Questionnaire" utilized the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980) to measure the constructs of knowledge, attitude, subjective norm, and behaviors of school nurses as consultants or teachers of sexuality and relationships education. The original instrument, a questionnaire, was developed using a combination of qualitative and quantitative methods. Quantitative data were obtained through questions that asked about contraception, sexually transmitted infections (STIs), the relationship between contraception and STIs, and a knowledge test where school nurses were asked to identify STIs from a list that included medical conditions that were not sexually related. The original 119-item "School Nurse Questionnaire" developed into the 171– item CSNSEQ by the following process:

Development of Original Instrument

As recommended by Ajzen and Fishbein (1980), focus groups were held to determine the behavioral, normative, and control beliefs of school nurses (Mullan & Westwood, 2009). The data gathered from the focus groups were recorded and transcribed for content analysis, broken down into thematic groups, and that information was analyzed using Attride-Stirling's (2001) method of organizing themes. Attride-Stirling's qualitative method is a

systematic method of extraction and interpretation of themes from organized themes to global themes. This classification process led to five organizational themes: how sex and relationships education (SRE) is received, taught, how it should be taught, when it should be taught, who should teach SRE, and the knowledge of the school nurse. The global theme that drew the organizational themes together is SRE (Westwood & Mullan, 2006a). This analysis provided the themes that were categorized into the most frequently held six beliefs about the role of school nurses in sexual health education. These beliefs are the basis for the instrument used in the 2006 study conducted by Westwood and Mullan. The six beliefs elicited by the focus group were:

1. Provide and promote a confidential 'drop-in' clinic.
2. Promote awareness of local services.
3. Promote safer sex messages.
4. Work with other professionals.
5. Work in partnership with school teachers.
6. Ensure that the school policy on confidentiality is clear (Mullan & Westwood, 2009, p.5).

The resultant questionnaires were mailed to all school nurses (n=206) in a large geographical area of central England; forty-six nurses responded (response rate of 22%). Descriptive and inferential statistics were performed and the results of the study indicated that school nurses have insufficient knowledge to effectively teach SRE (Westwood & Mullan, 2006a) and further analysis of school nurses' behavior explained that attitudes is a better predictor of school nurses' intention and the behavior to participate in SRE (Mullan & Westwood, 2009). The original instrument is based on the TRA, a theory that is well recognized in the literature (Strickland, 2006). The school nurse questionnaire served as a

template to create questionnaires that compared the same variables of TRA (knowledge, attitudes, subjective norms) in British teachers (Westwood & Mullan, 2007) and adolescent students (Westwood & Mullan, 2006b). Qualitative data gathered from school nurse focus groups, as well as quantitative evidence supported by findings from Westwood & Mullan's initial pilot and subsequent studies, along with international and U.S. data on adolescent health and sexual risk behaviors supports the rationale to replicate this study in California.

Revision 1. The original researchers were contacted for permission to adapt the questionnaire. Dr. Barbara Mullan, one of the original researchers responded to the e-mail inquiry and sent the instrument electronically; Dr. Westwood was not available. The language in the questionnaire was revised to reflect the American English dialect. Because the questionnaire was created for school nurses in the U.K, the language needed to be adapted for U.S. school nurses. These language changes were idiomatic and colloquial in nature, such as "consultation" replaced "drop-in; "sexuality education " replaced "sex and relationships education"; and "check" replaced "tick".

There were 8 items that measured specific knowledge about U.K. government policies regarding a document created by the National Health System (NHS), the U.K. government 's healthcare system. This document in the U.K. is known as the School Nurse Development Resource Pack (Department of Health [DoH], 2001), and addresses the role of school nurses in teaching sex and relationships education (Westwood & Mullan, 2006a). There is no comparable educational or health policy in California that assigns the role of sexual health educator exclusively to school nurses or to any other professional so these 8 items were eliminated from the questionnaire. After removing 8 items the questionnaire was reduced to 111 items. Ten (10) demographic items were added to the instrument to reflect the ethnic and

racial characteristics of California school nurses. These items reflect 2008 U.S. Department of Education reporting standards (http://www2.ed.gov/policy/rschstat/guid/raceethnicity/questions.html). Six (6) work-related demographics have been added to categorize current levels of educational preparation and identify differences in the job description of credentialed school nurses in California (CCTC, 2007). An additional three (3) question stems (106, 115, and 124) were inadvertently counted as survey items. One (1) open-ended question (item 131) was added at the end of the CVI, "Did we forget any important items related to sexual health and relationships education? The purpose of this item was to elicit suggestions from content experts that may have been specific and significant to the practice of California school nurses in sexuality education. At this point in the process, the instrument contained 131 items.

Ethical Approval. As the completion of the first revision, approval to contact school nurses as adolescent content experts was obtained electronically from the Executive Director of the California School Nurses Organization (CSNO). The CVI was submitted for approval from the Institutional Review Board (IRB) of the University of San Diego. After IRB approval was granted, e-mails were sent to ten school nurses experts from the five regional sections of the CSNO to participate in the CVI.

Sample. The literature is varied with respect to the number of content experts required (McGartland Rubio, Berg-Weger, Tebb, Lee & Rauch, 2003). Lynn (1986) recommends a minimum of three; others have recommended a range of two to 20 experts. Ten school nurse adolescent health experts were selected from the five sections (regions) of CSNO. The experts were selected because of their competence as school nurses specializing in adolescent health. Their jobs and volunteer activities included: high school nurse, district administrator

of school health, university professor, and member of CSNO's specialty practice committee on adolescent health. All agreed to participate and informed consent, instructions, and the CVI were mailed to the participants.

The initial response rate was 90%; four out of the nine CVI surveys were not included in the analysis because of the cut off for 30% missing data. The experts were recruited to validate instrument items for clarity, relevance, and importance. As described below, the results of the CVI were later averaged at the item level (Polit & Beck, 2006).

Revision.2 The second revision occurred from the results of the content validity index with the adapted instrument. The procedures for the CVI began with preparation of the revised instrument; 131 items were copied and pasted into a CVI template. Content validity was measured using three different scales: content relevance, item clarity, and item importance (Waltz, Strickland, & Lentz, 2010). Respondents rated each instrument item on these scales. Scale for content relevance: 1) Item is not relevant, 2) Unable to assess relevance without item revision, 3) Relevant but needs minor alteration, and 4) Item is very relevant and succinct. Scale for item clarity: 1) Unclear, 2) Unclear without revision, 3) Clear with minor alteration, and 4) Clear. Scale for item importance: 1) Not important; remove, 2) Somewhat important; keep on instrument if there is room, 3) Important; keep on instrument, and 4) Very important, do not remove from instrument.

The final panel of school nurse experts in adolescent health (n= 5) determined the content validity of each of the 131 items rated on content relevance, item clarity, and item importance. The items had mean index scores of 2.4 to 4.0 for clarity; 2.8 to 4.0 for importance; and 2.4 to 4.0 for relevance. No individual item received a mean score below 2.4 in any category; therefore none of the original instrument items on the CVI were deleted.

Revision 3. Instrument Changes Post CVI

After the analysis of the CVI, it was noted that the first two items on the original survey had been omitted. In ensuring instrument validity, it is important to maintain the integrity of the original instrument and the omitted questions were immediately restored. These questions were: 1) "Can you be unaware that you have a sexually transmitted infection?" and, 2) "Is withdrawal (pulling out) a good method of contraception for young people to use?" This brought the item count to 133.

A number of changes were made to the instrument to improve relevance, clarity, and importance from the suggestions made by the content experts in the context of a school nurse's job description. For example, in the matter of *relevance* to California school nurses, item #50 on the CVI reads "I do not feel confident in teaching/contributing in 'sex and relationships education' was changed to "sexuality education." This recommendation was implemented throughout the questionnaire for consistency in language. The content experts noted that this is the generic term preferred by the California Department of Education for sex education in public schools. Another item read, "Ensure that the confidentiality policy is practiced by school staff". The content experts felt that this is an administrative function and not the responsibility of the school nurse. However, the statement would be relevant if it identified the school nurse as the person to "educate the school staff about the confidentiality policy." This item was modified per the experts' suggestion.

In the matter of *importance*, one item asked, "where do you live?" One content expert noted that while it was not important to know where a nurse lives it was more important to know where the school nurse works. An additional item "where do you work?" was added to the questionnaire.

The CVI had one open-ended question: "Did we forget any important items related to sexual health and relationships education? If yes, write in below." The comments and suggestions made by the content experts were evaluated for correctness and equivalence with respect to the original instrument. Editorial changes made to any items only occurred if the revisions did not interrupt the integrity of the instrument and if the change clarified language, increased relevance and/or importance to the item. As the scale for *clarity* received the lowest rating (although not low enough to delete any item), those items received the most deliberation.

Some changes to the instrument were made in the demographics/work section. For example, complex demographic items were broken down into more specific items to facilitate participant's ease in responding. This process resulted in 36 additional items to the survey. Next, to provide critical data to directly answer the research question regarding level of participation in sexuality education among California school nurses, one question was added to the demographic (work) section to measure actual participation by school nurses in SE: "In the last 12 months, how many hours have you participated (teaching, consulting) in SE in your school/school district". In summary, these revisions to the instrument resulted in 170 items: 76 items were demographic/ work-related; 37 items were knowledge- affiliated; 57 Likert-type items were affiliated with the variables of attitudes, subjective norms, intention, and level of participation.

Revision 4. Transferring CSNSEQ Instrument to the Internet. The third revision began with transferring the 170 items onto the Internet. Placing the instrument onto a web-based product made it possible for the researcher to pilot test the instrument for 1) clarity of language, 2) inconsistencies in manipulating the web-based instrument, and 3) to measure the

average time it would take for participants to complete the web-based instrument. Five California, credentialed school nurses were selected to pilot-test the web-based version. Results of this pilot test revealed an average of 26 (range 17-38) minutes to complete the CSNSEQ. Minor clarifications were made to instructional language. Responses were added (i.e. don't know added to yes/no questions) so that participants would not leave data incomplete. In order not to overwhelm participants with large amounts of text on a computer screen, individual stems with Likert-type responses were placed on single pages.

Final Revision 5. Revisions Post Pilot Study. Prior to administering the instrument, the researcher critically reviewed the processes in making all revisions and it was noted that one open-ended question was missing from all versions. This question had been validated in the original CVI and was reinserted into the Internet version. The following open-ended question was included: "How is sexuality education taught within the curriculum? Explain." A text box was provided for narrative response.

The final version of the instrument was prepared to fit the template of an internet-based survey provider; SurveyMonkey© was chosen as the provider. A total of 171 items were organized into 66 discrete questions. In other words, the 171 items are captured within 66 survey questions. The questions were placed in such a manner that would be graphically appealing to the participants and appear less crowded. The results of this survey are forthcoming.

Limitations of CVI Research Process

Some limitations of content validity studies should be noted. Content validity is an important factor in supporting the construct validity of an instrument (Yaghmaie, 2003); however, a CVI is insufficient as the only gauge that an instrument measures the domain that

it is intended to measure. Feedback provided by CVI experts may reflect subjectivity and therefore is considered subject to bias. Although the CSNSEQ has been through a content validity process as described above, additional psychometric testing is warranted in order to determine the instrument's validity and reliability in the population of school nurses (McGartlin Rubio, et al., 2003). Psychometric testing of the CSNSEQ is planned for the future.

The CSNSEQ is a revised instrument, and as with all instruments that have been modified, are subject to limitations. Other limitations include instrument modification for use in the United States and adaptation from a paper and pencil questionnaire into a web-based, electronic version. In addition, survey content on sexuality education, contraceptive methods, curriculum and student specific educational policies about sexuality education may be time sensitive and therefore require revisions in light of evidence based practice guidelines and broader policy changes. Confidentiality and access issues regarding school age children, especially the adolescent population may need to be updated / revised subject to legal mandates. Finally, the survey may not be generalizable beyond California credentialed school nurses due to different educational preparation and individual state requirements for school nurse practice.

Strengths

Ironically, the limitations found in the process of adopting and revising the original British school nurse questionnaire to the present research tool known as the CSNSEQ mirror the strengths of utilizing the CVI process. The preliminary research of Westwood & Mullan (2006a) laid the theoretical foundation that generated the development of the original instrument, which was instrumental in describing the level of participation in sexuality

education by school nurses in the U.K. California school nurses who are experts in adolescent health and work within the context of the California educational system have made a significant contribution to the process of establishing validity to the CSNSEQ. This process also presents an opportunity to initiate psychometric testing and this in turn will increase the reliability and generalization of results in other research sites. Because it has been modified for Internet use, this instrument will be more time and cost efficient to administer, as well as much easier for data collection and analysis as all surveys will be channeled into one collection site (Ahern, 2005). Understanding the method of utilizing the CVI process in modifying other instruments will add to the number of research tools available to school nurses.

Implications for School Nurses

In order to advance the specialty of school nursing, research tools need to be created by and for school nurses in order to measure content that contributes to school nurse knowledge and transforms that knowledge into evidence-based practice. The content validity index is one technique that provides school nurses with a process to access research instruments designed for school nurse practice, take those instruments and modify their content for relevance, clarity, and importance to the specific research to be conducted. The CVI provides one method of expanding school nursing's research base by allowing school nurses an opportunity to replicate studies conducted in other countries and in other regions of our nation. Not only will it contribute to original research, but also increases the validity and reliability of research instruments already created through replication of studies that will validate school nurse practice.

Conclusion

In conclusion, this article reviews how a survey developed for UK based school nurses was adapted for California school nurses. In doing so, this paper demonstrates the CVI process in the context of school nursing. The original instrument was revised using the CVI process to create the CSNSEQ as the primary research instrument tool for a study conducted with a sample of California school nurses. To date few instruments have been developed for school nurse research. Nurse scientists may find the CVI process useful in modifying the CSNESQ for conducting similar studies of sexuality education among school nurses in other states.

The History and Politics of Adolescent Sexuality Education Policy: Collaborative Opportunities for Nurses in Mexico and the United States

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Abstract

At some level, adolescents interact with nursing professionals, whether it is in a school, a clinic, or as a client being cared for by an advanced practice nurse. Growing up and experiencing puberty is challenging for all adolescents, and is further complicated by the steady cross-cultural exposure and societal acculturation and assimilation for adolescents living along the U.S./Mexico border. In particular, are those Mexican and Mexican American adolescents whose level of knowledge and skill may influence their sexual risk practices and amplifies the need for health professionals to provide culturally appropriate sexuality education. It is critical that Mexican and U.S. nurses share a foundational knowledge of accurate developmentally appropriate sexuality education content. It is important that nurses on both sides of the border have an understanding of the political, cultural, and religious underpinnings that influence how sexuality education is administered in both Mexico and the U.S.

This article will discuss the history, legislation, and policies of sex education in the U.S. (California) and Mexico that have influenced sexual and reproductive health policies and education. Because educational policies are delegated to individual state governments in the United States, California will provide the legislative model for U.S. policies. Both Mexico and California have enacted laws and policies that provide for mandated sexuality-related curricula. Potentially, by collaboratively sharing this knowledge, nurses can be confident in their ability to engage in discourse when policy and practice issues are on the political table and create bi-national/bi-border curricula that is effective in promoting healthy behaviors for adolescents.

Introduction

Sexual health is an important part of human development, but due to political, cultural, and religious taboos related to sex, the education of adolescents in sexuality and reproductive health is usually overlooked or treated as problematic. Nursing professionals, in collaboration with primary and public health care providers, and in alliance with educators and parents, have been identified in the literature as associated in providing adolescents with accurate and developmentally appropriate knowledge and skills. Vital to the health and safety of all adolescents is their anticipated educational achievement and future socio-economic promise; these outcomes are tied to an adolescent's knowledge and skills in avoiding health risk.

However, the prevalence of sexual debut (initiation) during adolescence is high and cannot be negated: according to nationally representative surveys conducted in 2001, 61% of 12th graders and almost 90% of young adults aged 18-27 years in the U.S. report ever having had sexual intercourse (Brener, 2006; Halpern, 2006). In Mexico, age of sexual initiation is 15 for males, and 16 for females (Greene, Rasekh, & Amen, 2002). Adolescents between the ages of 15 and 24 years have the highest rates of sexually transmitted infections (STIs) worldwide representing over two-thirds of all cases in the developing world (CDC, 2012; Greene, et al., 2002). In the United States nearly half of all new STI cases occur in adolescents between the ages of 15 and 24 years (CDC, 2012). For example, these risky behaviors place adolescents at substantial risk as illustrated by the fact that one-third of all women living with HIV are between the ages of 15-24 years and are 1.6 times as likely as young men to be HIV positive (UNFPA, 2005).

One mode of addressing this issue is through education. Comprehensive sexuality education (CSE) is an evidence-based program that includes various curricula and skills

training regarding human development and sexuality, including education on pregnancy, family planning, and sexually transmitted diseases (California Education Code [EC 51931], n.d). The Sexuality Information and Education Council further defines CSE as a combination of sex education content that includes HIV/AIDS, social, emotional, physiologic, and anatomic instruction along with an abstinence message with information about condoms and contraception and opportunities to practice communication and refusal skills (Sexuality Information and Education Council of the United States [SIECUS], 2004). Failing to provide this critical information, including skills, and support to young people sends them out to the world inadequately prepared for life.

Growing up and experiencing puberty along the U.S./Mexico border complicates matters further because of the steady cross-cultural exposure and societal assimilation that adolescents, in particular Mexican and Mexican-American adolescents, experience. Lack of knowledge and skill that can influence their sexual risk practices amplifies the need for health care professionals to provide culturally appropriate and CSE. At some level, adolescents interact with nursing professionals, whether it is in a school, a clinic, or as a client being cared for by an advanced practice nurse. It is critical that Mexican and U.S. nurses share a foundational knowledge of accurate developmentally appropriate sexuality education content.

This article will discuss sexual and reproductive health education in Mexico and the United States. Because educational policies are delegated to individual state governments in the United States, California will provide the legislative model for U.S. policies. Both Mexico and California have enacted laws and policies that provide for mandated sexuality-related curricula. By exploring the history, legislation, and policies of sex education in the

U.S. (California) and Mexico, one can recognize the origins for such intense positive and negative reactions associated with these issues. It is important that nurses on both sides of the border have an understanding of the political, cultural, and religious underpinnings that influence how sexuality education is administered in both Mexico and the U.S. Potentially, by collaboratively sharing this knowledge, nurses can be confident in their ability to engage in discourse when policy and practice issues are on the political table and create bi-national/bi-border curricula that is effective in promoting healthy behaviors for adolescents.

Significance of the Problem

Why should the U.S. and Mexico be concerned about adolescent reproductive and sexuality education? Consider the fact that the U.S. and Mexico share a common border of 2,100 miles, with a population of approximately 12 million, and a poverty rate of 12% on the U.S. side and 28% on the Mexican side (EPA, 2010; Migration Information Site, 2010; PAHO, 2007). Mexico is the country of origin for almost two-thirds of Latinos in the United States. Variations in assimilation and acculturation to life in the U.S. exist, but the history and culture of Mexico continues to shape the lives and outlooks of people of Mexican origin north of the border (Driscoll, Biggs, Brindis, &Yankah, 2001). There are constant border crossings and high rates of legal and illegal immigration, thereby keeping cultural influences thriving which in turn affect the health beliefs and health practices of adolescents (PAHO, 2007).

All adolescents, as part of the normal growth and development trajectory are at risk for negative outcomes associated with sexual risk behaviors. However, Latino youth are even more vulnerable due to poverty, language, and lack of access to health and education services (Brindis, 2002; Talashek, Peragallo, Norr, & Dancy, 2004; Tessler Lindau, Tetteh, Kasza, &

Gilliam 2008). A significant illustration of how culture influences health beliefs, practices, and outcomes is the impact of HIV/AIDS on the Latino population. One must keep in mind, that the HIV/AIDS pandemic is 1) oblivious to geographic and political boundaries, thereby creating a cultural environment of greater risk. 2) Latinos (Mexican sub-group being the largest) will be increased to 29% of the total U.S. population by 2050 (Pew, 2011). These points are important in relation to the cross-border mobility that seems to be an element that may favor HIV/AIDS vulnerability in Latino migrants, as a socially vulnerable group, and to the projected increase in the adolescent population along the Mexico/U.S. border (Magis-Rodríguez, Gayet, Negroni, Leyva, Bravo García, et al., 2004; Walker, Gutierrez, Torres, Bertozzi, 2006).

At present, the expectation that adolescents on both sides of the border are receiving appropriate and adequate sexuality education is questionable as evidenced by findings from research conducted by the World Health Organization (WHO) and the United Nations Educational, Scientific, and Cultural Organization [UNESCO], that described deficiencies in the ability to disseminate standards-based programs designed to teach CSE. CSE curricula includes mandated education regarding prevention of HIV/AIDS and other sexually transmitted infections (STIs), but also includes preventative strategies to deal with early sexual initiation/debut (Cavanaugh, 2004; Gilliam, Berlin, Kozloski, Hernandez, & Grundy, 2007) and adolescent pregnancy, by providing students with skills to increase communication and critical decision-making (Driscoll, et al., 2001; Brindis, 2002; Villaruel, Gallegos, Loveland Cherry, & de Duran, 2003; Guttmacher (a),(b), (c), 2010).

The deficiencies exist for very different reasons. For example, in California there are inconsistencies in the manner in which the curricula is delivered: who teaches it, what is

actually being taught, how much time is spent on teaching it, and who is responsible for documenting that the curricula is delivered to students (Burlingame, 2003). The state mandates are ambiguous in defining these parameters; this situation results from numerous factors, including political and religious conservatism, and fiscal considerations that prevent effective monitoring of sexuality education (Constantine, Jerman, & Huang, 2007; Irvine, 2002; Mehlman, 2007). One issue relevant to Mexico is access to education beyond the 9th grade. Although the federal government provides for mandatory, free education (with established sexuality education curricula), it is limited to children in grades 1 through 9. This limitation in free public education leaves adolescents (10th through 12th grade), who may no longer be in school systems, without access to the established sexuality curricula that begins in the 4th and 5th grades and continues until 9th grade (Santibañez, Vernez, & Razquin, 2005).

Another issue of concern is that young women, regardless of which side of the border they reside, continue to experience sexual health inequities (Birn, 1999) due to their biological vulnerability to infection, coercion, and/or unprotected sexual intercourse (UNFPA, 2005). Worldwide, these facts may account for young women's growing numbers of HIV infections. Pathologically, the trauma of forced sex and consequent abrasions increases the risk of transmission of HIV and other sexually transmitted infections (STIs). Even maintaining abstinence before marriage may not prove to be a defensive strategy because culturally accepted practices of age-mixing and social networking with older partners continues in many communities (Vanoss Marin, Coyle, Gomez, Carvajal, & Kirby, 2000). Older husbands may already carry the virus; therefore marriage to an older man may increase a young woman's risk for HIV infection (UNFPA, 2005; Vanoss, et al., 2000).

Sexual Debut/Initiation. There is a great deal of variation in adolescent sexual behavior

within and across Mexico and the United States. The vast majority of people in contemporary North America experience sexual debut sometime during adolescence and prior to marriage (Tucker Halpern, Waller, Spriggs, & Hallfors, 2006). "Sexuality is an integral aspect of human ontogeny, with a developmental continuity of sexual feelings and behaviors that begin in early childhood and persist through late adulthood" (Vrangalova & Savin-Williams, 2011, p. 932). Despite this statistical and physiological normality, the characterization of adolescent sexual initiation as normal is viewed as problematic in the U.S. and Mexico (Spriggs Madkour, Farhat, Tucker Halpern, Godeau, & Gabhainn, 2010). The prevalence of sexual debut during adolescence is high: According to nationally representative surveys conducted in 2001, 61% of 12th graders and almost 90% of young adults aged 18-27 report ever having had sexual intercourse (Brener, 2006; Halpern, 2006). Sexual debut/initiation is considered problematic because sexual debut has been related to: 1) poor educational outcomes, (Spriggs & Tucker Halpern, 2006), 2) a decrease in self-rated academic performance (Sabia, 2007), 3) a lower than average completion of educational goals (Driscoll, et al., 2001), 4) an increase in risk of pregnancy, and 5) an increase in risk for sexually transmitted infections [STIs] (CDC, 2012; Forhan, Gottlieb, Sternberg, Xu, Datta, McQuillan, Berman, et al., 2009; UNESCO, 2010).

U.S. Pregnancy and STI Rates. U.S. adolescents bear one of the highest rates of STIs, teen pregnancy, and teen births in the industrialized world (Guttmacher (c), 2010; Cates, 2008) with three out of ten girls getting pregnant by age 20 (Kovar & Salsberry, 2012). Females, between the ages of 18-19 years, account for about two thirds of adolescent pregnancies (Bridges, 2011). About one third of pregnancies occur in the 15-17 year age group and a little over 2% occur in the 14-and-under-age group (Bridges, 2011; Guttmacher, 2010). Although

there have been reported decreases in early adolescent sexual initiation, decreases in adolescent pregnancy, and increased condom use, minority subgroups, especially Latino and Black youth are the exception (Forhan, et al., 2009; Villaruel & Rodriguez, 2003). Research studies and theories linking acculturation must be considered with caution because stereotypes about heterogeneous Latino youth can be barriers to effective treatment and care. Evidence cannot be linked as descriptive studies have been inconclusive, and intervention studies have been limited (Villaruel & Rodriguez, 2003). What is known is that many adolescents are not using contraceptive or barrier devices to protect against STIs and pregnancy (Crissey, 2004), and this may be due to lack of education about prevention, access, and lack of knowledge and skills regarding barrier and contraceptive devices (Suellentrop, (2010). Barriers to sexual health information do not recognize political boundaries and may account for higher numbers of adolescent pregnancy, adolescent births, STIs, and the growing number of HIV/AIDS diagnosed in young adulthood (Rios-Ellis, Frates, Hoyt D'Anna, Dwyer, Lopez-Zetina, Ugarte, 2008; Villaruel, et al., 2003).

Mexican Youth. According to the 2000 Mexican National Health Survey, 42% of young men and 26% of young women between the ages of 15 and 19 years have had a sexual relationship; only 47% of the young men and 15% the young women had used a condom during their first sexual intercourse (Walker, Gutierrez, Torres, & Berrtozzi, 2006). One out of every six births in Mexico occurs in women under 19 (Diaz-Sanchez, 2003). Adolescent fertility is higher in Mexican adolescents than in Mexican-origin adolescents in the U.S., although the context of these births, are predominantly marital births (Crissey, 2004). Inequalities such as substandard housing, lack of educational attainment, and poverty are noted mainly in rural areas of the Mexico, but also exist in many communities in the United

States (Pittman, Feldman, Ramirez, & Arredondo, 2009).

Qualitative and quantitative sources of data from both sides of the border indicate that there are two major reasons for poor outcomes in Latino youth associated with sexual knowledge acquisition: 1) poor communication between parent/child (Guilamo-Ramos & Bouris, 2008; Guzman, Schlehofer-Sutton, Villanueva, Dello Stritto, Casad, & Feria, 2003; Talashek, et al., 2004), and 2) inconsistencies in standardized sexual and reproductive curriculum in the formal educational setting (Freudenberg, 2007; Kirby, 2011; Rios-Ellis, et al., 2008).

Historical Perspectives

Policies and practices, especially those that incite moral, ethical, and political controversy can best be understood within a historical and political context. The domain of sexuality education is extremely diverse. It draws in a broad range of actors: parents, children, policymakers, school board members, education providers, and numerous institutions including schools, jails, hospitals and clinics, media groups, religious organizations, government, and nongovernmental organizations (NGOs). The subject matter includes formal and informal discussions about human anatomy and reproduction, sexual behavior and acts, sexually transmitted diseases, gender norms and values, abortions, contraception, sexual identity and orientation, social relations, communication, body image, and responsibility.

Over the past few decades in the U. S. and Mexico, the field of activities referred to as sexuality education has grown and changed significantly in shape, scope, and size. This growth has occurred in response to emerging diseases, technologies, economic forces, and power relations. Parallel ideologies have evolved around what role public (government-run)

institutions should control, participate, or avoid in terms of sexuality education.

History, Politics, and Religion

The U.S. and Mexico mirror historical, political, and religious foundations that influence the dissemination of sexuality education; both nations are grounded in histories of colonialism and therefore are burdened with legacies effecting the education of young men and women in matters of sexual and reproductive health. Popular sociological literature reinforces the common belief that sexuality education debates described as "culture wars" (Irvine, 2002) are largely a clash between conservatives and liberals (Mehlman, 2007; Constantine, Jerman, & Huang, 2007; Irvine, 2002). Both nations value the principle of "separation of church and state;" it is the interpretation of that principle in the context of sexual and reproductive controversy that appears to inflame liberals and conservatives on both sides of the border. One of the essentials of cultural modernity is the secular character of social life, namely, the separation of church and state (Amuchástegui-Herrera, 2001). One of the pillars of the construction of modern secular states is the development of a national education system (Amuchástegui-Herrera, 2001). Education is one of the most important vehicles for building consensus in all aspects of life, including the sociocultural aspects of sexuality (Amuchástegui-Herrera, 2001).

Design of Education in the U.S. and Mexico

Like the U.S., the Mexican government has three branches: legislative, executive, and judicial. It is also a federal republic. Like U.S. states and Canadian provinces, much of the law is left to the jurisdiction of the individual Mexican states. The Mexican legislature, the General Congress is bicameral. The Mexican president is elected by the people to a single six-year term. The judicial system has four hierarchical parts: at the top is the Supreme

Court, followed by the Electoral Tribunal, Circuit Courts, and District Courts. The higher court can make decisions over other courts through specific mechanisms, similar to the role of the U.S. Supreme Court (Vargas, 2008).

The current Constitution of 1917 is the first such document in the world to set out social rights, serving as a model for the Weimar Constitution of 1919 and the Russian Constitution of 1918 (Majeed, Lampman Watts, & Brown, 2006, p.188). Some of the provisions (Articles 3, 27, and 123) display profound changes that transform Mexican political philosophy and frames the backdrop for social reform in contemporary Mexico. For example, Article 3 controls censorship by forbidding the setting up of a list of prohibited books and establishes the basis for a free, mandatory, and lay education; thereafter, mandatory education was provided for children until 6th grade (French & Manzanárez, 2004). The age for compulsory education did not change until the General Education Law of 1993, which raised the requirement to the 9th grade (Santibañez, Vernez, & Razquin, 2005). The federal government sets national educational standards under the ministry of the Secretariat of Public Education (Secretaría de Educación Pública [SEP]). Educational standards are set by the SEP at all levels except in autonomous universities chartered by the government. Accreditation of private schools is accomplished by a mandatory approval and registration with this institution.

Under the provisions of the 1993 General Education Law, the SEP continues to oversee the general implementation of education, including supervision of teaching plans, but the states are given complete responsibility for administering basic education. This includes indigenous and special education. Mandatory school age is from 6-14 years; parents are legally obligated to send their children to school (Santibañez, et al., 2005).

Education in the U.S. is controlled and funded at three levels: federal, state and local. Child education is compulsory and public education is universally available. Under the Constitution, the responsibility for K-12 education rests with the states. Due to a compelling interest in the quality of the nation's public schools, the federal government through the legislative process, provides assistance to the states for schools in an effort to supplement, not supplant, state support (ED.gov, n.d.; LWV, 2011). Under direction of the state legislature, locally elected school boards have jurisdiction over school districts and are responsible for setting curricula, funding, teaching, and other policies. Although school boards are fiscally independent officials, educational standard and standardized testing decisions are made by state government (ED.gov., n.d.). The age for compulsory education varies from state to state; it averages from age five to eighteen years. Since 1874, California has made school attendance mandatory from ages six to eighteen years (Legislative Analyst's Office (LAO), 2004).

Religiosity in Mexico and the United States

Today, 96% of Mexico's population is Roman Catholic, and although the influence of the of the Church is apparent, the Mexican government continues to exercise the strict policy of secularism originally instituted in 1857 by President Comonfort and strictly enforced by the Constitution of 1917 by President Benito Juarez (Amuchástegui Herrera, 2001). Constitutional Articles 3, 5, 24, 27, and 130 were enacted to restrict the power of the Catholic Church (Lear, 2001). Attempts tó enforce these articles by President Plutarco Elías Calles in 1926 led to the bloody civil war known as the Cristero War (French & Manzanárez, 2004, Heilemann, 2002; Lear, 2001; Soberanes Fernandez, 2002). Throughout Mexico's history the value of maintaining a secular state to the Mexican people has been paramount. In

modern day Mexico, sexual and reproductive health debates stem from tension between the Roman Catholic Church in contrast to government control.

The religious landscape in the United States has always been Christian, and today represents 78% of all other religious affiliations. At present, Evangelical Christians lead by 25% of the total Christian population (Pew, 2007). The Roman Catholic Church has experienced the greatest net loss, trailing behind at 23%. Latinos, who already account for roughly one-in-three adult Catholics overall, may account for an even larger share of U.S. Catholics in the future. For while Latinos represent roughly one-in-eight U.S. Catholics age 70 years and older (12%), they account for nearly half of all Catholics within the ages of 18-29 years (45%). This cohort of young persons will be influential in future policy and funding issues.

In contrast to Mexico's turbulent history and firm policy of secularism, Thomas Jefferson incorporated separation of church and state into the original constitution, specifically to protect an individual's right to practice religious freedom. Although the principle of separation of church and state is recognized and respected, conservative religious groups in both nations continue to influence sexuality education and reproductive policy through political action that has resulted in control of funding sources.

History of Sex Education Policies/Practice in Mexico

The most important battlefield fought in Mexico has been between rigid tradition and scientific and democratic discourse over sex education in schools and in public health (Amuchástegui Herrera, 2001). The original Constitution of 1857 (under President Comonfort), ordained that religious institutions would be confined to churches and convents and removed from open policy and education (Amuchástegui Herrera, 2001). Thus, religious

institutions lost most of their economic base and an anti-clerical attitude developed among certain sectors of society. After the Mexican Revolution (1920) Álvaro Obregón became president of Mexico and was successful in promoting social liberalization by curbing the role of the Catholic Church, improving education, and taking steps towards instituting women's civil rights. Tragically, Obregón's influence was cut short by his politically motivated assassination, which was prompted by the insurgency named "la Guerra Cristera" (Christ's War). This uprising resulted in religious persecution, control of the Church in Mexican public life, and reinforced the secular rift in Mexico (Heilman, 2002).

Along with the development of the secular national state, the post-revolution Constitution of 1917 established the Institutional Revolutionary Party or Partido Revolutionario Institutional (PRI), which became the ruling party for the next 71 years (1929-2000). The PRI was well regarded in keeping Mexico's political life free of the anti-sexuality tenets of the Roman Catholic Church. Sexual and reproductive health and rights faired relatively well under the PRI (Smith, 2006), despite the dissident nature and influences of the omnipresent Church. Even today, Catholic sexual morals have not been completely substituted by values of individualism, tolerance, and respect promoted by feminism and modernism (Carrillo, 2007; Amuchástegui Herrera, 2001). Rather, these points of view seem to coexist in the secular state.

It was not until, July 2000 that Mexico's citizens demanded that the Mexican government extend less governmental control and in a truly historic election, Mexico's citizens elected Vicente Fox, a member of the National Action Party or Partido Acción Nacional (PAN), opening up a new era of democracy for Mexico's 100 million-plus citizens. However, with this political change came a new set of moral reforms that continue to

influence sexual and reproductive policies in Mexico (Smith, 2006).

Comprehensive Sexuality Education in Mexican Schools

In order to understand sexual and reproductive policy development in Mexico, one needs to address the historical events between the Mexican Revolution and PAN's victory. Moral codes did not change, as radically as separation of church and state; attention was paid to the control of venereal disease, but without emphasis to adolescents. Services to control sexually transmitted diseases were instituted in Mexico as far back as the 16th century, but the government emphasis was on controlling prostitution. In 1905 a law was passed that anyone thought to be working as a prostitute pass a compulsory physical examination; this act was in effect until 1940. By 1933, groups like the Sociedad Eugénesica Mexicana (Eugenics Society of Mexico) started to advocate for sex education in the schools because of the awareness that families were not informing their children about sexuality. These groups used premarital pregnancy, venereal disease and sexual perversion as arguments in favor of sexuality education. Conservative parents with the backing of right wing groups asserted that parents be the exclusive sex educators of their children, therefore forcing the Minister of Education to resign and all sex education efforts to halt (Amuchástegui Herrera, 2001).

Lázaro Cárdenas (1934), probably the most beloved president of the Mexican people, highlighted the importance of public health and other social measures to the nation's progress and declared "We must encourage the ambitions of the Mexican woman, shoulder to shoulder, with the man in achieving our aims" (Birn, 1999, pp. 399-400). At this time, women's demands for sex education and for the elimination of double standards were directed to improving women's roles as mothers and spouses, and did not question or negate women's domestic role (Amuchástegui Herrera, 2001).

Cardenas participated in public health initiatives with the U.S. through the Rockefeller Foundation's International Health Division (IHD). The Rockefeller model of public health was based on a biological approach to health and disease that called for technical interventions rather than a social, cultural, and political determinant of disease. The IHD campaign was largely a patriarchal endeavor to train Mexican doctors and engineers in American Ivy-League schools and return them to Mexico to shape and direct public health institutions. These efforts had multiple ends, one of which included raising Mexican standards in order to eliminate health threats to commerce going across the U.S./Mexico border (Birn, 1999). Accidentally, the centrality of women as promoters of health was acknowledged, and women were later utilized as influential targets and disseminators of public health information. Ironically, the ancient art of midwifery, with the spiritual, psychosocial and cultural aspects provided by women, was replaced by the strange and scientific Rockefeller medical model (Birn, 1999).

The federal statute, General Law of Population of 1947 actually promoted population growth to increase the workforce; it resulted in population growth at a rate of 3-5% per year and by 1972 the population had reached 54 million, from 20 million in 1940 (Nagel, 1978). It was only during the 1960s that popular opinion shifted, and privately funded family planning programs became increasingly active. The maternal and reproductive focus of the Rockefeller Foundation's programs continued into the 1960s when the focus was again re-directed to population restoration efforts that began due to an undersupply of a healthy workforce. Even attention to girl's education had to do more with controlling fertility, than with women's social and economic well-being (Birn, 1999). At this time policy regarding sexuality education in Mexican schools had been at the discretion of the local school

authorities and the principals of individual schools (Pick, Givaudan, & Brown, 2000).

In 1972 President Echevarria, known as a traditional pronatalist, announced the creation of a national family planning program (Nagel, 1978). In 1973 Mexico drafted a relatively successful family planning agenda with the purpose of spacing children or stopping childbirth, but not with the intent of postponing children. This occurred despite Vatican opposition to key elements of comprehensive sexuality education. It is important to note that this program excluded adolescents and indigenous populations (Smith, 2006). However, in 1974, the National Population Council was created and the National Program for Sex Education was launched, creating a curriculum that allowed teachers, health providers, and rural health promoters to present sexuality as a biophysical process (Amuchástegui Herrera, 2001; Nagel, 1978; Smith, 2006). These measures met with controversies that commanded adjustments to the presentation of teaching materials and textbooks, but the Mexican government continued to pursue programs of mass communication and sex education to compel the population to accept new attitudes (Nagel, 1978). According to a survey conducted by the National Fertility Survey, by the mid 1970s, 41.5% of Mexican women of childbearing age were practicing contraception bringing the average family size down from 6.5 children per woman to 2.0 children per family (Nagel, 1978).

In 1985, a Mexico City-based NGO, Instituto Mexicano de Investigación de Familia y Población's (IMIFAP) was founded. IMIFAP's mission was primarily to provide health prevention and life skills training in the areas of reproductive and sexual health, gender, HIV/AIDS, substance abuse and violence prevention, as well as micro-enterprise (IMIFAP, n.d). Mexico had been making great strides in the area of national, school-based sexuality education beginning with the legislative action that resulted in the General Education Law of

1993, which for the first time mandated compulsory secondary education and included clauses on sexuality education (Pick, et al., 2000). IMIFAP established the groundwork for the PRI in the 1990s to shift Mexico's national reproductive health plan away from a population control model to a social justice based approach. In 1993, due to advocacy efforts and a new global environment for sexual and reproductive health and rights (Smith, 2006), comprehensive sexuality education was being introduced in Mexico's primary and secondary schools. The law included 3 important elements: 1) that family planning and responsible parenthood be discussed in schools, 2) that education contribute to the individual's 'integral development' and, 3) that parents be involved in education. These are the central facets of IMIFAP's educational philosophy (Pick, et al., 2000).

In 1998, in response to legislation provided by the General Education Law of 1993, sexuality education was introduced in the 5th and 6th grades through an obligatory textbook for all students, which includes information about biology and life-skills. This was a significant victory for pro-choice organizations that negotiated these changes (Pick, et al., 2000). A new school subject called Formación Civica y Etica (Civic and Ethical Training) was introduced into the seventh and eighth grades nationwide, and extended to ninth grade a year later. This curriculum, that includes a strong life skills and sexuality education component was created through the efforts of Mexico's Ministry of Education (SEP), and written by invited groups and authors (Pick, et al., 2000; Smith, 2006).

However, these advances motivated Mexico's sexually conservative groups to mobilize against comprehensive sexuality education. These groups have now become more evident since the PAN's transition as the leading political party. PAN legislators, however, have become reluctant supporters of comprehensive sex education and of reproductive health

services as an alternative to abortion (Carrillo, 2007). In 2006, the Mexican federal government issued biology textbooks for seventh graders that include medically appropriate and current sexual health information. Although the textbooks were controversial, they were not removed from the schools, largely due to the secular attitude of the government and support of parents. A Mexican survey conducted by the National Federation of Parents demonstrated that over 95% of the 20 million Mexican parents surveyed agreed that sex education should be a part of the basic school curriculum (Pick, et al., 2007). A positive parental attitude in favor of CSE is also reflected in polls taken in the U.S., and in particular in California (Constantine, et al., 2007).The support of parents for inclusion of sexual health education as part of the regular curriculum in schools is validated by research on both sides of the border.

U. S. History of Sexuality Education Practice/Policy

In order to understand how sexuality education practices and policies have developed, one must examine the historical context that created the present-day debate. The developmental phase, known as adolescence, is a modern Western construct invented during the Victorian era by G. Stanley Hall's seminal work *Adolescence* (Bakan, 1971; Moran, 2001). As a result of the Industrial Revolution, the structure of the family was changed. Child labor was considered the social norm as families relocated from farms to large cities because of work opportunities. In 1938, the National Child Labor Committee's statute ended child labor, and instituted free and compulsory education for all children. This law recognized adolescents as children and not as adults (Bakan, 1971). Prior to this legal mandate, the sensible, yet moralizing need to speak to the sexual and reproductive health education of adolescents was identified years before, but with the incentive to curtail increasing rates of

venereal disease. Restrictive and moralistic messages would continue to be the norm in addressing sexual and reproductive health. By 1940, The U.S. Public Health Service strongly advocated sexuality education in the schools, labeling it an "urgent need" to address prevention of venereal disease (Mehlman, 2007; Irvine, 2002).

At the same time, major organizations such as American Association of School Administrators (AASA), began to call for better, more progressive sexuality education in our schools. Curriculum was modified to include promotion of health, teach normal sexuality and reproductive issues, as well as prevention of STIs (Irvine, 2002; Dailard, 2001). In 1953, the American School Health Association (ASHA) launched a nationwide program in family life education. Two years later the American Medical Association (AMA), in conjunction with the National Education Association (NEA), published five sex education pamphlets.

Despite overwhelming evidence, the majority of U.S. parents, public health officials, and educators supported comprehensive sexuality education, but conservative opponents were not swayed (Collins, Alagiri, & Summers, 2002; Constantine, et al., 2007; NPR, Kaiser, Kennedy, 2004;). For the next 30 years, the battles continued to rage between conservatives and health advocates over the merits and format of sexuality education in public schools.

The first wave of organized opposition from conservative political and fundamental religious factions started in the late 1960s to the early 1980s. In California, a historical battle raged on during the years between 1962-1969 in the Anaheim Union High School District (Mehlman, 2007; Irvine, 2002;) over the Family Life and Sex Education (FLSE) program, directed by Sally Williams R.N., an Anaheim school nurse and sex educator. Conservatives took the form of attack aimed at any form of sex education in school. Interestingly, sex education was not new to Anaheim schools; it had been part of the curriculum since the

1940s. Mrs. Williams managed a successful program, providing parents with workshops and garnering 92% parental support for FLSE. Regardless of widespread parental and educator backing, the FSLE program, was dismantled and reorganized to "a birds and the bees level" (Irvine, 2002, p.40). This was accomplished by disparaging newspaper articles that falsely described depravity narratives constructed to describe provocative instructional methods and shocking adolescent activities (Mehlman, 2007; Irvine, 2002). Because of negative and hostile press and media attention, Williams was escorted from her sex education class and never found a way to fight the unjustified charges levied against her (Personal Communication-Bradley, 2010; Irvine, 2002).

Even with the key concept of FSLE being that "the family unit is the only socially approved agency of reproduction" (Mehlman, 2007, p. 229), and the fact that the curriculum upheld the conventional morality of the day, its discursive quality was revolutionary, therefore unacceptable and thus was identified as subversive. Conservative groups such as the Christian Crusade and the John Birch Society described this and other sex education curriculums as dissident. Communist activity and persons associated with FLSE activities were considered perverse (Irvine, 2002; Scales, 2001). Phyllis Schlafly, leader of the right wing organization, Eagle Forum and author of *Child Abuse in the Classroom* (1984), declared sex education as child sexual abuse (Irvine, 2002). Shafly argued that sexuality education promoted and resulted in an increase in sexual activity among teens (Irvine, 2002).

Nonetheless, by 1983, sex education programs in California public schools multiplied, in large part due to newly emerging evidence that such programs didn't promote sex but in fact helped delay sexual activity and reduce the teen pregnancy rate (Constantine, et al., 2007; Irvine, 2002; Mehlman, 2007; Scales, 2001). Sexuality education was being taught

within the context of comprehensive family life education programs or human growth and development courses. Such an approach emphasized not only reproduction, but also the importance of self-esteem, responsibility, and decision-making. The new courses covered not only contraception, but also topics such as family finances and parenting skills.

In 1981, under President Reagan, conservative legislators began to influence sexuality and reproductive health curriculums by offering funding opportunities for educational grants that promoted abstinence. Congress created the first of three programs that provided funding for sexuality education: 1) Adolescent Family Life ACT (AFLA)-1981; 2) Title V (welfare reform legislation-1996); and 3) the Special Project of Regional and National Significance - Community Based Abstinence Education- 2001(SPRANS-CBAE) grant program. All three programs promoted abstinence-only sexuality education (Collins, et al., 2002).

Through AFLA, the federal government for the first time invested in local programs designed to prevent teenage pregnancy by encouraging "chastity and self-discipline" among teenagers (Dailard, 2001, p 9). From 1981 until 2007, the Department of Health and Human Services (DHHS) directed compliance of abstinence-only sex education under suppressive legislation instituted by AFLA (1981). No funding was permitted for programs that gave information on, or counseling related to abortion; instead programs were aimed at developing parenting skills, promoting adoption as an alternative to abortion and providing marriage counseling. AFLA helped usher in over 20 years of debate at the federal, state, and local level over whether sexuality education should exclusively promote abstinence or should take a more comprehensive approach.

In the late 1990s federal investment increased significantly after Congress, as part of the 1996 Title V welfare reform act, created a federal state program which funded $440

million over five years to support local sexuality education programs that condemned all sex outside of marriage (for people of any age) and prohibited any positive talk of contraception. Four years later, Congress approved SPRANS-CBAE, the third abstinence-only education program funded at $50 million over two years (Dailard, 2001).

Major funding for abstinence-only education continued without scientific evidence as to the effectiveness of the instruction to decrease sexual activity in adolescents (Dailard, 2001). Research also identified disparities about the inclinations of policymakers, the needs and desires of both students and parents, and reports by teachers of gaps in classroom (Dailard, 2001). It was not until 2004, when the Waxman Report found that the majority of curricula (11 out of 13) contained significant factual errors (Darflinger, 2008). This was found after significant misrepresentation of religious material, medical information, and violations of separation of church and state; a 1993 court settlement resulted in amendments to AFLA. The SPRANS curricula had not been reviewed for accuracy; for example, information regarding utility of condom use was identified as 60-69% effective (even though evidence shows that condoms are 97-99% effective), that abortion leads to depression and suicide, and that sex puts women at risk for cervical cancer (Darflinger, 2008; Waxman, 2004).

In 2007 an international retrospective review of 83 research studies was published that examined the effectiveness of sex and HIV curriculums (Kirby, 2007); 64 of the curricula were conducted in developed countries and 18 in developing countries. Virtually all the programs covered specific sexual and protective behaviors; the majority encouraged abstinence, but also discussed or promoted condom usage for purposes of contraception if a person chose to be sexually active. Only 7% of the programs were abstinence-only, and these were only from the United States (Kirby, Laris, & Rolleri, 2007). The United States was and

still is the only Western country with a history of formal policies directing federal and state funds towards promoting abstinence only programs (Darflinger, 2008).

Funding for CBAE programs began fiscal year 2001, with $20 million dollars; by fiscal year 2006, the funding was increased to $113 million dollars where it remained until fiscal year 2008. When President Obama took office in 2009, CBAE was cut to $99 million dollars; CBAE will receive no funding after 2010. Instead federal dollars will be allocated to the Office of Adolescent Health for comprehensive sexuality education (to include abstinence as a choice). Incidentally, the Office of Adolescent Health (OAH) was created as part of the *Preventive Health Amendments* of 1992, however, fiscal year 2010 marks the first time that OAH has been given any funding. In 1992, OAH was charged with coordinating all activities within the DHHS that related to adolescent health, including research and policy design. OAH was also designed to carry out demonstration projects to improve adolescent health. Without funding, however, the office was never established. The budget for this program is allocated at approximately $115 million dollars for evidence-based comprehensive sexuality education (SIECUS, 2010).

Comprehensive Sexuality Education in California Schools

To this date, California has received bipartisan support for comprehensive sexuality education and by the majority of its governors, Wilson (1991-1999) and Davis (1999-2003), Brown (2010- to present date 2012) (PPAC, n.d.); although less support was given by conservative Governor Schwarzenegger (2003-2010) (Raymond, Bogdanovich, Brahmi, Cardinal, Leonard Fager, Frattarelli, et al., 2008). In 1992, under the administration of Governor Wilson, California was pro-active in researching the efficacy of the abstinence-only Educate Now and Babies Later (ENABL) program. ENABL was appropriated $15

million by the state legislature, but was terminated after evaluations showed no significant effect from the intervention on attitude or behavior in adolescents. This was the first step that California took in rejecting abstinence-only legislation (Cagampang, Barth, Korpi, & Kirby, 1997). Federal Title V grants were soon available, but California has never applied for or accepted funding under the Title V abstinence-only-until-marriage program. However, the state has received more than $5 million in the fiscal year 2005 for Community-Based Abstinence Education (CBAE) programs (Waxman, 2004); DHHS awarded grants directly to community-based organizations by sidestepping the state's approval process. This action was accomplished with the support of conservative federal legislatures who wanted to promote the abstinence-only message and control funding for abstinence-only education (Finer, 2007).

In 2003 the state legislature passed Senate Bill 71, the California Comprehensive Sexual Health and HIV/AIDS Prevention Act into state law. This effectively banned "abstinence only" sex education and established guidelines for California public schools when providing "education regarding human development, including pregnancy, family planning, and sexually transmitted diseases"(California Education Code 51931[b]). Unfortunately, California schools are still not required to provide students with sex education. Schools are instructed to provide HIV/AIDS prevention education, once in the middle school and once in high school.

However, if schools choose to teach comprehensive sex education (CSE) they must follow specific content criteria established in SB71. CSE criteria in California must include the following: it must be age appropriate, medically accurate and objective, unbiased, appropriate for students with disabilities, and equally available for English language learners. Curricula must teach respect for marriage and committed relationships. The curricula must be

appropriate for use with pupils of all races, genders, sexual orientation, religious, ethnic and cultural backgrounds. Students are encouraged to communicate with their parents/guardians about human sexuality. If schools offer CSE and/or HIV/AIDS education parents must be offered notification. Parents must be given an opportunity to review materials, and they ultimately have the power to opt their child out of this education.

HIV/AIDS education is defined in California Education Code Section (CEC) 51931(d) as "Instruction on the nature of HIV/AIDS, methods of transmission, strategies to reduce the risk of human immunodeficiency virus (HIV) infection, and social and public health issues related to HIV/AIDS (CDE, 2010). Abstinence-only curriculum, that teaches abstinence as the only option for preventing pregnancy and STIs, is prohibited in California public schools. Private schools are not expected to act in accordance with the legal requirements, unless they are receiving federal funding.

California's emphasis on comprehensive sexuality education and access to reproductive health services is key to the state's 46% decrease in teenage pregnancy rates (Guttmacher Institute, 2011). California has a significantly higher teen pregnancy rate of 93% as compared to the national average of 84%; the HIV/AIDS rate is slightly below, at 8 per 100,000 people as compared to the national average, at 11 per 100,000 people. But despite these optimistic figures, California has much room for improvement (Burlingame, 2003; CHI, 2003; Constantine, et al., 2007; Guttmacher, 2011).

Implications for Nursing

Worldwide, nurses are seen as the largest group of health professionals, and by virtue of their scope of practice, are positioned to promote the health of adolescents (Saewyc, Bearinger, McMahon, & Evans, 2006). Statistical evidence points to the need for adolescents

to be educated in sexual and reproductive health education and life skills, that if practiced, will provide protective factors to support a healthy lifestyle. It is important for nurses to understand the history behind sexuality education controversies so they are able to understand why policies have been constructed. Clearly, the history of sexuality education is an emotionally charged subject complicated by compulsory education laws, politics, religion and culture. Nurses that provide care to adolescents, and in particular Latino adolescents, would be at a disadvantage without the academic preparation and cultural knowledge to teach effective sexuality education. The questions remain, is there a potential for collaboration between U.S. and Mexican nurses who practice as sexual and reproductive health educators? Who are the nurses willing to take on this challenge? How can nursing education share in effecting successful outcomes for adolescent clients? In reference to U.S. (California) and Mexican nursing professionals, three points will be discussed that influence their ability to take on this challenge: 1) bi-national/bi-border nursing workforce issues, 2) the preparation of nurses to teach sexuality and human reproduction to adolescents, and 3) nursing's leadership role in policy efforts to address adolescent sexual health education.

Bi-national/Bi-border Nurse Workforce

Mexican Nurse Workforce

Economics is fundamental in explaining accessibility to nurses and nursing services, and is especially important in establishing professional collaboration efforts between Mexico and the U.S. According to the Organization for Economic Cooperation and Development (OECD) the total health care expenditure taken from Mexico's GDP in 2008 was 5.9%, which is three percentage points lower than the average of 9% in the OECD countries. Mexico's population has grown from about 97.5 million to 112 million persons in the last 10

years (INEGI, 2010). According to OECD, in 2004, there were 200,000 nurses in Mexico with 2.2 nurses per 1,000 population in Mexico; the number of nurses per capita has increased in Mexico, up from the national average of 1.8 nurses per 1000 persons in 1990 (OECD, 2010). The nursing workforce in Mexico is 90% female and 10% male (Squires, 2010). Approximately 65.1% (n= 88,678) of the nursing workforce in Mexico consists of registered nurses who are graduates of diploma and baccalaureate programs (Nichols, Davis, & Richardson, 2011, p.620). The next level is the technical (general) nurse or *enfermera tecnica* who receives three years of hospital-based training at the high school or secundariá. The remainder of the nursing workforce is considered auxiliary, a title comparable to the nurse's aide in the U.S; these nurses have nine years or less of general education and on-the-job training (Squires, 2010).

Nursing in Mexico is not self-regulated, as there is nothing comparable to a Board of Registered Nursing (Nichols, et al., 2011), except for the Inter-institutional Commission on Nursing, founded in 1983, through the Ministry of Health to investigate complaints against nurses. Life-long, irrevocable nursing licenses are issued through the Secretary of Education (SEP) after completion of course and clinical work followed by two years of community service (Rivas, 2003). Baccalaureate and Master's graduates take a qualifying exam prior to receiving licensure (Nichols, et al., 2011).

The majority of Mexican nurses work in acute hospitals, as there is little opportunity to engage in public or community health nursing after graduation (Nigenda, Magana-Valladares, Cooper, & Ruiz-Larios, 2010). Technical and auxiliary nurses administer public health services, as members of a multidisciplinary team. Nationally, there are 1,033 health professions training programs including 509 in medicine and 300 in nursing (U.S. Mexican

Border Health Commission, 2005).

It was not until, 2004 when the Comisión Nacional de Salarios of Mexico elevated nurses with a bachelor's degree or higher to professional status (Squires, 2011). Nurses with Master's degrees are less than 1% and work in academia. Doctoral programs for the nursing profession did not exist in Mexico until 2001 (Squires, 2007; 2011). In 2001 the first doctoral program opened its doors at the University of Nuevo Leon, in Monterrey, Mexico (Nichols, et al., 2011; Squires, 2007, 2011).

Conceivably, the North American Free Trade Agreement (NAFTA) provides a framework to exchange nursing education curricula, practice ideas, and research activities. Contrary to expectations, NAFTA has not substantially influenced the migration of nurses or the establishment of shared health care or visions within and between the U.S./Mexico borders. This is mainly due to the fact that Mexican nursing education is not analogous to U. S. requirements. English language proficiency and secondary-level nursing education that does not meet U.S. requirements are the primary barriers to nurse migration (Aiken, 2007). Mexico is nevertheless, considered an emerging supplier to the U.S. nursing workforce. Mexican nurses are often recruited to states along the U.S. Southwestern border. However, because many Mexican nurses are educated at the secondary school level and have difficulty with English fluency, they have challenges in passing the Commission on Graduates of Foreign Nursing Schools (CGFNS) Qualifying Exam and the NCLEX-RN© examination (Nichols, et al., 2011).

In 2003 a total of 77 Mexican nurses took the NCLEX-RN exam for the first time with a pass rate of 17 percent compared to Canadian nurses with a pass rate of 75 percent (NCSBN, 2006).

U.S. Nurse Workforce

Health care spending in the United States, as compared to the rest of the industrialized world is 18.2% of its gross domestic product (GDP) (National Coalition on Health Care, 2011). According to the Bureau of Labor Statistics (2010) there are 2.6 million U.S. registered nurses; according to the OECD (2010) there are 8.1 U.S. nurses per 1000 persons. Sixty per cent of these nurses work in hospitals; 8% are employed in offices of primary healthcare providers, 5% in home healthcare services, 5% in nursing care facilities, and 3% in employment services. Others are employed by government agencies, social assistance agencies, and educational services.

There are currently four educational pathways to registered nursing; all involve passing a state administered national licensing exam, and prior to that attendance and completion of an accredited academic and clinical program (Aiken, Cheung, & Olds, 2009, p.w647-w648). These pathways include: hospital diploma program (< 5%); an associate degree (more than two-thirds of all graduates), a bachelor's degree (a little over 30%), and a small, but growing number of accelerated track applicants that enter nursing school with a bachelor's or higher degree in another field and can earn a BSN in a university program lasting from twelve to eighteen months (Aiken, et al., 2009; Bureau of Labor Statistics, 2010). Nursing licensure is in the U.S. by the nursing profession through the individual state's Boards of Nursing; all registered nurses are mandated to maintain continuing education for active licensure per state mandate (NCSBN, n.d.). The Baccalaureate in Nursing (BSN) degree is the minimum requirement for professional community health/public health (C/PHN) practice and continues to be essential as defined by the Association of Community Health Educators (ACHNE, 2009). California's State Board of Nursing requires certification in public health for nurses in

community health roles, especially public health departments and in public school districts (CA-BRN, n.d).

U.S. Nurses' Educational Preparation to Teach CSE

The topic of human sexuality has widespread application throughout the life course and is relevant to general nursing practice, as well as to specialty practice areas, including public health, community, and school nursing. Many nurses believe that sexuality assessment, evaluation, and counseling are part of their professional role (Reynolds & Magnan, 2005), yet sexual health education has been disregarded by nurse educators because it is not clearly identified in the essential core curriculum (AACN, 2008; AACN, 2011). Examples of reference to sexuality education are courses that contain elements of normal growth and development and the maternal-child didactic and clinical experience (AACN 2008), but these courses do not address these issues in the context of the adolescent experience.

A search of the nursing literature revealed little information about the role of the nurse in addressing holistic and comprehensive sexual health education with adolescents. What is evident is that sexuality is addressed primarily in the context of disease management and not as the norm in growth and development along the life continuum. International nurse researchers have addressed sexuality and patient care in the context of chronic illness and end of life trajectories (Dattilo & Brewer, 2005; Melo, Carvalho, & Pelá, 2006), rehabilitation nursing (Earle, 2002), and school nursing in elementary school children (Jou, Chen, Lee, & Yin, 2003). HIV/AIDS nursing practice has taken the lead in educating nurses in holistic sexuality education and care by creating the Association of Nurses in AIDS Care's (ANAC) core curriculum (ANAC, 2010). This curriculum was written to increase nurses' comfort level, knowledge, and skills in order to manage, educate, and counsel patients. The critical

nature of HIV/AIDS heightened nursing's responsiveness in the integration of sexual health concepts, but these concepts are yet to become part of the generic nursing program content. Intensive sexuality courses need to be instituted to meet the needs of the graduate nurse in addressing future research and evidence-based practice. Human sexuality deserves attention, not as a separate entity, but as a significant component of total health care.

In 1997, 520 U.S. nurses belonging to various advanced practice (National Association of Pediatric Nurse Associates and Practitioners [NAPNAP]) and public health (American Public Health Association [APHA]) and community health specialty groups, including school nurses (National Association of School Nurses [NASN]), participated in a national survey that assessed their competence in working with adolescents (Saewyc, Bearinger, McMahon, & Evans, 2006). The results were compared to a similar survey conducted in 1985. Both surveys assessed perceived competence in addressing common adolescent, health issues, relevance of those issues to nurses' practice, and leadership skills. The results indicated that nurses were prepared to address common health problems of adolescents, but at least 25% of nurses indicated being deficient in knowledge and skill in half of the adolescent sexual health competencies (Saewyc, 2006). Results expressed a significant lack of competency in matters of gay, lesbian, and bisexual youth. Critical indicators identified as priority areas in Healthy People 2000 and Healthy People 2010 such as smoking cessation, suicide, violence, and pregnancy were identified as irrelevant to their nursing practice.

Mexican Nurse Preparation to Teach CSE

Historically, the lack of preparation of Mexican nurses to teach sexuality and human reproduction to adolescents is tied to nursing education and nursing's limited involvement in the delivery of public health and school health services (Prida & Miranda, 1944). Mexican

public health services were established in 1918, shortly after World War I. A year later, in Mexico City, the first child health center was created. In 1924, the Department of Public Health opened a School of Hygiene offering postgraduate and specialization courses in sanitation, bacteriology, laboratory procedures, and child hygiene –this was the only course open to nurses and midwives (Prida & Miranda, 1944). At the same time, but without support of the Public Health Department, the Board of Education initiated specialization courses for school nurses. In 1929, under the leadership of the wife of President Portes Gil, programs for protection of childhood were created, as well as a maternity hospital and a system of nursery schools. The Board of Education reorganized the school nursing service with clinics to serve school age children, and eventually opened a Department of Psychopedagogy and Hygiene (Prida & Miranda, 1944). By 1931, 12 centers were operating in Mexico City with daily attendance of nearly one hundred and fifty mothers and children. Nurses and midwives were in charge of these centers. Once again, services for adolescent health were not on the health or social agenda, and although school nursing services were created, compulsory education did not exist beyond the sixth grade, so school nurses did not have access to adolescents. By the time that the law changed in 1993 (to increase mandatory education up to age 15 years) school nurses had virtually disappeared in Mexico.

Today the majority of Mexico's licensed nurses work in acute hospitals, as there is little opportunity to engage in public or community health nursing (Nigenda, et al., 2010). Technical and auxiliary nurses administer public health services, as members of a multidisciplinary team. At present, there is no evidence of the Mexican nurse's role in public or private schools. Information is not available regarding the number and the profile of health personnel directly involved in public health settings in Latin America and the Caribbean,

especially nurses (Nigenda, et al., 2010).

However during this era, a proposal to create a bachelor's degree in public health nursing was developed by Mexican nursing societies and presented to the Inter-Institutional Commission for Human Resources for Health (ICHRH), a public agency coordinated by the Ministry of Health with the participation of universities, nursing schools, and health institutions (Nigenda, et al., 2010). In 2006, an analysis conducted by the public health system determined that educational attrition and labor wastage for the nursing cohort finishing in the year 2002 was far below (252/1000) the 1987 rate (555/1000) (Nigenda, Ruiz, Rosales, & Bejarano, 2006). The nursing commission within ICHRH opposed this proposal with the argument that the labor market is not ready to demand nursing graduates from this type of program. Despite these findings, the commission recognized the need to train more nurses with public health specialization at the graduate level and three years after the first nursing doctoral program opened in Mexico in Nuevo Leon, the Comisión Nacional de Salarios elevated nurses with a bachelor's degree or higher to professional status (Nigenda, et al., 2006; Squires, 2011).

Since the inception of the graduate program (1982) at the Universidad Autonoma de Nuevo Leon (UANL) College of Nursing, community health has been a specialty of choice because of the emphasis of health promotion and illness prevention by the Ministry of Health (Rappsilber, Castillo, & Gallegos, 1998). Starting in 1994, three faculty members reviewed 29 theses written by community nursing majors from 1986-1993. A phenomenological study ensued and the synthesis of this data resulted in a 40-page document and a proposed model in the form of an unpublished monograph; one of these studies focused on the sexual and reproductive health needs of adolescents (Rappsilber, et al., 1998).

The adolescent health study conducted by UANL focused on the issue of Mexican youth, like U.S. adolescents, appear to be healthy, but many engage in risky behavior that can jeopardize their immediate health and contribute to chronic conditions and/or disabling behaviors in adulthood (National Research Council and Institute of Medicine, 2009; Rappsilber, et al., 1998). The UANL study gathered data about the sexual knowledge of 178 adolescents who resided in the marginal urban colonias. The adolescents reported that parents, primarily mothers, permitted conversation about sex in the home, but they were left with unanswered questions about masturbation, pregnancy, contraception, venereal disease, and the sexual act itself. Results of the study provided information to nursing researchers that adolescents wanted more information about sexuality in general (Rappsilber et al., 1998). Incidentally, during the period of time that this data was being collected, no mention was ever made about HIV/AIDS, although the HIV pandemic was receiving a great deal of political, scientific, and media attention (Uribe-Zúniga, Magis Rodríguez, & Bravo García, 1998). Strategies for research and education that resulted from the study included: 1) research and program evaluations of current curricula offered in schools, churches, and community clinics to teenagers about sexual matters, 2) opportunities to study nonjudgmental values clarification, 3) an addition to nursing curricula with a focus on adolescent psychology, behavior modification, motivational interviewing, and group dynamics and communication skills. Community projects for adolescent sexuality education and support were initiated by the graduate students as a result of the study (Rappsilber, et al.,1998).

Nurses in Latin America have conducted research for many years, but there is little evidence of this effort in English language publications (Castrillón, 2004). II Pan American Colloquium on Nursing Research, held in Mexico City (1996) reference terms for nursing

research were presented. Five areas of research were proposed: the work process of research, health promotion, recovery and rehabilitation in health, the advancement of nursing knowledge specific to practice, nursing technologies and instruments used for healthcare interventions, and studies on the formation of human resources in nursing (Castrillón, 2004). At the VII Pan American Colloquium (2000) the results of a retrospective study on 263 research studies were reviewed. Public health (n=84; 31.9%) and human resources (n=62; 23.6%) in the field of public health were identified as most prominent. In the field of public health, epidemiological studies represented 19%; in the field of human resources 54% of the topics discussed were related to nursing education. Collaborative projects focusing on adolescent health, have been conducted by Mexican and U.S. nurse researchers. As an example, a five-year, collaborative study funded by the National Institute of Nursing Research (NINHR) was published in 2003. The objective of the study was to develop and test a culturally based effective behavioral intervention designed to reduce HIV sexual risk behavior among Latino adolescents (Villarruel, Gallegos, Loveland Cherry, & de Duran, 2003). Dyads (n=936) made up of an adolescent (ages of 14-17 years) and a parent from the cities of Monterrey, Nuevo Leon, and Philadelphia, Pennsylvania participated in a randomized, controlled trial designed to reduce HIV risk behavior among Latino adolescents by using a culturally based intervention in the form of a curriculum known as "*Cuidate!*" which means "Take care of yourself" (Villarruel et al., 2003). Based on input from the Mexican adolescents and nurse researchers, adaptations to the curriculum and intervention were proposed: 1) components in the curriculum that dealt with discrimination of Latinos and generating cultural pride were eliminated as these concepts were unique to U.S. Latinos, 2) promoting condom use was a priority established by the Mexican government for Mexican

youth (references to U.S. content were eliminated, 3) a parental component was included as confirmed by parent focus groups in the U.S. and Mexico. Latina mothers on both sides of the border expressed a need and desire for knowledge, skills and support to communicate with their adolescent on sexual issues, as well as drug and alcohol use (Villarruel, et al., 2003). This study is an exemplar of the individual and collective efforts of nurse researchers on both sides of the border and the empowerment of sexuality education that has been tailored for different but similar populations in Mexico and the U.S.

Nursing's Leadership Role to Advocate for Adolescents

"Being a leader in health care today is often about taking people on a journey on which nobody wants to go" (Disch & Dracup, 2008, p.xxv). This statement reflects the sentiments of many professional nurses who understand the political and cultural ramifications of embracing the challenge of being an advocate to adolescents in their journey to access sexual health. The challenge is magnified by the premise that the nursing profession, in general, has not exercised its full potential in influencing policy at any level. As the largest healthcare force in the world, nurses have the capacity to politically influence policymaking. As members of society, nurses hold values associated with various subcultures, such as within civic or religious groups, but they exercise little influence on societal norms. Understanding the role that nurses have in shaping policy that advocates for the rights of adolescents access to sexuality education and health promotion and disease prevention services, however, is valuable knowledge for public policy activists. Policy involvement through government agencies and officials, political campaigns, and special interest groups are viable routes to policy influence (Taft & Nanna, 2008). Therefore, "leadership in this environment requires three things: 1) an understanding of the context in which healthcare is delivered, 2) a

compelling vision, or perhaps merely an idea of how things "could be better", and 3) an ability to connect with others, and move from "here" to "there." Leaders are those who are able to tolerate ambiguity and paradox while maintaining a clear focus on the goal and creating positive spaces for all to participate" (Disch & Dracup, 2008, p.xxvi).

The previously described studies (Rappsilber, et al.,1998; Villarruel, et al., 2003) have generated new nursing knowledge, that has been translated and tailored to meet the needs of Latino adolescents; the sexuality curricula is based on behavioral theory (Ashen & Fishbein, 1980) and evidence-based practice. Professional groups that increase opportunities for bi-national/bi-border nurses to share research projects include specialty practice associations, ethnic nursing organizations, and international nursing connections. The benefits of international collaboration include opportunities to mentor each other so that best practices can be shared and together culturally sensitive curricula be developed. Since 2004, academics from three continents (Europe, the Americas, and Australia) have been working together as the International Nursing PhD Collaborative (INPhD) to offer nurses the opportunity to be educated on global health and nursing issues from a research perspective. The countries represented are Canada, Mexico, Brazil, Spain, and Finland; at present the U.S. is not represented in this collaboration (INPhD, 2007) (http://www.inphd.nursing.utoronto.ca/). One of the challenges for global health is identified as knowledge translation and exchange; the production of rigorous and socially relevant research translated into nursing practice is critical for the international community and needed for successful interventions with Latino adolescents along the U.S. /Mexico Border and other communities where these families live.

Nurses must take full advantage of opportunities to educate policymakers by raising awareness of research-based evidence in the development of CSE policy and adolescent

health care practice. If policymakers do not receive accurate, scientific facts related to these often emotionally charged and morally laden issues, they might make decisions not in the best interest of the adolescent. As stakeholders in health policy design and development, nurses, especially nurses that care for school age children and adolescents, offer adolescents choices in making informed health decisions and offer a safe place to develop skills that lead to healthy adulthood. By participating in policy development, nurses have the ability to alter future generations by affirming the uniqueness of each adolescent (Cates, 2008).

Conclusion

The U.S. and Mexico share as many similarities as they share differences. For those reasons, the dissemination of standardized information regarding sexuality and reproductive health education needs to be clear, consistent, and adequately quantified in application and effectiveness for both Mexico and the United States. The U.S., as demonstrated by California's history in the evolution of adolescent sexual health education, continues to lack in quality and consistency of its health education programs. Mexico's sociocultural context presents a unique challenge for CSE because of traditional myths and taboos, and a general culture of silence. These cultural images are not limited to the communities along the geographical border of these two nations, because wherever Mexican-origin or Mexican heritage families gather, these challenges persist. Therefore, it is essential for nurses who work with families and adolescents in any capacity, to critically examine their knowledge, attitudes, and intent to teach, counsel and/or offer interventions. Bi-national and Bi-border nursing leaders, educators, and practicing professionals need to collaborate by sharing knowledge especially in areas of curricula and research. Nurses need to translate research into community spaces where interventions are most effective such as schools, churches, and

wherever families gather. Reaching the family is crucial, as parents often have considerable influence on children's values and perceptions of sexuality, and often present mixed messages. Schools represent an ideal place to provide children with factual information and protective factors that can help reduce the possibility of high–risk behaviors in adolescence. If the sexual and reproductive health needs of adolescents are to be adequately addressed, it must be done within the range of political, economic, social, and cultural realities that young people experience across and within societies (Kostrzewa, 2008). Both the U.S. and Mexico have recognized sexual and reproductive health issues as critical indicators for border health, by addressing cultural needs through policy, research, and practice interventions (Villaruel, et al, 2003; Collins-Dogrul, 2006; Glasier, Gülmezoglu, Schmid, Garcia Moreno, & Van Look, 2006). It is hopeful that after examining the historical and political framework of the U.S. and Mexico that nurses will appreciate a less biased perspective of how we have gotten to the present. This perspective will empower nurses to engage in discourse as they transform sexual health education in a manner that is culturally congruent and applicable for the purpose of improving the lives of all adolescents.

The U.S. and Mexico share a border with similar health issues and illness challenges. At present nursing education in the U.S. and Mexico is not analogous; the nursing profession in Mexico will continue to develop and evolve, as does U.S. nursing. However, with the introduction of the first nursing doctoral program at UANL, the promise of a bi-national/bi-border nursing research base was established. U.S. nursing scientists can use this opportunity to conduct research that will bridge nursing education curricula and clinical practice. Nurses on both sides of the border are positioned to create culturally unique and meaningful nursing interventions to all adolescents. The exchange of ideas and commodities between U.S. and

Mexican nurses, aided by technical advances through distance education and computer technology will shorten our geographical distance and lessen our cultural differences.

California School Nurses' Knowledge, Attitude, Subjective Norm, and Intention to Participate in Sexuality Education

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Abstract

A critical need exists to provide adolescents with sexual health education as identified by statistics of adolescent pregnancy, STI, and other high-risk behaviors. There is limited evidence to confirm if California students are receiving the sexual and reproductive health education as required by law. Given the contribution of school nurses in providing sexuality education (SE), as in other health-related topics, it is important to understand, from the perspective of school nurses, their knowledge, attitudes, and intention to participate in the sexual health curriculum. To date, no studies of this kind have been conducted in the United States, and in particular in California, to measure the perspective of school nurses as educators of sexual health content.

The purpose of this descriptive, correlational study is a) to describe California school nurses' knowledge, attitudes, subjective norm, and select demographics with b) intention to teach SE. The associations among these variables are used to predict the current level of SE participation of California school nurses serving K-12th grade students in California public schools. An original questionnaire developed in the UK, was revised, and adapted as a web-based survey named the California School Nurse Sexuality Education Questionnaire (CSNSEQ). Key findings of the study evolved around the theme that school nurses need to define their role as consultant vs. teacher of SE. Intention was positively identified as significant by 86.5% of participants as a consultant of SE (χ^2 = 7.4, P = 0.006). In describing attitude, 65.7% were uncertain and 19.6% were opposed to their role as primary teacher of SE (χ^2 = 8.6, P = 0.013). Yet when knowledge, attitude, and subjective norm were associated with intention, 86.7% of SNs are likely to

teach/consult SE ($\chi^2 = 4.6$, P = 0.025). These results are critical in guiding school nurse education, policy, and practice.

Introduction

A critical need exists to provide adolescents with sexual health education as identified by statistics of adolescent pregnancy, STI, and other high-risk behaviors (CDC, 2009; Terry-Humen, Manlove, & Cottingham, 2006). There is limited evidence to confirm if California students are receiving the sexual and reproductive health education as required by law (CEC, 51930-51939). Given the contribution of school nurses in addressing and providing a variety of health education topics to the school age and adolescent population, it is important to understand, from the perspective of school nurses, their knowledge, attitudes, and intention to participate in the sexual health curriculum. There is a growing body of research that suggests that school nurses, when present every day, advance the twin goals of improving health and educational outcomes (Robert Woods Johnson, 2010, p.4), despite this research there is little empirical evidence to link school nurses as teachers or consultants of sexuality education. A 2003 study funded by a Northern California collaborative and headed by the ACLU determined that only 11% of the sexuality educators in that region were school nurses (Burlingame, 2003). The purpose of this study is to describe the degree of knowledge, attitude, subjective norms, intention and level of participation of California school nurses in delivering sexuality education to California's school age and adolescent students.

Background

By 12th grade, nearly two-thirds of U.S. high school students have engaged in sexual intercourse (Tessler Lindau, Tettah, Kasza, & Gilliam, 2008; Eaton Kann,

Kinchen, Ross, Hawkins, Harris, et al. 2005). It is expected that every year in the U.S. over 4 million girls, ages 15-19 years, become pregnant (Chandra, Martinez, Mosher, Abma, & Jones, 2005; CDC, 2004). Pregnancy and birth are significant contributors to high school dropout rates among girls. Only about 50% of teen mothers receive a high school diploma by 22 years of age, versus approximately 90% of women who had not given birth during adolescence (Perper, Peterson, & Manlove, 2010).

Sexual debut or initiation, although a natural part of adolescent sexual development, is viewed as problematic in the U.S. (Spriggs Madkour, Farhat, Tucker Halpern, Godeau, & Gabhainn, 2010). The prevalence of sexual debut during adolescence is high: according to nationally representative surveys conducted in 2001, 61% of 12th graders and almost 90% of young adults aged 18-27 years report ever having had sexual intercourse (Brener, 2006; Halpern, 2006). Sexual debut/initiation is considered problematic because sexual debut has been related to: 1) poor educational outcomes, (Spriggs & Tucker Halpern, 2006), 2) a decrease in self-rated academic performance (Sabia, 2007), 3) a lower than average completion of educational goals (Driscoll, Briggs, Brindis, & Yankah, 2001), 4) an increase in risk of pregnancy, and 5) an increase in risk for sexually transmitted infections [STIs] (CDC, 2012; UNESCO, 2010).

In general, the teen birth rate has decreased in the United States, as well as in California (NCHS, 2010); the California teen birth rate decreased to about 32 births per 1,000 female teens, age 15 to 19 years (California Department of Public Health [CDPH], 2011), and Latinas have seen the steepest decline in teen births since 2007. Despite this decline, California data shows that Latinas (ages 15-19 years) continue to have the highest birth rates (66.4%) as compared to other ethnic groups (NCHS, 2010; CDPH,

2009). About 71% of the Latina teen mothers in California were born in the U.S., while 29% were foreign-born, according to the report (CDPH, 2010). Latino children for the first time made up a majority of California's under-18 population in 2010, as Hispanics grew to 37.6% of residents in the nation's most populous state (Carlton, 2011). The demographic changes to California's population and the projected issues surrounding Latino adolescent pregnancy make evident the critical need to provide accurate, standardized, and culturally appropriate SE to adolescents. Limited school-based sex education may account for these statistics (Zambrano, Cornelius, Sims-Boykin, & Salas, 2004).

Qualitative and quantitative research identifies two major reasons for poor outcomes in Latino youth associated with sexual knowledge acquisition: 1) poor communication between parent/child, and 2) inconsistencies in standardized sexual and reproductive curriculum in the formal educational setting (Guzman, Schlehofer-Sutton, Villanueva, Dello Stritto, Casad, & Feria, 2003; Rios-Ellis, Frates, Hoyt D'Anna, Dwyer, Lopez-Zetina, et al., 2008; Talashek, Peragallo, Norr, Dancy, 2004);). Although the primary purpose of this study describes how and if school nurses deliver sexual health education to the students in California schools, it is important to link the implications of this study to the rate of demographic change and its impact on the state of California to provide adolescents with SE.

Research is requisite to understand, from the perspective of the school nurse, their knowledge of, comfort with, and their willingness to teach and/or consult the sexual health curriculum. Nursing and other disciplines (i.e. medicine, the social sciences, education) are inadequately prepared to teach or consult in SE (Gillooly, 2004; Kirby,

2002; Muennech-Cowell, 2010; Westwood & Mullan, 2006a). There is little evidence to confirm the role of the school nurse as teacher or consultant of SE (McFayden, 2004; Westwood & Mullan, 2006a). The literature describes limited studies associating school nurses and SE; these studies lack rigor, have been descriptive, and have not been replicated. These studies have been conducted in Scandinavia, Western Europe, and in Asia, but the majority of exploratory and descriptive studies about the involvement of school nurses as educators of sexual health have been done in the U.K. (Johnston, 2009; Westwood & Mullan; 2006a; McFayden, 2004; Wainwright, Thomas, & Jones, 2000). These studies were motivated by the National Health Service (NHS), the U.K.'s public health service that identified school nurses (without empirical evidence) as key contributors to sexual health education because of access to school-age children and their work in the community. To date, no studies of this kind have been conducted in the United States, and in particular in California, to measure the perspective of school nurses as educators of sexual health content.

Theoretical Framework/Conceptual Framework

The conceptual framework for this study was derived from Ajzen and Fishbein's (1980) Theory of Reasoned Action (TRA). This study will utilizes the elements of the TRA, along with knowledge and select demographics to describe how school nurses' attitudes and subjective norms affect their intention to teach SE, and predict whether or not school nurses are engaging in SE. The TRA is based on the concept that attitude is a trigger and predictor of human behavior in decision-making (Rew, 2005, p.237). TRA assumes that human behavior is under voluntary control of the individual. Because school nurses (or other professional group) are not specifically mandated to teach SE, the

behavior of teaching/participating is considered volitional and supports the basic assumptions of TRA. TRA assumes a causal chain that links attitudes with subjective norms, and together effect behavioral intent, and subsequently produces a change in behavior (Montaño & Kasprzyk, 2008, p.72) (Refer to Figure 1).

Items Representing the Study Variables

Because there is no accessible psychometrics from previous research to support the existence of subscales within the original instrument, the following questions have been identified to best represent the study variables of knowledge, attitudes, subjective norms, intention, and level of participation in sexuality education (Refer to Table 1).

Knowledge. School nurse knowledge is defined as nursing knowledge about sexuality education inclusive of: developmental aspects of sexual and reproductive health, including skills that promote healthy relationships and prevent disease transmission. This knowledge may be acquired from informal/formal instruction. Therefore the item to represent knowledge is "If a girl had unprotected sexual intercourse on Friday night, would emergency contraception work if she took it on Monday morning?" The nominal level response options are: yes, no, or don't know.

Attitude. Attitudes are defined by behavioral beliefs that have a positive or negative value associated with teaching/counseling/ participating with teaching. The item chosen to represent this variable read: Sexuality education should be taught by school nurses. A 5-point Likert scale [(1) Strongly disagree to (5) Strongly agree] measures attitude.

Subjective norm. Subjective norm is defined as social pressure from important others (school nurse colleagues; managers/coordinators) that affect a school nurse's behavior to teach or participate in SE. The item chosen read: How often do you do what your school

nurse colleagues think you should do? A 5-point Likert item with a scale from very likely to very unlikely measures subjective norm.

Intention. For the purpose of this study, intention is defined as school nurses' motivation to involve themselves in a voluntary activity associated with teaching, counseling, and/or participating in sexuality education. The item chosen to represent this variable is: Next time you contribute (i.e., to teach/consult) to sexuality education do you intend to provide and promote confidential consultation for students? A 6-point Likert scale with ranges from very unlikely to very likely, or choice of not applicable (N/A) measures intention.

Level of Participation The item chosen to represent this variable is, "In the last 12 months, how many hours have you participated (teaching/consulting) in sexuality education for your school/school district?" Level of participation is measured at the ratio level and the participant provides a self-report in numerical value from zero to infinity of the number of hours spent teaching/counseling/participating in sexuality education.

Specific Aims of the Study

1) To determine the degree of a) knowledge of, b) attitudes in, c) subjective norm, d) intention to teach, and e) and level of participation in sexuality education among California school nurses.
2) To determine the relationship between 1) knowledge, 2) attitudes, and 3) subjective norm and intention to teach sexuality education among California school nurses.
3) To determine the relationship between 1) knowledge, 2) attitudes, 3) subjective norms and level of participation in sexuality education among California school nurses.

4) To determine the relationship between intention to teach sexuality education and the level of participation among California school nurses.
5) To determine if there is a relationship between select demographics of California school nurses and a) knowledge, b) attitude, c) subjective norm, d) intention to teach/participate, and e) level of participation in sexuality education.
6) To determine if a) knowledge, b) attitude, c) subjective norm, d) intention to teach/participate, and e) select demographics of California school nurses predict level of participation in sexuality education.

Methods

Study Setting and Sample Design

The target population is the 2,276 school nurses in California (California Commission on Teacher Credentialing [CCTC], 2009), of which 1,400 school nurses are current members of the California School Nurses Organization (CSNO (CSNO, n.d.). After receiving permission from the Executive Board of CSNO to access their membership as the focal point for communicating the opportunity to participate in the research study, a convenience sample of 110 credentialed school nurses was recruited through CSNO's online newsletter. CSNO is comprised of five regional sections that cover the entire state of California: Northern, Bay Coast, Central, Southern, and San Diego/Imperial. The newsletter is shared by CSNO members, along with other school nurses that are interested and eligible for participation in the study. Criteria for participation in the study included 1) current and active possession of a California school health services credential, 2) valid RN license to practice registered nursing in the state of California, and 3) a history of employment (active or retired) as a credentialed school nurse in the state of California. Nurses in California schools who do not meet all elements

of the eligibility criteria were excluded. The institutional review board (IRB) of the University of San Diego approved the study protocol.

Measures

The California School Nurses Sexuality Education Questionnaire (CSNSEQ), developed for this study, adapted questionnaire items from a previously validated instrument that was made available from one the original researchers and developers of the School Nurse Questionnaire (Mullan, personal communication, 2010). The original school nurse questionnaire was developed by Westwood & Mullan (2006a) to elicit school nurses' responses about their knowledge, attitudes, and subjective norm that affect their intention to teach sexual and reproductive health (SRE). Justification for using this particular instrument in this study is that the original instrument used by Westwood & Mullan was the first to make use of the Theory of Reasoned Action (TRA) to measure the variables of knowledge, attitudes, social norms, and intentions by school nurses to engage in sexuality education (Mullan &Westwood, 2009). The conceptual model for the study uses the TRA theory (Ajzen & Fishbein, 1980) to build associations among knowledge, attitudes, subjective norms and intention that predict volitional behavior. In this study associations between the variables of knowledge, attitude, and subjective norms may predict the intent of school nurses to teach or participate in sexuality education.

The validity of the instrument was scrutinized utilizing a content validity index process to examine each item content for relevance, clarity, and importance. In this process, the original survey was shared with five content experts (school nurse experts in adolescent health), whose recommendations were analyzed by the principal investigator and revised to reflect the language and content of California school nurse standards and

California state educational and legal requirements. Pilot testing occurred after revisions to the instrument were completed.

The original 119-item "School Nurse Questionnaire" developed into the present 171-item CSNSEQ by undergoing five revisions 1) revising language and content to reflect American dialect and education, 2) preparation of the revised instrument to create the CVI index template, 3) revisions made post CVI, 4) transfer of instrument to a web-based product, and 5) revisions made after pilot testing of the instrument. The final version of the instrument resulted in 171 items and this is the version that was administered in this study. It should be noted that to aide in the visual design of the instrument, the 171 items were organized in such a way that the numbering scheme reflects only 66 questions. In other words, the 171 items are captured within 66 survey questions; this is simply a way to visually present the survey to facilitate its transition to an Internet based instrument and streamline the process for participants.

Data Analysis Methods

Data were analyzed by using IBM SPSS Statistics version 19.0. Descriptive statistics summarized demographic and other study variables. Bivariate analyses explored the relationships among the constructs that school nurses encounter concerning sexuality education (knowledge, attitude, subjective norm, intention to participate, and level of participation in sexuality education) and personal, work, education, and career-related demographic variables. In the bivariate analyses, the chi-square test for independence was used to determine the statistical significance of associations between outcome and other variables. The Fisher's Exact Test was employed to determine the associability between the outcome variables and demographic variables. This was necessary to adjust

for categories that had less than 5 respondents and to obtain *p* values without relying on assumptions that may not be met by the data. The significance level was set at 0.05.

Results

Sample Characteristics. Characteristics of the sample derived from the study include: a survey response rate of 9.71% (n=110); most of the participants (85.1%) reported memberships in CSNO. The mean age of the sample was 53.7 years (range = 27-76 years). There was a positive response (72.5%) to religion/spirituality practice in the home was reported; the majority of participants described themselves as belonging to non-denominational sects (52.5%). The majority of respondents were employed full time, with an average caseload of three schools (range 0-13). Availability to students for consultation about sexuality concerns during the school day was positive at 64.1%. Educational levels for the participants were reported higher than the required Baccalaureate degree, as 46.1% had a Master's degree, and 23.5% reported advanced practice licensure or credential. As a professional specialty, the majority of respondents identified themselves as a school nurse rather than as an advanced nurse practitioner or administrator. Most of the respondents (83.6%) reported never obtaining post-graduate and/or continuing education in sexuality education (Refer to Table 2).

The selected items describing the variables (Refer to Table 2) resulted in the following data:

Knowledge. School nurse knowledge was used to examine developmental aspects of sexual and reproductive health, including skills that promote healthy relationships and prevent disease transmission. Of the respondents who answered the question (n = 106), 41.5% answered yes, 49.2% answered no, and 12.3% answered don't know.

Attitude. School nurse attitudes were defined by behavioral beliefs that have a positive or negative value associated with teaching/counseling/ participating with teaching sexuality education. Of the respondents who answered the question (n=105), 65.7% answered agree/strongly agree.

Subjective norm. Subjective norm was used to examine social pressure from important others (school nurse colleagues; managers/coordinators) that affect a school nurse's behavior to teach or participate in SE. Of the respondents who answered the question (n=79), 15.2% very seldom/seldom, 38.0% answered neither often nor seldom, 60.8% answered often/very often.

Intention. Intention was used to examine school nurses' motivation to involve themselves in a voluntary activity associated with teaching/counseling/participating in sexuality education. Of the respondents who answered the question (n=90), 13.3% answered very unlikely to unlikely, 86.7% very likely to likely.

Level of participation. Level of participation was measured using time (hours) spent by school nurses in teaching/consulting in sexuality education activities. Of the respondents who answered the question (n=100), 45.0% participated in no sexuality education, 40.0% participated in 1-15 hours of sexuality education, 10.0% participated in 16-30 hours of sexuality education, 5.0% participated in over 30 hours of sexuality education.

Bivariate Analyses

The degree of associations between the dimensions of knowledge, attitudes about, effect from subjective norm, intention to teach/consult, and level of participation in sexuality education among California school nurses and selected demographic characteristics were examined using bivariate analysis: chi-square, degrees of freedom, and calculations for P- value.

Knowledge and Attitude. Associations between the dimension of knowledge and all selected demographic variables used were not significant. (Refer to Table 3). The results of school nurses' attitude associating improved sexuality education if they were teacher of choice was statistically associated with their highest level of education ($\chi^2 = 8.6$, P = 0.013). In addition, attitude was statistically associated with how nurses identified themselves as belonging to a professional nursing specialty ($\chi^2 = 5.6$, P = 0.042). Among nurses who responded to the question on attitude, 67.8% agreed that sexuality education should be taught by nurses in schools. Only 11.8% disagreed that sexuality education should be taught by school nurses; 20.4% of the nurses were uncertain if nurses should teach sexuality education in schools. (Refer to Table 4).

Table 4: Sexuality education should be taught by school nurses.

Demographic Variables	Yes n (%)	No n (%)	Don't Know n (%)	χ^2	df	P[‡]
Age	15 (14.9)	20 (19.8)	66 (65.3)	4.7	6	0.117
Less than 44 years	3 (20.0)	3 (20.0)	9 (60.0)			
45 to 54 years	4 (11.4)	4 (11.4)	27 (77.2)			
55 to 64 years	7 (16.2)	10 (23.3)	26 (60.5)			
65 years and older	1 (12.5)	3 (37.5)	4 (50.0)			
Racial Characteristics	14 (14.7)	19 (20.0)	62 (65.3)	0.02	2	0.773
White	12 (14.8)	16 (19.8)	53 (65.4)			
Non-White	2 (14.3)	3 (21.4)	9 (64.3)			
Employment Status	14 (14.0)	20 (20.0)	66 (66.0)	1.8	4.0	0.351
Full-time	11 (14.5)	14 (18.4)	51 (67.1)			
Part-time	3 (17.6)	4 (23.5)	10 (58.9)			
Retired	0 (0.0)	2 (28.6)	5 (71.4)			
What is your religion?	10 (14.1)	12 (16.9)	49 (69.0)	6.2	6	0.066
Roman Catholic	6 (26.1)	4 (17.4)	13 (56.5)			
Protestant	0 (0.0)	1 (12.5)	7 (87.5)			
Non-denominational	4 (10.8)	7 (18.9)	26 (70.3)			
Jewish	0 (0.0)	0 (0.0)	3 (100.0)			
Do you have Children?	15 (14.7)	20 (19.6)	67 (65.7)	2.4	2	0.175
Yes	15 (16.1)	17 (18.3)	61 (65.6)			
No	0 (0.0)	3 (33.3)	6 (66.7)			
What is your highest level of education?	15 (14.7)	20 (19.6)	67 (65.7)	8.6	4	0.013
BA/ BSN	8 (25.8)	6 (19.4)	17 (54.8)			
MSN	7 (14.9)	7 (14.9)	33 (70.2)			
APN/ PhD	0 (0.0)	7 (29.2)	17 (70.8)			
Nursing Professional Specialty	11 (11.8)	19 (20.4)	63 (67.8)	5.6	4	0.042
Administrative	2 (20.0)	0 (0.0)	8 (80.0)			
Advance Practice	1 (3.8)	5 (19.2)	20 (76.9)			
School Nurse	11 (11.8)	19 (20.4)	35 (61.4)			

In the last 12 months, how many hours have you participated (teaching/consulting) in sexuality education in your school/school district?	15 (15.0)	18 (18.0)	67 (67.0)	2.8	6	0.328
No sexuality education	9 (20.0)	9 (20.0)	27 (60.0)			
1 - 15 hours of sexuality education	4 (10.0)	6 (15.0)	30 (75.0)			
16 - 30 hours of sexuality education	1 (10.0)	2 (20.0)	7 (70.0)			
Over 30 hours of sexuality education	1 (20.0)	1 (20.0)	3 (60.0)			
How is sexuality education taught within the curriculum?	13 (16.3)	16 (20.0)	51 (63.7)	3.4	4	0.191
Unit based	4 (13.8)	5 (17.2)	20 (69.0)			
Grade level	6 (14.0)	10 (23.2)	27 (62.8)			
Assembly	3 (37.5)	1 (12.5)	4 (50.0)			
Number of hours that you have received post-graduate or continuing education in sexuality education.	16 (15.3)	20 (19.0)	69 (65.7)	2.5	4	0.355
No hours of continuing education	15 (17.2)	16 (18.4)	56 (64.4)			
1 - 15 hours of continuing education	1 (9.1)	3 (27.3)	7 (63.6)			
Over 15 hours of continuing education	0 (0.0)	1 (14.3)	6 (85.7)			
Are you (the school nurse) available to students for consultation about sexuality education concerns during the school day?	16 (15.5)	18 (17.5)	69 (67.0)	1.6	2	0.481
Yes	8 (12.1)	12 (18.2)	46 (69.7)			
No	8 (21.6)	6 (16.2)	23 (62.2)			

Counts and percentages were adjusted for missing values.
df Degrees of freedom
[f] *P* values were calculated on valid percentages and the Fisher's exact test.

Subjective Norm. The level of religiosity was statistically associated with effect of nurse's subjective norm towards sexuality education ($\chi^2 = 2.8$, P = 0.029). The dimension, subjective norm, was statistically associated with highest level of education ($\chi^2 = 6.9$, P = 0.039). (Refer to Table 5).

Intention. School nurses' intent to teach, participate, or consult with students about sexuality education was statistically associated with age ($\chi^2 = 7.4$, P = 0.006). Similarly, the level of intent was statistically associated with the highest level of education achieved by nurses at the time of the study ($\chi^2 = 4.8$, P = 0.016), as well as with identification as a specialization in nursing ($\chi^2 = 5.4$, P = 0.023 (Refer to Table 6).

Table 6: Provide and promote confidential consultation for students.

Demographic Variables	Unlikely n (%)	Likely n (%)	χ^2	df	P[ƒ]
Age	12 (13.5)	77 (86.5)	7.4	3	0.006
Less than 44 years	2 (15.4)	11 (84.6)			
45 to 54 years	0 (0.0)	29 (100.0)			
55 to 64 years	9 (22.5)	31 (77.5)			
65 years and older	1 (14.3)	6 (85.7)			
Racial Characteristics	8 (9.5)	76 (90.5)	0.11	1	0.740
White	7 (10.0)	63 (90.0)			
Non-White	1 (7.1)	13 (92.9)			
Employment Status	11 (12.6)	76 (87.4)	4.2	2	0.115
Full-time	7 (10.1)	62 (89.9)			
Part-time	4 (28.6)	10 (71.4)			
Retired	0 (0.0)	4 (100.0)			
What is your religion?	8 (12.5)	56 (87.5)	0.6	3	0.329
Roman Catholic	2 (9.5)	19 (90.5)			
Protestant	1 (14.3)	6 (85.7)			
Non-denominational	5 (14.7)	29 (85.3)			
Jewish	1 (0.0)	2 (100.0)			
Do you have Children?	12 (13.3)	78 (86.7)	1.0	1	0.593
Yes	12 (14.3)	72 (85.7)			
No	0 (0.0)	6 (100.0)			
What is your highest level of education?	12 (13.3)	78 (86.7)	4.8	2	0.016
BA/ BSN	5 (17.9)	13 (82.1)			
MSN	7 (17.9)	32 (82.1)			
APN/ PhD	0 (0.0)	23 (100.0)			
Nursing Professional Specialty	10 (11.9)	74 (88.1)	5.4	2	0.023
Administrative	1 (10.0)	9 (90.0)			
Advance Practice	0 (0.0)	25 (100.0)			
School Nurse	9 (18.4)	40 (81.6)			
In the last 12 months, how many hours have you participated (teaching/consulting) in sexuality education in your school/school district?	12 (13.6)	76 (86.4)	0.8	3	0.638
No sexuality education	6 (16.7)	30 (83.3)			
1 - 15 hours of sexuality education	4 (10.8)	33 (89.2)			
16 - 30 hours of sexuality education	1 (10.0)	9 (90.0)			
Over 30 hours of sexuality education	1 (20.0)	4 (80.0)			
How is sexuality education taught within the curriculum?	8 (11.3)	63 (88.7)	2.5	2	0.075
Unit based	2 (7.7)	24 (92.3)			
Grade level	4 (10.5)	34 (89.5)			
Assembly	2 (28.6)	5 (71.4)			
Number of hours that you have received post-graduate or continuing education in sexuality education.	12 (13.3)	78 (86.7)	3.2	2	0.114
No hours of continuing education	12 (16.4)	61 (83.6)			
1 - 15 hours of continuing education	0 (0.0)	10 (100.0)			
Over 15 hours of continuing education	0 (0.0)	7 (100.0)			
Are you (the school nurse) available to students for consultation about sexuality education concerns during the school day?	12 (13.6)	76 (86.4)	5.5	1	0.036
Yes	5 (8.1)	57 (91.9)			
No	7 (26.9)	19 (73.1)			

Counts and percentages were adjusted for missing values.
df Degrees of freedom
[ƒ] P values were calculated on valid percentages and the Fisher's exact test.

Level of Participation. To assess the level of participation of school nurses in teaching or consulting sexuality education activities, nurses were asked to report how many hours they had participated (teaching/consulting) in sexuality education in their school/school district during the past 12 months; the number of hours reported by nurses were statistically associated with racial characteristics ($\chi^2 = 2.9$, P = 0.042). The level of participation in sexuality education activities was statistically associated with employment status ($\chi^2 = 14.2$, P = 0.005); associated with nursing professional specialty ($\chi^2 = 6.0$, P = 0.047); associated with the way SE was taught within the curriculum ($\chi^2 = 5.9$, P = 0.015); with the number of hours of continuing education received ($\chi^2 = 10.7$, P = 0.012); and associated with the nurse's availability for students' consultation ($\chi^2 = 13.6$, P = 0.002). (Refer to Table 7)

Intention and Level of Participation. There was no statistical association between the nurses' intention to teach/consult and the level of participation. (Refer to Table 8).

Knowledge, Attitude, Subjective Norm and Level of Participation. There was no statistical association between these three dimensions and the level of participation in sexuality education. (Refer to Table 9).

Knowledge, Attitude, Subjective Norm, and Intention. The dimension, attitude, was statistically associated with the intention of nurses to teach/consult in sexuality education ($\chi^2 = 13.6$, P = 0.002). (Refer to Table 10).

Table 10: What is the relationship between knowledge, attitudes, and effect of subjective norms and intention to teach?

	Unlikely n (%)	Likely n (%)	χ^2	df	$P^{\dagger}$
If a girl had unprotected sexual intercourse on Friday night, would emergency contraception work if she took it Monday morning?	12 (13.8)	75 (86.2)	4.2	2	0.073
Yes	4 (10.5)	34 (89.5)			
No	8 (21.6)	29 (78.4)			
Don't know	0 (0.0)	12 (100.0)			
Sexuality education should be taught by school nurses.	12 (13.3)	78 (86.7)	4.6	2	0.0025
Disagree	4 (30.8)	9 (69.2)			
Uncertain	3 (15.8)	16 (84.2)			
Agree	5 (8.6)	53 (91.4)			
How often do you do what your school nurse colleagues think you should do?	9 (11.8)	67 (88.2)	0.207	2	0.365
Very seldom/ seldom	0 (0.0)	1 (100.0)			
Neither often nor seldom	3 (10.7)	25 (89.3)			
Often/ very often	6 (12.6)	41 (87.2)			

Counts and percentages were adjusted for missing values.
df Degrees of freedom
† *P* values were calculated on valid percentages and the Fisher's exact test.

Multivariate Analyses

Multivariate analysis was not conducted due to sample size, missing data, and cells with less than 5 responses per item. Therefore, this particular study will require replication with a different recruitment strategy in order to access a greater number of participants in order to perform a multivariate analysis that will predict which variables are significant in predicting school nurses' participation in sexuality education.

Discussion

Several associations have been made connecting the constructs of knowledge, attitude, and subjective norms in this current study of California school nurses and their intention to participate sexuality education. The conceptual model for the study supports the associations among school nurses' knowledge, attitudes, subjective norms and intention that link the volitional behavior of engaging in sexuality education by teaching or consulting. This research is the first of its kind to describe the perspectives of school nurses as educators of sexual health content the U.S. This study takes a step towards

addressing gaps in research about school nurses and their contribution in sexual health education. The findings from this study will be instrumental in defining the role of the school nurse as sexual health educator and provides foundational data to advance school nurse research, translate knowledge into evidence based practice, and support the need to incorporate sexuality education into a nursing's core curriculum.

Knowledge. The scientific aspect of sexuality education requires knowledge about "normal" functioning and an understanding of the pathophysiology and pharmacotherapies that may cause disease or changes in sexuality (Wilmoth, 2007). Knowledge was added as an independent variable for the purposes of this study because knowledge alters personal beliefs and so affects attitude, and in turn affects behavior (Ajzen & Fishbein, 1980; Gamel, Davis, & Hengeveld, 1993; Mullan & Westwood, 2009; Saunamäki, Andersson, & Engstrom, 2010; Westwood & Mullan, 2006a). Although the survey item representing the variable of knowledge was found statistically insignificant for this study, the descriptive data points to what is lacking in nursing education, as well as other social disciplines. Interestingly, reports from other disciplines, including medicine and education, acknowledge that they too, are inadequate in providing information to adolescents and that the information recalled by adolescents who attend secondary schools is incorrect or lacking (Burlingame, 2003; Kirby, 2002; Tessler-Lindau, et al., 2008). The literature points out that sexuality education curricula do not exist or are inadequate in nearly all health professional's basic educational programs, including the disciplines of nursing and medicine.

Sexual health education has been overlooked by nurse educators because it is not clearly identified in the essential core curriculum developed by the American Academy

of Colleges of Nursing [AACN] (AACN, 2008; AACN, 2011). Furthermore, continuing education with a focus on sexuality education is seldom offered or perhaps selected by nurses as an option. Evidence gathered from this study describes the number of continuing education hours (CEH) that school nurses have ever taken in the context of sexuality education. This study revealed an overwhelming majority of school nurses received no post-graduate or continuing education in sexuality education. According to the literature, many nurses believe that sexuality assessment, evaluation, and counseling are part of their professional role (Fong Wong, Wu, & Loke, 2009; Reynolds & Magnan, 2005; Thistle & Ray, 2002). If knowledge related to sexuality education is of concern to school nurses, as are other health concerns, school nurses need to have availability to access continuing education opportunities to keep current on the latest medications, technologies, and research, as well as skill-building and communication techniques to improve their nursing practice with adolescent consumers. The importance of CEH in SE for school nurses is identified from the question representing knowledge; the correct answer requires current knowledge of emergency contraception. Emergency contraception is a drug that has been available in the U.S. since 1999 (with a prescription), and since 2006 (as an over the counter drug) to women over the age of 18 years. In California, adolescents from age 12-17 years can access this drug with a prescription from a licensed healthcare provider and without parental permission (Planned Parenthood, n.d). The responses from the California survey (46.2% gave the incorrect answer, and 12.3% didn't know) were similar to results gathered in the U.K. (88% had the incorrect answer) (Westwood & Mullan, 2006a). One may argue that given the array of developmental stages and associated health concerns that school nurses

encounter on a daily basis, that knowledge concerning emergency contraception is not a priority. However, the statistics regarding high risk sexual activity and the consequences on long term health, educational attainment, and future livelihood of young people make this an important marker of school nurse knowledge.

Integrating the topic of sexuality into nursing practice requires many skills that most nurses do not obtain in basic nursing education and may not have access to skill development through their place of employment. It is evident that sexuality curricula has been predominantly directed by the health professions in the context of care to the adult patient as a result the patient's disease management and care process and not as part of the normal growth and development trajectory (Lewis & Bor, 1994; Schaalma, Abraham, Rogers Gillmore, & Kok, 2004).

Prior studies (Westwood & Mullan, 2006a, 2006b; Westwood & Mullan, 2007) showed that school nurses' knowledge of sex education was weak, therefore, according to the TRA strengthening associations between knowledge, attitudes, and intention to practice with knowledge will improve school nurse participation is SE (Mullan & Westwood, 2009).

Attitude. The TRA is based on the concept that attitude is a trigger and predictor of human behavior in decision-making (Rew, 2005, p.237). Strong attitudes can interfere with the acquisition of knowledge, and inadequate knowledge is a barrier to the acquisition of nursing skills (Lewis & Bor, 1994). An earlier study (1994) did show a slight, but significant, correlation between educating nurses on methods on how to conduct a sexual history and its effects on the outcome of performing the behavior (Lewis & Bor, 1994). This study suggests that knowledge affects outcome, therefore practice and

knowledge are related. The implications of the study suggest the need for an improvement in nurse education regarding sexuality at all stages of training (Lewis & Bor, 1994). Personal discomfort, lack of training or knowledge, and fear of embarrassing themselves or their patients (Krebs, 2007), are the primary reasons why nurses avoid communicating to clients about sexual matters (Lewis & Bor, 1994; Magnan & Reynolds, 2006; Magnan & Norris, 2008; Reynolds & Magnan, 2005).

A descriptive, correlational survey, across five areas of nurse specialization (medical, surgical, oncology, rehabilitation, and obstetrics and gynecology) affirmed the belief that sexual assessment, evaluation, and counseling are part of their professional role, but that nurses do not integrate these practices into nursing care. The study revealed a significant barrier in that nurses' perceived that patients do not expect nurses to address these concerns (Magnan & Reynolds, 2006).

Attitude was examined in the context of California school nurses' personal behavioral beliefs that have positive or negative value associated with teaching sexuality education. While the Magnan study (2006) looked at different nursing specialties, this study examined school nurses and their attitude towards SE. The responses were grouped into categories of: 1) school nurse, 2) advanced practice nurse (APN), 3) and administrator. The cross tabulation between nurse specialty and attitude was significant ($\chi^2 = 5.6$, P = 0.042). The overwhelming majority (67.8%) was indecisive (answered don't know) in claiming that improvements in sexuality education would occur if school nurses taught SE.

The attitude about teaching SE was even more significant with the findings associated with highest level of education and attitude. The most significant finding about

attitude was associated with reported higher levels of education ($\chi^2 = 8.6$, $P = 0.013$). Again, the majority of participants answered "don't know" and identified as Master's graduates and/or APNs. This may be indicative as to the lack of clarity in defining the role of the school nurse. Other assumptions can be made for the lack of commitment as teacher of SE such as knowledge and training deficits that contribute to discomfort with the subject. More realistic explanations related to school nurses' indecision or declination to engage in SE may be workload issues, lack of authorization to teach SE, or administrative constraints. Ideas about normal and appropriate sexual behavior, whether these relate to gender roles, sexual identity or the experience or expression of sexual desires, originate from the interaction of social and cultural forces. Attitudes towards sexuality education can be transformed by education and the acquisition of nursing skills.

Subjective Norm. Normative beliefs are an individual's beliefs about the extent to which other people who are important to them (school nurse peers, teachers, and or managers) think they should or should not perform particular behaviors (Trafimow, 2008). The effect of the influences of others is reinforced from evaluations made from associations or relationships between performing a behavior (teaching or participating in SE) and the prediction of some consequence such as administrative disciplinary actions (Gorosh, 1981; Hayter, Piercy, Massey & Gregory, 2007; Irvine, 2002), positive feedback such as students' verbal expressions about safer sex practices (Hoyt & Broom, 2002), or decreased high school drop-out rates (Freudenberg, 2007).

School nurses have been described as autonomous in their practice (Simmons, 2002). School nurses often are the only health experts in their school, and more often than not, practice as the only nurse for multiple school sites. School nurses are perceived as

marginalized persons because they operate between two professional cultures – health and education (Whitehead, 2001, 2006; Smith, 2004). School nurses must follow their state nurse practice acts, as well as state educational codes and federal guidelines.

The majority of school nurses responded that they would go along with the consensus of the group; only 1.2% reported from peer influence. The rest of the participants (38%) represented a more autonomous and mindful practice. School nurses may or may not take into account the actions of other school nurses, but must practice within the context of their district policies and the needs of their individual communities. Interestingly, Mullan & Westwood (2009), found intention to be the strongest predictor of behavior and attitude, and not the influence of the subjective norm. Previous and current studies have been inconclusive regarding the influence of others in affecting school nurses' behaviors regarding SE (Hayter, 2008; Gorosh, 1981; Stretch, McCann, Roberts, Elton, Baxter, & Brabbin, 2009). The results of this study call for further research to investigate the importance of "important others" as they effect the role of the school nurse.

Religiosity was associated with effect of nurse's subjective norm towards sexuality education ($\chi^2 = 2.8$, $P = 0.029$). The majority of responses indicated an association between religious affiliation and peer approval. But it should be noted that a great number (40.7%) of the participants who associated with a religious denomination indicated that peer approval was an optional consideration in decision-making. A very small minority (1.7%) did not consider school nurse colleagues in making decisions. Autonomy may be the factor in these results, but the effects of religiosity should not be overlooked. The effect of religiosity on the practices of school nurses is another area of research that has not been investigated, but religiosity and conservative political values

have a great influence in the development of sexuality education policy and practice in the U.S. (Irvine, 2002). In turn, the religious and cultural environments may exert a strong influence on how school nurses regard sexuality education. The religious affiliation of this sample was predominantly identified as non-denominational of which identified as Evangelical Christians known for their conservative views on sexual and reproductive health. Currently, Evangelical Christians lead by 25% of the total Christian population in the U.S. (Pew, 2007)

Intention. Intention is the major construct of the TRA and is conceptualized as the immediate determinant of a person's action or behavior; the best predictor of whether or not school nurses participate in teaching sexuality education is intention. Age was strongly significant with intention ($\chi^2 = 7.4$, $P = 0.006$). Respondents overwhelmingly responded that they are likely to provide consultation to the students. According to the latest survey conducted by the California Board of Registered Nursing, the average age of RNs working in California between 1990 and 2010 is 42.9 to 46.3 years (Spetz, Keene, & Herrera, 2011). The sample of California school nurses had a wide range of ages (27-76 years), but the mean age of the California school nurse is 53.7 years, making school nurses a more mature group. A study investigating barriers to nurses in addressing sexuality issues with oncology and medical-surgical patients, made associations of age of the nurse with nurses' level of comfort with the subject of sexuality (Magnan, Reynolds, & Galvin, 2005). In this study, with respect to age, older nurses were more apt to identify sexuality as too private an issue to discuss with patients, but the length of time worked as a nurse was associated significantly with less discomfort talking about sexual issues. California school nurses are older and the majority of the participants have been in their

profession for many years; this may account for intention as being highly significant in this study and replication of this study may substantiate the relevance of age as a correlate in school nurse participation in SE. Other demographic variables that were significantly associated with intention were level of education and identification as a nursing specialty.

Logistically, the availability of school nurses on a campus was also significant with intention to provide consultation to students. These results validate the perceptions of itinerant school nurses and how they prioritize workload responsibilities. Because of school nurse staffing at multiple school sites and those accompanying responsibilities, the role of consultant is more applicable school nurse practice than the role of the classroom teacher. Another rationalization may be preference to provide individual counseling on this sensitive and confidential subject, nurse's comfort with one-to-one consultation over teaching in a large classroom setting.

Level of Participation. The intention of school nurses to provide consultation to California's school age and adolescent population is admirable, but the results of the survey as related to actual participation in SE are indicative that SE is not a priority for school nurses. Strong associations were made between the amount of time (hours) spent engaging in SE, full-time employment, method of administering curriculum (unit-based, by grade level, or in an assembly), and again, level of education. The majority of SE activities were administered by school nurses with graduate degrees and advanced practice certification, but was also correlated with identification as a school nurse rather than APN or administrator. Credentialing in California requires that anyone that is working as school nurse must have credentials, even if they possess an advanced

certificate or degree, therefore, the perception of identifying as a school nurse is validated by an authoritative body (CCTC, n.d.).

The level of nurses' participation in sexuality education was weakly associated with racial characteristics ($\chi^2 = 2.9$, P = 0.042). In the analysis White and non-White were grouped together. This was significant only in that White school nurses were overwhelmingly represented (77.9%) in the sample. Data from the CBRN describes a change in the ethnic and racial makeup of California's working nurses. The number of White nurses has declined from 77.2% since 1990 to 53.8% in 2010. Whites no longer comprise the majority of the nursing population under the age of 45 years; 59.2% of the younger nurses are non-white. The most highly represented non-White ethnic groups across all ages are Filipinos (20.8%), Hispanics (8.5%), and non-Filipino Asians (7.7%) (Spetz, Keene, & Herrera, 2011). The sample of school nurses in this study, do not reflect the population of other nurses in the state of California. American Indian/Native American, Asian, Black/ African American, and Native Hawaiian/Pacific Islander had less than 5% representation in the study, respectively. Hispanics were represented as 10.5% of the study. Further research is indicated to evaluate and modify present school nurse recruitment strategies that will address the cultural, ethnic, and language needs of the population that is being served in the state of California.

Limitations

Among the limitations of this research was the recruitment strategy, which resulted in a small sample and consequently, missing data and small cells. These limitations precluded the ability to perform a multiple regression analysis that would have answered the research question about which variables predict school nurses' teaching or consulting

behaviors. Insufficient sample size was largely due to poor accessibility of the survey to the participants; the CSNSEQ survey was imbedded into a web-based newsletter that subscribers needed to access. A larger sample may have been obtained by accessing e-mail addresses from the organization's list or from the credentialing organization. Another issue was timing and site. Originally the survey was to have been a paper and pencil questionnaire, delivered at a state conference, but the annual conference was postponed until the following year. Also, the survey was made available to the newsletter just before a winter holiday period which resulted in less interest in work-related business and therefore resulted in low school nurse participation.

Generalizing the findings is limited due to 1) small sample, 2) differences in educational preparation and individual state requirements for school nurse practice, 3) and the possibility of selection bias (as a convenience sample), and 4) non-coverage bias due to Internet access of select subgroups, as the target population (all California school nurses) are not represented in the sample frame available for identifying potential study participants (Aday & Cornelius, 2006, p.152). Another selection bias is that participants are required to navigate a web-based product; this may lead to highly unrepresentative data, as there is little research to quantify the Internet savvy of school nurses (AANP, 2006).

As with all revised instruments, there are inherent limitations. The original U.K. paper and pencil questionnaire was transformed into a web-based electronic version after adaptation and five revisions before becoming the CSNSEQ. Although the CSNSEQ has been through a content validity process and a pilot study, additional psychometric testing is warranted in order to determine the instrument's validity and reliability in the

population of school nurses. Psychometric testing is planned for the future.

Implications for Nursing

The findings from this study will be instrumental in defining the role of the school nurse as sexual health educator and provides foundational data to advance school nurse research, translate knowledge into evidence based practice, and support the need to incorporate sexuality education into a nursing's core curriculum. Findings from this study are important because they address several professional issues: clarification of the role of the school nurse as sexuality educator in the educational environment; school nurse workload and practice issues, a need to address the nursing profession's core curricula, as well as provisions to supplement continuing education on the topic of sexuality education.

The identification of the school nurses as a consultant rather than, as teacher of record was the most significant finding. School nurses were overwhelmingly intent on consulting in SE and just as vehemently opposed to being identified as the principal teacher for this subject. This is further supported by demographic information supplied by the sample of school nurses in the sample regarding workload assignments and expectations by the profession, administrators, and the community. This study supports the premise that school nurses are autonomous practitioners whose work environment and job description is often ambiguous in policy and practice.

Moreover, this study supports the need to improve nursing education in the content area of sexuality education. The literature about nursing education reveals a gap in sexuality education in multiple areas: as a pre-requisite course, as core curriculum for baccalaureate and graduate nursing education, and as a continuing education courses.

Sexuality education courses at the CEH level need to be specific to each nursing specialty with an emphasis on developmentally appropriate knowledge and techniques on how to communicate and build skills with adolescents.

Conclusion

From this study, several associations have been made among the variables of knowledge, attitude, and subjective norms that when linked with certain demographic variables lead to behaviors of intention and voluntary participation of California school nurses to engage in SE. Prior studies that mention school nurses as educators of SE often coalesced the role of the school nurse with other educators within survey items. This study offers current and significant data to recognize the level of participation of school nurses. California school nurses will be able to use the data to define their role to support their participation in SE. The replication of this study in other regions of the country will validate the contributions of school nurses in providing SE for school age children and adolescents.

Dissertation summary and conclusion

Summary and Conclusion

All children are entitled to knowledge and skills that contribute to helping students develop healthy sexuality. This includes a child's ability to make educated choices that can significantly impact their reproductive life. The case to provide sexuality education to California's students is illustrated by statistics concerning adolescent pregnancy, STIs, and other high-risk behaviors that effect academic and future economic success. The critical need is further pronounced by California's changing demographic profile as Latino children, for the first time, (2010) make up a majority of California's under-18 population (Carlton, 2011). It is projected that by 2042, Latinos will be the majority in California (Pew, 2010). Nationally, Latino adolescents continue to demonstrate pregnancy rates that are higher than other racial and ethnic groups; this trend continues throughout the state of California. Currently, there is little evidence that school aged children are receiving mandated sexuality education.

The need to provide relevant education in a culturally appropriate manner led to the article comparing U.S. and Mexican sexuality education policies and the influence of history, politics, culture, and religion and how policy is interpreted. This article also investigated the history of the nursing profession in both countries and the influence of the nursing profession in affecting policy issues for adolescent youth on both sides of the U.S./Mexico border. The findings indicate while there are significant economic and cultural differences between Mexico and the U.S, there are very similar parental and student concerns and support for sexuality education. The secular nature of the Mexican government has been instrumental in developing a national sexuality education program for many years. The U.S., despite its economic success, continues to lead developed

nations in adolescent pregnancy rates. The U.S. was founded on religious freedom, and although a minority, religious conservatives exert a great deal of pressure on disseminating accurate and accessible sexual health information to U.S. adolescents. Therefore, we see a dichotomy between these two nations regarding policies that guide sexuality education. As for the nursing professionals, the opportunities for collaboration in creating interventions for adolescents are boundless. The use of distance education, technology, and other social media will continue to be developed and will make it easier for nurses to share their knowledge and expertise in developing curricula that is culturally appropriate. Cooperative research between nurse scientists will result in findings that can be applied to multiple communities on both sides of the border. Although the role of the school nurse in Mexico has not been utilized since the 1940s, this may change as academia in Mexican nursing evolves, and the community-health nursing specialty develops in Mexico.

In the U.S. school nurses have been identified, although without evidence, as providers of sexuality education because of their access and availability to school age children. Prior to this study, the role of the school nurse in the U.S. as consultant or teacher of sexuality education has been ambiguous, at best. There is much work to be done in clarifying this role in light of the responsibilities of a school nurse, this study provides the foundation for school nurses to create a unique and suitable role. This study used the theoretical framework found in Ajzen's and Fishbein's Theory of Reasoned Action (TRA). The concepts found in the TRA model, attitude, subjective norm, and attitude, and with the addition of select demographic variables and a component of sexuality knowledge, are associated with intention to participate in certain volitional

behaviors. In this case, the behavior is participation at some level to teach or consult with students in the content area of sexuality education.

In conducting the study, an instrument was located that approximated the requirements to investigate these variables in a sample of California school nurses. A questionnaire developed in the U.K. by a school nurse researcher, was adapted by using a content validity index process, which is the thesis for another article found in this dissertation. This instrument became known as the California School Nurse Sexuality Education Questionnaire (CSNSEQ). Although it was changed to reflect language, policy, and was transformed from a paper and pencil questionnaire into a web-based product, the essence of the instrument remained intact. This allows for limited interpretation of the findings in comparing California and U.K. school nurses.

Significant findings from the analysis of the primary study point in the direction for school nurses to act as consultants rather than teacher of record. School nurse participants described employment status, availability to students, the manner in which the curriculum is taught, and the number of hours of continuing education they had received as indicative of level of participation. Participants described large workload assignments and responsibilities for multiple school sites. Although not measured in the study, school nurses encounter on a daily basis, emergencies and crises that disrupt planned activities.

Correspondingly, another significant finding was that school nurses were not so much opposed to the role of teacher, as they were undecided if they should assume that role. This discovery touches on the issue of knowledge. Although knowledge was not associated significantly with other study variables, the descriptive data indicated that school nurses were lacking in current knowledge regarding the item representing

knowledge: emergency contraception. In the matter of sexuality education, school nurses share a knowledge deficit with other social sciences, even medicine. The literature describes that most disciplines are inadequately prepared to discuss, and even more important to teach the protective skills that promote a healthy lifestyle. U.S. cultural norms do not address sexuality and sexual health as natural in the developmental trajectory; rather the focus is on deviant behaviors and pathophysiology. Unfortunately, this phenomena concerning sexuality is also found in nursing education and practice. This study addresses the need to re-evaluate inclusion of sexuality education as a norm in the nursing curricula at all levels, including the pre-licensure, baccalaureate, and graduate levels, and more so in continuing education for each nursing specialty. In school nurse education and especially in California there is a need to include sexuality education as part of the credentialing core competencies.

School nurses serve in a myriad of roles while helping children daily. They provide health services including education and counseling, but could easily help youth survive throughout the tumultuous adolescent years by learning effective, science-based information about reproductive health. As advocates for youth, school nurses have the responsibility to provide adolescents with the tools to safeguard their sexual health, so that adolescents can be knowledgeable and responsible in protecting themselves from teen pregnancy, and STIs, including HIV.

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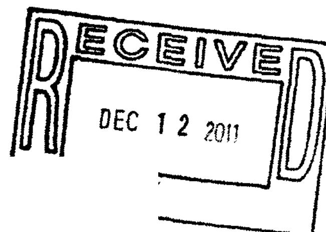
Appendices

Appendix A

Institutional Review Board Study (IRB) Approval

Institutional Review Board
University of San Diego
REQUEST FOR MODIFICATION
OF AN ALREADY APPROVED IRB APPLICATION

Date: December 2, 2011



To: Dr. Thomas Herrinton
IRB Administrator
Office of the Provost, HC-214
University of San Diego

From: Maria G. Matza RN, MSN
Doctoral Candidate-SON
E-mail address: mmatza-12@sandiego.edu
Phone: 949-230-2800

If you are a student:
Mary Rose Mueller PhD, RN, Faculty-SON
E-mail address: mmueller@sandiego.edu
Phone: (619 260-4562

Re: IRB Application #2011-03-080
We are requesting a modification to a pre-existing approved IRB application. The modification will consist of:

1) Recruitment will be extended to the online newsletter of the California State School Nurses Association. Permission to insert the recruitment announcement into the newsletter has been granted by Ms. Katy Waugh, President of California School Nurses Organization (see Appendix A).

2) A copy of the recruitment advertisement is attached. (See Appendix B)

No other part of the protocol or any other aspect of the study will be changed.

Appendix A
CSNO Board Minutes
Permission for Research Study

Notes from Executive Committee Conference Call

July 23, 2011

New Business:

Request for approval for Maria Matza to continue her PhD Research Project: Barbara moved to accept Maria Matza's request to do Survey Monkey with our email contacts and send the link in the newsletter with the addendum that a policy for future survey requests be completed by December 1, 2011. Seconded by Mary. Voted. Approved.

Appendix B
Recruitment and Informational Page

Dear California School Nurses,

My name is Maria Matza. I am a doctoral student in the School of Nursing at the University of San Diego, San Diego, CA. I am conducting a research study about school nurses' participation in sexuality education, and I would like to invite you to participate if you are a California school nurse and in possession of current and active California RN license, a current School Health Services Credential, and history of employment as a school nurse in California.

The purpose of this research study is to describe the relationships between school nurses' knowledge, attitudes, subjective norms, and select demographics with intention to teach/consult in sexuality education (SE), and to identify the current level of participation of school nurses serving K-12th grade students in California schools.

If you decide to participate, you will be asked to complete an online survey that takes about 30 minutes to complete. You will be asked about your knowledge level, attitudes concerning, the influence of important others (subjective norm), and intentions to teach or participate in sexuality education. You will also be asked a few questions about yourself, such as your job, school, education, gender, age, and other factors. The hyperlink to the survey will be active from December 14, 2011 until January 11, 2012.

The risks of participating in this study are minimal and no more than those encountered in everyday life. Your responses will be kept confidential and all your information will be coded with a number. Your email or Internet Protocol (IP) address will automatically be deleted, and nobody will know your identity. We will keep the study data for a minimum of 5 years.

Taking part in this study is entirely optional. Choosing not to participate will have no effect on your employment, healthcare, or any other services to which you are entitled. You may quit being in the study at any time or decide not to answer any specific questions. Should you decide to participate in this study, please print out a copy of this page for future reference.

I will be happy to answer any questions you have about the study. You may contact me at (949) 230-2800 or mmatza-12@sandiego.edu. You can also contact my faculty advisor, Dr. Mary Rose Mueller, at (619) 260- 4562 or mmueller@sandiego.edu.

If you would like to participate, please click on this link to begin the study: https://www.research.net/s/CSNSEQ.

Thank you for your consideration.

Maria Matza

Appendix B

California School Nurse Sexuality Education Questionnaire

California School Nurse Sexuality Education Questionnaire

The purpose of this section of the questionnaire is to find out what you know and how you feel about sexuality education. By completing it you will help to develop the role school nurses have in sexual promotion/education in California elementary and secondary schools.

1. Can you be unaware that you have a sexually transmitted infection?

- O Yes
- O No
- O Don't know

2. Is withdrawal (pulling out) a good method of contraception?

- O Yes
- O No
- O Don't know

3. Can you catch a sexually transmitted infection from giving or receiving oral sex?

- O Yes
- O No
- O Don't know

4. If you are under the age of 14 can you get free condoms from any family planning clinic?

- O Yes
- O No
- O Don't know

5. Do all methods of contraception protect you from sexually transmitted infections?

- O Yes
- O No
- O Don't know

6. If a girl had unprotected sexual intercourse on Friday night, would emergency contraception work if she took it Monday morning?

- O Yes
- O No
- O Don't know

7. Is a girl at risk of becoming pregnant if she has unprotected sex while menstruating?

- O Yes
- O No
- O Don't know

8. Do students need parents/guardians consent to obtain contraception if they are under the age of 14?

- O Yes
- O No
- O Don't know

California School Nurse Sexuality Education Questionnaire

Check "yes" if you know the following words are sexually transmitted infections. Check "no" if you know the following words are not sexually transmitted infections. Check "don't know" if you are not sure.

9. Genital herpes

- O Yes
- O No
- O Don't know

10. Heterophytes

- O Yes
- O No
- O Don't know

11. Macrocheilia

- O Yes
- O No
- O Don't know

12. Chlamydia

- O Yes
- O No
- O Don't know

13. Giardia

- O Yes
- O No
- O Don't know

14. Hemimelia

- O Yes
- O No
- O Don't know

15. Non-specific vaginitis

- O Yes
- O No
- O Don't know

16. Gonorrhea

- O Yes
- O No
- O Don't know

17. Non-specific urethritis

- O Yes
- O No
- O Don't know

California School Nurse Sexuality Education Questionnaire

Check "yes" if you know the following words are sexually transmitted infections.
Check "no" if you know the following words are not sexually transmitted infections.
Check "don't know" if you are not sure.

18. HPV
- O Yes
- O No
- O Don't know

19. Hyphedonia
- O Yes
- O No
- O Don't know

20. Hepatitis B
- O Yes
- O No
- O Don't know

21. Public lice
- O Yes
- O No
- O Don't know

22. Hepatitis E
- O Yes
- O No
- O Don't know

23. HIV
- O Yes
- O No
- O Don't know

24. AIDS
- O Yes
- O No
- O Don't know

25. Syphilis
- O Yes
- O No
- O Don't know

California School Nurse Sexuality Education Questionnaire

Check "yes" if you know the following words are sexually transmitted infections.
Check "no" if you know the following words are not sexually transmitted infections.
Check "don't know" if you are not sure.

26. Coxiella

- o Yes
- o No
- o Don't know

27. Pelvic inflammatory disease

- o Yes
- o No
- o Don't know

28. How effective (in %) is the emergency contraceptive pill if taken between 25-48 hours following unprotected sexual intercourse?

- o Yes
- o No
- o Don't know

California School Nurse Sexuality Education Questionnaire

Do you feel that you have sufficient, up to date knowledge/information to teach the following to students (K-12)?

29. Do you feel that you have sufficient up to date knowledge/information to teach:

	None	Not enough	Too much	The right amount	N/A
Reproductive anatomy/physiology	O	O	O	O	O
Sexually transmitted infections	O	O	O	O	O
Contraception	O	O	O	O	O
Assertiveness, negotiation, refusal skills	O	O	O	O	O
How to access local sexual and reproductive health services	O	O	O	O	O
Child-care and parenting skills	O	O	O	O	O
Issues concerning relationships	O	O	O	O	O
Legal issues concerning children's rights for sexual/reproductive health	O	O	O	O	O
Confidentiality issues concerning age of consent	O	O	O	O	O

To what level do you agree or disagree with the following statements.

30. How do you think sexuality education might be improved?

	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
Sexuality education in school is OK as it is	O	O	O	O	O
Sexuality education should be taught by school nurses	O	O	O	O	O
Sexuality education should be taught by outside community health agencies	O	O	O	O	O
Teachers in school should teach all sexuality education courses	O	O	O	O	O
Sexuality education should be taught by a combination of people i.e. health care professionals, outside agencies, and teachers	O	O	O	O	O
Sexuality education in school should involve older students (peer educators)	O	O	O	O	O

California School Nurse Sexuality Education Questionnaire

31. Are you (the school nurse) available to students for consultation about sexuality education concerns during the school day?

- O Yes
- O No

If you answer yes, state in numerical terms the number of hours per academic year that you are available to students.

[ ]

32. Are you (the school nurse) available to students for consultation about sexuality education concerns during the school day?

[ ]

From the perspective of a school nurse, how do you rate the effectiveness of sexuality education in your school(s)?
Choose between 1 and 10 to represent your opinion.

33. From the perspective of a school nurse, how do you rate the effectiveness of sexuality *education in your school(s)?*

	1	2	3	4	5	6	7	8	9	10
Ineffective (1) to Effective (10)	O	O	O	O	O	O	O	O	O	O
Embarrasing (1) to Unembarassing (10)	O	O	O	O	O	O	O	O	O	O
Boring (1) to Interesting (10)	O	O	O	O	O	O	O	O	O	O
Feel that the students learn nothing about relationships (1) to Feel that the students learn a lot about relationships (10)	O	O	O	O	O	O	O	O	O	O
Hate teaching the subject (1) to Enjoy teaching the lessons (10)	O	O	O	O	O	O	O	O	O	O
Sexuality education should not be part of the school nursing role (1) to Sexuality education should very much be part of the school nursing role (10)	O	O	O	O	O	O	O	O	O	O
I do not feel confident in teaching sexuality education (1) to I feel totally confident teaching sexuality education (10)	O	O	O	O	O	O	O	O	O	O

California School Nurse Sexuality Education Questionnaire

Demographics

34. What is your employment status?

- O Full time
- O Part time
- O Retired
- O Consultant
- O Public school
- O Private school
- O Parochial school
- O Charter school
- O Other

35. For how many schools are you the primary school nurse?

Enter a numeric value

[ ]

36. For how many students are you responsible in your school/ school district?

Enter a numeric value

[ ]

37. For which grade levels are you responsible? Check as many as apply.

Pre K	Kindergarten	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
O	O	O	O	O	O	O	O	O	O	O

38. How many years have you worked as a school nurse in California?

Enter a numeric value

[ ]

39. Have you worked as a school nurse outside of the state of California?

- O Yes
- O No
- O N/A

40. If you have worked outside the state of California as a school nurse, please indicate the number of years?

Enter a numeric value

[ ]

California School Nurse Sexuality Education Questionnaire

41. Total the number of years you have worked as a school nurse.

Enter a numeric value

[ ]

42. In the last 12 months, how many hours have you participated (teaching/consulting) in sexuality education in your school/ school district?

Enter a numeric value

[ ]

43. What is your highest level of education?

- O BA
- O BSN
- O Master's
- O Advanced Practice in Nursing
- O Doctorate

44. Identify your specialty as a nurse professional. Write in.

Enter a numeric value

[ ]

45. Have you received post-graduate continuing education in sexuality education?

- O Yes
- O No

If you answer yes, please list in numerical value the number of hours that you have received post-graduate or continuing education in sexuality education.

[ ]

46. Are you a member of CSNO?

- O Yes
- O No

47. If you are a member of CSNO, what section are you an affiliate with?

- O Northern
- O Bay Coast
- O Central
- O Southern
- O San Diego/Imperial

California School Nurse Sexuality Education Questionnaire

48. What is your age?

Enter a numeric value

[ ]

49. Do you have children?

- O Yes
- O No

50. If you have children, what are the ages (ranges) of the children?

- O 0 – 5 years
- O 6 – 10 years
- O 11 – 14 years
- O 15 – 18 years
- O >19 years

51. In what type of community setting do you work?

- O Yes
- O No
- O Don't know

52. In what type of community setting do you live?

- O Urban
- O Suburban
- O Rural

53. Is religion/spirituality practiced in your home?

- O Yes
- O No
- O Don't know

54. If you answer yes, please state religious/spiritual practice.

[ ]

55. Do you follow any cultural practices in your home?

- O Yes
- O No
- O Decline to answer

56. If you answer yes, please name the primary cultural that is practiced in your home.

[ ]

California School Nurse Sexuality Education Questionnaire

57. Race characteristics: This format is based on US government federal guidelines.

- O American Indian/Alaska Native
- O Asian
- O Black/ African American
- O Native Hawaiian/ Pacific Islander
- O White
- O Other
- O Decline to answer

58. Ethnic characteristics: This format is based on US government federal guidelines.

- O Hispanic/Latino
- O Non-Hispanic/Non-Latino
- O Other
- O Decline to answer

59. Next time you contribute (i.e., teach, consult) to sexuality education do you intend to:

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	N/A
Provide and promote confidential consultation for students	O	O	O	O	O	O
Promote awareness of local resources	O	O	O	O	O	O
Promote safer sex messages for students	O	O	O	O	O	O
Work with other professionals/agencies to help plan a coordinated sex education program	O	O	O	O	O	O
Work in partnership with teachers to provide opportunities for students to explore positive qualities in a relationship, the reasons for having sex or not having sex, and the effects of bullying in a relationship	O	O	O	O	O	O
Ensure the confidentiality policy is clear and meets the needs of students	O	O	O	O	O	O
Educate the school staff about the confidentiality policy	O	O	O	O	O	O

California School Nurse Sexuality Education Questionnaire

60. Next time I contribute (i.e., teach, consult) to sexuality education in my secondary schools if I:

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	N/A
Provide and promote confidential consultation it will be	O	O	O	O	O	O
Promote awareness of local resources it will be	O	O	O	O	O	O
Promote safer sex messages for students it will be	O	O	O	O	O	O
Work with other professionals/agencies to help plan a coordinated sex education program it will be	O	O	O	O	O	O
Work in partnership with teachers to help students acquire a range of skills related to sexual behavior, such as negotiation, decision-making, assertiveness, and listening it will be	O	O	O	O	O	O
Work in partnership with teachers to provide opportunities for students to explore positive qualities in a relationship, the reasons for having sex or not having sex, and the effects of bullying in a relationship will be	O	O	O	O	O	O
Advocate to ensure that the confidentiality policy is clear and meets the needs of students it will be	O	O	O	O	O	O
Educate the school staff about the confidentiality policy it will be	O	O	O	O	O	O

California School Nurse Sexuality Education Questionnaire

61. Next time I contribute (i.e., teach, consult) to sexuality education in my secondary schools, my manager/school nurse coordinator thinks I should:

	Manager/ coordinator does not give directions	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	N/A
Provide and promote confidential consultation	O	O	O	O	O	O	O
Promote awareness of local resources	O	O	O	O	O	O	O
Promote safer sex messages for students	O	O	O	O	O	O	O
Work with other professionals/agencies to help plan a coordinated sex education program	O	O	O	O	O	O	O
Work in partnership with teachers to provide opportunities for students to explore positive qualities in a relationship, the reasons for having sex or not having sex, and the effects of bullying in a relationship	O	O	O	O	O	O	O
Provide measures (education) to ensure that the confidentiality policy is clear and meets the needs of students	O	O	O	O	O	O	O

62. How often do you do what your manager/school nurse coordinator thinks you should do?

	Very seldom	Seldom	Neither often nor seldom	Often	Very often	N/A
How often do you do what your manager/school nurse coordinator thinks you should do?	O	O	O	O	O	O

California School Nurse Sexuality Education Questionnaire

63. Next time I contribute (i.e., teach, consult) to sexuality education in my secondary school(s), my school nurse colleagues think I should:

	I do not consult with other school nurses	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	N/A
Provide and promote confidential consultation	O	O	O	O	O	O	O
Promote awareness of local resources	O	O	O	O	O	O	O
Promote safer sex messages for students	O	O	O	O	O	O	O
Work with other professionals/agencies to help plan a coordinated sex education program	O	O	O	O	O	O	O
Work in partnership with teachers to provide opportunities for students to explore positive qualities in a relationship, the reasons for having sex or not having sex, and the effects of bullying in a relationship	O	O	O	O	O	O	O
Provide measures (education) to ensure that the confidentiality policy is clear and meets the needs of students	O	O	O	O	O	O	O

64. How often do you do what your school nurse colleagues think you should do?

	Very seldom	Seldom	Neither often nor seldom	Often	Very often	N/A
How often do you do what your school nurse colleagues think you should do?	O	O	O	O	O	O

California School Nurse Sexuality Education Questionnaire

65. Sexuality health teaching/education/promotion in my secondary schools will be better if I:

	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	N/A
Provide and promote confidential consultation it will be	O	O	O	O	O	O
Promote awareness of local resources	O	O	O	O	O	O
Promote safer sex messages for students it will be	O	O	O	O	O	O
Work with other professionals/agencies to help plan a coordinated sex education program	O	O	O	O	O	O
Work in partnership with teachers to help students acquire a range of skills related to sexual behavior, such as negotiation, decision-making, assertiveness, and listening	O	O	O	O	O	O
Work in partnership with teachers to provide opportunities for students to explore positive qualities in a relationship, the reasons for having sex or not having sex, and the effects of bullying in a relationship	O	O	O	O	O	O
Provide measures to ensure that the confidentiality policy is clear and meets the needs of students	O	O	O	O	O	O

California School Nurse Sexuality Education Questionnaire

66. When participating in sexuality health teaching/education/promotion in your secondary school(s) how often do you do the following?

	Very seldom	Seldom	Neither often nor seldom	Often	Very often	N/A
Provide and promote confidential consultation it will be	O	O	O	O	O	O
Promote awareness of local resources	O	O	O	O	O	O
Promote safer sex messages for students it will be	O	O	O	O	O	O
Work with other professionals/agencies to help plan a coordinated sex education program	O	O	O	O	O	O
Work in partnership with teachers to help students acquire a range of skills related to sexual behavior, such as negotiation, decision-making, assertiveness, and listening	O	O	O	O	O	O
Work in partnership with teachers to provide opportunities for students to explore positive qualities in a relationship, the reasons for having sex or not having sex, and the effects of bullying in a relationship	O	O	O	O	O	O
Provide measures to ensure that the confidentiality policy is clear and meets the needs of students	O	O	O	O	O	O

California School Nurse Sexuality Education Questionnaire

You have completed the questionnaire.

Thank you for participating in the California School Nurse Sexuality Education Questionnaire (CSNSEQ).

Appendix C

Tables

Table 1: Items That Define the Variables: Constructs and Definitions

Variable	Survey Question	Corresponding Item on CSNSEQ	Level of Measurement
Knowledge	Q. 6	If a girl had unprotected sexual intercourse on Friday night, would emergency contraception work if she took it on Monday morning?	Nominal
Attitude	Q. 30b	Sexuality education should be taught by school nurses.	Ordinal 5-point Likert item
Subjective norm	Q. 64	How often do you do what your school nurse colleagues think you should do?	Ordinal 5-point Likert item
Intention	Q. 59a	Next time you contribute (i.e., to teach/consult) to sexuality education do you intend to: provide and promote confidential consultation for students.	Ordinal 6-point Likert item
Level of Participation	Q. 42	Hours spent teaching/counseling/participating in sexuality education	Scale
Demographics	Q. 33-57	Description of SNs personal, work, education, and career demographics	Nominal

Table 2: Distribution of selected characteristics of the study population.

	n (%)
Age	
Less than 44 years	15 (14.9)
45 to 54 years	35 (34.7)
55 to 64 years	43 (42.5)
65 years and older	8 (7.9)
Racial/Ethnic characteristics	
American Indian/ Native Alaskan	1 (1.1)
Asian	4 (4.2)
Black/ African American	2 (2.1)
Hispanic	10 (10.5)
Native Hawaiian/ Pacific Islander	2 (2.1)
White	74 (77.9)
Other	2 (2.1)
Employment status	
Full-time	76 (76.0)
Part-time	17 (17.0)
Retired	7 (7.0)
What is your religion?	
Roman Catholic	23 (32.4)
Protestant	8 (11.3)
Non-denominational	37 (52.1)
Jewish	3 (4.2)
Do you have children?	
Yes	93 (91.2)
No	9 (8.8)
What is your highest level of education?	
BA/BSN	31 (30.4)
MSN	47 (46.1)
APN/PhD	24 (23.5)
Nursing professional specialty	
Administrative	10 (10.8)
Advanced Practice	26 (28.0)
School Nurse	57 (61.2)
How is sexuality education taught within the curriculum?	
Unit based	29 (36.2)
Grade level	43 (53.8)
Assembly	8 (10.0)
Number of hours that you have received post-graduate or continuing education in sexuality education.	
No hours of continuing education	92 (83.6)
1 - 15 hours of continuing education	11 (10.0)
Over 15 hours of continuing education	7 (6.4)
Are you (the school nurse) available to students for consultation about sexuality education concerns during the school day?	
Yes	66 (64.1)
No	37 (35.9)
If a girl had unprotected sexual intercourse on Friday night, would emergency contraception work if she took it Monday morning?	
Yes	44 (41.5)

No	49 (46.2)
Don't Know	13 (12.3)
Sexuality education should be taught by school nurses.	
Disagree	16 (15.3)
Uncertain	20 (19.0)
Agree	69 (65.7)
In the last 12 months, how many hours have you participated (teaching/consulting) in sexuality education in your school/school district?	
No sexuality education	45 (45.0)
1 - 15 hours of sexuality education	40 (40.0)
16 - 30 hours of sexuality education	10 (10.0)
Over 30 hours of sexuality education	5 (5.0)
Provide and promote confidential consultation for students.	
Unlikely	12 (13.3)
Likely	78 (86.7)
How often do you do what your school nurse colleagues think you should do?	
Very seldom/ seldom	1 (1.2)
Neither often nor seldom	30 (38.0)
Often/ Very often	48 (60.8)

Counts and percentages were adjusted for missing values.

Table 3: If a girl had unprotected sexual intercourse on Friday night, would emergency contraception work if she took it Monday morning?

Demographic Variables	Yes n (%)	No n (%)	Don't Know n (%)	χ^2	df	P[§]
Age	41 (42.2)	44 (45.4)	12 (12.4)	3.4	6	0.153
Less than 44 years	7 (46.7)	6 (40.0)	2 (13.3)			
45 to 54 years	13 (39.4)	15 (45.5)	5 (15.1)			
55 to 64 years	20 (47.6)	18 (42.9)	4 (9.5)			
65 years and older	1 (14.3)	5 (71.4)	1 (14.3)			
Racial Characteristics	40 (44.0)	40 (44.0)	11 (12.0)	1.7	2	0.249
White	35 (44.9)	35 (44.9)	8 (10.3)			
Non-White	5 (38.5)	5 (38.5)	3 (23.1)			
Employment Status	41 (42.2)	44 (45.4)	12 (12.4)	1.0	4.0	0.680
Full-time	31 (41.9)	34 (45.9)	9 (12.2)			
Part-time	8 (50.0)	6 (37.5)	2 (12.5)			
Retired	2 (28.6)	4 (57.1)	1 (14.3)			
What is your religion?	27 (40.3)	31 (46.3)	9 (13.4)	3.8	6	0.107
Roman Catholic	9 (40.9)	9 (40.9)	4 (18.2)			
Protestant	2 (28.6)	3 (42.8)	2 (28.6)			
Non-denominational	14 (40.0)	18 (51.4)	3 (8.6)			
Jewish	2 (66.7)	1 (33.3)	0 (0.0)			
Do you have Children?	42 (42.9)	44 (44.9)	12 (12.2)	1.5	2	0.155
Yes	38 (42.7)	39 (43.8)	12 (13.5)			
No	4 (44.4)	5 (55.6)	0 (0.0)			
What is your highest level of education?	42 (42.9)	44 (44.9)	12 (12.2)	5.6	4	0.133
BA/ BSN	11 (35.5)	13 (41.9)	7 (22.6)			
MSN	20 (46.7)	21 (48.7)	2 (4.6)			
APN/ PhD	11 (45.8)	10 (41.7)	3 (12.5)			
Nursing Professional Specialty	40 (44.9)	37 (41.6)	12 (13.5)	2.6	4	0.305
Administrative	6 (60.0)	4 (40.0)	0 (0.0)			
Advance Practice	12 (48.0)	9 (36.0)	4 (16.0)			
School Nurse	22 (40.8)	24 (44.4)	8 (14.8)			
In the last 12 months, how many hours have you participated (teaching/consulting) in sexual education in your school/school district?	42 (43.8)	44 (45.8)	10 (10.4)	4.2	6	0.133
No sexuality education	16 (37.2)	24 (55.8)	3 (7.0)			
1 - 15 hours of sexuality education	19 (48.7)	15 (38.5)	5 (12.8)			
16 - 30 hours of sexuality education	4 (44.4)	4 (44.4)	1 (11.2)			
Over 30 hours of sexuality education	3 (60.0)	1 (20.0)	1 (20.0)			
How is sexuality education taught within the curriculum?	36 (45.6)	33 (41.7)	10 (12.7)	1.5	4	0.564
Unit based	11 (37.9)	13 (44.8)	5 (17.3)			
Grade level	21 (50.0)	17 (40.5)	4 (9.5)			
Assembly	4 (50.0)	3 (37.5)	1 (12.5)			
Number of hours that you have received post-graduate or continuing education in sexuality education.	44 (41.5)	49 (46.2)	13 (12.3)	6.4	4	0.067
No hours of continuing education	33 (37.5)	43 (48.9)	12 (13.6)			
1 - 15 hours of continuing education	5 (45.5)	5 (45.5)	1 (9.0)			
Over 15 hours of continuing education	6 (85.7)	1 (14.3)	0 (0.0)			
Are you (the school nurse) available to students for consultation about sexuality education concerns during the school day?	43 (47.8)	45 (43.5)	11 (8.7)	4.6	2	0.106
Yes	32 (50.0)	24 (37.5)	8 (12.5)			
No	11 (31.4)	21 (60.0)	3 (8.6)			

Counts and percentages were adjusted for missing values.
df Degrees of freedom
[§] P values were calculated on valid percentages and the Fisher's exact test.

Table 4: Sexuality education should be taught by school nurses.

Demographic Variables	Yes n (%)	No n (%)	Don't Know n (%)	χ^2	df	P[§]
Age	15 (14.9)	20 (19.8)	66 (65.3)	4.7	6	0.117
Less than 44 years	3 (20.0)	3 (20.0)	9 (60.0)			
45 to 54 years	4 (11.4)	4 (11.4)	27 (77.2)			
55 to 64 years	7 (16.2)	10 (23.3)	26 (60.5)			
65 years and older	1 (12.5)	3 (37.5)	4 (50.0)			
Racial Characteristics	14 (14.7)	19 (20.0)	62 (65.3)	0.02	2	0.773
White	12 (14.8)	16 (19.8)	53 (65.4)			
Non-White	2 (14.3)	3 (21.4)	9 (64.3)			
Employment Status	14 (14.0)	20 (20.0)	66 (66.0)	1.8	4.0	0.351
Full-time	11 (14.5)	14 (18.4)	51 (67.1)			
Part-time	3 (17.6)	4 (23.5)	10 (58.9)			
Retired	0 (0.0)	2 (28.6)	5 (71.4)			
What is your religion?	10 (14.1)	12 (16.9)	49 (69.0)	6.2	6	0.066
Roman Catholic	6 (26.1)	4 (17.4)	13 (56.5)			
Protestant	0 (0.0)	1 (12.5)	7 (87.5)			
Non-denominational	4 (10.8)	7 (18.9)	26 (70.3)			
Jewish	0 (0.0)	0 (0.0)	3 (100.0)			
Do you have Children?	15 (14.7)	20 (19.6)	67 (65.7)	2.4	2	0.175
Yes	15 (16.1)	17 (18.3)	61 (65.6)			
No	0 (0.0)	3 (33.3)	6 (66.7)			
What is your highest level of education?	15 (14.7)	20 (19.6)	67 (65.7)	8.6	4	0.013
BA/ BSN	8 (25.8)	6 (19.4)	17 (54.8)			
MSN	7 (14.9)	7 (14.9)	33 (70.2)			
APN/ PhD	0 (0.0)	7 (29.2)	17 (70.8)			
Nursing Professional Specialty	11 (11.8)	19 (20.4)	63 (67.8)	5.6	4	0.042
Administrative	2 (20.0)	0 (0.0)	8 (80.0)			
Advance Practice	1 (3.8)	5 (19.2)	20 (76.9)			
School Nurse	11 (11.8)	19 (20.4)	35 (61.4)			
In the last 12 months, how many hours have you participated (teaching/consulting) in sexuality education in your school/school district?	15 (15.0)	18 (18.0)	67 (67.0)	2.8	6	0.328
No sexuality education	9 (20.0)	9 (20.0)	27 (60.0)			
1 - 15 hours of sexuality education	4 (10.0)	6 (15.0)	30 (75.0)			
16 - 30 hours of sexuality education	1 (10.0)	2 (20.0)	7 (70.0)			
Over 30 hours of sexuality education	1 (20.0)	1 (20.0)	3 (60.0)			
How is sexuality education taught within the curriculum?	13 (16.3)	16 (20.0)	51 (63.7)	3.4	4	0.191
Unit based	4 (13.8)	5 (17.2)	20 (69.0)			
Grade level	6 (14.0)	10 (23.2)	27 (62.8)			
Assembly	3 (37.5)	1 (12.5)	4 (50.0)			
Number of hours that you have received post-graduate or continuing education in sexuality education.	16 (15.3)	20 (19.0)	69 (65.7)	2.5	4	0.355
No hours of continuing education	15 (17.2)	16 (18.4)	56 (64.4)			
1 - 15 hours of continuing education	1 (9.1)	3 (27.3)	7 (63.6)			
Over 15 hours of continuing education	0 (0.0)	1 (14.3)	6 (85.7)			
Are you (the school nurse) available to students for consultation about sexuality education concerns during the school day?	16 (15.5)	18 (17.5)	69 (67.0)	1.6	2	0.481
Yes	8 (12.1)	12 (18.2)	46 (69.7)			
No	8 (21.6)	6 (16.2)	23 (62.2)			

Counts and percentages were adjusted for missing values.
df Degrees of freedom
[§] *P* values were calculated on valid percentages and the Fisher's exact test.

Table 5: How often do you do what your school nurse colleagues think you should do?

Demographic Variables	Very seldom, seldom n (%)	Neither often nor seldom n (%)	Often, very often n (%)	χ^2	df	P[§]
Age	1 (1.3)	30 (38.4)	47 (60.3)	2.4	6	0.210
Less than 44 years	0 (0.0)	4 (36.4)	7 (63.6)			
45 to 54 years	1 (3.7)	9 (33.3)	17 (63.0)			
55 to 64 years	0 (0.0)	15 (42.9)	20 (57.1)			
65 years and older	0 (0.0)	2 (40.0)	3 (60.0)			
Racial Characteristics	1 (1.4)	30 (40.5)	43 (58.1)	5.2	2	0.094
White	0 (0.0)	24 (39.3)	37 (60.7)			
Non-White	1 (7.7)	6 (46.2)	6 (46.2)			
Employment status	1 (1.4)	28 (36.8)	47 (61.8)	0.7	4	0.271
Full-time	1 (1.7)	21 (35.0)	38 (63.3)			
Part-time	4 (0.0)	5 (40.0)	6 (60.0)			
Retired	0 (0.0)	2 (40.0)	3 (60.0)			
What is your religion?	1 (1.7)	24 (40.7)	34 (57.6)	2.8	6	0.029
Roman Catholic	0 (0.0)	11 (50.0)	11 (50.0)			
Protestant	0 (3.4)	3 (34.5)	4 (57.1)			
Non-denominational	1 (3.4)	10 (34.5)	18 (62.1)			
Jewish	1 (50.0)	0 (0.0)	1 (50.0)			
Do you have Children?	1 (1.3)	30 (38.0)	48 (60.8)	0.4	2	0.346
Yes	0 (14.5)	28 (33.7)	43 (51.8)			
No	1 (22.2)	2 (22.2)	5 (55.6)			
What is your highest level of education?	1 (1.2)	30 (38.0)	48 (60.8)	6.9	4	0.039
BA/BSN	0 (0.0)	5 (18.5)	19 (70.5)			
MSN	1 (2.9)	14 (40.0)	20 (57.1)			
APN/PhD	0 (0.0)	11 (55.0)	9 (45.0)			
Nursing professional specialty	1 (1.4)	30 (40.5)	43 (58.1)	42.5	4	0.124
Administrative	0 (0.0)	3 (37.5)	5 (62.5)			
Advanced Practice	0 (0.0)	12 (52.2)	11 (47.8)			
School Nurse	1 (2.3)	15 (34.9)	27 (62.8)			
In the last 12 months, how many hours have you participated (teaching/consulting) in sexual education in your school/school district?	1 (1.2)	30 (38.5)	47 (60.3)	2.4	6	0.335
No sexuality education	1 (3.2)	10 (32.3)	20 (64.5)			
1 - 15 hours of sexuality education	0 (0.0)	15 (42.9)	20 (57.1)			
16 - 30 hours of sexuality education	0 (0.0)	3 (37.5)	5 (62.5)			
Over 30 hours of sexuality education	1 (20.0)	2 (40.0)	2 (40.0)			
Number of hours that you have received post-graduate or continuing education in sexuality education.	1 (1.3)	30 (38.0)	48 (60.8)	3.9	4	0.180
No hours of continuing education	1 (1.5)	22 (33.3)	43 (65.2)			
1 - 15 hours of continuing education	0 (0.0)	4 (57.1)	3 (42.9)			
Over 15 hours of continuing education	0 (0.0)	4 (66.7)	2 (33.3)			
How is sexuality education taught within the curriculum?	0 (0.0)	24 (40.0)	36 (60.0)	1.3	2	0.427
Unit based	0 (0.0)	6 (30.0)	14 (70.0)			
Grade level	0 (0.0)	15 (44.1)	19 (54.9)			
Assembly	0 (0.0)	3 (50.0)	3 (50.0)			
Are you (the school nurse) available to students for consultation about sexuality education concerns during the school day?	1 (1.3)	29 (37.7)	47 (61.0)	2.4	2	0.440
Yes	0 (0.0)	21 (38.9)	33 (61.1)			
No	1 (4.3)	8 (34.8)	14 (60.9)			

Counts and percentages were adjusted for missing values.
df Degrees of freedom
[§] *P* values were calculated on valid percentages and the Fisher's exact test.

Table 6: Provide and promote confidential consultation for students.

Demographic Variables	Unlikely n (%)	Likely n (%)	χ^2	df	P[§]
Age	12 (13.5)	77 (86.5)	7.4	3	0.006
Less than 44 years	2 (15.4)	11 (84.6)			
45 to 54 years	0 (0.0)	29 (100.0)			
55 to 64 years	9 (22.5)	31 (77.5)			
65 years and older	1 (14.3)	6 (85.7)			
Racial Characteristics	8 (9.5)	76 (90.5)	0.11	1	0.740
White	7 (10.0)	63 (90.0)			
Non-White	1 (7.1)	13 (92.9)			
Employment Status	11 (12.6)	76 (87.4)	4.2	2	0.115
Full-time	7 (10.1)	62 (89.9)			
Part-time	4 (28.6)	10 (71.4)			
Retired	0 (0.0)	4 (100.0)			
What is your religion?	8 (12.5)	56 (87.5)	0.6	3	0.329
Roman Catholic	2 (9.5)	19 (90.5)			
Protestant	1 (14.3)	6 (85.7)			
Non-denominational	5 (14.7)	29 (85.3)			
Jewish	1 (0.0)	2 (100.0)			
Do you have Children?	12 (13.3)	78 (86.7)	1.0	1	0.593
Yes	12 (14.3)	72 (85.7)			
No	0 (0.0)	6 (100.0)			
What is your highest level of education?	12 (13.3)	78 (86.7)	4.8	2	0.016
BA/ BSN	5 (17.9)	13 (82.1)			
MSN	7 (17.9)	32 (82.1)			
APN/ PhD	0 (0.0)	23 (100.0)			
Nursing Professional Specialty	10 (11.9)	74 (88.1)	5.4	2	0.023
Administrative	1 (10.0)	9 (90.0)			
Advance Practice	0 (0.0)	25 (100.0)			
School Nurse	9 (18.4)	40 (81.6)			
In the last 12 months, how many hours have you participated (teaching/consulting) in sexuality education in your school/school district?	12 (13.6)	76 (86.4)	0.8	3	0.638
No sexuality education	6 (16.7)	30 (83.3)			
1 - 15 hours of sexuality education	4 (10.8)	33 (89.2)			
16 - 30 hours of sexuality education	1 (10.0)	9 (90.0)			
Over 30 hours of sexuality education	1 (20.0)	4 (80.0)			
How is sexuality education taught within the curriculum?	8 (11.3)	63 (88.7)	2.5	2	0.075
Unit based	2 (7.7)	24 (92.3)			
Grade level	4 (10.5)	34 (89.5)			
Assembly	2 (28.6)	5 (71.4)			
Number of hours that you have received post-graduate or continuing education in sexuality education.	12 (13.3)	78 (86.7)	3.2	2	0.114
No hours of continuing education	12 (16.4)	61 (83.6)			
1 - 15 hours of continuing education	0 (0.0)	10 (100.0)			
Over 15 hours of continuing education	0 (0.0)	7 (100.0)			
Are you (the school nurse) available to students for consultation about sexuality education concerns during the school day?	12 (13.6)	76 (86.4)	5.5	1	0.036
Yes	5 (8.1)	57 (91.9)			
No	7 (26.9)	19 (73.1)			

Counts and percentages were adjusted for missing values.
df Degrees of freedom
[§] *P* values were calculated on valid percentages and the Fisher's exact test.

Table 7: In the last 12 months, how many hours have you participated (teaching/consulting) in sexual education in your school/school district?

Demographic Variables	No hours n (%)	1 – 15 Hours n (%)	16 – 30 Hours n (%)	Over 30 Hours n (%)	χ^2	df	P[§]
Age	45 (45.5)	39 (39.3)	10 (10.1)	5 (5.1)	9.3	9	0.058
Less than 44 years	9 (60.0)	3 (20.0)	3 (20.0)	0 (0.0)			
45 to 54 years	14 (40.0)	16 (45.7)	2 (5.7)	3 (8.6)			
55 to 64 years	17 (40.5)	18 (42.9)	5 (11.9)	2 (4.7)			
65 years and older	5 (71.4)	2 (28.6)	0 (0.0)	0 (0.0)			
Racial Characteristics	40 (43.0)	39 (41.9)	9 (9.7)	5 (5.4)	2.9	3	0.042
White	33 (41.8)	32 (40.5)	9 (11.4)	5 (6.3)			
Non-White	7 (50.0)	7 (50.0)	0 (0.0)	0 (0.0)			
Employment Status	44 (45.4)	39 (40.2)	9 (9.3)	5 (5.1)	14.2	6.0	0.005
Full-time	30 (40.5)	34 (45.9)	5 (6.8)	5 (6.8)			
Part-time	8 (47.1)	5 (29.4)	4 (23.5)	0 (0.0)			
Retired	6 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)			
What is your religion?	32 (45.7)	29 (41.4)	6 (8.6)	3 (4.3)	9.4	9	0.059
Roman Catholic	9 (40.9)	9 (40.9)	2 (9.1)	2 (9.1)			
Protestant	2 (25.0)	6 (75.0)	0 (0.0)	0 (0.0)			
Non-denominational	18 (48.6)	14 (37.8)	4 (10.8)	1 (2.8)			
Jewish	3 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)			
Do you have Children?	45 (45.0)	40 (40.0)	10 (10.0)	5 (5.0)	2.4	2	0.175
Yes	40 (44.0)	37 (40.6)	9 (9.9)	5 (5.5)			
No	5 (55.6)	3 (33.3)	1 (11.1)	0 (0.0)			
What is your highest level of education?	45 (45.0)	40 (40.0)	10 (10.0)	5 (5.0)	2.0	6	0.437
BA/ BSN	13 (43.3)	11 (36.7)	4 (13.3)	2 (6.7)			
MSN	21 (44.7)	21 (44.7)	3 (6.3)	2 (4.3)			
APN/ PhD	11 (47.8)	8 (34.8)	3 (13.0)	1 (4.4)			
Nursing Professional Specialty	40 (44.0)	37 (40.6)	9 (9.9)	5 (5.5)	6.0	6	0.047
Administrative	5 (50.0)	3 (30.0)	0 (0.0)	2 (20.0)			
Advance Practice	10 (40.0)	11 (44.0)	3 (12.0)	1 (4.0)			
School Nurse	40 (44.0)	37 (40.7)	6 (10.7)	2 (3.6)			
How is sexuality education taught within the curriculum?	26 (33.8)	39 (50.6)	9 (11.7)	3 (3.9)	5.9	6	0.015
Unit based	12 (41.4)	12 (41.4)	5 (17.2)	0 (0.0)			
Grade level	12 (28.6)	23 (54.8)	4 (9.5)	3 (7.1)			
Assembly	2 (33.3)	4 (66.7)	0 (0.0)	0 (0.0)			
Number of hours that you have received post-graduate or continuing education in sexuality education.	45 (45.0)	40 (40.0)	10 (10.0)	5 (5.0)	10.7	6	0.012
No hours of continuing education	39 (47.6)	33 (40.2)	7 (8.5)	3 (3.7)			
1 - 15 hours of continuing education	5 (45.5)	2 (18.2)	3 (27.3)	1 (9.1)			
Over 15 hours of continuing education	1 (14.3)	5 (71.4)	0 (0.0)	1 (14.3)			
Are you (the school nurse) available to students for consultation about sexuality education concerns during the school day?	44 (36.4)	39 (45.5)	10 (13.6)	5 (4.5)	13.6	3	0.002
Yes	20 (31.7)	31 (49.2)	9 (14.3)	3 (4.8)			
No	24 (68.6)	8 (22.9)	1 (2.9)	2 (5.7)			

Counts and percentages were adjusted for missing values.
df Degrees of freedom
[§] *P* values were calculated on valid percentages and the Fisher's exact test.

Table 8: What is the relationship between intention to teach sexuality education and the level of participation among California school nurses?

	No hours n (%)	1 – 15 Hours n (%)	16 – 30 Hours n (%)	Over 30 Hours n (%)	χ^2	df	P§
Provide and promote confidential consultation for students.	36 (40.9)	37 (42.0)	10 (11.4)	5 (5.7)	0.8	3	0.638
Unlikely	6 (50.0)	4 (33.3)	1 (8.3)	1 (8.3)			
Likely	30 (39.5)	33 (43.4)	9 (11.8)	4 (5.3)			

Counts and percentages were adjusted for missing values.
df Degrees of freedom
§ P values were calculated on valid percentages and the Fisher's exact test.

Table 9: What is the relationship between knowledge, attitudes, and effect of subjective norms and the level of participation among California school nurses?

	No hours n (%)	1 – 15 Hours n (%)	16 – 30 Hours n (%)	Over 30 Hours n (%)	χ^2	df	P§
If a girl had unprotected sexual intercourse on Friday night, would emergency contraception work if she took it Monday morning?	43 (44.8)	39 (40.6)	9 (9.4)	5 (5.2)	4.2	6	0.133
Yes	16 (38.1)	19 (45.2)	4 (9.5)	3 (7.1)			
No	24 (54.5)	15 (34.1)	4 (9.1)	1 (2.3)			
Don't know	3 (30.0)	5 (50.0)	1 (10.0)	1 (10.0)			
Sexual education should be taught by school nurses.	45 (45.0)	40 (40.0)	10 (10.0)	5 (5.0)	2.8	6	0.328
Disagree	9 (60.0)	4 (26.7)	1 (6.7)	1 (6.7)			
Uncertain	9 (50.0)	6 (33.3)	2 (11.1)	1 (5.6)			
Agree	27 (40.3)	30 (44.8)	7 (10.4)	3 (4.5)			
How often do you do what your school nurse colleagues think you should do?	31 (39.7)	35 (44.9)	8 (10.3)	4 (5.1)	2.4	6	0.335
Very seldom/ seldom	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)			
Neither often nor seldom	10 (33.3)	15 (50.0)	3 (10.0)	2 (6.7)			
Often/ very often	20 (42.6)	20 (42.6)	5 (10.6)	2 (4.3)			

Counts and percentages were adjusted for missing values.
df Degrees of freedom
§ P values were calculated on valid percentages and the Fisher's exact test.

Table 10: What is the relationship between knowledge, attitudes, and effect of subjective norms and intention to teach?

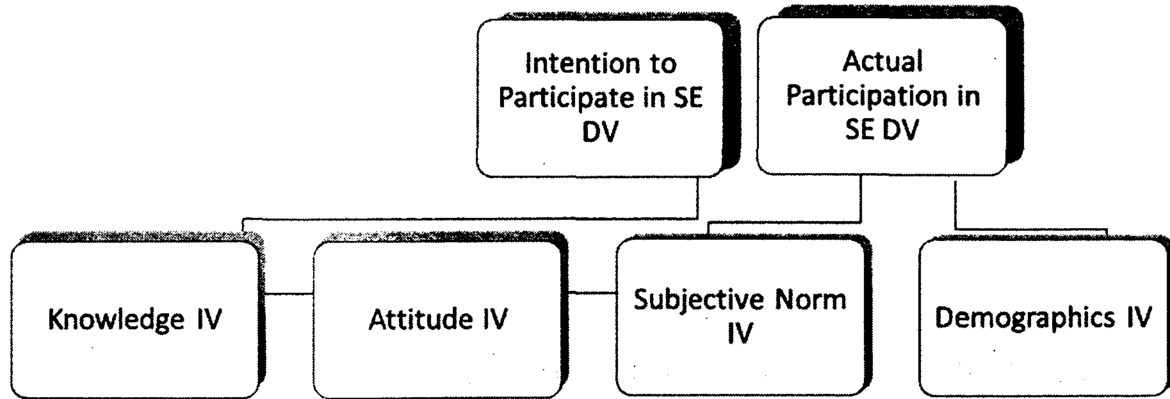
	Unlikely n (%)	Likely n (%)	χ^2	df	P§
If a girl had unprotected sexual intercourse on Friday night, would emergency contraception work if she took it Monday morning?	12 (13.8)	75 (86.2)	4.2	2	0.073
Yes	4 (10.5)	34 (89.5)			
No	8 (21.6)	29 (78.4)			
Don't know	0 (0.0)	12 (100.0)			
Sexuality education should be taught by school nurses.	12 (13.3)	78 (86.7)	4.6	2	0.0025
Disagree	4 (30.8)	9 (69.2)			
Uncertain	3 (15.8)	16 (84.2)			
Agree	5 (8.6)	53 (91.4)			
How often do you do what your school nurse colleagues think you should do?	9 (11.8)	67 (88.2)	0.207	2	0.365
Very seldom/ seldom	0 (0.0)	1 (100.0)			
Neither often nor seldom	3 (10.7)	25 (89.3)			
Often/ very often	6 (12.6)	41 (87.2)			

Counts and percentages were adjusted for missing values.
df Degrees of freedom
§ *P* values were calculated on valid percentages and the Fisher's exact test.

Appendix D

Figure

Figure 1: Theoretical Model Conceptual Framework



Adapted from Fishbein-Ajzen (Theory of Reasoned Action)