BEST PRACTICE MODEL FOR SCHOOL NURSES TEACHING HUMAN SEXUALITY EDUCATION TO HIGH SCHOOL STUDENTS FOR THE PREVENTION OF UNINTENDED PREGNANCY

By

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ABSTRACT

The purpose of this thesis was to create a best practice model for school nurses teaching human sexuality education to high school students in the state of Arizona for the prevention of unintended teen pregnancy. Human sexuality education is not required by the state, and it may be comprehensive or abstinence based. Review of the literature of CINAHL and Medline was conducted using the keywords teen pregnancy, sex education, human sexuality education and school nurses. The project produced a best practice model for school nurses delivering human sexuality education. The Sexuality Education Triad (SET) places the school nurse as the nucleus and has three main components: relationship to students, relationship to parents, and curriculum. School nurses are key resources for students, parents and teachers in this area. The project culminated in a hypothetical implementation and evaluation plan of the SET model. The proposed best practice model for school nurses teaching human sexuality education would improve the quality of the education, promote cooperation between schools and parents, and ensure that students receive sound, unbiased information in this highly important area of their lives.
CHAPTER ONE: INTRODUCTION

The purpose of this thesis was to develop a best practice model for school nurses teaching human sexuality education to high school students in the state of Arizona. In this thesis, the problem of unintended teen pregnancy is explained to show readers why a change in the current model for human sexuality education is necessary. Following, there is a discussion of various models that have been researched and their strengths and weaknesses are addressed. The author proposes a model based on research that best incorporates the strengths of the other models while minimizing any weaknesses in accordance with Arizona state law. Although one of the main goals of human sexuality education is to reduce adolescents’ risk for contracting sexually transmitted infections, including human immunodeficiency virus, for the purposes of this thesis the aim of the model is to reduce unintended teen pregnancy.

Background

According to the United States Department of Health and Human Services (2013), Arizona was ranked 13th out of 51 states and the District of Columbia on 2010 final teen birth rates among females aged 15-19. Additionally, Arizona was ranked number 4 out of 51 in pregnancies among females aged 15-19 in 2005. In the state of Arizona it was recently proposed that schools be required to teach human sexuality education. Arizona Revised Statutes, (ARS), House Bill (HB) 2506 (2013) recently proposed, “All school districts shall provide sex education that is medically accurate and comprehensive”. Currently in Arizona, any human sexuality education that is taught in the schools is left to the discretion of the school district (Advocates for Youth, 2008). When schools elect to teach human sexuality education, it is required that it be age appropriate and include information about human immunodeficiency virus (HIV) and sexually
transmitted infections (STIs). Until ARS HB 2506 is signed into law, there is no requirement that information be evidence based, culturally or religiously unbiased. If this bill is passed, parents will continue to have the right to opt their children out of the human sexuality education programs entirely. However, there is still no requirement that the school nurse be involved in the development or delivery of human sexuality education (ARS HB 2506, 2013).

There are two different approaches to human sexuality education: abstinence-only-until-marriage and comprehensive (Advocacy for Youth, 2001). There are different terms used to describe each, for example comprehensive is also called abstinence-plus, but the program will either teach students about contraception or not depending on which type of program it is (Advocacy for Youth, 2001). Abstinence-only-until-marriage programs emphasize abstaining from any sexual activity until marriage. This type of education either completely avoids any discussion about the use of contraceptives, or only mentions failure rates associated with such use. Abstinence-only-until-marriage programs also teach that abstinence is the expected standard of activity for all teens and unmarried persons (Williams, 2006). Supporters of abstinence-only programs claim that comprehensive human sexuality education encourages sexual activity among teens (Williams, 2006).

According to ARS HB 2506, comprehensive human sexuality education is defined in the state of Arizona as “evidence-based programs that begin in middle school grades or junior high school grades and continue through grade twelve and that provide pupils with opportunities for developing skills and learning age-appropriate, medically accurate information on a broad set of topics related to sexuality, including human development, healthy relationships, decision-making, abstinence, contraception, and disease prevention,” (ARS HB 2506, 2013, p. 4).
Comprehensive programs teach abstinence as the only 100% effective method for avoiding STIs and unintended pregnancy, but also teach about contraception and methods of protecting against the transmission of STIs (Advocacy for Youth, 2001). Additionally, it also teaches interpersonal and communication skills and helps adolescents explore their own values, goals and options (Advocacy for Youth, 2001).

**Introduction to the Problem**

The rate of pregnancy among women ages 15 to 19 in 2010 was 34.3 per 1,000 women in 2010, with 72.7% of mothers aged 15-19 who delivered a live-born infant reporting the pregnancy was unintended in the U.S. (CDC, 2012b). The United States has the highest rate of teenage pregnancy of any developed nation (Guttmacher Institute, 2012a) and the government continues to fund abstinence-based programs (USDHHS, 2012). In many schools, human sexuality is taught as a part of physical education and only about one week of class is focused on this subject. The purpose of this thesis is to develop a model for school nurse delivered human sexuality education. The aim of the education is to reduce teen pregnancy rates by providing education regarding contraception and making decisions that promote healthy sexual activity, including the choice to abstain.

Historically, women have begun child bearing while still in their teen years, however it is now more culturally acceptable to wait until the late twenties or thirties and even into the forties to begin having children (Tavernise, 2011). This is due to increased life expectancy, increased education for women and improved career choices for women (Tavernise, 2011). Traditionally, it is expected that a couple be married prior to the conception of their first child. For these reasons, unmarried young women who become pregnant are often ostracized by their peers, community
and at times by their families. Culture is a large factor in the response to a teen’s pregnancy. Many outsiders view an unplanned pregnancy as negative or “life-ruining” because it prevents the young mother, and in many cases the young father, from living up to their potential. Having a child requires great sacrifice, and young couples still in high school are often not prepared for the hardships that having a child will bring. Because of the potential for a difficult life, a primary goal of human sexuality education for adolescents is to prevent unintended teen pregnancy (Commendador, 2007).

According to the Pregnancy Risk Assessment Monitoring System (PRAMS) from the CDC (2012b), only 9.1% of unintended pregnancies were unwanted, but 63.7% were mistimed. Among Hispanic communities, early motherhood is often supported and some Latina girls even feel that becoming pregnant wins them respect in the community (Oropesa, 1996). The intention of this thesis is not to say that all unintended teen pregnancies are undesired, but the American cultural values dictate that teens earn a high school diploma and establish him or herself as an upstanding and contributing member of society before they choose to become a parent.

In many American high schools, the responsibility of human sexuality education is placed upon the shoulders of physical education or health teachers while the school nurse is minimally involved, if at all (Brewin, Koren, Morgan, Shipley & Hardy, 2013). A school nurse has the potential to be a highly trained and educated resource that many schools could utilize in both the development and delivery of human sexuality education. To become a school nurse in the state of Arizona, registered nurses are required to apply to the Arizona State Board of Nursing (ASBN) and complete a very involved process. In conjunction with completing an application, applicants must be a registered nurse in good standing in the state of Arizona, prove
citizenship or legal documentation, report any criminal charges, and pay a fee of $75 for initial certification. Initial certification is valid for three years. The renewal certification fee is $25 dollars, and nurses must also complete three semester hours in a school nurse practice course, a physical assessment of the school-aged child course, and a nursing care of the child with developmental disabilities course. Each level of recertification requires more continuing education. In fact, after completing the first level of certification, school nurses must hold a bachelor’s degree in nursing or complete three semester hours in continuing education related to school nursing (ASBN, 2012). The National Association of School Nurses position statement supports inclusion of reproductive health education in a comprehensive school health education programs and that school nurses take an active role in assisting in the development and implementation of such programs (National Association of School Nurses, 2005).

In order to have the knowledge and expertise needed to teach human sexuality education, school nurses would need further training in this specific area. However, it would count as continuing education for the school nurse, which the nurse is required at least three or six semester hours of for renewal of certification, depending on the level of certification.

There are other organizations emerging with the goal to educate teens with evidence based information about human sexuality. Teen Outreach Pregnancy Services (TOPS) was founded in Tucson, Arizona, by Laura Pedersen, a registered nurse (personal communication, August 8, 2012). TOPS works with teens through all stages of pregnancy and parenting. It is their mission to provide education and support to teens for the promotion of a positive outcome. TOPS was founded to provide teens with the most accurate and useful information available, and they currently enlist the help of other nurses, community health educators and certified lactation
educators to serve the needs of their patrons (L. Pedersen, personal communication, August 8, 2012).

In 2006, only 5% of American high schools made condoms available to students, but statistics show that a sexually active teen who does not use contraception has a 90% chance of getting pregnant within a year (Guttmacher Institute, 2012b). It is also known that European adolescents are as sexually active as American adolescents; however European teens are more likely to use contraception (Guttmacher Institute 2012a).

Teen pregnancy is not an untreatable infection. Although there is no absolute cure to the occurrence of unintended teen pregnancy, there are ways to reduce the incidence that are simply not being utilized. Among teen mothers with an unintended pregnancy, only 44.7% reported using contraception (CDC, 2012b). This figure does not express consistency of use or indicate if contraceptives were being used incorrectly, leading to pregnancy. Teaching basic human sexuality is as important as teaching hand hygiene – if a person wants to avoid being sick, he or she should wash his or her hands frequently. If an adolescent wants to avoid a pregnancy, then it is imperative he or she pick the best method of protection for him or herself, which is not always choosing to abstain.

In many schools, abstinence-based programs are the only way information is presented to students. The main reason for this is due to government funding of abstinence education. In fiscal year 2011 the Arizona Department of Health Services was awarded over $1.3 million towards abstinence education and another $1.1 million for “Personal Responsibility Education Programs” (PREP) (USDHHS, 2012). The purpose of these programs is to educate adolescents on both abstinence and contraception and to prepare them for adulthood by teaching them about
healthy relationships, financial literacy, parent-child communication and decision making (Guttmacher Institute, 2012 b). PREP programs seem to offer more to the students, but unfortunately federal funding for abstinence-only-until-marriage programs holds great influence over what is taught rather than what is evidence based or proven to be most effective.

There is strong evidence to suggest that comprehensive, rather than abstinence-only, approaches to human sexuality education help adolescents both to withstand the pressures to have sex too soon and to have healthy, responsible and mutually protective relationships when they do become sexually active (Guttmacher Institute, 2012 a). In fact, there is no evidence that abstinence-only programs delay teen sexual activity. Research also shows that abstinence-only programs discourage contraceptive use among sexually active teens, thus further increasing their risk of unintended pregnancy and STIs (Guttmacher Institute, 2012a).

Summary

Chapter One was an introduction to the issue of unintended teen pregnancy, human sexuality education in Arizona, and the role of school nurses in the delivery of human sexuality education. In Arizona, human sexuality education is left to the discretion of districts and the school nurse has no formal role in delivering information to students. In 2005, Arizona was ranked number 4 out of 51 in pregnancies among females aged 15-19 (USDHHS, 2013). Evidence presented in chapter two will show that comprehensive human sexuality education taught as a part of a model with the school nurse as the nucleus of human sexuality education will reduce the rate of unintended teen pregnancies.
CHAPTER TWO: REVIEW OF THE LITERATURE

Chapter Two consists of a review of the literature on human sexuality education and the role of school nurses in the delivery of information to high school students. Thirteen articles pertaining to the topic are summarized. Review of the literature of CINAHL and Medline was conducted using the keywords teen pregnancy, sex education and school nurses. Articles selected were from no earlier than 2007 and had to be from either the United States or United Kingdom.

In 2007, Hulton described a logic model framework and how it can be utilized by school nurses in the development, implementation, and evaluation of school based programs. A logic model framework was used for this study. A ten-session abstinence-based, character building curriculum was taught to 62 students in a rural community in a Mid-Atlantic state. No significant differences were found between the intervention and comparison groups. Outcomes measures of Future Orientation, Importance of Abstinence Until Marriage, Sexual Attitudes About Future, or Self-efficacy of Sexual Abstinence were compared (Hulton, 2007). Participants of the study reported that visual and interactive lessons were the most effective teaching methods, including the use of graphic pictures of actual sexually transmitted infections. The researchers found statistically significant difference in self-efficacy for abstinence, sexual attitudes about future, and importance of abstinence until marriage from the female participants but not among male participants (Hulton, 2007). Data was collected using surveys, focus groups, and program logs of participation among students. The study was done with little bias or confounding variables, however the setting has limited generalizability to the United States as a whole due to the rural community setting. Another limitation of the study is that the logic model presents a linear relationship, but in reality the programs are very dynamic interrelationships that rarely follow a
sequential order as presented in the model. Implications for school nursing practice include parent, student, teacher and administrator communication, resource allocation to promote sustainability of the program, ensuring that information is kept up-to-date, and integration of program evaluation from the beginning (Hulton, 2007).

Commendador (2007) used a cross-sectional survey design to examine the relationship between adolescent female self-esteem and decision making. Contraceptive behavior was examined in the second study of this review. The sample consisted of 98 female adolescents aged 14-17 who came to five different clinics on the Big Island of Hawaii. No significant associations or correlations were found between age, global self-esteem, decision self-esteem, decision coping, and the decision to use contraception in sexually active adolescent females. However, a negative correlation was found between overall maladaptive decision making and contraceptive use in sexually active adolescent females. This suggests is that sexually active females with higher maladaptive scores are less likely to use contraception (Commendador, 2007). The study is reliable and the findings are credible, however the ages included in the study is very narrow, which limits generalizability of the study. An additional study that includes adolescents aged 12-19 would be more inclusive and provide further insight to the influence of age on female behaviors.

Hayter, Piercy, Massey and Gregory (2007) conducted a study to explore how school nurses perceive the influence of schools on their role in delivering human sexuality education in primary schools. Three focus groups with a convenience sample of 16 nurses experienced in conducting human sexuality education were recorded and analyzed. The study found that all participants had experienced disciplinary actions of schools in their practice and all had
encountered surveillance over sex and relationship education. Four themes were identified in the data: ‘covert surveillance’, ‘overt surveillance’, ‘teacher attitude’, and ‘resistance practices’. The study concluded that school nurses need to be aware of the fact that there will be some attempts by the school to regulate human sexuality education (Hayter, Piercy, Massey and Gregory, 2007). The main weakness of this study is the small sample size. Additionally, the study was conducted outside of the United States which makes it difficult to apply the findings to an American setting. In England, school nurses are involved in the teaching of sex education because they are viewed as outsiders with specialist knowledge.

Jones (2008) conducted a literature review exploring the provision of sex and relationship education for young people in England. The review was conducted using a keyword search of CINAHL, MEDLINE, ASSIA, Blackwell Synergy and The Cochrane Library was conducted using the terms sex education, parents, children, teachers and school nurses. The search covered a ten year period and 203 articles were cited. Although the review was conducted in the United Kingdom, many of the cited articles originated in the United States. Three main themes emerged: policy versus reality in schools, issues for parents as sex educators to their children, and the role of the school health nurse in human sexuality education (Jones, 2008). The high number of articles used in the literature review adds to the credibility and strength of the review. However, references go back as far as 1995, not including classic pieces. It was originally conducted in 2006 although some information was updated for publishing in 2008. The atmosphere for sex education has changed slightly since then, which makes some of the findings obsolete.

In 2009, Eisenberg, Bernat, Bearinger and Resnick conducted a study of parents (n=1605) of school-age children in Minnesota. Participants were interviewed over the phone
regarding their beliefs about condom availability and education. Chi-square tests of significance were used to detect differences in agreement and with each statement for ten demographic and personal characteristics. The study found that 86% (n=1380) of participants agreed that teenagers need information about condoms and 77% (n=1236) agreed that actual condoms should be shown during lessons. 21% (n=337) believed that this type of education should be required. In contrast, 14% (n=225) believed that condom education should not be permitted in schools (Eisenberg et al., 2009). This study is very credible and addresses many of the common problems regarding human sexuality education in the United States. The limitations on this study pertain to the sample only being taken from parents in Minnesota. The population of Minnesota is approximately 86% non-Hispanic white (USDC, 2013). Also, the report explicitly states difficulty recruiting parents of minority race and ethnicity (Eisenberg et al., 2009). This weakness is attributed to the fact that interviews were conducted over the phone which also leads to non-response bias.

Jones (2010) performed a qualitative study to gain insight into the behaviors of pregnant adolescents by following Bandura’s 1986 model of triadic reciprocal determinism. Pregnant adolescents (n=15) comprised the sample with a mean age of 17 years. A qualitative feminist approach was used to interview the subjects. The study found driving factors for sexual risk taking to be both internal and external. Internal factors were fitting in, curiosity, and forbidden fruit. External factors were partner pressure, peer pressure and media (Jones, 2010). The major weakness of this study is small sample size. Also, a sample comprised of participants from multiple socio-economic backgrounds and ethnicities would have strengthened the study. The
study did make an effort to be credible and trustworthy. This was done by verbatim transcription of audiotapes and member checking during interviews and by second interviews.

A 2011 systematic review by Jackson, Geddes, Haw and Frank looked at 18 studies to identify and assess the effectiveness of experimental studies of interventions that report on multiple risk behavior outcomes in young people. This study found that the most promising interventions addressed multiple domains (individual and peer, family, school and community) of risk and protective factors for risky sexual behavior. Programs that only addressed one domain were less effective in preventing risky behavior (Jackson et al., 2011). The study admits the evidence supporting programs to reduce risk behaviors is limited. Other limitations include reporting bias, failure to contact the investigators of studies to obtain unpublished results, and limited generalizability to the United States (U.S.) (Jackson et al., 2011).

In 2008, Lindau, Tetteh, Kasza and Gilliam conducted a quantitative study to identify predictors of comprehensive sex education in public schools. Using a three-stage design, sex education teachers (n=335) from 201 schools in Illinois were surveyed during the 2003-2004 school year covering the topics related to comprehensive human sexuality education. A logistic regression model identified predictors of comprehensiveness. The study found that the most frequently taught topics included HIV/AIDS, STDs, and abstinence-until-marriage. The study found that 70% (n=234) of sex education teachers reported that they covered 10 or more of the 17 topics, but only 23% (n=77) covered at least one topic in each of the eight domains. Topics common to both abstinence-based and other sex education curricula were among the most frequently covered. Topics looked at were HIV/AIDS (the most frequently taught), other STDs, abstaining until marriage, dealing with pressure, emotional consequences of sex, how to talk with
a partner about birth control and STDs, reproductive basics, STD testing, where to access contraception and services, abortion, rape/sexual assault, birth control, how to use other forms of birth control, how to use condoms, emergency contraception (the least frequently taught), and homosexuality and sexual orientation. Practical skills such as how to use condoms and morally debated topics such as abortion and homosexuality were among the least frequently taught. Overall, topics relating to accessing reproductive and sexual health services, factual information about contraception, and homosexuality and sexual orientation were only covered by a fraction of instructors. Nearly a third of sex education teachers indicated that they had not received sex education training. Each of the 17 topics was more likely to be taught by teachers with sex education training than by those without. The 2008 Lindau et al. study focuses on the content of sex education and the determinants of comprehensiveness to help health care providers understand possible gaps in adolescent patient knowledge. Lindau et al. found that most adolescents in Illinois public schools receive some form of sex education, although the content, quality and comprehensiveness vary across teachers.

Lynch (2008) wrote a descriptive article about a London school that created its own drop-in teen center in order to address its need for better sexual and health education for its students. Created in March of 2003, TeenTalk@Kidbrooke is run by the school nurse and “provides a parent and teacher-free zone where pupils can talk confidentially,” (p. 1). Kidbrooke previously had the highest rates of teenage pregnancy, along with high levels of sexually transmitted infections, smoking and overall poor nutrition. The center has become so successful that the program is being reproduced at other secondary schools in the borough. Evidence of the success can be seen in the reduction of teen pregnancies – from 15 births the year before the center
opened down to one. Part of the success is due to the involvement of the teens themselves; they helped with the color scheme, the logo and the name. A peer mentoring program is also available where students can be trained as peer listeners. Many students come in groups with their friends even if they have something private to say. TeenTalk provides a vital service by addressing topics that parents are often reluctant to discuss. Parents and school staff alike welcome the center and the aid it provides to the students. The program is focused on the needs of young people and strives to provide quality information in a comfortable setting.

Jackson (2011) suggests the role of school nurses in human sexuality education in a descriptive article. This article was written by a nurse for other school nurses. In the article, the author describes how school nurses should establish open communication with students, assure confidentiality, provide group activities and certify that information provided is comprehensive and evidence-based. In order to foster a community for open communication, the author suggests that nurses display “teen friendly bulletin boards offering pertinent information on a variety of subjects throughout the year” (p. 2). She also suggests a dry erase board posted in the health office to encourage input from the students. Although there are different state statutes related to the teens’ right to confidentiality and access to medical care, the author suggests the nurse should do her best to operate within those parameters. Teens need to feel that information shared will be kept confidential and that they are free to ask questions without being judged. School nurses may educate administrators, counselors and teachers about the rights afforded to students by state law. The most important aspect in regards to sexual health education is offering comprehensive evidence-based curricula. The main goal of the article is to encourage school nurses to provide information to students in both a formal and informal manner.
Daly (2011) focuses on the addition of contraceptive services for the prevention of teenage pregnancy to a school based health center (SBHC) in a small New England city. SBHCs are teen-friendly community resources originally established to help serve students with no identifiable source of health care. Typically, SBHCs provide teens with access to physical examinations, immunizations, health education, care of acute and chronic illnesses, health screening, mental health services, issue-oriented support groups, substance abuse counseling, and in some, reproductive healthcare. However, many are prohibited from dispensing contraceptive devices. Typically located within the school building, they frequently remain administratively separate from the school and the services of the school nurse. Students gain access to services through a signed consent from a parent/guardian, and use is not usually contingent upon insurance status or the students’ ability to pay. SBHC policy regarding contraception is often met with controversy despite legal and public health support for sexually active adolescents having access to contraceptive care. This article pertains to one city’s plan to develop and implement contraceptive services into their SBHC and how they were able to make their plan a reality. Using a transtheoretic model as a framework, Daly was able to use the input of community members with experience in the many aspects she wanted to address to make their center successful in helping teens avoid unplanned pregnancy. The article discusses the challenges faced in implementing the changes and maintaining them as a guide for others wanting to create a similar model.

Ott, Rouse, Resseguie, Smith and Woodcox (2010) conducted a qualitative study as a part of a larger mixed methods evaluation of a state small grants program for pregnancy prevention. Program directors and educators from 17-state funded adolescent pregnancy prevention/sex
education programs were interviewed regarding success and challenges faced implementing science-based approaches to program design, implementation and evaluation. The findings highlight the difference between best practices and what is possible in human sexuality education at the community level. There were great challenges in finding curricula that was evaluated using proper standards and in generalizable settings. The findings from the interviews showed that collaboration between schools and the community is highly important. Overall, the findings show how limited state funds lead to local innovation and development of curricula for in-need populations. The conclusions of the study show the need for both funding and technical assistance in program development, selection, adaptation, and evaluation.

Brewin, Koren, Morgan, Shipley and Hardy (2013) used a descriptive qualitative method to explore the school nurses’ experience with facilitators and barriers to providing sexual education. Eighteen nurses from 12 Massachusetts high schools were interviewed regarding their role in sexual education at their school. The results showed that the school nurses do not provide formal sexual education but frequently conduct informal sessions. School nurses also reported that students need more sexual health information, but there is little or no collaboration with the school health teachers. In the discussion section, Brewin et al. (2013) state that students identify school nurses as a trusted confidential source, but school nurses are not identified as a formal source of information by the schools. One of the difficulties for school nurses is the breadth of their role. While teachers suggest nurses focus on sharing their expertise on sexuality education with the community, there is a higher demand than the school nurses can supply.
Summary

Chapter Two presented a review of the literature summarizing what is currently published on the role of school nurses in human sexuality education for the prevention of unintended pregnancy. Evidence presented above shows that a school nurse delivered, comprehensive approach to human sexuality education will lead to a decrease in the incidence of unintended teen pregnancy. Based on the findings, this author proposes a model of school nurse delivered human sexuality education focusing on curriculum, the relationship with parents and the relationship with students. The model is further explained in Chapter Three.
CHAPTER THREE: PROPOSED BEST PRACTICE

Chapter Three consists of a proposed model for the best practice for school nurses at the center of human sexuality education to high school students in the state of Arizona for the prevention of unintended pregnancy. It also includes the targeted outcomes of the protocol.

Introduction to Sexuality Education Triad

The aim of this best practice proposal is to create a model with the school nurse at the center of human sexuality education that schools may choose to implement. This proposed model places the school nurse at the center of human sexuality education and is based on three key elements: the relationship between the school nurse and the students, the relationship between the school nurse and the parents of the students, and curriculum. This model is named the Sexuality Education Triad (SET) (Figure 1). By creating an environment where the school nurse is the main resource for a school’s human sexuality education, unintended pregnancies will be reduced.

FIGURE 1. Sexuality Education Triad (SET) Model
School Nurse as Nucleus

Within the school, the primary resource for sexual health information is the school nurse. In order to hold this position, the school nurse will need to demonstrate extensive knowledge regarding human sexuality. This will require the school nurse to attend training on the subject and pass a qualifying exam. Schools will decide if the school nurse will also teach human sexuality education in a classroom setting. If the school does not choose to have the school nurse teach human sexuality classes, another instructor who is highly trained in the subject may teach instead. However, if students and parents have additional questions outside of the class time, the school nurse should be the first person they seek to answer such questions.

Relationship to Students

The next element is developing the relationship between students and the school nurse. By opening communication between the students and the school nurse, more students may approach the school nurse for information (Jackson, 2011). This is not limited to sexual health information. School nurses are trained to have knowledge on a variety of topics and students should feel comfortable talking to the school nurse about any health concerns they may have, from nutrition to mental health, and especially sexual health. For the purposes of this model, school nurses are required to complete sexual health specific training to ensure they are providing students with evidence based and unbiased information. The school nurse would be knowledgeable about the health education curriculum and must abide by state laws regarding obligation to report. Some nurses may find it difficult to develop trust with certain students, so it may be appropriate to encourage them to talk to another trusted adult if that would make the student feel more comfortable. School nurses can also foster open communication by creating a health office that welcomes students to open up about any concerns. School nurses provide
pamphlets on pregnancy, support groups for teen mothers and fathers, sexually transmitted infections and treatments, rape prevention and self-esteem, and ways to enhance decision making (Jackson, 2011). Materials can be obtained free of charge from the Centers for Disease Control (CDC, 2012a). The nurse may encourage and sponsor a student action club that is willing to talk to peers about sexual decision making and answer relationship and sexual health questions. The nurse acts as an available resource should questions arise that cannot be answered by members of the group (Jackson, 2011). The education requirements of school nurses allow them to provide the depth and breadth of medical and health care knowledge that a teacher or health aide cannot.

One of the barriers to open communication between students and the school nurse is the fear that information told to the school nurse in private will not be kept private. The nurse must be familiar with individual state statutes related to the teens’ right to confidentiality and access to medical care and operate within those parameters. Although certain subjects, such as suspected or know abuse or intention to physically harm oneself or others, require the school nurse to report the information, most information is protected by Family Education Rights and Privacy Act (FERPA) (USDHHS, 2008). If students are made aware that conversations will be kept confidential they are more open to discussing sensitive topics with a knowledgeable individual, such as the school nurse. This also protects parents when they come to the school nurse with confidential information.

**Relationship to Parents**

Due to the sensitive nature of the subject being taught, parental involvement is critical to successful human sexuality education. Fantasia and Fotenot (2010) noted that parents are the primary educators for their own children regarding sexual health, healthcare providers often need
to fill in gaps where parents lack the necessary information and confidence to speak on such topics. A school nurse with the appropriate specialized training is an excellent resource for students and parents alike.

School nurses have a responsibility to encourage communication with parents. There may be sensitive issues that a parent is unsure how to discuss with his or her child and the school nurse can act as a resource for the parent to utilize for support. Another way in which the school nurse can foster communication with parents is by holding open forums where parents can attend, with and without their children, and the nurse can discuss any health related questions that may arise.

Schools in Arizona require parental consent in order for students to participate in sexual health education (National Conference of State Legislatures, 2013). This is beneficial because it encourages parents to be involved in their child’s human sexuality education. However, an opt-out program requiring students to participate unless their parent chooses to remove them from the program would be more successful in reaching more students. Fostering open communication between parents and children encourages parents to have conversations with their children about sexuality and other topics that may seem uncomfortable to discuss openly. Parents have the right to know what information their children are taught about sexuality. Although the school may require human sexuality education for all students, parents should still retain the right to remove their children from such classes. Eisenberg et al. (2009) found that parents expressed supportive views about condom availability and education and a majority agreed that making condoms available in schools reduced the risk of pregnancy. By making parental involvement a pillar of human sexuality education, parents will be equipped with the
skills to talk to their children about topics they may have felt uncomfortable discussing in the past and students will be more willing to ask questions of their parents or the school nurse and look for guidance when making decisions regarding sex.

**Curriculum**

In terms of creating a curriculum, it is crucial that the information included is factual, evidence-based and up to date as well as presented in an unbiased fashion. One of the most important roles of the school nurse is to provide students with information that includes resources for any health concerns they may encounter. Many human sexuality education programs are developed by the school district or purchased from an education company, but do not consult any medical or healthcare professional for the development of the curriculum (Ott et al., 2010). The curriculum must be peer-reviewed; whether it is developed by the district or an existing curriculum is adopted. Information presented may be outdated, and is at times biased towards the ideal of heterosexuality and sexual activity only within the context of marriage (J. Gilbert, personal communication, October 3, 2012). Ott et al. (2010) state “little is known about the capacity and needs of organization who implement sex education programs on the local level” (p. 167). The purpose of human sexuality education is not to teach students how or when they should engage in sexual activity. Programs should present information in a factual way that allows for individuality and caters to all sexual identities. Additionally, certain phrases are skewed to identify traditional gender roles, such as: a teen boy will not be able to support his girlfriend and child should his girlfriend become pregnant (J. Gilbert, personal communication, October 3, 2012). It is not appropriate for a school to project gender biases on any student at any time.
It is also important to note that programs must be age appropriate. Each age group will have different questions and concerns. Information taught to elementary school students should focus more on the changes associated with puberty while high school students need more information regarding how to practice safe sex, relationships and decision-making skills.

**Analysis of SET**

With the implementation of an effective human sexuality education program, young people will be equipped with the information to make relationship decisions that do not lead to negative consequences, even if that decision includes engaging in sexual activity. Abstinence is the only 100% effective method of preventing pregnancy, but other methods of contraception can prevent unintended pregnancy when used correctly. In order for unintended pregnancy to be avoided in sexually active adolescents, both males and females must be educated with the necessary information to accomplish this goal. In addition to addressing pregnancy and STI prevention, effective human sexuality education programs address common dating patterns among adolescents, acknowledge immature sexual decision making skills, stress sexual communication and negotiation skills, and increase awareness about environmental dangers and raise awareness of risks related to interpersonal and sexual violence (Fantasia & Fontenot, 2010).

An effective human sexuality education program results in a decreased incidence of unintended teen pregnancy, STI rates, and intimate partner violence (McKeon, 2006). Other benefits of an effective program are students with high self-esteem and positive decision making skills. The object of human sexuality education is not to discourage students from participating in sexual activity. The intention is to provide teens with enough information so that they may
make more informed decisions including utilizing appropriate contraceptives for sexual intercourse.

**Summary**

Chapter Three proposed a best practice model for school nurses teaching human sexuality education to high school students for the prevention of unintended pregnancy. The model places the school nurse at the center of human sexuality education with an emphasis on the relationship between the nurse and students, the nurse and parents, and curriculum. By utilizing this model, the incidence of unintended pregnancy among high school students will be reduced. Chapter Four describes a hypothetical implementation and evaluation of the SET model.
CHAPTER FOUR: IMPLEMENTATION AND EVALUATION

The purpose of this thesis was to develop a best practice model for school nurses teaching human sexuality education to high school students in the state of Arizona. Chapter Four presents a hypothetical plan to implement a nurse driven model of human sexuality education at Pueblo Magnet High School, part of Tucson Unified School District, in Tucson, Arizona and a plan for evaluation of the model.

In order to provide the context for this project, information about the setting and current practices is presented. Pueblo High School is located on the South side of Tucson. Enrollment demographics of the 2013-2014 school year obtained from the TUSD (2013) website show 90% (n=1335) Hispanic, 4% (n=59) Native American, 3.8% (n=56) White, and 1.2% (n=18) African American. There are 1478 students enrolled in grades 9-12 for the 2013-2014 year. There is one registered nurse assigned to the school full time, and two part-time health assistants. Usual responsibilities do not extend into the classroom and sexuality education is addressed in physical education classes. Education is currently comprehensive, but many students desire pregnancy and parenthood. Pregnancy frequently leads students to change schools or drop-out altogether.

Evidence presented in Chapter Two supports the conclusion that appropriate sexuality education can lead to decreases in unintended pregnancies among high school students. The proposed model to be implemented is the SET model, as introduced in Chapter Three.

Rogers’ Theory of Diffusion of Innovations

Rogers’ Theory of Diffusions of Innovations (1995) provides the organizing framework for implementing and evaluating SET. Roger’s model has five stages: knowledge, persuasion, decision, implementation, and confirmation. Applications of Roger’s Theory to implementation
and evaluation of the SET model at Pueblo Magnet High School is presented in the following sections.

**Rogers’ Knowledge Stage**

Rogers’ (1995) wrote that “Knowledge occurs when the decision-maker is exposed to an innovation’s existence and gains some understanding of how it functions. Acquiring knowledge occurs throughout the innovation-decision process” (Cain & Mittman, 2002, p. 18). The decision makers for sexuality education at Pueblo High School are the directors of Family Life Curriculum at TUSD. They work within the regulations of the school district and the State of Arizona legislature. In order to expose the decision-makers to the importance of innovating improved sexuality education, the school nurse will make an appointment with the Head of Family Life Curriculum, Ms. Joan Gilbert. Prior to the meeting, the school nurse will provide her with a short fact sheet. The school nurse will also bring a hard copy of the proposed human sexuality program, the SET model, including references. The goal for the meeting will be to be sure the director is aware of the rate of teen pregnancy at the school, solicit her experience with this problem, her point of view about the situation, and present the innovation and evidence that it is likely to result in a decrease in the problem.

The knowledge stage of the process is when the administration of Pueblo Magnet High School becomes aware of the existence of the innovation or idea for use in the school (Cain & Mittman, 2002). In this case, the school administration and school nurse would be notified of students becoming pregnant and how the pregnancy impacts grades, attendance, and the graduation rate in the student population. This initial information will propel the school administration and the school nurse to learn more about the problem either through formal or
informal communication. Formal communication includes conference presentations, publication in clinical journals, internet sites, and news releases (Cain & Mittman, 2002). Informal communication is described as talk from one school nurse to another, among other school administrators and faculty members, or talking to the students themselves (Cain & Mittman, 2002).

There are various factors that influence the knowledge stage such as previous models of education – schools may feel that since there have always been a number of students who become pregnant unintentionally, there is no need to change the way human sexuality is taught in the school. Additionally, attitude of the school administration or parents of the students towards a change in the delivery of human sexuality education plays a large role; how willing are they to adopt a new, possibly controversial, program (Cain & Mittman, 2002)?

During the knowledge stage it is necessary to examine the characteristics of the decision making unit prior to meeting with her (Cain & Mittman, 2002). Can TUSD afford to have an RN in every school, or at least every high school? Will this program be effective in encouraging students to postpone planned pregnancies? Will reduced student pregnancies increase the graduation rate and lower the drop-out rate? All of these questions are important to discuss in the knowledge stage. These talking points may be barriers that need to be addressed at the first meeting. It is also imperative that the school nurse is open to suggestions from the decision-maker.
Rogers’ Persuasion Stage

Rogers’ (1995) writes that “Persuasion occurs when the decision-maker forms a favorable or unfavorable attitude toward the innovation. Persuasion is when the decision-maker becomes psychologically involved and starts to feel something about the innovation. Early information received or past experience with a similar technology affects the attitude toward the innovation” (Cain & Mittman, 2002, p. 18). During the persuasion stage, the director of Family Life Curriculum develops either a favorable or an unfavorable attitude towards change. At TUSD, this task is up to the head of Family Life Curriculum (J. Gilbert, personal communication, October 3, 2012). Curriculum is not reviewed at regular intervals. Prior to the first meeting, the school nurse will need to review the current curriculum. During this phase, many questions will arise such as: Is there a current curriculum out there to use as a model? What is important to our students? How do parents feel about a change in curriculum? What are some of the advantages and disadvantages of updating the curriculum (Cain & Mittman, 2002)? The school nurse may propose the school district adopt an existing curriculum, such as the one created by Teen Outreach Pregnancy Services. After gaining support from Ms. Gilbert, a proposal will be made to the school district board. Board meetings are open to the public, so parents of the students will be encouraged to attend and voice their opinion regarding making changes to the curriculum and the delivery of information as directed by the SET model.

Rogers’ Decision Stage

Rogers’ (1995) says that “Decision occurs when the decision maker engages in activities, such as partial trial of the innovation, that lead to a choice to adopt or reject the innovation” (Cain & Mittman, 2002, p. 18). Assuming that the school nurse has been able to persuade key
staff and administrators of the value of the new curriculum, plans will begin for a limited pilot test with evaluation for feasibility and acceptability by students and parents.

In the decision stage the innovation is either adopted or rejected. At TUSD, after the head of Family Life Curriculum decides to update the curriculum, the school board must also approve utilizing the school nurse as the lead on teaching human sexuality education.

**Rogers’ Implementation Stage**

According to Rogers (1995), “Implementation occurs when the decision-maker puts an innovation into use and overt behavior change happens. The new user seeks information about how to obtain the innovation, thinks about what problems might be encountered, and seeks support in putting the innovation in place” (Cain & Mittman, 2002, p. 18).

In the implementation stage, the new curriculum will be adopted and school nurses will need to undergo training to be fully equipped to teach human sexuality education. TUSD school nurses will complete an approved continuing education program geared towards teaching human sexuality education. Once the school nurse at Pueblo Magnet High School has completed the training and has read through the updated curriculum, she will be prepared to be the nucleus of human sexuality education for the school.

Starting the fall of 2014, the school nurse of Pueblo Magnet High School will teach 50 students from 9th grade and 50 students from 10th grade. Class will be held on Tuesdays and Thursday for 50 minutes all semester long. In the spring semester, 50 students from 11th grade and 50 students from 12th grade will be taught following the same bi-weekly schedule. Classes will be held in an available classroom. If none is available, classes will be held in the library. Students enrolled in the course must be fluent and literate in English. The health aid will cover
for the nurse during this time. If a medical emergency arises and the school nurse is called out of the classroom, another faculty member will take charge of the class.

**Rogers’ Confirmation Stage**

Rogers (1995) writes that “Confirmation occurs when the decision-maker seeks reinforcement of an innovation- decision already made, or reverses a previous decision to adopt or reject the innovation if exposed to conflicting messages about the innovation. At this point, the decision maker seeks to avoid a state of dissonance or to reduce it if it occurs” (Cain & Mittman, 2002, p. 18). An important aspect for this stage is evaluation data to inform the decision makers about continuing, expanding, revising, or rejecting the curriculum and new model of delivery.

In the confirmation stage the school district will evaluate the effectiveness of the change in curriculum and delivery of human sexuality education. Based on the findings, the school district will decide whether to continue and expand the program to other schools or discontinue the program (Cain & Mittman, 2002). When evaluating the new practice there are two different evaluations that will be conducted: feasibility and effectiveness. Feasibility evaluation will determine how successful the school was in implementing SET. The effectiveness evaluation will determine if the model achieved what it was designed to achieve.

A feasibility evaluation will be done twice during the first year of implementation. Once at the end of the first semester the SET model is adopted, and a second at the end of the school year. This will allow for adequate time for the students and parents to adjust to the new role of the school nurse as the main resource regarding human sexuality information. Are students and parents receptive to the new model? Are they seeking the school nurse for sexuality related
information? Is the school nurse able to accommodate all students and parents approaching her for this information? This evaluation can be done by surveying the nurse regarding her interpretation of the effectiveness of the model. If it is evident from the findings that changes need to be made, the model can be revised to better accomplish its intended goals.

To evaluate the effectiveness of SET, data will need to be collected regarding pregnancy rates among the students. Both planned and unintended pregnancies will be recorded and will be compared to the number of pregnancies among students from before implementation of the best practice. Data from before and after implementation of the best practice would be compared to assess the effect of the model on the incidence of unintended and planned pregnancies among students. There will also be a comparison of pregnancy rates between students enrolled in the course taught by the school nurse and the general student population (See Table 1.)

<table>
<thead>
<tr>
<th>Component</th>
<th>Goal</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Nurse as Nucleus</td>
<td>School nurse is primary source of human sexuality information</td>
<td>School nurse will attend continuing education course on teaching human sexuality education to high school students. School nurse will teach human sexuality education to 50 students from each grade during the 2014-2015 school year</td>
</tr>
<tr>
<td>Relationship with students</td>
<td>School nurse and students have open communication</td>
<td>School nurse will maintain 100% confidentiality with students who visit the school nurse office regarding sexuality related concerns by documenting student visits</td>
</tr>
<tr>
<td>Relationship with parents</td>
<td>School nurse is a resource for parents when they have questions and concerns regarding their child and his or her sexual health</td>
<td>School nurse will document when parents contact her regarding concerns about their child</td>
</tr>
<tr>
<td>Curriculum</td>
<td>Curriculum will be comprehensive, evidence based, unbiased and age-appropriate</td>
<td>School district will either adopt an existing peer-reviewed curriculum or create their own curriculum that will be peer-reviewed to meet the criteria</td>
</tr>
</tbody>
</table>
The following table is an outline of each stage of the implementation process and the action that would be taken at Pueblo Magnet High School. These steps could be adapted for implementation at any Arizona high school. (See Table 2.)

**TABLE 2.**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Time</th>
<th>Actions</th>
</tr>
</thead>
</table>
| Knowledge | January and February 2014 | School administration wants to address incidence of pregnancy among students  
Formal communication: school nurse attends conference presentation about pregnancy rates among high school students  
Informal communication: school nurse and administrators talk about the incidence of pregnancy in student population  
Asking questions: Is the current human sexuality curriculum effective in preventing unintended pregnancy? |
| Persuasion | February 2014 | School district board: decide that there needs to be a change in the delivery and curriculum of human sexuality education  
SET model is adopted to be implemented at Pueblo High School  
School administration and nurse review best practice and changes are made as necessary (training for school nurse, classroom availability, funding) |
| Decision   | March 2014              | Best practice is presented to school district board  
Best practice is either rejected, sent for revisions, or approved |
| Implementation | Fall 2014 | Peer reviewed curriculum is approved by Family Life Curriculum department to be comprehensive, evidence based and unbiased  
School nurse attends human sexuality education training  
School nurse reads new curriculum  
School nurse practices according to new model of human sexuality education delivery |
| Confirmation | End of Fall 2014/End of 2014-2015 school year | Feasibility Evaluation  
Survey of school nurse  
Effectiveness Evaluation  
Data collection of pregnancy rate of students |
Conclusions

Strengths

This best practice protocol is based on evidence that supports both comprehensive education and nurse-delivered human sexuality education. Based on the evidence, if the SET model is followed, there will be a reduction in unintended pregnancy among students that participate in the program. There is a significant deal of research that supports comprehensive programs in the place of abstinence-based programs. School nurses could complete the required training as a part of their required continuing education for certification as a school nurse. Schools would benefit from reducing pregnancy because there will be fewer absences related to pregnancy, the drop-out rate will decrease and the graduation rate will increase.

Limitations

While this best practice protocol addresses methods for teaching human sexuality for the prevention of unintended teen pregnancy, it does not address methods of teaching human sexuality for prevention of sexually transmitted infections, teaching to non-heterosexual students, or teaching to learning disabled and developmentally delayed students. Further research into effective methods for teaching effective human sexuality courses to the above mentioned groups is required. In addition, it does not discuss how to address students who become or wish to become pregnant intentionally. A suggested method is to encourage students to delay the decision to become pregnant until after high school graduation. Other limitations include the maximum number of students the school nurse could teach during one semester, students who are not native English speakers, and the current Arizona law that parents must sign consent for their child to attend human sexuality education classes (opt-in).
**Future Planning**

If implementation is successful and the program is expanded, additional resources would be necessary for all 1478 students to be enrolled in the course. Additional instructors would need to be employed, including instructors that could teach the course to students who are not proficient in English. One method that could accommodate additional students would be to offer the course online. This would also afford the students increased anonymity, therefore decreasing any embarrassment related to the sensitive subject. With continued expansion to other high schools in the district, the program will also begin to be implemented at the middle school and junior high level.

**Summary**

This thesis sought to provide school districts and high schools with a thorough literature review on effective human sexuality education programs, a recommended best practice model, and a suggested method for implementation and evaluation. With the model presented in this thesis, the intention is that high schools in Arizona will adopt comprehensive human sexuality curriculums and place the school nurse at the center of the delivery of human sexuality education. If schools follow the model presented, evidence supports the conclusion that there will be a reduction in the incidence of unintended pregnancy among high school students. By implementing a comprehensive human sexuality curriculum based around the school nurse, students will be equipped with the knowledge to make better sexual behavior decisions and the school nurse will be the most utilized resource for sexuality related information.
REFERENCES


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