

Copyright

By

Sarah Obermeyer

2013

**The Dissertation Committee for Sarah Obermeyer certifies that this is
the approved version of the following dissertation:**

**Certified Nurse-Midwives' Barriers Toward
Sexual Health Screening Practices**

Committee:

Alice S. Hill, RN, PhD, FAAN, Supervisor

M. Terese Verklan, PhD, CCNS, RNC, FAAN

Sheryl L. Bishop, PhD

Carol M. Wiggs, PhD, RN, CNM, AHN-BC

Frances E. Likis, DrPH, NP, CNM, FACNM

Dean, Graduate School

**Certified Nurse-Midwives' Barriers Toward
Sexual Health Screening Practices**

by

Sarah Obermeyer, MSN, CNM, NP

Dissertation

Presented to the faculty of the Graduate School of

The University of Texas Medical Branch

In Partial Fulfillment

Of the Requirements

For the Degree of

Doctor of Philosophy

The University of Texas Medical Branch

June 19, 2013

Acknowledgements

Above all, I am grateful that God has given me the ability to learn, grow and pursue education aspirations. I am very aware of God's presence in these past three years.

I am grateful for parents (Jon and Anne Obermeyer) and grandparents (Beryl and Arlene Salisbury) who value education, have supported my education journey, and have believed that I could do whatever I wanted to do in life. I am also grateful for sisters (Jessica Archer and Hannah Obermeyer) who have encouraged me and reminded me through their own education pursuits, of the courage to do what we think cannot be done, and my dear friend Sarah Dornbos who has accompanied me in the peaks and valleys of this education journey and given immeasurable support and compassion. Thank you to my co-workers and peers who have been a source of encouragement.

Dr. Alice Hill has been an advisor and mentor in this process. Her patience and support have been a gift. Thank you to the members of my committee who have given of their time and expertise to support my journey, Dr. Sheryl Bishop, for her wisdom and excitement about statistics, and making me believe that I too could love statistics; Dr. M. Terese Verklan, for her questions and feedback as I began to solidify my topic and research questions; Dr. Carol Wiggs, for her expertise as a midwife and writer.

Long before Dr. Frances E. Likis agreed to serve on my committee she was my midwifery faculty. Her respect of women and ability to provide dignity in a way that honored individuals instilled in me a desire to emulate her. She is the reason that I first began to care about the topic of sexual health in women's health care, and I thank her for her support and encouragement as a midwife and doctoral student.

Last, I am thankful for all of the students who have passed through my nursing courses and have taught me along the way.

Certified Nurse-Midwives' Barriers Toward Sexual Health Screening Practices

Publication No. _____

Sarah Obermeyer, PhD

The University of Texas Medical Branch, 2013

Supervisor: Dr. Alice S. Hill

Sexuality and sexual health are important components of general health screenings. Reports of sexual health screening practices are limited to physicians, nurses and nurse practitioners. No research exists to describe sexual health screening practices of certified nurse-midwives (CNMs), a group of advanced practice registered nurses with specialized training in women's health, including gynecologic and primary care. The purpose of this study was to determine sexual health screening practices of certified nurse-midwives (CNMs), CNM barriers to addressing sexuality, and the predictors of their screening behaviors.

A descriptive, exploratory design was used to explore relationships between and among the main variables: attitudes and beliefs (barriers), demographic variables (gender, age, ethnicity, marital status, years in practice, type of education program, region where practice occurs, type of practice and average length of appointment) and sexual health

screening practices. Data were obtained through web-based electronic surveys of a sample of 278 CNM members of the American College of Nurse-Midwives.

Factor analysis on the modified Sexuality Attitudes and Beliefs Survey (mSABS) identified two subscales reflecting CNM comfort and confidence related to sexual health and identification of the role of midwife and patient in sexual health. Few differences were found between demographic subgroups (education, marital status, location of practice and practice type) on the barriers to screening and screening behaviors. The mSABS score, years of practice experience and the amount of time (in minutes) spent with gynecologic patients significantly predicted screening practice index score.

This study provides preliminary evidence that CNM attitudes and beliefs (i.e. mSABS score), more years of experience as a midwife, and more time spent with gynecologic patients may be predictors of sexual health screening. Additionally, foundational information was gathered about the practices of sexual health screening by CNMs.

TABLE OF CONTENTS

Chapter One: Introduction	7
Statement of the Problem	7
Purpose Statement.....	9
Research Questions	9
Significance of the Study	11
Certified Nurse-Midwives and Sexual Health Screening.....	11
Attitudes and Beliefs	12
Delimitations	13
Assumptions	13
Definition of Terms.....	14
Organization of the Study	16
Chapter Two: Review of Literature.....	17
Introduction.....	17
Overview of Sexual Health and Dysfunction.....	17
Sexual Health Screening	18
CNM Sexual Health Screening	23
Effects of Attitudes and Beliefs on Screening.....	24
Sexual Health Screening: Personal and Practice Related Characteristics.....	25
Survey Use for Data Collection	27
Supporting Research Studies	28
Summary	29
Chapter Three: Methods	31
Introduction.....	31
Research Purpose	31

Research Design.....	31
Population and Sample	32
Sample Population	32
Sample	32
Sample Size.....	33
Setting.....	34
Inclusion and Exclusion Criteria	34
Instruments.....	34
Demographics	35
Modified Sexuality Attitudes and Beliefs Survey (mSABS)	35
Modified Wimberly Sexual Health Screening Tool (mSHST)	36
Procedures	37
Recruitment	37
Survey Administration	37
Data Analysis	38
Human Subjects.....	39
Chapter Four: Findings	40
Introduction.....	40
Description of Sample.....	40
Psychometrics.....	46
Analysis of Data.....	47
Summary of Results.....	66
Chapter Five: Discussions, Recommendations and Conclusions.....	67
Introduction.....	67
Summary of Methodology and Findings Related to the Literature	67

Additional Findings	70
Study Limitations	70
Limitations in Sampling.....	70
Limitations in Measures.....	70
Limitations in Data Analysis.....	71
Implications	72
Implications for practice	72
Implications for Education and Training.....	72
Implications for Research.....	73
Appendices	76
APPENDIX A: Invitation Letter	76
APPENDIX B: Demographic Data.....	77
APPENDIX C: Modified Sexuality Attitudes and Beliefs Instrument (mSABS).....	78
APPENDIX D: Modified Sexual Health Screening Tool (mSHST)	79
APPENDIX E: Survey	80
APPENDIX F: ACNM Approval	85
Bibliography	86
Vita	93

List of Tables	41
Table 1: Demographics	41
Table 2: Age, Years in midwifery practice, Time spent with gynecologic patient.....	42
Table 3: Demographics of sample compared to ACNM membership	44
Table 4: Age and years in midwifery practice: sample compared to ACNM membership	45
Table 5: Regrouped Demographics	45
Table 6: Factor Analysis of mSABS	47
Table 7: Correlation of mSABS and age, years in practice and minutes spent with GYN patients	49
Table 8: Analysis of variance.....	51
Table 9: ANOVA post hoc tests	51
Table 10: Kruskal-Wallis non-parametric test of variance	55
Table 11: Kruskal-Wallis post hoc tests utilizing Mann Whitney U pair comparison.....	56
Table 12: Sub-group differences in mSABS scores	57
Table 13: Comparative analysis of mSABS score among demographic groups	58
Table 14: Pairwise comparison among marital status groups	59
Table 15: CNM screening for components of sexual health.....	61
Table 16: Sexual Dysfunction categories	62
Table 17: Pearson’s correlation between predictors.....	63
Table 18: Pearson’s correlation between predictors and criterion	64
Table 19: Forward Regression	65
Table 20: Backward Regression.....	65

CHAPTER ONE: INTRODUCTION

Statement of the Problem

Sexuality is a key aspect of health and is as significant as physical, mental and social well-being (Bartlik, et. al., 2005; Jaarsma,et.al., 2010). Changes in sexual function may indicate acute or chronic health changes including mental and emotional health, endocrine, cardiovascular, and neurologic disease; therefore screening for sexual function can play an integral role in improving health (Peck, 2001; Kingsberg, 2006). Similarly, screening for high-risk sexual behaviors creates opportunities to educate individuals about ways they can reduce their risk of sexually transmitted infections (STIs) and undesired pregnancy, thus enhancing overall health. If sexual health is not addressed, there is the potential for negative psychosocial, emotional and physical outcomes (Peck, 2001).

The World Health Organization defines sexual health as “a state of physical, mental and social well-being” in relation to sexuality (WHO, 2006, p.9). Well-being in one’s sexuality includes the right to have a safe, respectful and pleasurable sexual experience (WHO, 2006). Sexual health is not simply an absence of dysfunction or disease, but rather a holistic, balanced sense of the sexual self (Murtagh, 2010).

Forty three percent of women in a national sample (n=1749) reported sexual dysfunction (Laumann,et.al., 1999). Although it is estimated that 40%-45% of women will experience some form of sexual dysfunction in their lifetime (Laumann,et.al., 1999), many patients have difficulty articulating concerns regarding sexual health and dysfunction (Bartlik,et.al., 2005). A 2003 survey of 3,807 women reported that 40% of the women did not seek help with sexual issues from their provider; however 54% would

like to be able to speak with their provider about such issues (Berman,et.al., 2003).

Patients are hesitant to address issues of sexual health because of embarrassment or fear of judgment (Murtagh, 2010).

There are an estimated total of 110 million individuals with sexually transmitted infections (STIs), with 20 million new infections each year (Satterwhite,et.al., 2013), costing the U.S. healthcare system approximately \$16 billion yearly in medical costs (Owusu-Edusi,et.al., 2013). Women represent 51% of new cases (Satterwhite,et.al., 2013). The consequences of STIs are generally more significant for women and may result in pelvic infection, sepsis and infertility, therefore screening for risk factors and existing infection is essential. Additionally, women accounted for 20% of the new HIV infections in 2010 with the majority of these infections occurring from heterosexual contact with a person at high risk for infection. (CDC, 2013).

Nearly half of all pregnancies (49%) in the United States in 2006 were unintended. Unintended pregnancy is associated with poor maternal health behaviors (smoking, alcohol use and delayed or absent pregnancy care) and child health outcomes (premature birth and lack of breastfeeding) (Finer & Zolna, 2011). Screening for sexual activity and the use of contraception, when desired, can support the prevention of unintended pregnancies and adverse pregnancy outcomes.

Attitudes and beliefs held by clinicians about sexuality may affect the clinical practice of medical professionals (Webb & Askham, 1987; Magnan & Norris, 2006). It is unclear, however, how these feelings relate to screening practices of medical professionals in general, and certified nurse-midwives (CNMs) in particular. Certified nurse-midwives are specialists in the area of women's gynecologic health and are capable

of addressing issues of sexual health as a part of midwifery care (Greener & Reagan, 1986; ACNM, 2011). Clinical observations suggest that health care providers are not routinely completing sexual health screenings as a part of general health screenings. Physicians, nurse practitioners and nurses have reported perceived barriers to sexual health assessment including discomfort (Macdowall,et.al, 2010), low confidence (Bluespruce,et.al., 2001) lack of knowledge and training, and lack of time (Kingsberg, 2006). While research has been conducted to identify sexual health screening practices of nurses, nurse practitioners and physicians (Bluespruce,et.al., 2001; Wimberly,et.al., 2006; MacDowell, 2010), little is known concerning the screening practices of certified nurse-midwives. Lack of knowledge about CNMs sexual health screening practices and barriers to consistent screening poses a significant problem – without this knowledge it will be impossible to determine areas needed for focused clinical education, or interventions to improve outcomes of clinical practice behaviors.

Purpose Statement

The purpose of this study is to determine sexual health screening practices of CNMs, CNM barriers to addressing sexuality, and the predictors of their screening behaviors.

Research Questions

The specific aims and related research questions for this study are:

Aim 1: Identify CNM barriers to addressing sexuality as measured by the modified Sexuality Attitudes and Beliefs Survey (mSABS) across demographic subgroups, i.e., gender, age, ethnicity, marital status, years in practice, type of education program, region where practice occurs, type of practice and average length of appointment.

Research Question 1.1: How strongly do CNMs experience barriers to addressing sexuality with patients as measured by the mSABS instrument across demographic subgroups, i.e., gender, age, ethnicity, marital status, years in practice, type of education program, region where practice occurs, type of practice and average length of gynecologic exam appointment?

Research Question 1.2: Which barriers on the mSABS instrument are shown to be particularly problematic for CNMs across demographic subgroups, i.e., gender, ethnicity, marital status, type of education program, region where practice occurs, and type of practice?

Aim 2: Characterize CNM screening behaviors relating to sexual health at gynecologic exams within demographic subgroups as determined by an index score of the modified Sexual Health Screening Tool (mSHST).

Research Question 2.1: What is the distribution of CNMs screening for sexual activity (sexual history) as a part of gynecologic exams as reflected by the mSHST index score?

Research Question 2.2: What proportion of CNMs screen for specific components of sexual health as a part of gynecologic exams?

Aim 3: Determine the best set of predictors of CNM sexual health screening practices.

Research Question 3.1: What is the best set of predictors (CNM , age, years in practice, average length of gynecologic exam appointment and mSABS score) of sexual health screening by CNMs as measured by the mSHST index score?

Significance of the Study

It is well understood that changes in sexual function may indicate overall health changes (i.e., cardiovascular, neurologic, endocrine), therefore screening for sexual health and function can play a part in improving overall health. Although it is estimated that 40%-45% of women will experience some form of sexual dysfunction in their lifetime, and women account for more than half of new STI cases (Satterwhite,et.al., 2013), screening for sexual health by a medical provider may be inconsistent (Murtagh, 2010). Sexual health should be addressed as a part of a complete health assessment (Murtagh, 2010). The U.S. Preventative Service's Task Force (USPTF) and National Academy of Sciences Institute of Medicine recommend a thorough sexual history be taken every year (Wimberly,et.al., 2006), however, healthcare providers may not routinely discuss sexual health with a patient unless a specific problem arises (Maes & Louis, 2011). The contribution of this study is significant because it will be the first study known to address the sexual health screening practices of CNMs. It will provide a preliminary understanding of the barriers (attitudes and beliefs) that may be related to practice behaviors or practice outcomes of CNMs who provide gynecologic health care.

Certified Nurse-Midwives and Sexual Health Screening

CNMs are specialists in women's health including gynecologic, maternity and primary care. CNMs are expected to be knowledgeable and confident in their abilities to address reproductive and sexual health concerns (Greener & Reagan, 1986). Beginning with their training as registered nurses, CNMs embrace the practice of holistic patient care, which includes physical, emotional and sexual well-being (Gott,et.al., 2004). Throughout midwifery curriculum, sexual health is presented as an important concept in the midwifery

model of holistic care, making CNMs particularly capable of addressing these issues (Greener & Reagan, 1986). Because midwives are specialists with a focus on reproductive health, they may be less burdened with the need to address chronic primary health conditions and may have more opportunity to address areas of concern related to sexual health.

The American College of Nurse-Midwives (ACNM) Standards for the Practice of Midwifery indicate that the practice of nurse-midwifery should include the assessment of client data in accordance with the Core Competencies for Basic Midwifery Practice (ACNM, 2011). The core competencies recognize the assessment of sexual health as an important inclusion in pre-pregnancy, gynecologic and menopausal care. Sexual health screening includes the assessment of sexually transmitted infection risk, sexual concerns, sexual behaviors and contraceptive use (ACNM, 2012). Clinical observations suggest that despite the recommendation to include sexual health screenings, these screenings are not being completed as part of gynecologic examinations.

Attitudes and Beliefs

Attitudes and beliefs play a role in determination of behavior, therefore it can be surmised that the attitudes and beliefs of a health care provider toward sexuality would affect their practice of sexual health screening as part of a patient encounter. Attitudes about sexual health screening can therefore be a barrier to screening. Positive correlations have been found between the perceptions of barriers and reported screening practices (Maes & Louis, 2011). The majority of research addressing health care practitioners' attitudes and behaviors related to sexual health focuses on physicians and nurses, with one recent study addressing nurse practitioners. Although one multi-

disciplinary study included a variety of nursing and medical personnel, it did not include CNMs (Bluespruce, et.al., 2001).

Although CNMs are identified as specialists in this area, there is no research addressing the CNM role and the practice of sexual health screening and management. Given the lack of evidence about CNM practice and increasing anecdotal information, the proposed research will add to current research to include CNMs. The completion of this research is essential to expand the current literature, include information on this specialized group of women's health providers, determine if CNMs are performing this core competency during gynecologic health screening, and address the connection of attitudes and beliefs to practices.

Delimitations

1. The time of the study was from February 2013 to March 2013.
2. This was an Internet-based study of CNMs who were members of the ACNM in February 2013.
3. Only CNMs who were currently practicing in gynecology in the United States were included in the study.

Assumptions

1. The sample studied was representative of the total population of ACNM members.
2. The responses given by the sample participants were honest and representative of their midwifery practice.

Definition of Terms

For the purposes of this study, the following terms were conceptually and operationally defined:

Certified Nurse-Midwives. CNMs are a subset of advanced practice nurses who are trained as clinicians with a specialization in women's health including gynecologic, maternity and primary care. These practitioners are registered nurses who have graduated from a midwifery education program accredited by the Accreditation Commission for Midwifery Education (ACME) and passed a national certification examination.

Sexual health. Sexual health is defined as sexual practices, sexual function and sexual dysfunction.

Sexual Health Screening. Sexual health screening is the addressing of sexual health in a patient-provider encounter. In this study, nine questions related to sexual health are considered essential components of screening. These questions can be found in Appendix D.

High-risk sexual behaviors. High-risk sexual behaviors are sexual activities that pose potential harm to an individual's physical, sexual or emotional health.

Age. Age was determined by participant self-report and was measured in years.

Ethnicity. Participants were asked to choose the ethnicity with which they most identify. Categories included Native Indian or Alaskan Native, Asian, Black or African American, Hispanic/Latino, Native Hawaiian or Pacific Islander and White. The choice of "other" was given as an option with a request to specify, and indicate heritage if mixed race.

Marital Status. Participants identified their marital status as Single, Married/Partnered or Separated/Widowed/Divorced.

Years in midwifery practice: Years in midwifery practice refers to the number of years practicing midwifery as a CNM.

Type of midwifery education. Type of midwifery education was defined as the level of midwifery education the participant completed. This included certificate programs, master's degree, doctoral degree or international midwifery training.

Regional location of practice. Practice location is categorized by regions of the United States. West, Southwest, Midwest, Northeast and Southeast regions are further categorized by specific states.

West region. Alaska, California, Colorado, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming

Southwest region. Arizona, New Mexico, Oklahoma, and Texas

Midwest region. Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin

Northeast region. Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont

Southeast region. Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia

Type of midwifery practice: The category of midwifery practice is defined as the type of practice in which the CNM would typically see a gynecologic patient. Accepted practice types were modeled after the categories used by the ACNM

membership survey and included private practice (physician-owned), private practice (midwife-owned), birth center, home birth practice, community clinic (federally or public funded), hospital/medical center owned practice, health department, health maintenance organization, military, non-profit organization, and the option of “other” allowed for participant specification.

Time spent with gynecologic patients: The average time spent with a gynecologic patient was identified in minutes.

Organization of the Dissertation

The study is organized into five sections. The first chapter has introduced the problem and the research purpose. Chapter two includes the relevant literature related to sexual health screening, screening barriers and the instruments used to evaluate barriers to screening. The study methodology, sample selection, procedures and instruments used for data collection are presented in chapter three. Chapter four includes an analysis of the data as well as discussion of the research findings. Chapter five concludes with the summary, study conclusions and further recommendations that have come from the study. Following the five chapters are a bibliography and appendixes.

CHAPTER TWO: REVIEW OF LITERATURE

Introduction

Chapter two presents a review of literature pertaining to the purpose of this study and the major variables. The purpose of this study is to determine sexual health screening practices of certified nurse-midwives' (CNMs), barriers to addressing sexuality, and the predictors of their screening behaviors. The overview of literature will begin with a review of screening for sexual health and sexual dysfunction as well as barriers to screening. CNM practices of sexual health screening will be presented followed by a review of selected demographic characteristics that may affect screening practices. A descriptive, exploratory study does not warrant an identified theoretical or conceptual framework, however this study is supported by an organizational framework derived from the literature surrounding barriers to screening and the effect these barriers have on clinical practice.

Overview of Sexual Health and Dysfunction

Sexual health and function can be indicative of neurologic, endocrine, cardiovascular and psychological health, and the choices that one makes in their sexual practices have the possibility of putting the individual at health risk. Sexuality goes beyond simple physiology and affects a person's self-image, self-concept, self-esteem and quality of life (Laumann et al., 1999; Peck, 2001). Sexual health can be disrupted by relational problems or life changes such as menopause. Medications and dermatologic conditions may also affect sexual health and function (Dahir, 2011). Holistic, high-quality health care integrates attentiveness to sexual health with the same importance as physical, emotional, spiritual and social health (Nusbaum & Hamilton, 2002). Failure to attend to

sexual health is contradictory for those CNMs who identify themselves as holistic health care providers (Peate, 1997).

Sexual function is related to overall physical health and can be affected by endocrine conditions (such as thyroid and hyperprolactinemia), depression, cardiovascular function, or medication side effects (Kingsberg, 2004). Sexual dysfunction is defined as any problem that causes a sexual response that deviates from the individual's expected sexual response. Four types of female sexual dysfunction have been identified to categorize dysfunction conditions and help guide treatment. These categories consist of 1) desire disorder, 2) arousal disorder, 3) dyspareunia (pain with sexual intercourse or penetration) and 4) female orgasmic disorder (Kingsberg, 2004; Murtagh, 2010).

The identification of sexual health and function is imperative to general health screening and must be an area of focus for health care providers. Early detection of sexual dysfunction allows for interventions to slow or prevent long-term complications of physical or psychological disorders. The second aim of the proposed research will identify the screening practices of one group of health care providers (CNMs) in an effort to determine the consistency of screening.

Sexual Health Screening

Sexual health screening in primary care is a means of proactive and preventative care of the patient (Nusbaum & Hamilton, 2002). Sexual health screening should be included as part of the complete health history regardless of the individual's age, sexual orientation or marital status (Longworth, 1997; Peck, 2001; Sinha & Palep-Singh, 2007). Inquiring about sexual health practices and sexual function is an indirect way of normalizing the topic and gives permission for a patient to speak about sex when future concerns arise

(Andrews, 1988). The provider who raises sexual health issues creates an environment that legitimizes the topic of sexuality and contributes to the patient's feeling that the practitioner truly cares for their health (Macdowallet.al.,2010).

Sexual health screening should be addressed as part of preventative, gynecologic and primary care. Additionally, any patient encounter that occurs because of a patient's report of sexual concerns should include a complete sexual health screening (Peate, 1997). The context of a gynecologic exam is a relevant and natural opportunity for the provider to raise the question of sexuality (Wendt,et.al., 2007). The American Congress of Obstetricians and Gynecologists (ACOG) recommends yearly screening for sexual practices at all gynecologic exams beginning at age 13 with the addition of sexual function screening at age 19 (ACOG, 2012). Sexual health screening includes identifying sexual behaviors that put an individual at risk for sexually transmitted infections (STIs) and HIV, addressing contraception, and screening for current health problems that may affect sexual health such as psychological conditions, cardiovascular and neurologic disease (Kingsberg, 2006). Screening for sexual dysfunction in the areas of desire, arousal, achievement of orgasm, and pain should also be included in the sexual health history (Kingsberg, 2006) as well as addressing relational and sexual satisfaction (Sinha & Palep-SinghA, 2007).

Creating a consistent pattern of sexual health screening allows the patient to discuss concerns about their sexual health (Peate, 1997) and provides the health care practitioner the opportunity to screen for behaviors of risk or sexual dysfunction, and offer education (Wimberlyet.al., 2006). Health care providers must first create a trusting relationship with a patient through the implementation of privacy, an unhurried manner, and a non-

judgmental attitude toward sexuality. An understanding of one's own attitudes and feelings act as a base for consistent screening practices. Creating a systematic approach for addressing sexual health and identifying one's scope of practice are key steps in the sexual health screening process (Longworth, 1997). Early detection of sexual dysfunction may allow a provider to diagnose systemic conditions and treat these conditions before morbidity and mortality is affected. If sexual health screening is not thorough, conditions of risk or dysfunction may be under diagnosed or misdiagnosed, creating long-term negative effects on health (Temple-Smith et al., 1998).

Sexually associated public health problems such as HIV and AIDS, sexually transmitted infections, teen pregnancy and sexual violence against women and children are a continuing concern when working with female patients (Magnan & Norris, 2006). HIV prevention must include discussions related to sexual practices, sexual partners, and use of prevention strategies if they are to be successful (WHO, 2002). Consistent screening also allows for appropriate and timely referrals to specialist when necessary.

There are many barriers to sexual health screening that have been identified. Sexual dysfunction and sexual health problems are identified as a prominent area that both physicians and nurse practitioners felt uncomfortable discussing (Macdowall, 2010), however nurse practitioners are more likely to see sexual health as an important part of holistic care, whereas physicians did not consider sexual health to be a medical issue (Gott, 2004). Although healthcare providers have high confidence levels when addressing issues related to nicotine, drug, or alcohol use, they often express low confidence when attending to issues of sexual health (Bluespruce et al., 2001). Multiple obstacles prevent health care providers from participating in sexual health screening.

Embarrassment and discomfort are among the top barriers that prevent both physicians and nurses from addressing issues of sexual health with patients (Steadet.al., 2003; Macdowall, 2010; Quinnet.al., 2011). A review of nursing literature reveals that nurses feel ambivalent or uncomfortable about discussing sex with patients (Quinnet.al.,2011), Physicians have reported a sensitivity to the community they serve and see the avoidance of sexual health topics as a means of respecting the community standards regarding what is acceptable and non-offensive to patients (Bermanet.al, 2003).

Concern over a lack of time to address sexual health is a frequently identified barrier in the literature (Steadet.al., 2003; Marwick, 1999). Fear of “opening a can of worms,” and time pressures in patient care makes sexual health a low priority in comparison to more acute concerns (Macdowall, 2010; Quinnet.al., 2011). In addition to regular time pressures in patient encounters, patients often bring up issues of sexual health near the end of the visit when there is insufficient time to deal with the concerns (Temple-Smithet.al., 1998). The existence of communication barriers and the use of translators can also be challenging and may be considered a barrier to sexual health assessment because of the need for extended visit time (Gott, 2004).

Lack of training, lack of confidence and lack of expertise are additional barriers to assessment of sexuality (Kingsberg, 2004; Marwick, 1999). General practitioner physicians note a lack of training in sexual health and infrequent use of these skills in their general practices (Temple-Smithet.al., 1998). Nurses are concerned about their level of knowledge concerning sexual health assessment, lack of experience, and lack of role models to observe and learn sexual health screening techniques (Steadet.al., 2003). Medical students also reported a lack of opportunities to observe sexual history taking,

and believed they were poorly trained in this area (Skelton & Matthews, 2001). In a survey of 125 United States medical schools and 16 Canadian medical schools, the training focused on sexual health consisted of only 3 to 10 hours of instruction in more than half of the schools (Solush et. al., 2003).

Both nurses and general practice physicians may question whether sexual health is their responsibility and within the scope of their professional role (Steadet.al., 2003). Health care providers who screen for sexual health concerns should have resources available for referrals to specialists when they are unable to care for the patients' needs. A lack of resources and referrals create a barrier for those who feel unprepared to take on these issues. (Marwick, 1999; Steadet.al., 2003).

Patients perceive the initiation of discussion regarding sexual health to be the responsibility of the health care professional and they rely on practitioners to address such topics (Quinnet.al., 2011; Bartliket.al., 2005, Bermanet.al., 2003). When asked about their perception of barriers to raising sexual questions or concerns, female patients identify barriers that include the age and gender of the practitioner, overall lack of time and privacy in health care visits, and uncertainty about speaking with a general practitioner about their sexual health rather than a specialist (Sarkadi & Rosenqvist, 2001). Other identified barriers from older adults include an uncertainty regarding how important the concern would be to the practitioner, shame, embarrassment, and fear of judgment (Gott & Hinchliff, 2003; Kingsberg, 2006). While 85% of participants in a 1999 survey (Marwick) of 500 adults age 25 and older said they would talk to their physician about a sexual health issue, 71% thought their doctor would dismiss their

sexual concerns; and 68% thought the physician would be uncomfortable with them asking.

CNM Sexual Health Screening

CNMs have been in practice in the United States since the 1920s (ACNM, 2010). Certified nurse-midwives are registered nurses who have continued their education as a nurse-midwife by graduating from an education program that is accredited by the Accreditation Commission for Midwifery Education (ACME), and successfully completing a national certification examination (ACNM, 2010). The midwifery philosophy of care includes respecting the dignity, equality and diversity of individuals and promoting skilled communication with women. Midwives provide comprehensive assessment of health in gynecologic care from adolescence to menopause (ACNM, 2011), and often the CNM is the primary health care provider for women of childbearing age.

Physical assessment by nurse-midwives historically consisted primarily of breast and pelvic exams and limited examination of other body systems. During early 1970s, nurse-midwives began participating in family planning. Desiring continuity of care with female clients, they began to offer interconception care and educated themselves in complete history and physical exam skills. Nurse-midwifery practice has expanded from maternity care to now include gynecologic and primary care of women across the lifespan of puberty to menopause (Varney, 2003). Nurse-midwifery textbooks consistently advocate for the incorporation of sexual health screening into routine CNM care (Varney, 2003; Schuiling & Likis, 2011; Youngkin 2012). While guidelines for sexual health assessment

exist, the actual individual scope of practice for each provider is determined by the provider commitment to sexual health assessment (Longworth, 1997).

Women regard midwives as trustworthy, reliable professionals with specific knowledge pertaining to sexuality (Wendt et.al, 2011). Midwives posing questions about sexual health was seen as a willingness to discuss sexuality in a 2011 survey of patients receiving care from Swedish CNMs (Wendt, et.al. 2001). While CNMs screening practices have not been specifically studied, nurses with a specialty in OB/GYN had significantly lower barriers to sexual health screening than those in other medical specialties, and were more likely to initiate and handle discussion of sexual health without referral to a physician (Magan & Reynolds, 2006). Facilitators of CNM practice of sexual health screening include the promotion of a respectful environment, higher levels of personal knowledge, support from employers and the use of personal skills and assets. One significant barrier to screening that was unique to CNMs was the identification of the difficult emotions that can be associated with dialoguing about sexual health (Wendtet.al., 2011).

Although CNMs are educated in the area of sexual health and their education material emphasizes screening for sexual health and function, this group of providers has not been included in descriptive studies of sexual health screening practices or barriers that limited these practices. The proposed research will explore the screening practices of CNMs in greater depth and will measure potential barriers to screening.

Effects of Attitudes and Beliefs on Screening

Attitudes have been described as an “orientation toward or away from an object, concept or situation, and readiness to respond in a predetermined manner to these or other

related objects, concepts or situations” (Webb & Akham, 1987, p.78). The attitudes that one holds affect social interactions. Hayter (1996) found that negative attitudes toward sexuality held by nurses were reflected in non-verbal cues of dislike including negative tone and facial expressions. Payne (1976) determined positive correlations between the sexuality knowledge and attitudes of professional family planning nurses and their comfort in dealing with situations where sexuality was discussed.

The majority of research addressing health care practitioners’ attitudes and behaviors related to sexual health focuses on physicians, with one recent study addressing nurse practitioners. (Maes & Louis, 2011). Although one multi-disciplinary study (Bluespruce et.al., 2001) about sexual health screening in relationship to HIV prevention included physicians, physician’s assistants, nurse practitioners, registered nurses and social workers, it did not include CNMs. These studies have addressed attitudes and beliefs as a potential barrier or facilitator of screening, however there is little evidence in the literature that shows a correlation between these variables. Furthermore, although Bluespruce and colleagues (2001) were able to show a change in provider attitudes toward sexual health screening after an education intervention consisting of four interactional trainings, sexual health screening practices were not measured as an outcome. This is the first study to examine potential effects of attitudes and beliefs on provider (CNM) practices of sexual health screening.

Sexual Health Screening: Personal and Practice Related Characteristics

Recent studies have found correlations between demographic indicators and screening practices among health care practitioners. Macdowell et.al. (2010) found that male practitioners were less likely to ask patients about sexual function. Wimberley’s (2006)

research on screening practices of primary care physicians supported this finding by indicating that female physicians were more likely to take a sexual history than their male peers. Physicians and Nurse Practitioners (NPs) prefer to discuss sexual health with patients of the same gender (Gott, 2004). Female nurse practitioners reported more comfort in screening for sexual health with female patients than with male patients (Maes & Louis, 2011).

When relating ethnicity to the practice of sexual health screening, it initially appeared that African American physicians paid greater attention to sexual history taking than the other identified ethnicities, however when adjusted for gender and specialty, this association was no longer present (Wimberly et al., 2006). The age of the practitioner in relation to the patient may be a factor in sexual health screening (Temple-Smith et al., 1998). Twelve percent of 500 surveyed nurse practitioners were uncomfortable discussing sexual health with patients older than themselves (Maes, 2011). Nurses 40 years and older were reported to have a greater number of barriers to sexual health screening (Kim et al., 2001). An early study of knowledge and attitudes of student nurse-midwives (SNMs) showed no significant difference when compared according to age, marital status, and education level in the program, or years of nursing experience. There were differences in knowledge and attitudes of SNMs when compared in reported religion, type of nurse-midwifery program, specific education in human sexuality, and degree of urbanization (Greener & Reagan, 1986).

Minimal research has addressed the relationship between practice-related characteristics and sexual health screening practices. Time allotment for patient visits has been identified as a barrier to screening (Stead et al., 2003; Marwick, 1999;

Macdowall, 2010; Quinnet.al., 2011), and a 1976 study identified nurses working in urban settings as more likely to be comfortable addressing sexual health than those working in rural settings (Payne). The amount of practitioner experience, type of education and type of practice have not been explored as variables affecting screening.

The proposed research study will examine these personal characteristics (gender, age, ethnicity, years of practice experience and education background) and practice-related characteristics (type of practice, region where practice is located, time spend with gynecologic patients) to determine if relationships exist between these demographic characteristics of the sample group and practices of sexual health screening.

Survey Use for Data Collection

Surveys have been a useful method of data collection for quantitative, qualitative and mixed methods research. This method is convenient and generally allows for a shorter time period of data collection. The use of a survey also eliminates the need for a trained interviewer, however this may create a disadvantage by preventing the researcher from clarifying answers or ensuring that all questions are adequately completed (Dillman, 2008). Surveys can be administered through mailed paper format, telephone interview, or electronic web-based methods. Of these three main methods of survey administration, electronic web-based surveys are cost-effective, offer anonymity to participants, and have the ability to reach a large number of participants in diverse locations. Dillman's (2008) tailored method of design provides structure for survey development that focuses on clarity in survey questions, concrete identifiable answers and creation of a survey that is easy for participants to maneuver through with little difficulty. The use of an electronic,

web-based survey may limit the sample by preventing participation by those who cannot access the Internet or those who lack confidence in computer skills.

Supporting Research Studies

Two studies provide support for the design and purpose of the current research. The 2006 study by Wimberly and colleagues surveyed primary care providers of various specialties (obstetricians/gynecologists, internal medicine, general practitioners and pediatricians) to show relationships between and among training, attitudes and practices in sexual history taking. Of the respondents (n=416), 58% reported routinely asking a general question about sexual health, while only 12%-24% asked about specific components of the sexual health assessment. Specialists in obstetrics and gynecology were more likely to take a sexual history than internists (Wimberly et al., 2006).

Maes (2011) identified the sexual history-taking practices of Nurse Practitioners (NPs) when caring for patients 50 years and older. Only two percent of surveyed NPs report that they always ask about sexual health with patients age 50 years and older, however a majority of the NPs reported feeling confident in their sexual health screening abilities. A positive correlation was noted between the nurse practitioners' perceived barriers and sexual health screening practices (Maes & Louis, 2011).

Other studies have shown that while health care providers may wait for patients to bring up topics of sexual health, patients desire providers to improve communication about sex. The 2005 Global Study of Sexual Attitudes and Behaviors is a cross-cultural survey of 27,500 patients (men and women) ages 40 to 80. More than half of the respondents reported having some type of sexual problem, however only 18.8% of women sought professional help for their condition. When women were asked if their

provider had asked them about sexual dysfunction in the past three years, only 9.4% said they had been asked, although 41.2% believe their physician should be routinely asking about this subject (Moreira et al., 2005). Most providers believe sexual health should be discussed, however only 25% of physicians and 20% of nurses actually addressed this topic (Stead et al., 2003). In a study of 488 Swedish women seeking care from midwives and physicians, 92% believed it would be natural for the gynecologic provider to ask about sexuality (Wendt et al., 2007).

Although patients desire that their provider ask about sexual health, and believe that gynecologic settings would be an accepted setting for such questions, health care providers do not routinely perform sexual health screening. No literature has addressed sexual health screening practices of CNMs. The literature discussed substantiates the need for the current research to explore practices of sexual health screening by CNMs and the potential barriers that may exist that prevent consistent screening.

Summary

Sexual health is an important component of overall wellness and should be addressed through consistent sexual health screening. Gynecologic examinations are a reasonable time for this to occur. While obstacles to screening have been identified, and practices of screening have been reported in nurses, physicians and nurse practitioners, there is no research addressing the sexual health screening practices of certified nurse-midwives.

CNMs have the knowledge and ability to practice sexual health screening with female patients. It is not clear if CNMs are addressing sexual health with patients and if their attitude and beliefs about sexuality are acting as barriers toward screening. Given the lack of evidence about CNM practice, and increasing anecdotal information, the proposed

research will add to current research to include CNMs. The completion of this research will expand the current literature to include information on CNMs, and determine if CNMs are screening for sexual health during gynecologic health care.

CHAPTER THREE: METHODS

Introduction

Sexual health screening as a component of women's general health screening is recommended on a yearly basis. Provider attitudes toward and beliefs about sexuality and sexual health screening may act as barriers preventing consistent screening. Despite the identification of these barriers, research showing the effects of barriers on sexual health screening practices is limited and does not include certified nurse-midwives (CNMs) – a group of health providers well-positioned to incorporate such screenings into women's health care.

Research Purpose

The purpose of this research was to determine the sexual health screening practices of CNMs and identify predictors of these screening behaviors. Demographic data and potential barriers consisting of attitudes and beliefs about sexual health were examined as potential predictors of screening practices. The study adds information about CNMs to the current body of research. This chapter will discuss the methods of research used in the completion of this study.

Research Design

Prior to beginning the research, IRB approval was obtained through the University of Texas Medical Branch. A descriptive exploratory design was used for this study. In descriptive studies, the investigator describes a sample in an effort to record its uniqueness. There is no treatment in a descriptive study. Descriptive studies are generally conducted using a questionnaire, direct observations or interviews. In an exploratory study, the investigator attempts to show relationships that exist between

variables. In this study, the investigator examined relationships between and among the main variables: attitudes and beliefs (barriers), demographic variables (gender, age, ethnicity, marital status, years in practice, type of education program, region where practice occurs, type of practice and average length of appointment) and sexual health screening practices. Electronic web-based surveys were chosen for this research because of their cost-effectiveness, ability to reach a large number of participants in diverse locations, and ability to offer anonymity to participants.

Population and Sample

Sample Population

The population sample for this study consisted of CNMs providing gynecologic care in the United States. The sample was recruited from the American College of Nurse-Midwives (ACNM), the professional organization for CNMs. The ACNM represents certified nurse-midwives and certified midwives (CMs) in the United States. Permission for solicitation of ACNM member participation in the research was obtained from the senior staff researcher at the ACNM Division of Research (Appendix F). A total of two thousand five hundred (2500) email addresses were purchased from the ACNM and emails were sent by the ACNM to all addresses inviting them to participate in the research study.

Sample

Convenience sampling was used to identify ACNM members who met the a priori inclusion criteria for the study. In February, 2013, 2500 email invitations were sent asking recipients to participate in the research survey (Appendix A). These invitations were sent to the first 2500 ACNM members on the list generated by the ACNM member

services department. Retired and student nurse-midwives were excluded from this original list. The researcher did not have access to the email address list at any point. Over a four-week period of time, 355 participants responded to the survey. Of this number 278 CNMs completed all parts of the survey.

Four participants were male (1.4%), while 274 were female (98.6%). This is representative of the 2008 ACNM membership survey which indicated that of the survey respondents 1.4% were male and 98.2% were female (Schuilinget.al., 2010). A majority of respondents (94.6%) identified themselves as white ethnicity. The age of respondents ranged from 23 to 75 with an average of 47 years of age.

Sample Size

A power analysis was not conducted for this study since no particular change in practice index score on the surveys used for this tool has been established as clinically significant, therefore determining a sample size based on a statistically significant change in scores, which can be manipulated as a function of sample size, would not be ideal. Additionally, previous quantitative research identifying screening behaviors of other primary care providers (physicians and nurse practitioners) have included sample sizes of 300-500 participants (Maes & Louis, 2011; Wimberlyet.al., 2006; Magnan & Reynolds, 2006). Therefore, rather than doing a power analysis to determine sample size, the study sample size was set at a level that is comparable to other previous studies (n=400). The desired sample size was not met, however the total initial respondent number was 355, which was within the range representative of comparable studies. After the data was cleaned and missing data was identified, the sample totaled 278.

Setting

The study setting was the internet. Individual participants determined their location for participation in data collection. Participants accessed the survey on a computer or wireless device of their choice and were able to complete the survey when they wished to do so.

Inclusion and Exclusion Criteria

CNMs currently practicing in the United States who provide gynecologic care and had access to the electronic web-based survey and basic computer skills were included in the study. The ACNM membership includes both certified midwives (CM) and certified nurse-midwives and the organization considers this to be one group of providers. Education programs for CMs and CNMs differ, in that CMs do not have a nursing education prior to midwifery training. These providers have been excluded from the study in order to provide a sample with common education backgrounds.

In order to include eligible CNMs in this study, the first page of survey instructions concluded with a question asking the participant to identify if they are a CNM currently in gynecologic practice in the United States. Those who answered “no” were exited out of the survey and were not included in data collection.

Instruments

Three instruments were used for this study: 1) a brief demographics page, 2) a modified Sexuality Attitudes and Beliefs Survey and 3) a survey of sexual health screening practices, modified from the Wimberly Sexual Health Screening Tool (Wimberly et al., 2006). The survey was designed based on Dillman’s (2008) tailored method of design.

Demographics

The demographics page included personal characteristics and practice-related characteristics (Appendix B). Personal characteristic included gender, age, CNM education training, ethnicity, and years in CNM practice. The dichotomous characteristic of gender was dummy coded as zero (male) and one (female). Practice-related characteristics addressed the type of midwifery practice and location of practice by region and average time spent with a gynecologic patient. The categories of ethnicity and type of practice were given an option of “other” in which the respondent was asked to specify their response.

Modified Sexuality Attitudes and Beliefs Survey (mSABS)

CNM attitudes and beliefs about sexuality were explored using a shortened, ten question version of the twelve question Sexuality Attitudes and Beliefs Survey (SABS) developed by Reynolds and Magnan (2005) (Appendix C). The SABS instrument was designed to measure nurses’ attitudes toward addressing sexual health in patient care. The SABS consists of 12 original items that are scored on a 6-point Likert scale with a range from 1 (strongly disagree) to 6 (strongly agree). Seven of the twelve items on the scale are reverse scored and a total score is achieved by adding each item’s individual score. The total score ranges between 12 and 72 with a higher score indicating greater attitudinal barriers toward the individual addressing sexual health in their patient care (Reynolds & Magnan, 2005). Cronbach’s α for reliability of this instrument have ranged from .70 to .82.

To support the validity of the SABS instrument, the authors determined a correlation of the instrument with a well-established instrument (SKAT) measuring attitudes toward

sexuality. The Sexual Knowledge and Attitudes Test (SKAT), originally developed in 1967, is a widely used instrument for measurement of personal attitudes toward sexuality as well as measurement of sexual knowledge (Miller & Lief, 1979). In the development of the SABS, significant correlations were found between the SKAT attitudes section and the SABS instrument, supporting the construct validity of the SABS as measuring the attitudes toward sexuality (Reynolds & Magnan, 2005).

For this study, two items were deleted from the instrument due to the specificity of addressing nurses caring for hospitalized patients (item 5) and specificity toward the nursing role rather than the role of the practitioner (item 7). Because this current research targets CNMs in outpatient primary care, these are not pertinent questions. Therefore, the total score for the modified instrument is a range of 10-60.

Modified Wimberly Sexual Health Screening Tool (mSHST)

The Wimberly sexual health screening tool (2006) was originally used to identify sexual history-taking practices by physicians. The tool has been modified for this study in order to capture practice behavior of CNM sexual health screening. Screening behaviors were indexed in this study according to nine practice behaviors, each measuring the presence of a specific screening question. Screening practices were identified as either practiced (yes) or not practiced (no). Response items included addressing topics of 1) sexual activity, 2) number of sexual partners, 3) frequency of intercourse, 4) type of sex practices, 5) partner's sexual practices, 6) sexual orientation or preferences, 7) sexual abuse experiences, 8) history of sexually transmitted infections, and 9) presence of sexual dysfunction. Sexual dysfunction was further divided into four categories (desire, arousal, orgasmic and dyspareunia disorders), however these

categories were used for descriptive purposes only and did not factor into the overall index score. The total possible index score ranged between zero and nine. This modified Wimberly Sexual Health Screening Tool (mSHST) gathered demographic data on actual practices of sexual health screening and therefore did not have nor need reliability or validity testing.

Procedures

Recruitment

Approval was sought by the ACNM to solicit participation from the membership. Following ACNM approval in January 2013, the ACNM member services department sent out email invitations to the survey on February 15, 2013. The email addresses were reviewed by the organization to ensure only current practicing CNMs were on the list. Students and retired nurse-midwives were not contacted in initial email invitations. The survey remained open for response for four weeks.

Survey Administration

Prior to sending out the online survey, pilot testing was completed by fifteen volunteer testers to receive feedback on its ease and usability. Once the survey and survey procedures were found to be accurate, the Survey Monkey © web address containing a demographic information page, the modified Sexuality Attitudes and Beliefs Survey (mSABS) and CNM sexual health screening practices (mSHST) were distributed to the CNMs by the ACNM member services department (Appendix E). Participants were able to take the survey in their environment of choice. Participants were told that they could expect to spend no more than 20-30 minutes on the survey completion.

Participation in the survey was completely voluntary and anonymous. Consent was given by participants on the first page of the survey. Participants who declined to give consent were exited from the survey and thanked for their participation. The first page of the electronic web-based survey included a complete description of the study as well as the instruction to proceed only if they wished to participate in the survey. All information was kept confidential. Access to Survey Monkey © data was password protected and only the primary researcher had access to the password.

Data Analysis

Data were collected through the Survey Monkey © system for four weeks, and upon completion of the time period, the data were transferred into the Statistical Product and Service Solutions (SPSS) (20.0.0) system for analysis. The SPSS file for data analysis was kept in a password protected computer file. For the purpose of this study, the significance level was set at $p < .05$. The level of significance refers to the potential risk of finding significance when it does not exist (a Type I error).

Before analyzing data, a preliminary analysis was run to determine if there was missing data or outliers. Following the cleaning of data, descriptive statistics (i.e. range, mean, standard deviations and percentages) were conducted on demographic variables in order to clarify the characteristics of the sample and identify potential issues with heterogeneity, misdistribution or other potential compromises to analysis. Adjustments to categorization of demographic data and identified issues of heterogeneity and distribution will be discussed in chapter 4. Cronbach's α was conducted for the modified Sexuality Attitudes and Beliefs Survey (mSABS) to ensure reliability with this sample. Statistical analysis was then conducted for each of the identified research questions.

Human Participants

Permission for proposed study was obtained from the University of Texas Medical Branch Institutional Review Board (IRB). Written permission was also obtained through the ACNM research branch (Appendix F). Instructions for the research study were given to participants at the beginning of the survey. Participants were told that there would be no identifying information included in the survey and that all data were collected for use in the investigator's dissertation research. The study purpose was stated and the participants' voluntary participation in the survey was indicated by their explicit consent on the first page of the survey and continuation with the subsequent survey questions. Participants could choose to leave the survey at any point.

No benefit or harm to participants was anticipated. No reimbursement or incentive was offered. Participants were thanked for their input and assured of their contribution to the research data.

CHAPTER FOUR: FINDINGS

Introduction

This study examined the attitudes and beliefs of certified nurse-midwives (CNMs) about sexuality and the sexual health screening practices of CNMs. This chapter will first provide a description of the participants' personal and practice-related characteristics. The findings of the analysis of attitudes and beliefs about sexuality as measured by the modified Sexuality Attitudes and Beliefs Survey (mSABS) will be addressed followed by the findings of sexual health screening practices of CNMs. Analysis of the predictive ability of demographic data and mSABS scores on screening practices will be presented in the results of the multiple regression to determine the best set of predictors of screening practices. A summary of the data analysis will be provided at the end of each section and the chapter will conclude with a brief summary of the overall study findings.

Description of Sample

The sample consisted of 335 CNM members of the American College of Nurse-Midwives (ACNM). All 335 CNMs met the inclusion criteria of current practice as a certified nurse-midwife in the United States. These 335 respondents consented to participate in the study. Forty-three respondents chose to leave the survey at various points or did not have complete data. After reviewing and cleaning the data, a final 278 participants (78% of the total respondents) provided completed data. Participant demographics (person and practice-related) are show in Tables 1 and 2 below.

Table 1*Demographics (n=278)*

Demographic Variable	N	%
Gender		
Male	4	1.4%
Female	274	98.6%
Ethnicity		
American Indian or Alaskan Native	2	0.7%
Asian	4	1.4%
Black or African American	4	1.4%
Hispanic or Latino	3	1.1%
Native Hawaiian or Pacific Islander	2	0.7%
White	263	94.6%
Marital Status		
Single	28	10.1%
Married or Partnered	209	75.2%
Separated, Divorced or Widowed	41	14.7%
Midwifery Education		
Certificate	34	12.2%
Master's Degree	236	84.9%
Doctoral Degree	7	2.5%
International training	1	0.4%
Practice location		
West	57	20.5%
Southwest	26	9.4%
Midwest	62	22.3%
Northeast	91	32.7%
Southeast	42	15.1%

(Table 1 continued)

Demographic Variable	N	%
Type of practice		
Private practice (physician-owned)	84	30.2%
Private practice (midwife-owned)	20	7.2%
Birth center	8	2.9%
Home birth practice	4	1.4%
Community clinic	37	13.3%
Hospital or medical center owned practice	94	33.8%
Health department	1	0.4%
Health maintenance organization (HMO)	9	3.2%
Military	8	2.9%
Non-profit organization	13	4.7%

Table 2

Age, Years in midwifery practice, Time spent with gynecologic patient (n=278)

Demographic Variable	Mean	SD	Minimum	Maximum
Age (years)	46.9	11.796	23	75
Practice experience (years)	13.2	9.735	0	40
Time spend with gynecologic patients (minutes)	25.94	10.574	8	60

The study sample consisted of a majority of female CNMs with a mean age of 47. Additionally, 94.6% of the participants were white, with 84.9% participants holding the master's degree. The majority of the sample (75.2%) were married or partnered. CNMs

reported an average of 13 years in practice and the majority of participants practiced in hospital/medical center owned practices (33.8%) or physician-owned private practices (30.2%).

The demographics of the sample were consistent with the demographics of the ACNM membership as reported in the 2008 annual membership survey of demographics and workforce data. This indicated accurate representation of the population and likely external validity (Schuilinget.al., 2010). Tables 3 and 4 show the comparison of sample data with ACNM membership data.

Gender and ethnicity did not provide meaningful or generalizable data due to unequal group sizes and group sizes less than 20 in some subcategories (e.g. male, minorities). Neither demographic indicator was used in subsequent analyses. Distribution of education and type of midwifery practice resulted in a small sample size in one education training category, international midwifery training, which was grouped with midwifery certificate training in the likelihood that these training programs would be most similar. It is important to note that while the education training groups of doctorally prepared midwives and certificate trained midwives were significantly fewer than master's prepared midwives and therefore created unequal group sizes, no logical regrouping was possible therefore all future analyses including this variable were non-parametric.

Table 3*Demographics of sample compared to ACNM membership*

Demographic Variable	% of ACNM members (n=2293)	% of sample (n=278)
Gender		
Male	1.4%	1.4%
Female	98.2%	98.6%
Ethnicity		
American Indian or Alaskan Native	No data	0.7%
Asian	No data	1.4%
Black or African American	2.5%	1.4%
Hispanic or Latino	2.8%	1.1%
Native Hawaiian or Pacific Islander	No data	0.7%
White	93%	94.6%
Midwifery Education		
Certificate	No data	12.2%
Master's Degree	82.3%	84.9%
Doctoral Degree	7.5%	2.5%
International training	No data	0.4%
Type of practice		
Private practice (physician-owned)	22.5%	30.2%
Private practice (midwife-owned)	7.1%	7.2%
Birth center	No data	2.9%
Home birth practice	4%	1.4%
Community clinic	7%	13.3%
Hospital or medical center owned practice	29.7%	33.8%
Health department	No data	0.4%
Health maintenance organization (HMO)	No data	3.2%
Military	2.1%	2.9%
Non-profit organization	3.8%	4.7%

Table 4*Age and years in midwifery practice of sample compared to ACNM membership*

Demographic Variable	ACNM Range	Sample Range
Age (years)	25-83	23-75
Practice experience (years)	1-58	0-40

Six categories of practice type (birth center, home birth practice, health department, HMO, military and non-profit organization) represented a small percentage of the sample; therefore the categories were collapsed in a logical manner according to practice or organizational structure. Private CNM-owned practice included homebirth practice. Practice types with a centralized organizational structure were considered one grouping (birth centers, hospital, HMO and military practices), and community clinics included non-profit organization and health department run clinics. Table 5 displays the demographic data collapsed into the new groupings.

Table 5*Regrouped Demographics (n=278)*

Demographic Variable	N	%
Marital Status		
Single	28	10.1%
Married or Partnered	209	75.2%
Separated, Divorced or Widowed	41	14.7%

(Table 5 continued)

Demographic Variable	N	%
Midwifery Education		
Certificate/international training	35	12.6%
Master's Degree	236	84.9%
Doctoral Degree	7	2.5%
Practice location		
West	57	20.5%
Southwest	26	9.4%
Midwest	62	22.3%
Northeast	91	32.7%
Southeast	42	15.1%
Type of practice		
Private practice (physician-owned)	84	30.2%
Private/homebirth practice (midwife-owned)	24	8.6%
Medical Organization run practice *	119	42.8%
Community Clinic Practice **	51	18.3%

Note. *Includes Birth center, Hospital owned, HMO and Military; **Includes community clinic, non-profit, health department

Psychometrics

The modified Sexual Health Screening Tool (mSHST) was used as an index score to identify inclusion of specific categories of sexual health into screening. This tool was therefore not assessed for psychometric properties.

The psychometric properties of the modified Sexuality Attitudes and Beliefs Survey (mSABS) were assessed before addressing the research questions. First, Cronbach's α test of reliability was performed on the mSABS. The results ($\alpha=.76$) suggests that the mSABS instrument is adequately reliable in this sample. Next, factor analysis was

conducted to test the validity of this instrument. All 10 of the items loaded in 2 factors reflecting CNM comfort and confidence related to sexual health (six items; $\alpha = .69$), and identification of the role of midwife and patient in sexual health (four items; $\alpha = .58$) (Table 6).

Table 6

Factor Analysis of mSABS

Item	Eigenvalue	% of variance	Factor 1	Factor 2
I am uncomfortable	3.422	34.420	.678	
Sexuality is private	1.046	10.458	.435	
Patient should initiate	.930	9.298		.587
Sexuality is essential	.827	8.272		.680
I understand sexuality	.799	7.988	.589	
I am more comfortable	.713	7.132	.627	
I make time for sexuality	.690	6.902	.596	
I feel confident	.573	5.728	.610	
Midwifery responsibility	.538	5.285		.668
Patient expectations	.442	4.418		.688
Cronbach's α (subscale)			.690	.583

Analysis of Data

Next, the five research questions, representing the study's three aims were examined. Each of the five questions was analyzed using various statistical methods. The planned analyses were not possible for all of the research questions. The variables of gender and ethnicity were not included in the analysis because of insufficient group sizes. Failure to

meet the assumptions of parametric analyses necessitated use of non-parametric statistics in analyses that included practice type and education.

Aim 1

The first aim of this study was to identify CNM barriers to addressing sexuality as measured by the modified Sexuality Attitudes and Beliefs Survey (mSABS) across demographic subgroups. This was achieved through two research questions.

Research Question 1.1. The first research question of the study was to determine how strongly CNMs experience barriers to addressing sexuality with patients as measured by the mSABS instrument across demographic subgroups, i.e., gender, age, ethnicity, marital status, years in practice, type of education program, region where practice occurs, type of practice and average length of appointment. Gender and ethnicity were not considered in this analysis due to insufficient group sizes.

The data were analyzed to determine if the assumptions of parametric statistics were met. The use of Pearson's Product Moment requires interval or ratio level data, and normally distributed data. After examining the distribution of the variables (age, years in midwifery practice and average length of gynecologic appointment), it was determined that the assumption of distribution normality was not met and therefore non-parametric statistics were used. Spearman's rho correlation was used to determine if age, years in midwifery practice or the average length of gynecologic appointments were moderately or strongly correlated to the mSABS score which would necessitate inclusion in subsequent analyses as covariates. A value of $\rho > .40$ was considered a moderate correlation. For the three variables tested, all rho values were $< .40$ (Table 7) and therefore these three variables were not considered as covariates in analyses of variance.

Table 7

Correlation of mSABS and age, years in practice and minutes spent with gynecologic patients

	Age	Years in Practice	Minutes with patients
Correlation (r, p)	.005, (p=.934)	.020, (p=.740)	-.117, (p=.052)

Next, an analysis of variance (ANOVA) was conducted to determine if there are differences within the selected demographic variables (education, marital status, region where practice is located and type of practice) on age, years in practice and minutes spent with gynecologic patients (Table 8). Analyses were examined for heterogeneity across the subgroups within each variable using Levine’s test.

Analysis of variance indicated several significant findings within subgroups of variables. Education subgroups had significant variance in the age of the respondents. Post hoc tests confirmed this finding in significant Tamhane’s T2 values. CNMs educated through certificate or international training were older than those educated with either a Master’s degree or Doctoral degree. Further examination of these findings revealed a significant Levine’s test for heterogeneity, necessitating the use of non-parametric approaches to determine if the finding were stable. Kruskal Wallis H test of variance and post hoc results supporting the ANOVA findings may be seen in Table 10.

Education subgroups also showed significant difference between groups in years of practice of the CNMs. Post hoc tests revealed significant Bonferonni’s mean difference with CNMs educated by certificate or international training to have more years in

practice than those trained by either a Master's or Doctoral degree. Levine's statistic was not significant, therefore further analyses was not completed.

In the variable of marital status, significant differences were found between both age of the CNM and years in practice. Post hoc testing supported these findings indicating that separated/widowed/divorced CNMs were older (Tamhane's T2) and had more years in practice (Bonferonni) than single or married/partnered CNMs. Kruskal Wallis testing was completed with age in marital status subgroups after Levine's statistic revealed issues with heterogeneity (Table 10).

In the variable of practice location by region, significance was found in the minutes spent with patients. Significant post hoc test findings were limited to a difference in the means between those practices located in the Southwest and those in the Southeast. There was no indication of problems with heterogeneity in the subgroups of this variable.

Among practice types, age, years in practice and minutes spent with gynecologic patients all indicated significant differences between subgroups. Post hoc tests (Tukey) identified CNMs working in private practice owned by CNMs to have more years in practice than those working in MD owned practices and those working in medical organization run clinics. CNMs in CNM owned private practice spent significantly more time with gynecologic patients than did those in private MD owned practice, medical organization run practice or community clinics. Tests for heterogeneity issues led to non-parametric approaches to evaluate the minutes spent with patients among practice types (Table 10)

Table 8*Analysis of variance*

	ANOVA		Levine's test of significance	
	F value	<i>p</i>	Statistic	<i>p</i>
Education				
Age	18.158	.000	5.905	.003
Years in Practice	9.855	.000	.379	.685
Minutes with patients	.291	.748	1.090	.338
Marital Status				
Age	11.527	.000	3.513	.031
Years in Practice	4.539	.012	2.053	.130
Minutes with patients	.629	.534	1.079	.341
Region				
Age	.262	.902	1.260	.286
Years in practice	.842	.500	.173	.952
Minutes with patients	3.512	.008	1.218	.303
Practice type				
Age	3.195	.024	1.812	.145
Years in practice	4.114	.007	.746	.524
Minutes with patients	22.199	.000	4.357	.005

*See KW analyses in table 10 for subsequent validation due to significant heterogeneity presence

Table 9*ANOVA post hoc tests*

	m(sd)/m(sd)	Mean Difference
Age with education subgroups		
Certificate/International (n=34)/Master's Degree (n=236)	57.62(8.70)/45.47(11.49)	12.147
Certificate/International (n=34)/Doctoral Degree (n=7)	57.62(8.70)/43.0(7.87)	14.618
Master's Degree (n=236)/Doctoral Degree (n=7)	45.47(11.49)/ 43.0(7.87)	2.470

(Table 9 continued)

	m(sd)/m(sd)	Mean Difference
Years in practice with education subgroups		
Certificate/International (n=34)/Master's Degree (n=236)	19.76(8.80)/12.31(9.55)	7.443
Certificate/International (n=34)/Doctoral Degree (n=7)	19.76(8.80)/10.14(9.74)	9.614
Master's Degree (n=236)/Doctoral Degree (n=7)	12.31(9.55)/10.14(9.74)	2.171
Minutes with patients with education subgroups		
Certificate/International (n=34)/Master's Degree (n=236)	24.91(9.14)/26.14(10.86)	-1.226
Certificate/International (n=34)/Doctoral Degree (n=7)	24.91(9.14)/24.29(7.87)	.629
Master's Degree (n=236)/Doctoral Degree (n=7)	26.14(10.86)/ 24.29(7.87)	1.854
Age with marital status subgroups		
Single (n=28)/Married or Partnered (n=208)	40.50(12.63)/46.46(11.54)	-5.957
Single (n=28)/Separated/Widowed/Divorced (n=41)	40.50(12.63)/53.51(11.80)	-13.012
Married/partnered (n=208)/ Separated/Widowed/Divorced (n=41)	46.46(11.54)/ 53.51(11.80)	7.055
Years in practice with marital status subgroups		
Single (n=28)/Married or Partnered (n=208)	10.80(11.49)/12.74(9.43)	-1.941
Single (n=28)/Separated/Widowed/Divorced (n=41)	10.80(11.49)/17.13(9.16)	-6.331
Married/partnered (n=208)/ Separated/Widowed/Divorced (n=41)	12.74(9.43)/17.13(9.16)	-4.390
Minutes with patients with marital status subgroups		
Single (n=28)/Married or Partnered (n=208)	23.82(7.70)/26.14(10.66)	-2.322
Single (n=28)/Separated/Widowed/Divorced (n=41)	23.82(7.70)/26.34(11.81)	-2.520
Married/partnered (n=208)/ Separated/Widowed/Divorced (n=41)	26.14(10.66)/ 26.34(11.81)	-.198
Age with region subgroups		
West (n=56) with Southwest (n=26)	47.21(12.04)/47.27(12.26)	-.055
West (n=56) with Midwest (n=62)	47.21(12.04)/46.45(10.79)	.763

(Table 9 continued)

	m(sd)/m(sd)	Mean Difference
West (n=56) with Northeast (n=91)	47.21(12.04)/46.24(12.74)	.973
West (n=56) with Southeast (n=42)	47.21(12.04)/48.33(10.85)	-1.119
Southwest (n=26) with Midwest (n=62)	47.27(12.26)/ 46.45(10.79)	.818
Southwest (n=26) with Northeast (n=91)	47.27(12.26)/ 46.24(12.74)	1.027
Southwest (n=26) with Southeast (n=42)	47.27(12.26)/ 48.33(10.85)	-1.064
Midwest (n=62)with Northeast (n=91)	46.45(10.79)/ 46.24(12.74)	.210
Midwest (n=62)with Southeast (n=42)	46.45(10.79)/ 48.33(10.85)	-1.882
Northeast (n=91)with Southeast (n=42)	46.24(12.74)/ 48.33(10.85)	-2.092
Years in practice with region subgroups		
West (n=56) with Southwest (n=26)	14.23(10.26)/11.48(10.02)	2.747
West (n=56) with Midwest (n=62)	14.23(10.26)/12.84(9.32)	1.389
West (n=56) with Northeast (n=91)	14.23(10.26)/12.48(9.64)	1.749
West (n=56) with Southeast (n=42)	14.23(10.26)/14.94(9.72)	-.712
Southwest (n=26) with Midwest (n=62)	11.48(10.02)/ 12.84(9.32)	-1.358
Southwest (n=26) with Northeast (n=91)	11.48(10.02)/ 12.48(9.64)	-.998
Southwest (n=26) with Southeast (n=42)	11.48(10.02)/ 14.94(9.72)	-3.460
Midwest (n=62) with Northeast (n=91)	12.84(9.32)/ 12.48(9.64)	.360
Midwest (n=62) with Southeast (n=42)	12.84(9.32)/ 14.94(9.72)	-2.102
Northeast (n=91) with Southeast(n=42)	12.48(9.64)/ 14.94(9.72)	-2.461
Minutes with patients with region subgroups		
West (n=56) with Southwest (n=26)	28.39(10.77)/30.69(13.76)	-2.306
West (n=56) with Midwest (n=62)	28.39(10.77)/25.56(8.24)	2.821
West (n=56) with Northeast (n=91)	28.39(10.77)/24.85(11.37)	3.540
West (n=56) with Southeast (n=42)	28.39(10.77)/22.60(7.74)	5.791
Southwest (n=26) with Midwest (n=62)	30.69(13.76)/ 25.56(8.24)	5.128
Southwest (n=26) with Northeast (n=91)	30.69(13.76)/ 24.85(11.37)	5.846

(Table 9 continued)

	m(sd)/m(sd)	Mean Difference
Southwest (n=26) with Southeast (n=42)	30.69(13.76)/ 22.60(7.74)	8.097
Midwest (n=62) with Northeast (n=91)	25.56(8.24)/ 24.85(11.37)	.718
Midwest (n=62) with Southeast (n=42)	25.56(8.24)/ 22.60(7.74)	2.969
Northeast (n=91) with Southeast(n=42)	24.85(11.37)/ 22.60(7.74)	2.251
Age with practice type subgroups		
MD owned (n=84)/CNM owned (n=23)	45.83(11.38)/51.87(9.92)	-6.036
MD owned (n=84)/Medical organization (n=119)	45.83(11.38)/45.49(11.75)	.346
MD owned (n=84)/Community clinic (n=51)	45.83(11.38)/49.71(12.57)	-3.873
CNM owned (n=23)/Medical organization (n=119)	51.87(9.92)/ 45.49(11.75)	6.382
CNM owned (n=23)/Community clinic (n=51)	51.87(9.92)/ 49.71(12.57)	2.164
Medical organization (n=119)/Community clinic (n=51)	45.49(11.75) 49.71(12.57)	-4.218
Years in practice with practice type subgroups		
MD owned (n=84)/CNM owned (n=23)	11.95(9.92)/19.50(10.60)	-7.552
MD owned (n=84)/Medical organization (n=119)	11.95(9.92)/12.63(9.18)	-.683
MD owned (n=84)/Community clinic (n=51)	11.95(9.92)/13.61(9.39)	-1.660
CNM owned (n=23)/Medical organization (n=119)	19.50(10.60)/ 12.63(9.18)	6.870
CNM owned (n=23)/Community clinic (n=51)	19.50(10.60)/13.61(9.39)	5.892
Medical organization (n=119)/Community clinic (n=51)	12.63(9.18)/13.61(9.39)	-.978
Minutes with patients with practice type subgroups		
MD owned (n=84)/CNM owned (n=23)	23.26(9.54)/40.67(12.93)	-17.405
MD owned (n=84)/Medical organization (n=119)	23.26(9.54)/25.80(9.55)	-2.536
MD owned (n=84)/Community clinic (n=51)	23.26(9.54)/23.75(7.43)	-.483
CNM owned (n=23)/Medical organization (n=119)	40.67(12.93)/25.80(9.55)	14.868
CNM owned (n=23)/Community clinic (n=51)	40.67(12.93)/23.75(7.43)	16.922
Medical organization (n=119)/Community clinic (n=51)	25.80(9.55)/23.75(7.43)	2.053

Three variables displayed significant heterogeneity (education with age, marital status with age, and practice type with minutes spent with the patient) therefore a non-parametric Kruskal Wallis H was additionally conducted in order to ensure the stability of subgroup difference. Tables 10 and 11 indicate that the ANOVA results were replicated. Since both nonparametric and parametric analyses supported the existence of significant differences between subgroups on age, years in practice and minutes with patients, further analyses include these variables as covariates when appropriate.

Table 10

Kruskal-Wallis non-parametric test of variance

	Mean rank	Chi-square	<i>p</i>
Age with Education			
Group 1: Certificate/international	209.5	30.403	.000
Group 2: Master's Degree	129.7		
Group 3: Doctoral Degree	111.0		
Age with Marital Status			
Group 1: Single	96.77	20.933	.000
Group 2: Married/Partnered	135.86		
Group 3: Separated/Widowed/Divorced	183.78		
Minutes with patients with practice type			
Group 1: Private practice MD owned	118.32	36.707	.000
Group 2: Private practice CNM owned	229.54		
Group 3: Medical organization run	141.84		
Group 4: Community clinic	126.57		

Table 11*Kruskal-Wallis post hoc tests utilizing Mann Whitney U pair comparison*

	Mean rank	Chi-square	<i>p</i>
Age with Education sub-groups			
Test 1: Certificate/international	203.34	29.385	.000
Master's Degree	125.73		
Test 2: Certificate/international	23.65	9.753	.002
Doctoral Degree	8.14		
Test 3: Master's Degree	122.45	.335	.563
Doctoral Degree	106.86		
Age with Marital Status sub-groups			
Test 1: Single	87.93	6.377	.012
Married/Partnered	122.62		
Test 2: Single	23.34	15.939	.000
Separated/Widowed/Divorced	42.96		
Test 3: Married/Partnered	117.74	12.838	.000
Separated/Widowed/Divorced	161.82		
Minutes with patients with practice type sub-group			
Test 1: Private practice MD owned	45.61	31.898	.000
Private practice CNM owned	85.63		
Test 2: Private practice MD owned	91.65	4.713	.030
Medical organization run	109.31		
Test 3: Private practice MD owned	66.06	.575	.448
Community clinic	71.20		
Test 4: Private practice CNM owned	111.29	27.420	.000
Medical organization run	64.08		
Test 5: Private practice CNM owned	57.63	29.634	.000
Community clinic	28.76		
Test 6: Medical organization run	88.45	1.510	.219
Community clinic	78.61		

Descriptive statistics (mean and standard deviation) of the total mSABS scores within variable groups is reported in Table 12. Test of variance on mSABS scores and demographic variable groups showed no significant difference between groups when controlling for co-variables where appropriate.

Table 12

Sub-group differences in mSABS scores

	mSABS score (mean +/- SD)	Test of variance
Midwifery Education		
Certificate/International training	38.51 (+/-4.017)	ANCOVA
Master's Degree	39.21 (+/-3.769)	Covariate: Age
Doctoral Degree	38.29 (+/- 3.773)	F=.330, p=.804
Marital Status		
Single	38.46 (+/- 3.522)	ANCOVA
Married/Partnered	39.10 (+/- 3.917)	Covariate: Age
Separated/Divorced/Widowed	39.51 (+/- 3.348)	F=.507, p=.678
Practice Region		
West	39.33 (+/- 4.481)	Kruskal-Wallis
Southwest	38.54 (+/- 3.818)	1.296, p=.862
Midwest	39.34 (+/- 3.617)	
Southeast	39.00 (+/- 3.612)	
Northeast	38.98 (+/- 3.544)	
Type of practice		
Private Practice – MD-owned	38.96 (+/- 3.403)	ANCOVA
Private Practice – CNM owned	39.62 (+/- 4.230)	Covariate: minutes
Medical organization run	39.03 (+/-4.132)	with patients
Community Clinic	39.24 (+/-3.450)	F=.889, p=.465

Summary. The modified Sexuality Attitudes and Beliefs Survey had a possible score range of 10 to 60. The mSABS score represents the barriers that exist against sexual health screening. The overall mean mSABS score of all participants was 39.10 (SD=3.796) with a range of scores from 29 to 49. After controlling for significant covariates, no significant difference was found between sub-groups in the categories of midwifery education, marital status, practice location by regions and type of practice. Because there were no significant differences of mSABS scores between sub-groups, it can be concluded that CNMs in this sample have a similar experience with barriers to addressing sexual health. Additionally the overall mean of 39 suggests that the midwives in the study scored in the middle range of the barriers score; neither high nor low.

Research Question 1.2. The purpose of the second identified research question was identification of the specific barriers on the mSABS instrument that are particularly problematic for CNMs across demographic sub-groups. A comparative analysis for each demographic variable was conducted using Kruskal Wallis analyses to evaluate the differences among demographic variable groups and the individual mSABS item scores (Table 13).

Table 13

Comparative analysis of mSABS items across demographic groups

Kruskal-Wallis (χ^2, p)				
mSABS item	Education	Marital Status	Practice Type	Practice Location
Sexuality is essential	1.739 ($p=.419$)	1.607 ($p=.448$)	1.649 ($p=.438$)	5.094 ($p=.278$)
I understand sexuality	.864 ($p=.649$)	3.145 ($p=.208$)	.267 ($p=.875$)	6.396 ($p=.171$)
I am uncomfortable	1.158 ($p=.561$)	.276 ($p=.871$)	.922 ($p=.631$)	7.462 ($p=.113$)
I am more comfortable	.448 ($p=.799$)	.303 ($p=.860$)	3.597 ($p=.166$)	2.055 ($p=.726$)

I make time for sexuality	.337 ($p=.845$)	2.622 ($p=.270$)	4.583 ($p=.101$)	5.857 ($p=.210$)
I feel confident	.872 ($p=.647$)	3.179 ($p=.204$)	.554 ($p=.101$)	8.111 ($p=.088$)
Sexuality is too private	.098 ($p=.952$)	.077 ($p=.962$)	3.915 ($p=.141$)	8.200 ($p=.085$)
Midwifery responsibility	.705 ($p=.703$)	2.827 ($p=.243$)	.390 ($p=.823$)	6.317 ($p=.177$)
Patient should initiate	2.305 ($p=.316$)	6.726 ($p=.035$)	.341 ($p=.843$)	6.258 ($p=.181$)
Patient expectations	.034 ($p=.983$)	2.788 ($p=.248$)	.192 ($p=.908$)	3.991 ($p=.407$)

Only the item stating “sexuality should be discussed only if initiated by the patient” was significant for a difference in the marital status group medians, which falls well within family-wise error which is the probability to find a spurious significant result within a large population of analyses. However, for completeness, post hoc tests were completed to evaluate pairwise comparison among these three marital groups for exploratory purposes. The result of these tests indicates a significant difference between the marital status single group and both the married/partnered group and the separated/widowed/divorced group. The single group indicated more agreement with the statement “sexuality should be discussed only if initiated by the patient” than did the two other groups (Table 14).

Table 14

Pairwise comparison among marital status groups

	Mean rank	Z value (p)
Pair 1		
Single	91.11	-2.490 ($p=.013$)
Married/Partnered	122.74	
Pair 2		
Single	28.63	-2.387 ($p=.017$)
Separated/Widowed/Divorced	39.35	

(Table 14 continued)

	Mean rank	Z value (<i>p</i>)
Pair 3		
Married/Partnered	124.88	-.330 (<i>p</i> =.741)
Separated/Widowed/Divorced	128.67	

Summary. Initial comparative analysis of demographic subgroups with the individual items on the mSASBs instrument indicated significant findings in only one area: marital status and agreement “sexuality should be discussed only if initiated by the patient”. Pairwise comparisons specified that single CNMs indicated greater agreement with this statement than did those midwives who were married/partnered or separated/widowed/divorced. However, given the probability of family-wise test error, the validity of this finding should be viewed with extreme caution.

Aim 2

The second aim of the study was to characterize the CNM sexual health screening behaviors within demographic sub-groups.

Research Question 2.1. The first research question for Aim 2 uses the mSHST index score to explore the distribution of CNM screening for sexual health as a part of routine gynecologic exams. The index score had a potential range of 0 to 9 reflecting a count of sexual health screening questions used by each CNM. Descriptive statistics on the index scores revealed a range from 1 to 9 with a mean of 5.58 (SD=1.782).

Research Question 2.2. The second research question of Aim 2 was to determine the proportion of CNMs who screen for specific components of sexual health and function in routine gynecologic exams. Descriptive statistics were conducted on each item in the mSHST (Table 15). The category of sexual dysfunction was broken down to the four

diagnostic categories, however these individual categories were not included as part of the index score. All CNMs screened for at least one of the identified sexual health questions. A majority of CNMs routinely screened for sexual activity, number of sexual partners, sexual orientation, history of abuse, STI history and sexual dysfunction. Less than one-third of the sample screened for frequency of intercourse, type of sex practices and sexual practices of partners. While there is no clear reason for the exclusion of these screening questions, it is possible that the underlying risk factor for these questions overlap with other questions (e.g. type of sex practices as a part of sexual preferences).

Table 15

CNM screening for components of sexual health: Do you routinely ask about the following topics during gynecologic exams?

	No N(%)	Yes N(%)
Sexual activity	4 (1.4%)	274 (98.6%)
Number of sexual partners	72 (25.9%)	206 (74.1%)
Frequency of intercourse	210 (75.5%)	68 (24.5%)
Type of sex practices	198 (71.2%)	80 (28.8%)
Partners' sexual practices	227 (81.7%)	51 (18.3%)
Sexual orientation/preferences	66 (23.7%)	212 (76.3%)
History of sexual abuse	64 (23%)	214 (77%)
History of sexually transmitted infection	12 (4.3%)	266 (95.7%)
Sexual dysfunction	99 (35.6%)	179 (64.4%)

Of particular interest were the frequencies of screening for the four individual categories of sexual dysfunction. In this sample, screening for pain disorders occurred more frequently than the remaining three categories of dysfunction (Table 16).

Table 16

Sexual Dysfunction categories: Do you routinely ask about the following topics during gynecologic exams?

	No N (%)	Yes N (%)
Desire Disorders	171 (61.5%)	107 (38.5%)
Arousal Disorders	205 (73.7%)	73 (26.3%)
Orgasmic Disorders	207 (74.5%)	71 (25.5%)
Pain Disorders (Dyspareunia)	85 (30.6%)	193 (69.4%)

Summary. Overall, CNMs were more likely to screen for sexual activity and a history of sexually transmitted infections. A majority (>50%) of CNMs participants also screen for a history of sexual abuse, sexual orientation or preference, number of sexual partners and sexual dysfunction. CNMs are less likely to include the frequency of intercourse, type of sex practices in which the woman engages and screening for partners' sexual practices as part of their routine gynecologic exam sexual health screening. CNMs are more likely to screen for sexual pain disorders than other categories of sexual dysfunction.

Aim 3

The third aim of the study was to identify the best set of predictors of CNM sexual health screening practices.

Research Question 3.1. The final aim of the study used stepwise forward and backward multiple regressions to determine the best set of predictors of CNM sexual health screening. Higher mSHST scores indicate more extensive sexual health screening. The mSHST index score was the criterion variable while age, years in practice time spent

with gynecologic patients (in minutes) and the mSABS score of barriers were the predictor variables.

Before beginning the analysis, the assumptions of multiple regression analysis were examined. First, multiple regression assumes low correlation between predictors. Second, multiple regression assumes high correlation between predictors and criterion. Pearson’s correlation was conducted to determine the correlation between predictors and the correlations between predictors and the criterion. Age and years in practice were found to be strongly correlated, $r = .79$, $p = .000$ (Table 17). After examining tolerance and variance inflation factors as well as beta scores, concern with multicollinearity was not supported. While the correlations between predictors and criterions were small in this study data, the regression analyses were still performed with the understanding of this limitation (Table 18).

Table 17

Pearson’s r correlation between predictors

	mSABS	Age	Years	Minutes
mSABS				
Age	-.011 ($p=.855$)			
Years	-.026 ($p=.669$)	.790 ($p=.000$)		
Minutes	.110 ($p=.066$)	.142 ($p=.018$)	.127 ($p=.034$)	

Note. Age = Age of CNM; Years = Years in practice; Minutes = Minutes with gynecologic patients

Table 18*Pearson's r correlation between predictors and criterion*

	Pearson's r	<i>p</i>
mSHST Index score with mSABS score	.237	.000
mSHST Index score with age	.082	.172
mSHST Index score with years in practice	.143	.017
mSHST Index score with minutes with patient	.178	.003

Stepwise forward multiple regression was first performed after removing the highly correlated predictors of age and years in practice. Two more regression analyses were performed including each of these predictors in the set. Finally, forward regression with all four predictors was conducted. All forward regression analyses resulted in a predictor set of mSABS score and minutes spent in gynecologic patient visits (Table 19). When stepwise backward regression was used, only provider age was removed from the set, leaving mSABS score, years of practice experience and minutes spent with the patient as the predictor set (Table 20).

The difference noted in the forward and backward regressions is related to the ability of backward regression to identify variables that may have been overlooked in forward regression. This occurs because backward regression begins with all of the variables in the model and therefore, the contribution of the individual variable may occur due to the presence of the other variables. CNM age and years of experience were found to have a strong correlation in the original analysis, therefore, backward regression was conducted a second time excluding years of experience in the set of potential predictors. The same set of predictors was found in this analysis, therefore the original backward regression results were accepted.

Table 19*Forward Regression*

Variable	Standardized β	p
mSABS score	.229	.000
Minutes spent with patient	.133	.024

Variables included	R^2	F value (df)	p
mSABS score & minutes spent with the patient	.078	11.513 (2, 276)	.000

Note. df=degrees of freedom

Table 20*Backward Regression*

Variable	Standardized β	p
mSABS score	.232	.000
Years in practice	.106	.069
Minutes spent with patient	.120	.042

Variables included	R^2	F value (df)	p
mSABS score, years in practice & minutes spent with the patient	.089	8.849 (3, 276)	.000

Note. df=degrees of freedom

Summary. In forward multiple regression, 8% of the variance was explained by two significant predictors ($R^2=.078$, $F= 11.513$ (2,276), $p=.000$). The mSABS score accounted for the largest percent of explained variance (~23%) in the index score of sexual health screening practices ($\beta=.229$, $p=.000$) while the number of minutes spent with gynecologic patients accounted for 13% ($\beta=.133$, $p=.024$). In backward regression, the mSABS score ($\beta=.232$, $p=.000$), years in practice ($\beta=.106$, $p=.069$) and minutes spent with the patient ($\beta=.120$, $p=.042$) significantly predicted screening practice index score accounting for 9% of the variance overall ($R^2=.089$, $F=8.849$ (3, 276), $p=.000$).

Summary of Results

The mSABS instrument was found to be reliable in the study sample. Two subscales were identified through factor analysis reflecting CNM comfort and confidence related to sexual health and identification of the role of midwife and patient in sexual health. Study participants had an overall mean mSABS score of 39.10 (+/- 3.796) with a range of scores from 29 to 49. Non-parametric analyses were performed when problems with distribution and heterogeneity arose. No significant differences were found in mSABS scores between demographic subgroups. Comparative analysis of individual mSABS instrument item scores among demographic subgroups revealed one significant finding between single CNMs and other marital groups on agreement that sexuality should only be discussed if initiated by the patient, although it is likely that this finding is due to a family-wise error. Multiple regression resulted in a set of three predictors explaining 9% of the variance of sexual health screening practice index scores. The mSABS score, years of practice experience and the amount of time (in minutes) spent with gynecologic patients significantly predicted screening practice index score.

CHAPTER FIVE: DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS

Introduction

This study examined the attitudes and beliefs of certified nurse-midwives (CNMs) about sexuality and the sexual health screening practices of CNMs. Chapter 5 summarizes the findings of the study and discusses conclusions drawn from the data as well as relating the findings to the existing literature. Implications for nurse-midwifery practice and future research recommendations are included.

Summary of Methodology and Findings Related to the Literature

This study was conducted with a descriptive exploratory design. This allowed a description of the sample's distinctiveness as well as showing the relationships between and among variables. Although the study is reflective of those who chose to participate in the survey, the demographics of the sample were consistent with the ACNM organizational member data. The study provides a preliminary understanding of the barriers that may be related to practice behaviors or practice outcomes of CNMs who provide gynecologic health care. The study used a modified version of the Sexuality Attitudes and Beliefs Survey (mSABS) to address barriers to sexual health screening. This instrument was found to be reliable in the study sample. An index score of sexual health screening questions was used to create a score related to the number of screening practices used by practitioners to allow comparisons of practice behaviors at a more global level than the individual items.

There were no significant differences found in mSABS scores between demographic subgroups. This finding supports an early study of student nurse-midwives (Greener &

Reagan, 1986) that found no significant difference between knowledge and attitudes when compared according to age, marital status, or years of nursing experience.

Although nurses 40 years and older have been found to report a greater number of barriers to sexual health screening (Kimet.al., 2001), this study did not find age to have a significant effect on barriers among the sample population. While it is unclear why the findings from this study differ from the findings of the previous study, possible explanations may include the difference in education between nurses (previous study) and nurse-midwives (current study), or the cultural progression that has occurred in the decade since the previous study that may foster greater acceptability about discussion about sexual topics.

A comparative analysis of individual mSABS instrument item scores among demographic subgroups was conducted and revealed one significant finding – stronger agreement by single CNMs than married/partnered or separated/widowed/divorced CNMs related to the instrument item stating “sexuality should be discussed only if initiated by the patient”. Participants who were single were not asked to identify if they were single/in a relationship or single/not in a relationship, therefore assumptions about relational status cannot be made. However, given that there has been no research in this area, one speculation for this finding could be that those who identified as single, and potentially not be in a relationship, may be embarrassed or timid about bringing up this conversation and may see sexuality as private.

All CNMs in the sample screened for at least one component of sexual health in gynecologic appointments. CNMs were more likely to use a general screening question of sexual activity and history of sexually transmitted infections than other components of

screening. These findings support Wimberly's (2006) conclusions that physicians (n=416) were more likely to ask a general question about sexual activity (58%) than they were to ask about specific components of sexual health screening (12-24%). A majority (>50%) of CNMs participants also screened for a history of sexual abuse, sexual orientation or preference, number of sexual partners and sexual dysfunction. CNMs in the study were less likely to address frequency of intercourse, type of sex practices in which the woman engages, or partners' sexual practices as part of their routine gynecologic exam sexual health screening. It is unclear why CNMs in this sample did not address these areas. One possible explanation may be that these areas address personal sexual preferences, however the component related to sexual orientation/preference was addressed by the majority of the sample. Further information is needed to determine why these categories posed difficulty for CNMs.

Age of the CNM, years of CNM practice experience, amount of time spent with the patient and mSABS scores were used as predictors of sexual health screening practices. In this study, three variables (mSABS score (barriers), years of practice experience and the amount of time (in minutes) spent with gynecologic patients) predicted screening practice (as measured by the mSHTS index score). While the mSABS instrument has not been studied in relation to its ability to predict practice behaviors, age, years of practice experience, and lack of time are supported in the literature as having an observed or personally reported effect on actual practice. While no previous studies showed relationships between years of professional experience or actual time spent with patients and screening practice, Maes and Louis (2011) noted an inverse correlation between perceived barriers to sexual health counseling of nurse practitioners and sexual health

screening practices with lack of time as the most significant barrier to screening. Other studies confirm the perception of lack of time as a barrier to screening (Stead et. al., 2003; Macdowall, 2010; Quinnet.al., 2011).

Additional Findings

Factor analysis was completed for the modified Sexuality Attitudes and Beliefs Survey. The ten items on the scale loaded into two factors with modest Cronbach's α findings on each of the two subscales but acceptable Cronbach's overall. The findings of this analysis warrant further exploration, development (addition of items for each factor), and determination of the potential use of these subscales to measure specific constructs or barriers. Further validation of the modified tool may also be useful to support the instrument's use with CNMs and nurse practitioners for identification of barriers, and prediction of screening practice.

Study Limitations

Limitations in Sampling

Although the sample size was comparable to previous related studies, the desired sample size was not met. The research and data collection procedure was dependent on the participation of certified nurse-midwives and a review of sample demographics revealed that the majority of respondents were white, married (or partnered) women with a Master's degree. Although this data is analogous to recent ACNM data, the findings of the study are not generalizable beyond this sample.

Limitations in Measures

Participants may have completed the survey because of an interest in sexual health; therefore they may have been more likely to have consistent practices of sexual health

screening. Due to the nature of the data collection through self-administered survey, individuals may have over or underestimate their practices of sexual health screening or may have answered the attitude and belief related questions in a way that would be seen as socially appropriate or correct. Additionally, the use of a web-based survey may have biased the sample toward a demographic that was more comfortable using the internet.

The SABS instrument was originally created for use with nurses. The current research is the only study in which the SABS instrument has been used with CNMs. The modified survey was found to be reliable in this population, however it is possible that the modifications made created limitations.

Limitations in Data Analysis

Comparative analysis of individual items on the mSABS instrument among demographic subgroups was conducted and one significant finding was noted with a significance of $p=.035$. This finding may be related to a family-wise error, as the significance level was set at $p<.05$, leaving a 5% possibility of Type I error. Had the significance level of the test been set at more strict level ($p<.01$) none of the analyses would have met criteria for significance. The original significant finding was followed by pairwise comparison and was found to be supported in this follow-up test.

Multiple regression analysis was completed using the predictors of CNM age, years of experience, minutes spent with gynecologic patients and mSABS scores to determine the best set of predictors of sexual health screening index score. Completion of regression analysis assumes low correlations between predictors and high correlation between predictors and criterion. In this study, two predictors (age and years of practice

were strongly correlated ($r=.790$, $p=.000$). All predictors showed small correlations with the criterion ($r<.30$). These limitations were observed in the results of the analyses, in the final variance accounted for by the predictor set in the regression was 9%.

Implications

Implications for practice

Although future studies are needed to address the stability of these findings, the results have potential implications for midwifery practice. The inclusion of sexual health screening is essential to a complete health screening and may lead to findings that will change health outcomes. The findings of this study identified components of sexual health screenings that were problematic for the CNMs in the sample (frequency of intercourse, type of sex practices and sexual practices of partners). Likelihood to screen for types of sexual dysfunction also showed arousal and orgasmic disorder screening to be overlooked by a majority of CNMs. Previous research found that a majority of Swedish women believe that asking about sexuality is natural role of gynecologic providers (Wendt et.al., 2007). CNMs are well-positioned to include such screenings in yearly gynecologic exams. CNMs who find that they have limited time to screen for sexual health and function may find that having the patient complete sexual history forms before seeing the provider may aid in facilitation of such discussions.

Implications for Education and Training

This study found that a majority of CNMs screen for sexual dysfunction. CNMs were most likely to screen for sexual dysfunction related to dyspareunia. While it is important to further validate the results of this study, it is possible that the knowledge gained from these findings can be used to design education trainings on sexual health and function.

Based on the finding from this study, it would appear that these trainings should provide focus on those sexual dysfunction conditions unrelated to pain. It is possible that with greater knowledge about these conditions, CNMs would be willing to ask questions related to desire, arousal and orgasm and provide assistance to women with these disorders. Furthermore, CNMs should be educated about appropriate referrals for women who are found to have sexual risk factors or dysfunction.

Implications for Research

This study is one of a small number of studies of CNMs and sexual health. With these preliminary findings describing barriers and practice behaviors, there appears to be a need for more research focused on these variables. Qualitative research exploring the perceived barriers experienced by CNMs would expound on the reasons for refraining from sexual health screenings. Based on the review of literature and the lack of findings in this research to understand the reason for inadequate screening among CNMs, education research centered on the inclusion of human sexuality in midwifery programs is necessary to understand CNMs' preparation for patient care. Midwifery education programs may be enhanced by including a component or a full course on human sexuality as well as the management of sexual concerns by the CNM. Greater knowledge of sexual physiology and management of risk factors will support ongoing screening by CNMs. Education programs for practicing midwives are also vital to lessen the barriers against screening.

Single CNMs in this study were more likely than other CNMs to believe that the patient rather than the CNM should bring up sexuality. There is a scarcity of research on sexual health screening that is focused on patients and patient desires related to screening.

Studies of patient desires in the area of sexual health screening would be helpful in understanding the perspective of the patient and may provide additional information to those CNMs who hold the belief that patients should, and will, bring up concerns to their health care provider. Studies quantifying the impact of consistent screening on patient outcomes would substantiate the need for early identification and treatment of sexual health concerns.

Conclusions

The relationship between provider and patient is based on the patient's expectation that the CNM is knowledgeable and confident in the area of sexuality. Knowledge of the physiologic connection between physical and sexual health supports the idea that CNMs may be able to improve health outcomes for women through consistent screening of sexual health and function, by implementing the recommendations of national organizations, including those of the ACNM. In order to do so, CNMs need to examine the barriers that prevent them from screening and identify areas of screening that are lacking in their practice.

Overall, this study helps to further the understanding of the barriers to sexual health screening and screening behaviors by CNMs practicing gynecologic care in the United States. This is of importance given that there is little known about the sexual health screening practices of this group of health care providers. Few differences were found between demographic subgroups (education, marital status, location of practice and practice type) on the barriers to screening and screening behaviors. However, the study provides preliminary evidence that CNM attitudes and beliefs (i.e. mSABS score), years of experience as a midwife, and the amount of time spent with gynecologic patients may

be predictors of sexual health screening. Together these findings provide foundational insight into this unique group of health care providers and highlight the need for more research on CNM specific barriers to sexual health screening and study of the psychometric properties of the modified Sexuality Attitudes and Beliefs Survey.

APPENDIX A: INVITATION LETTER

Email Subject Line: Invitation to participate in Sexual Health Screening Practices Survey

Dear ACNM Member:

My name is Sarah Obermeyer. I am a Certified Nurse-Midwife and a member of ACNM. I am also a doctoral candidate at the University of Texas Medical Branch (UTMB) and I am conducting a research project as part of the requirements for a PhD in Nursing from UTMB. I would like to invite you to participate in this study. Solicitation of CNM/CM participants for this research study has been approved by ACNM.

The study is being done to identify the barriers pertaining to sexual health screening practices of CNMs. If you are willing to participate in the research, you will be asked to complete an online survey using Survey Monkey © that is anticipated to take **20 minutes or less** to complete. Participation is anonymous.

To access the survey, please go to: <https://www.surveymonkey.com/s/LQXW2BP>

Although you will not benefit directly from participation in the study, I hope that the information gathered will affect patient care and health by gaining information about sexual health screening practices.

I am happy to answer any questions you may have about the study. You may contact me at saoberme@utmb.edu.

Thank you for your consideration of this project.

With kind regards,

Sarah Obermeyer, MSN, CNM

APPENDIX B: DEMOGRAPHIC DATA

Gender:

- Male
 Female

Age _____

Ethnicity:

- American Indian or Alaska Native
 Asian
 Black or African American
 Native Hawaiian or Pacific Islander
 White
 Hispanic/Latino
 Other (please specify)

Marital status:

- Single
 Married or Partnered
 Separated or Divorced

Years of CNM practice experience _____

Type of midwifery education program:

- Certificate
 Master's Degree
 Doctoral Degree
 International midwifery training

Region in which practice is located:

- West (Alaska, California, Colorado, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington or Wyoming)
 Southwest (Arizona, New Mexico, Oklahoma, or Texas)
 Midwest (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota or Wisconsin)
 Northeast (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, or Vermont)
 Southeast (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia or West Virginia)

Type of practice:

- Private practice (Physician-owned)
 Private practice (Midwife-owned)
 Birth Center
 Home birth practice
 Community Clinic (federally or public funded)
 Hospital/medical center owned practice
 Health Department
 Health maintenance organization
 Military
 Non-profit organization
 Other (please specify)

Average minutes spent with gynecologic patient _____

**APPENDIX C: MODIFIED SEXUALITY ATTITUDES AND BELIEFS
INSTRUMENT (mSABS)**

	Strongly Disagree					Strongly Agree
1. Discussing sexuality is essential to patients' health outcomes	1	2	3	4	5	6
2. I understand how my patients' diseases and treatments might affect their sexuality.	1	2	3	4	5	6
3. I am uncomfortable talking about sexual issues	1	2	3	4	5	6
4. I am more comfortable talking about sexual issues with my patients than are most of the nurse-midwives I work with.	1	2	3	4	5	6
5. I make time to discuss sexual concerns with my patients	1	2	3	4	5	6
6. I feel confident in my ability to address patients' sexual concerns	1	2	3	4	5	6
7. Sexuality is too private to discuss with patients.	1	2	3	4	5	6
8. Giving a patient permission to talk about sexual concerns is a midwifery responsibility.	1	2	3	4	5	6
9. Sexuality should be discussed only if initiated by the patient	1	2	3	4	5	6
10. Patients expect nurse-midwives to ask about their sexual concerns	1	2	3	4	5	6

- Original items 5 & 7 removed
- Reverse coding for items 1, 2, 4, 5, 6, 8, and 10
- "Nurse" has been replaced with "nurse-midwife"

Adapted from: Reynolds, K. & Magnan, M. (2005). Nursing attitudes and beliefs toward human sexuality. *Clinical Nurse Specialist*, 19(5), 255-259.

APPENDIX D: MODIFIED SEXUAL HEALTH SCREENING TOOL (mSHST)

Do you ask about the following topics in GYN Exams?	0=no	1=yes
1. Sexual activity (Is the woman sexually active?)	0	1
2. Number of sexual partners	0	1
3. Frequency of intercourse	0	1
4. Type of sex practices (vaginal, anal, oral)	0	1
5. Partner's sexual practices	0	1
6. Sexual orientation/preferences	0	1
7. Sexual abuse experiences	0	1
8. STD history	0	1
9. Sexual Dysfunction	0	1
Sexual dysfunction: Desire disorders (lack of sexual desire or decreased libido)	0	1
Sexual dysfunction: arousal disorders (lack of sexual arousal or excitement)	0	1
Sexual dysfunction: orgasmic disorders (persistent delay or absence of orgasm following a normal sexual arousal phase)	0	1
Sexual dysfunction: dyspareunia (painful sexual intercourse)	0	1

Total Index score range 0-9, Sexual Dysfunction categories used for descriptive purposes
 Adapted from: Wimberly, Y., Hogben, M., Moore-Ruffin, J., Moore, S. & Fry-Johnson, Y. (2006). Sexual history-taking among primary care physicians. *Journal of the National Medical Association*, 98(12), 1924-1929.

APPENDIX E: SURVEY

CNM Sexual Health Screening

Thank you for your interest in this study!

This survey should take you no more than 20 minutes to complete. The pages that follow include the informed consent that describes the study. No identifying information or signature is required.

Please continue to the next page.

INFORMED CONSENT

The study is being done to identify potential barriers pertaining to sexual health screening practices of CNMs providing gynecologic care in the United States.

Although you will not benefit directly from participation in the study, I hope that the information gathered will affect patient care and health by gaining information about sexual health screening practices.

Participation is anonymous – you will not be asked any identifying information on the survey and no link will be made with your email address. Taking part in the study is your decision.

I am happy to answer any questions you may have about the study. You may contact me at saoberme@utmb.edu or 310-415-7528. If you have any concerns about your rights as a participant in the research, you may contact my project advisor, Dr. Alice Hill at ahill@utmb.edu.

If you would like to participate, please continue to the next question. The survey must be finished in one sitting. You cannot exit the survey and return later to complete it. This is a short survey and should take no more than 20 minutes to complete, however if you must exit during the survey, please do return and take the survey from the beginning - your perspective is valued.

Please continue to the next page to acknowledge your desire to participate in this survey.

***1. I have read and understand the study information. I wish to participate in the study.**

Yes

No

Thank you for considering this study. You have chosen to decline participation.

Warmest regards,
Sarah Obermeyer

CNM Sexual Health Screening

***2. Are you a Certified Nurse-Midwife currently providing gynecologic care in the United States?**

- Yes, I am
- No, I am not

This research is focused on CNMs providing gynecologic care to women in the United States. Thank you for your willingness to participate. Based on your answer to the previous question, your participation is complete.

There are three sections of questions to the survey. Please complete all questions before moving on to the next section. You will not be able to return to a previous page after you have progressed in the survey.

***3. Do you routinely ask about the following topics in gynecologic exams?**

	No	Yes
Sexual activity (Is the woman sexually active?)	<input type="radio"/>	<input type="radio"/>
Number of sexual partners	<input type="radio"/>	<input type="radio"/>
Frequency of Intercourse	<input type="radio"/>	<input type="radio"/>
Type of sex practices (vaginal, anal, oral)	<input type="radio"/>	<input type="radio"/>
Partner's sexual practices	<input type="radio"/>	<input type="radio"/>
Sexual orientation/preferences	<input type="radio"/>	<input type="radio"/>
Sexual abuse experiences	<input type="radio"/>	<input type="radio"/>
Sexually Transmitted Infection (STI) history	<input type="radio"/>	<input type="radio"/>
Sexual dysfunction	<input type="radio"/>	<input type="radio"/>
Specific sexual dysfunction: DESIRE DISORDERS (lack of sexual desire or decreased libido)	<input type="radio"/>	<input type="radio"/>
Specific sexual dysfunction: AROUSAL DISORDERS (lack of sexual arousal or excitement)	<input type="radio"/>	<input type="radio"/>
Specific sexual dysfunction: ORGASMIC DISORDERS (persistent delay or absence of orgasm following a normal sexual arousal phase)	<input type="radio"/>	<input type="radio"/>
Specific sexual dysfunction: DYSPAREUNIA (painful sexual intercourse)	<input type="radio"/>	<input type="radio"/>

CNM Sexual Health Screening

***4. Please rate how strongly you agree to the statements below:**

	1 (Strongly Disagree)	2	3	4	5	6 (Strongly Agree)
Discussing sexuality is essential to patients' health outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand how my patients' diseases and treatments might affect their sexuality.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am uncomfortable talking about sexual issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am more comfortable talking about sexual issues with patients than are most of the CNMs I work with.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I make time to discuss sexual concerns with my patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel confident in my ability to address patients' sexual concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sexuality is too private to discuss with patients.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Giving a patient permission to talk about sexual concerns is a midwifery responsibility.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sexuality should be discussed only if initiated by the patient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patients expect nurse-midwives to ask about their sexual concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***5. What is your gender?**

- Female
 Male

***6. What is your age?**

***7. What is your Ethnicity?**

- American Indian or Alaska Native
 Asian
 Black or African American
 Hispanic/Latino
 Native Hawaiian or Pacific Islander
 White

Other, please specify (if mixed race, please indicate heritage)

CNM Sexual Health Screening

***8. What is your marital status?**

- Single
- Married or Partnered
- Separated, Divorced or Widowed

***9. How many years have you been in practice as a CNM?**

***10. What type of midwifery educational program have you completed?**

- Certificate
- Master's Degree
- Doctoral Degree
- International midwifery training

Other (please specify)

***11. In what region is your practice located?**

- West (Alaska, California, Colorado, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington or Wyoming)
- Southwest (Arizona, New Mexico, Oklahoma, or Texas)
- Midwest (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota or Wisconsin)
- Northeast (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, or Vermont)
- Southeast (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia or West Virginia)

CNM Sexual Health Screening

***12. In what type of practice do you see gynecologic patients?**

- Private practice (Physician-owned)
- Private practice (Midwife-owned)
- Birth Center
- Home birth practice
- Community Clinic (federally or public funded)
- Hospital/medical center owned practice
- Health Department
- Health maintenance organization
- Military
- Non-profit organization

Other (please specify)

***13. Please indicate the average number of minutes you typically spend with a gynecologic patient.**

Thank you so much for taking the time to complete this survey. I appreciate your responses and recognize that with the help of research participants such as you, midwifery practice and patient care can continue to advance.

Warmest regards,

Sarah Obermeyer, CNM

APPENDIX F: ACNM APPROVAL

Kerri D. Schuiling, PhD, CNM, NP-BC, FACNM, FAAN
ACNM
8403 Colesville Road Ste 1550
Silver Spring, MD
January 27, 2013

Sarah A. Obermeyer, M.S.N., C.N.M, N.P.
2431 Merton Ave
Los Angeles, California 90041
310.415.7528
sobermeyer@apu.edu

Dear Ms. Obermeyer:

We have received your correspondence about your research study: "*Certified Nurse-Midwives Barrier Toward Sexual Health Screening Practices*" and your request to access ACNM members for their participation in the study. Thank you for forwarding the pertinent documents to the ACNM office. The purpose in requesting these documents for the ACNM files is to ensure that the rights of ACNM members as research participants will be adequately safeguarded and that surveys sent to ACNM members are pertinent to the midwifery profession and practice.

I have received and reviewed all of the required documents and am pleased to let you know that your request is approved. **The general statement that ACNM *requires* you to use in your letter to CNMs/CMs or solicitation ads/fliers is: "Solicitation of CNM/CM participants for this study has been approved by ACNM".**

Also included with this approval to access ACNM members is a document titled: *Rights of ACNM Members as Research Subjects* and contact information for our Director of Membership Services, George Hamilton. His email is ghamilton@acnm.org. George will assist you in setting up the email notification to members that you will use to send our members the link to your survey.

Good luck with your study! We look forward to reading about the results of your study.

Sincerely,



Kerri D. Schuiling, PhD, CNM, NP-BC, FACNM, FAAN
Sr. Staff Researcher
ACNM

BIBLIOGRAPHY

- ACNM (American College of Nursing Midwives). (2012). Core Competencies for Basic Midwifery Practice. Retrieved March 23, 2012, from <http://www.midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/000000000050/Core%20Comptencies%20Dec%202012.pdf>
- ACNM (American College of Nursing Midwives). (2010). Our Credentials. Retrieved from <http://www.midwife.org/Our-Credentials>.
- ACNM (American College of Nursing Midwives). (2011). Standards for Practice of Midwifery. Retrieved March 23, 2012, from http://www.midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/000000000051/Standards_for_Practice_of_Midwifery_Sept_2011.pdf
- ACOG (American Congress of Obstetrics and Gynecologists). (2012). Well-woman care: Assessments & recommendations. Retrieved April 1, 2013, from <http://www.acog.org/~media/Departments/Annual%20Womens%20Health%20Care/PrimaryAndPreventiveCare.pdf?dmc=1&ts=20130407T0127045690>
- Andrews, S. (1988). Coping with the sexual health interview. *Journal of Nurse-Midwifery*, 33(6), 269-273.
- Bartlik, B., Rosenfeld, S. & Beaton, C. (2005). Assessment of sexual functioning: Sexual history taking for health care practitioners. *Epilepsy and Behavior*, 7(2005), S15-S21. doi: 10.1016/j.yebeh.2005.08.027
- Berman, L., Berman, J., Fedler, S., Pollets, D, Chhabra, S., Miles, M. & Powell, J. (2003). Seeking help for sexual function complaints: what gynecologists need to

- know about the female patients' experience. *Reproductive Endocrinology*, 79(3), 572-576. doi: 10.1016/S0015-0282(02)04695-2
- Bluespruce, J., Dodge, W., Grothaus, L., Wheeler, K., Rebolledo, V., Carey, J., McAfee, T. & Thompson, R. (2001). HIV prevention in primary care: Impact of clinical intervention. *AIDS Patient Care*, 15(5), 243-235.
- CDC (Center for Disease Control) (2013). HIV among women. Retrieved from <http://www.cdc.gov/hiv/topics/women/pdf/women.pdf>
- Dahir, M. (2011). A sexual medicine health care model and nurse practitioner role. *Urologic Nursing*, 31(6), 359-362.
- Dillman, D., Smyth, J. & Christian, L. (2008). *Internet, mail, and mixed-mode surveys: the tailored design method*. Hoboken, NJ: John Wiley & Sons.
- Finer, L. & Zoina, M. (2011). Unintended pregnancy in the United States: Incidence and disparities, 2006. *Contraception*, 84(5), 478-485. doi: 10.1016/j.contraception.2011.07.013.
- Gott, M., Galena, E., Hinchliff, S. & Elford, H. (2004). "Opening a can of worms": GP and practice nurse barriers to talking about sexual health in primary care. *Family Practice*, 21(5), 528-536. doi: 10.1093/fampra/cmh509
- Gott, M. & Hinchliff, S. (2003). Barriers to seeking treatment for sexual problems in primary care: a qualitative study with older people. *Family Practice*, 20(6), 690-695. doi: 10.1093/fampra/cm612
- Greener, D. & Reagan, P. (1986). Sexuality: Knowledge and attitudes of student nurse-midwives. *Journal of Nurse-Midwifery*, 31(1), 30-37.

- Hayter, M. (1996). Is non-judgmental care possible in the context of nurses' attitudes to patients' sexuality. *Journal of Advanced Nursing*, 24, 662-666.
- Jaarsma, T., Stromberg, A., Fridlund, B., DeGeest, S., Martensson, J., Moons, P., Norekval, T. M., Smith, K. & Thompson, D. R. (2010). Sexual counseling of cardiac patients: Nurses' perception of practice, responsibility and confidence. *European Journal of Cardiovascular Nursing*, 9 (2010), 24-29. doi: 10.1016/j.ejcnurse.2009.11.003
- Kim, S., Kang, H. & Kim, J. (2011). A sexual health care attitude scale for nurses: Development and psychometric evaluation. *International Journal of Nursing Studies*, 48, 1522-1532. doi: 10.1016/j.jnurstu.2011.06.008
- Kingsberg, S. (2004). Just ask! Talking to patients about sexual functioning. *Sexuality, Reproduction and Menopause*, 2(4), 199-203.
- Kingsberg, S. (2006). Taking a sexual history. *Obstetrics and Gynecology Clinics of North America*, 33, 535-547. doi:10.1016/j.ogc.2006.09.002
- Laumann, E., Paik, A. & Rosen, R. (1999). Sexual dysfunction in the United States: Prevalence and Predictors. *Journal of the American Medical Association*, 281(6), 537-544.
- Longworth, J. C. D. (1997). Sexual Assessment and Counseling in Primary Care. *Nurse Practitioner Forum*, 8(4), 166-171.
- Lewis, S & Bor, R. (1994). Nurses' knowledge of and attitudes toward sexuality and the relationship of these with nursing practice. *Journal of Advanced Nursing*, 20, 251-259.

- Macdowall, W., Parker, R., Nanchahal, K., Ford, C., Lowbury, R., Robinson, A., Sherrard, J., Martins, H., Fasey, N. & Wellings, K. (2010). 'Talking of Sex': Developing and piloting a sexual health communication tool for use in primary care. *Patient Education and Counseling*, 81, 332-337.
doi:10.1016/j.pec.2010.10.027
- Maes, C. & Louis, M. (2011). Nurse practitioners' sexual history-taking practices with adults 50 and older. *The Journal for Nurse Practitioners*, 7(3), 216-222.
- Magnan, M. & Norris, D. (2006). Nursing students' perceptions of barriers to addressing patient sexuality concerns. *Journal of Nursing Education*, 47(6), 260-269.
- Magnan., M & Reynolds, K. (2006). Barriers to addressing patient sexuality concerns across five areas of specialization. *Clinical Nurse Specialist*, 20(6), 285-292.
- Marwick, C. (1999). Survey says patients expect little physician help on sex. *Journal of the American Medical Association*, 281(23), 2173.
- McKelvey, R. Webb, J., Baldassar, L., Robinson, S. & Riley, G. (1999). Sex knowledge and sexual attitudes among medical and nursing students. *Australian and New Zealand Journal of Psychiatry*, 33, 260-266.
- Miller, W. & Lief, H. (1979). The sex knowledge and attitude test (SKAT). *Journal of Sex & Marital Therapy*, 5(3), 282-287.
- Moreira, E., Brock, G., Galsser, D., Nicolosi, A., Laumann, E., Paik, A., Wang, T., & Gingell, C. (2005). Help-seeking behavior for sexual problems: the Global Study of Sexual Attitudes and Behaviors. *International Journal of Clinical Practice*, 59(1), 6-16. doi: 10.1111/j.1368-5031.2004.00382.x

- Murtagh, J. (2010). Female sexual function, dysfunction and pregnancy: Implications for practice. *Journal of Midwifery and Women's Health*, 55(5), 438-446. doi: 10.1016/j.jmwh.2009.12.006
- Nusbaum, M. & Hamilton, C. (2002). The proactive sexual health history. *American Family Physician*, 66(9).
- Owusu-edusi, K., Chesson, H., Gift, T., Tao, G., Mahajan, R., Ocfemia, M. & Kent, C. (2013). The estimated direct medical cost of selected sexually transmitted infections in the United States, 2008. *Sexually Transmitted Diseases*, 40(3), 197-201.
- Payne, T. (1976). Sexuality of nurses correlations of knowledge attitudes and behaviors. *Nursing Research*, 25(4), 286-292.
- Peate, I. (1997). Taking a sexual health history: The role of the practice nurse. *British Journal of Nursing*, 6(17), 978-983.
- Peck, S. A. (2001). The importance of the sexual health history in the primary care setting. *Journal of Obstetric, Gynecologic and Neonatal Nursing*, 30(3), 269-274.
- Quinn, C., Happell, B. & Browne, G. (2011). Talking or avoiding? Mental health nurses' views about discussing sexual health with consumers. *International Journal of Mental Health Nursing*, 20, 21-28. doi: 10.1111/j.1447-0349.2010.00705.x
- Reynolds, K. & Magnan, M. (2005). Nursing attitudes and beliefs toward human sexuality. *Clinical Nurse Specialist*, 19(5), 255-259.
- Sarkadi, A & Rosenqvist, U. (2001). Contraindications in the medical encounter: female sexual dysfunction in primary care contacts. *Family Practice*, 18(2), 161-166.

- Satterwhite, C., Torrone, E., Meites, E., Dunne, E., Mahajan, R., Ocfemia, M., Su, J., Xu, F. & Weinstock, H. (2013). Sexually transmitted infections among US women and men: Prevalence and incidence estimates, 2008. *Sexually Transmitted Diseases*, 40(3), 187-193.
- Schuiling, K., Sipe, T. & Fullerton, J. (2010). Findings from the analysis of the American College of Nurse-Midwives' Membership surveys: 2006-2008. *Journal of Midwifery & Women's Health*, 55, 299-307. doi:10.1016/jmwh.2010.03.011
- Schuiling, K. & Likis, F. (2011). *Women's Gynecologic Health*. Burlington, MA: Jones & Bartlett Learning.
- Sinha, A. & Palep-Singh, M. (2007). Taking a sexual history. *Obstetrics, Gynaecology and Reproductive Medicine*, 18(2), 49-50.
- Skelton, J. & Matthews, P. (2001). Teaching sexual history taking to health care professionals in primary care. *Medical Education*, 35, 603-608.
- Solursh, D., Ernst, J., Lewis, R., Prisant, M., Mills, T., Solursh, L, Jarvis, R. & Salazar, W. (2003). The human sexuality education of physicians in North American medical schools. *International Journal of Impotence Research*, 15(Suppl 5), S41-S45.
- Stead, M., Brown, J., Fallowfield, L. & Selby, P. (2003). Lack of communication between healthcare professions and women with ovarian cancer about sexual issues. *British Journal of Cancer*, 88, 666-671. doi: 10.1038/sj.bjc.6600799
- Temple-Smith, M., Mulvey, G. & Keogh, L. (1999). Attitudes to taking a sexual history in general practice in Victoria, Australia. *Sexuality Transmitted Infections*, 75, 41-44.

- Varney, H., Kriebs, J. & Gegor, C. (2003). *Varney's midwifery* (4th ed.) Massachusetts: Jones & Bartlett Learning.
- Webb, C. & Askham, J. (1987). Nurses' knowledge and attitudes about sexuality in health care – a review of the literature. *Nurse Education Today*, 7, 75-87.
- Wendt, E., Hildingh, C., Lidell, E., Westerstahl, A., Baigi, A. & Marklund, B. (2007). Young women's sexual health and their views on dialogue with health professionals. *Acta Obstetriciaet.Gynecologica*, 86, 590-595. doi: 10.1080/00016340701214035
- Wendt, E., Marklund, B., Lidell, E., Hildingh, C. & Westerstahl, A. (2011). Possibilities for dialogue on sexuality and sexual abuse – midwives' and clinicians' experiences. *Midwifery*, 27, 539-546. doi: 10.1016/j.midw.2010.05.001
- Wimberly, Y., Hogben, M., Moore-Ruffin, J., Moore, S. & Fry-Johnson, Y. (2006). Sexual history-taking among primary care physicians. *Journal of the National Medical Association*, 98(12), 1924-1929.
- World Health Organization (2006). *Defining sexual health: Report of a technical consultation on sexual health*. Retrieved from http://www.who.int/reproductivehealth/publications/sexual_health/defining_sexual_health.pdf
- Youngkin, E., Davis, M., Schadewald, D. & Juve, C. (2012). *Women's Health: A primary care clinical guide* (4th ed.). New Jersey: Prentice Hall.

VITA

Sarah Anne Obermeyer was born in Grand Haven, Michigan, the daughter of Jon Ames Obermeyer and Anne Catherine Obermeyer. Raised in Michigan, she attended various elementary schools and graduated from Herbert Henry Down memorial High School in 1994. Sarah earned her Bachelor of Science in Nursing (B.S.N.) at Hope College in Holland, Michigan in 1998. In 2005 after working as a registered nurse in obstetrics, she earned a Master's of Science in Nursing (M.S.N.) with a certification as a nurse-midwife and women's health nurse practitioner from Frontier University. While working as a full-scope nurse-midwife, Sarah began teaching at Azusa Pacific University in the B.S.N. and M.S.N. programs. She continued to work as an educator and midwife.

Sarah is a member of the American College of Nurse-Midwives and the Association of Women's Health, Obstetric and Neonatal Nurses.

Education

B.S.N. May, 1998, Hope College, Holland, Michigan

M.S.N. January, 2005, Frontier University, Hyden, Kentucky

Ph.D. August 2013, University of Texas Medical Branch, Galveston, Texas

Summary of Dissertation

Sexuality and sexual health are important components of general health screenings. Reports of sexual health screening practices are limited to physicians, nurses and nurse practitioners. No research exists to describe sexual health screening practices of certified nurse-midwives (CNMs), a group of advanced practice registered nurses with specialized training in women's health, including gynecologic and primary care. The purpose of this study was to determine sexual health screening practices of certified nurse-midwives (CNMs), CNM barriers to addressing sexuality, and the predictors of their screening behaviors.

A descriptive, exploratory design was used to explore relationships between and among the main variables: attitudes and beliefs (barriers), demographic variables (gender, age, ethnicity, marital status, years in practice, type of education program, region where practice occurs, type of practice and average length of appointment) and sexual health screening practices. Data were obtained through web-based electronic surveys of a sample of 278 CNM members of the American College of Nurse-Midwives.

Factor analysis on the modified Sexuality Attitudes and Beliefs Survey (mSABS) identified two subscales reflecting CNM comfort and confidence related to sexual health and identification of the role of midwife and patient in sexual health. Few differences were found between demographic subgroups (education, marital status, location of practice and practice type) on the barriers to screening and screening behaviors. The mSABS score, years of practice experience and the amount of time (in minutes) spent with gynecologic patients significantly predicted screening practice index score.

This study provides preliminary evidence that CNM attitudes and beliefs (i.e. mSABS score), more years of experience as a midwife, and more time spent with gynecologic patients may be predictors of sexual health screening. Additionally, foundational information was gathered about the practices of sexual health screening by CNMs.