A Comparison Study; Sexuality in Women with Insulin-Dependent Diabetes Mellitus and in Women Without Chronic Illness

Beth Eubank

Follow this and additional works at: https://athenacommons.muw.edu/msn-projects

Part of the Nursing Commons

Recommended Citation

This Thesis is brought to you for free and open access by the MSN Research at ATHENA COMMONS. It has been accepted for inclusion in MSN Research Projects by an authorized administrator of ATHENA COMMONS. For more information, please contact acpowers@muw.edu.
A COMPARISON STUDY: SEXUALITY IN WOMEN WITH
INSULIN-DEPENDENT DIABETES MELLITUS
AND IN WOMEN WITHOUT CHRONIC ILLNESS

by

BETH EUBANK

A Thesis
Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Science in Nursing
in the Division of Nursing
Mississippi University for Women

COLUMBUS, MISSISSIPPI
August 1996
A Comparison Study: Sexuality in Women with Insulin-Dependent Diabetes Mellitus and in Women Without Chronic Illness

by

Beth Eubank

[Signatures]

Instructor of Nursing
Director of Thesis

[Signature]
Professor of Nursing
Member of Committee

[Signature]
Assistant Professor of Nursing
Member of Committee

[Signature]
Director of the Graduate School
Abstract

The relationship between chronic illness and sexuality has long been recognized, and diabetes mellitus is a chronic illness affecting 16 million individuals in the United States. The purpose of this descriptive comparative study was to explore sexuality in the insulin-dependent diabetic female. The research hypothesis that guided the study was there is no difference in perceived sexuality for women with insulin-dependent diabetes and women without chronic illness. The sample consisted of 30 females between the ages of 21 and 40 years who had not experienced surgical menopause and were clients in primary care clinics in the Mississippi Delta. Fifteen of the participants were females with a self-reported diagnosis of insulin-dependent diabetes mellitus. The remaining 15 participants were females without a self-reported medical diagnosis of any chronic illness. The Derogatis Sexual Functioning Questionnaire was utilized to compare sexual functioning between the two groups. Descriptive statistics and z scores were utilized to analyze the data. The findings of this study indicated that a difference does exist in the sexual functioning of females with insulin-dependent diabetes mellitus and females without any chronic illness.
Implications for the advanced practice nurse in the primary care setting includes the incorporation of sexual assessment as a requisite facet of a holistic assessment with every individual but particularly in the insulin-dependent diabetic female.
Acknowledgements

I would like to express my appreciation to many who have provided the much needed support and encouragement throughout the past year.

I would like to thank my family. My husband graciously endured and lovingly supported me during the last 12 months. Also, my beautiful daughter who was so patient when I was not able to spend a substantial amount of time with her. I will never be able to express my gratitude to my mother and father. During the last year they have donated endless days of baby-sitting, many words of encouragement, and lots of love. Thank you for all of your support. I love you both.

I would like to express my appreciation to my research committee, Lorraine Hamm, Chairperson, Dr. Mary P. Curtis, and Suzanne Bennett. Lorraine, I can never express my gratitude to you. Whenever asked for assistance, you were always eager to assist. When offering constructive criticism, you were ever gracious and kind. Thank you for your support and guidance.

To Dr. Curtis, I would like to express my appreciation for your much needed wisdom. Suzanne, thank you for your kind spirit when providing direction.
Many thanks to Tammy Brown, Terri Massey-Hays, and Janice Sherdon for assisting in accessing the research population for this study. I would never have completed this project without your assistance.
Table of Contents

Abstract ............................................... iii
Acknowledgements ...................................... v
List of Tables ........................................ ix

Chapter

I. The Research Problem ............................. 1

Introduction to the Problem .................. 2
Significance to Nursing ...................... 4
   Nursing practice ......................... 4
   Nursing education ...................... 5
   Nursing theory .......................... 5
   Nursing research ...................... 6
Conceputal Framework ....................... 6
Assumptions ................................... 8
Purpose of the Study .......................... 9
Statement of the Problem .................... 9
Research Hypothesis ......................... 10
Definition of Terms .......................... 10
Summary .......................................... 11

II. Review of the Literature ...................... 12

III. The Method ..................................... 35

Design of the Study ............................. 35
Research Hypothesis ........................... 36
Setting, Population, and Sample ............. 36
Methods of Data Collection ................... 38
   Procedures ................................ 38
   Instrumentation ........................ 39
Data Analysis ................................... 43
Summary .......................................... 43

IV. The Findings ................................... 44

Description of the Sample ..................... 44
Results of Data Analysis ..................... 47
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limitations</td>
<td>48</td>
</tr>
<tr>
<td>Summary</td>
<td>48</td>
</tr>
<tr>
<td>V. The Outcomes</td>
<td>49</td>
</tr>
<tr>
<td>Summary of Significant Findings</td>
<td>49</td>
</tr>
<tr>
<td>Discussion</td>
<td>51</td>
</tr>
<tr>
<td>Conclusions</td>
<td>53</td>
</tr>
<tr>
<td>Implications for Nursing</td>
<td>54</td>
</tr>
<tr>
<td>Recommendations</td>
<td>56</td>
</tr>
<tr>
<td>Research</td>
<td>56</td>
</tr>
<tr>
<td>Nursing</td>
<td>56</td>
</tr>
<tr>
<td>References</td>
<td>58</td>
</tr>
</tbody>
</table>

Appendix

A. Approval of Mississippi University for Women's Committee on Use of Human Subjects in Experimentation 61

B. Agency Consent Form 63

C. Informed Consent 65

D. Demographic Data 67

E. Demographic Data (Insulin-Dependent Diabetics) 69
List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demographic Characteristics of the Sample</td>
<td>45</td>
</tr>
<tr>
<td>2. Demographic Characteristics of the Insulin-Dependent Diabetic Group</td>
<td>46</td>
</tr>
<tr>
<td>3. Differences in Sexuality in the Insulin-Dependent Diabetic Female and the Female Without Chronic Illness</td>
<td>47</td>
</tr>
</tbody>
</table>
Chapter I
The Research Problem

Diabetes mellitus has been identified as a major chronic illness affecting adults in the United States. According to Eastman (1995), "approximately 16 million individuals with diabetes mellitus reside in the United States, and of this 16 million, half have not been diagnosed" (p. 24). Diabetes mellitus has been a contributing factor in 7% of all deaths in the United States, and the financial burden of diabetes and related complications was projected to exceed $92 billion a year (Eastman, 1995).

Chronic illnesses, such as diabetes, have been recognized as constant factors that penetrate all aspects of human functioning (Massie, 1981). One of the essential components of personhood that has been thought to be affected was the sexuality of the individual with chronic illness. Human sexuality has been viewed as an integral dimension of the personhood of every individual and is composed of biologic, psychologic, and sociocultural facets that interrelate to permit the individual to experience self as masculine or feminine, to seek and give affection, and to meet basic needs for love and belonging.
(Hogan, 1985). Daniluk (1991) reports that sexuality is fundamental to a woman's identity, and the psychological, interpersonal, social, cultural, and spiritual aspects of a woman's sexuality are as important as the biological elements. Dunning (1992) related that sexuality has been considered a vital ingredient of a person's essence, and sexuality has been influenced both positively and negatively by new experiences. One experience that has been recognized as an influence on an individual's sexuality was diabetes mellitus. Since little research has been done on the psychologic aspects of sexuality as being affected by diabetes mellitus, the focus of this study was to explore sexuality in the insulin-dependent diabetic female.

Introduction to the Problem

The relationship between chronic illness and sexuality has been recognized for a number of years. Unsain and Goodwin (1982) proposed that chronic illness affected gender and sexual identity. Moreover, Anderson and Wolf (1986) reported that chronic illness threatened one's basic sense of integrity as a sexual person. Diabetes mellitus was a chronic illness Anderson and Wolfe (1986) referred to as impacting sexual identity by threatening personal control over body functions, intimacy, and generativity.
Callaghan and Williams (1994) related that diabetes mellitus impacted every aspect of an individual including sexuality. Loss of spontaneity and uncertainty were factors identified by diabetic individuals as the most significant repercussions of diabetes mellitus. When discussing loss of spontaneity, diabetics related the excessive preparations required for everyday living. Uncertainty was related to the threat of long-term complications, the risk of becoming a burden on family, the hazard of having children with diabetes mellitus, and the peril of everyday symptomatic uncertainty (Callaghan & Williams, 1994).

Dunning (1992) reported that the development of sexual dysfunction in diabetic males has been well documented, but the contribution of diabetes to sexual dysfunction in females had not been established. Much of the data concerning diabetic females was based on the information established about sexuality in diabetic males. Moreover, Young and Bailey (1989) related that information remained insufficient for a thorough comprehension of the impact of diabetes on sexual functioning in the female.

According to Schover (1992), preliminary research concerning the effects of diabetes on sexuality in women had left fundamental questions unanswered. The effect diabetes mellitus had on vaginal lubrication, sexual desire, and ability to achieve orgasm had not been
entirely established. Although pelvic autonomic neuropathy occurs in the female diabetic, Slob, Koster, Radder, Van Der Werff Ten Bosch (1990) reported that authorities were unsure if this neuropathy affected sexuality in the female.

Few studies have sought to address sexuality in the diabetic female. The purpose of the current study was to compare sexuality in the insulin-dependent female and the sexuality of the female without chronic illness.

Significance to Nursing

The current study of sexuality in diabetic females has special significance for the family nurse practitioner. The findings have implications concerning nursing practice, nursing education, nursing theory, and nursing research.

Nursing practice. The implications for the nurse practitioner in the primary setting are infinite. Nurses are often uncomfortable in assessing sexual health, and evaluation of sexual health is rarely incorporated into the nursing assessment (LeMone, 1995). Sexual assessment is an appropriate nursing action which furnishes a data base on which to make diagnoses and enables the nurse to develop a plan for education, counseling, or referral. In light of this information, the inclusion of a sexual assessment should be a requisite facet of a holistic assessment with every individual.
Although sexual assessments and interventions are significant in every client, particular attention to the assessment of sexuality in the insulin-dependent diabetic female should be the required standard. This study sought to establish that psychological aspects of sexuality were impacted by diabetes mellitus and to explore how nursing practice can be changed with this information. Considering the findings of the study, not only should sexual assessments be a customary aspect of the female insulin-dependent diabetics' care, but sex education which includes psychological aspects as well as physiological elements should be a constituent of the nurse practitioners' regimen with these individuals.

**Nursing education.** This comparison of sexuality in insulin-dependent diabetic females and females without chronic illness provided new knowledge about the effects of diabetes on sexuality. Nurse educators could use these data to enlighten nursing students of the importance of sexual assessment and sexual health education in the diabetic female client.

**Nursing theory.** This study served to enhance Roy's Adaptation Model as a framework for assessing psychosexual concerns of females with diabetes mellitus. The research study substantiated the value of Roy's theory and justified conducting new research concerning sexuality using Roy's theory.
Nursing research. This comparison of sexuality in the insulin-dependent diabetic female and the female without chronic illness was explored to further determine the implications regarding sexuality in the insulin-dependent diabetic female. Limited research was found on this topic, and this study will add to the body of knowledge about sexuality in the insulin-dependent diabetic client.

Conceptual Framework

Roy's (1984) Adaptation Model served as the theoretical framework for this study. Roy has described the holistic nature of person who has patterns of functioning that are responsive to health problems. A person, the recipient of nursing care, is an adaptive system with coping mechanisms that respond to external and internal stimuli. Adaptation occurs in four modes: physiologic needs, self-concept, role function, and interdependence. Illness ensues when adaptation is ineffective; health ensues when continual adaptation occurs. The goal of nursing is to aid in adapting to changes in physiological needs, self-concept, role function, and interdependence during health and illness.

Roy's modes of adaptation were utilized in this study as a framework for assessing psychosexual aspects of the insulin-dependent diabetic female. According to Roy (1984), one of the factors that precipitates behavior for women with insulin-dependent diabetes is this disease
process causes the individual to make an adaptive response. Initially, the individual adapts via control processes which consist of regulator and cognator subsystems of coping. The regulator subsystem consists of mechanisms which are automatic responses through neural-chemical-endocrine processes. The cognator subsystem of coping consists of mechanisms which require complex processes of perception and information processing, learning, judgment, and emotion. The individual adapts in a second system consisting of four modes: physiological mode, self-concept mode, role performance mode, and interdependence mode. The realization that the individual adapts to insulin-dependent diabetes in all these modes of adaptation is essential to the ultimate goal of nursing, assisting the person in his or her adaptation effort. Adaptation promotes the integrity of the person, which leads to health.

In order to achieve physiological, psychological, and social integrity in response to any stimulus, the four modes listed above are utilized. Nursing facilitates adaptation in the diabetic female by assessing behavior in each of the four adaptive modes and intervening by managing the influencing stimuli. An insulin-dependent diabetic female utilizes the four modes to develop responses concerning her sexuality. The components of sexuality are similar to Roy's modes of adaptation.
Sexuality consists of physiological sexual function which is analogous to the physiological mode of adaptation. These are analogous for obvious reasons. Both allude to the physical mechanisms that sustain life or permit sexual intercourse. Perception of attractiveness is analogous to the self-concept mode of adaptation. Perception of attractiveness is how an individual discerns oneself as appealing or attractive (Dunning, 1992). An individual's self-concept is the combination of beliefs that one holds about oneself at any given time (Roy, 1984). The self image of the gender role is analogous to the role performance mode. Roy (1984) describes role performance as the performance of duties based on given positions in society, which is similar to the gender role of an individual. Since the interdependence mode involves one's relations with significant others and support systems (Roy, 1984), the interdependence role pervades all aspects of human sexuality.

**Assumptions**

The assumptions identified for this study were as follows:

1. Person is a biopsychosocial being in constant interaction with the environment (Roy, 1984).

2. Person responds to the environment through physiologic, self-concept, role function, and interdependence adaptive modes (Roy, 1984).
3. Sexuality is a phenomenon which can be measured.

4. Diabetes mellitus is a major chronic illness in the adult population of the United States which brings about changes in all aspects of an individual's life.

5. Sexuality is a phenomenon of some concern and significance to females.

Purpose of the Study

The purpose of this study was to determine if a difference existed in the sexuality of the insulin-dependent diabetic female and the female without chronic illness. This finding is valuable to nurses in advanced practice who need to plan interventions concerning sexuality for diabetic females and females without chronic illness.

Statement of the Problem

Currently, the effects of insulin-dependent diabetes mellitus on the sexuality in the female with this chronic illness are not established. Numerous questions concerning the sexuality in diabetic women have remained unanswered (Schover, 1992). In addition, the importance placed on physiologic sexual dysfunction has ignored entire areas of personhood (LeMone, 1993). This study addresses the following question: Is there a difference in the sexuality of the insulin-dependent diabetic female and the female without chronic illness?
**Research Hypothesis**

One null hypothesis guided this study: There is no difference in perceived sexuality for women with insulin-dependent diabetes and women without chronic illness.

**Definition of Terms**

For the purpose of the research study, the following terms were defined:

*Sexuality*: the perception of attractiveness to self and others, self-image of the gender role, and perception of physiological sexual function (Dunning, 1992). For the purpose of this study, sexuality was defined operationally as the scores on the Derogatis Sexual Functioning Inventory.

*Women with insulin-dependent diabetes mellitus*: females with a self-reported diagnosis of insulin-dependent diabetes mellitus. For the purpose of this study, these women were defined operationally as females between the ages of 21 and 40 years, had a self-reported medical diagnosis of insulin-dependent diabetes mellitus, had not experienced surgical menopause, and were clients in primary care clinics in the Mississippi Delta.

*Women without chronic illness*: females without a self-reported medical diagnosis of any chronic illness. For the purpose of this study, these women were operationally defined as females between the ages of 21 and 40 years, with no self-reported chronic illness, not
experienced menopause, and were clients in primary care clinics in the Mississippi Delta.

**Summary**

Sexuality should be routinely addressed with the insulin-dependent diabetic female client, but most efforts in addressing sexuality in the diabetic client have been reserved for the male diabetic. The exclusion of information concerning sexuality in the diabetic female has been apparent in the literature.

This chapter sought to establish a relevant research problem and relate its significance to nursing. Roy's (1984) Adaptation Model served as a guide for the research study. Assumptions, purpose of the study, problem statement, research question, and relevant terms were defined and presented in order to clarify key concepts.
Chapter II
Review of the Literature

Having completed a selected review of the literature, the researcher found that sexuality in the insulin-dependent diabetic female has been the focus of a modest number of small studies. In the most recent studies the focus has been on the physiologic components of sexuality while the psychologic components of sexuality have been omitted. This current study explored the psychologic areas of sexuality in addition to the physiologic factors of sexuality.

In a much older study, before the phenomenon was well documented, Ellenberg (1977) recognized that little data on the sexual aspects of the female diabetic existed and evaluated sexuality in the female diabetic by comparing libido and orgasmic response in 100 female diabetic clients using a two-group descriptive design. One group (n = 54) was comprised of diabetic females ranging in age from 20 to 70 years. These female diabetics had been diagnosed with diabetes more than 10 years and had neuropathy. The presence of neuropathy was established by absent deep tendon reflexes and sensory impairment of feet and toes. The control group (n = 46) was similar in age
and duration of diabetes, but these diabetic females did not have clinically demonstrable neuropathy.

The procedure for selection of patients was not directly discussed in the study, but subjects were all chosen from the same medical practice. Both groups were questioned as to their interest in sex, libido, and the presence or absence of orgasmic response. No additional questions were asked of either group.

Ellenberg (1977) found no significant difference in libido or orgasmic response in either group. Specifically, 44 of the 54 subjects with neuropathy and 38 of the 48 subjects without neuropathy answered positively to questions concerning libido and orgasmic response. No additional findings were discussed, and no further conclusions were stated. Ellenberg (1977) concluded that diabetes had little effect on sex performance.

Ellenberg (1977) did suggest that further investigation was indicated to clarify the significance of the observations made in the study. In addition, Ellenberg recommended the development of an objective measurement of female sexual responsiveness. The current study compared two groups, one comprised of diabetic females and a control group of nondiabetic females to further clarify Ellenberg's (1977) findings related to sexual functioning.

Newman and Bertelson (1986) examined sexual dysfunction in diabetic women. Females with
insulin-treated diabetes mellitus (n = 81) were interviewed, and questionnaires were administered. The participants were premenopausal women, ages 18 to 50 years, who reported coital activity during the previous year. The participants were not pregnant and had not had a hysterectomy. Thirty-nine of the subjects were patients who were regularly evaluated and treated for diabetes at clinics of the Washington University Medical Center. Thirty-nine were married, 22 were single, and 20 were formerly married or separated. Educational levels ranged from eighth grade to doctoral degrees. Sixty of the participants were white and 21 were black.

Newman and Bertelson (1986) employed a descriptive comparative design to examine the sexual functioning of the group. Convenience sampling was utilized to recruit subjects. Thirty-three of the participants responded to media announcements in the community and through organizations for diabetics. Nine of the women were referred from health professionals.

Subjects were interviewed in a semistructured format and were classified with sexual dysfunction on the basis of responses to the interview using criteria derived from the Diagnostic and Statistical Manual of Mental Disorders (DSM-III). The Derogatis Sexual Functioning Inventory (DSFI) was used to assess current levels of an individual's sexual functioning. The DSFI encompasses 10
areas: information, experience, drive, attitudes, psychological symptoms, affects, gender-role definition, fantasy, body image, and satisfaction. The Beck Depression Inventory (BDI) was implemented to measure depth of depression. The Marital Adjustment Test (MAT) was used as a global measure of marital and relationship satisfaction. Diabetic complications were evaluated using a standardized symptom checklist from medical charts for patients affiliated with the Washington University Medical Center and by physician reports for other participants.

Each potential subject was contacted by telephone or in person. The women who agreed to be in the study met individually with the examiner. During the interview, the participant signed a consent form, answered questions in a semistructured interview, and completed three standardized questionnaires (DSFI, BDI, and MAT).

Newman and Bertelson (1986) found that 47% of the diabetic women experienced sexual dysfunction. Among these women, 50% had one sexual problem, 18.4% reported two sexual problems, 23.7% reported three sexual problems, and 7.9% reported four sexual problems. Sexual difficulties recounted were inhibited sexual excitement, inhibited sexual desire, dyspareunia, and inhibited orgasm. A one-way multivariate analysis of variance was used to compare women with and without sexual dysfunction on the standardized psychological measures (BDI, DSFI, and MAT).
The two groups differed on scores for the dependent psychological measures. One-way univariate analyses revealed significant differences between the two groups on scores for the BDI and the following subscales of the DSFI: Psychological Symptoms, Gender Role Definition, and Satisfaction.

Newman and Bertelson (1986) discovered that women with sexual dysfunction were more depressed, were more stereotyped in their sex-role definitions, reported more severe psychological symptoms, and were less satisfied in their sexual relationships than women with normal sexual function. Analysis using the chi-square statistic revealed that diabetic women with sexual dysfunction did not differ from those with normal sexual function in frequency of peripheral or autonomic neuropathy. Women with sexual dysfunction had a significantly higher frequency or recurrent urinary tract infections than women with normal sexual function. One-way ANOVAs revealed no significant differences between women with and women without sexual dysfunction in duration of diabetes, age of diabetic onset, or insulin dose. Glycosylated hemoglobin values were available for only 22 women with sexual dysfunction and 25 women without sexual dysfunction. Results of a one-way ANOVA revealed no significant differences between women with and without sexual dysfunction in degree of
recent metabolic control, as indexed by glycosylated hemoglobin levels.

Newman and Bertelson (1986) concluded that the majority of the women in this study reported sexual problems. More specifically, diabetes affected the excitement of sexual function in these women as evidenced by the rate of inhibited sexual excitement reported by these diabetic women. The researchers concluded that diabetes may be associated with dyspareunia which may be related to high frequency of inadequate vaginal lubrication and the significantly higher frequency of urinary tract infections. The researchers did not find a high incidence of orgasmic dysfunction or inhibited sexual desire in these diabetic women. The investigators did reveal psychological differences between female diabetics with and without sexual dysfunction. Diabetic women with sexual dysfunction experienced significantly more symptoms of depression. In addition, diabetic females in the study were significantly less androgenous in their gender-role definitions than diabetic women with normal sexual function. The sexual dysfunction group was significantly more dissatisfied with their sexual relationships than the nondysfunctional group. Neuropathy was not deducted to affect sexual functioning.

One recommendation for further study was to utilize record keeping, partner interviews, and assessment of
vascular changes in the vagina during sleep as methods of measurement of sexual functioning. Newman and Bertelson (1986) recommended that future studies examine the etiology of specific types of sexual problems through longitudinal designs.

The current study utilized a diabetic group and a control group of nondiabetic women. Newman and Bertelson's (1986) study was similar to the current study in that psychological aspects of sexual functioning were taken into consideration.

Slob, Koster, Radder, and Van Der Werff Ten Bosch (1990) explored the subjective and objective responses of diabetic females to visual erotic stimulation in the laboratory setting. Females diagnosed with Type I diabetes (n = 24) for more than one year who were premenopausal, not pregnant, and not lactating comprised one group. Additionally, these subjects had no other disease affecting sexual functioning. The diabetic group was self-selected from a diabetes outpatient clinic and through an advertisement in a diabetic publication. The control group was nondiabetic women (n = 10) recruited from among friends and acquaintances of the researchers.

The researchers chose a quasi-experimental design to investigate the psychophysiological responses of the women to erotic visual stimulation. The individuals in both groups were initially interviewed by an investigator in
order to obtain personal and medical history. A thermistor clip was given to the subject along with the questionnaires. Instructions concerning completing the questionnaires were given at this time. Blood was drawn for glucose estimation, and when the investigator left the room, the subject attached the thermistor-clip to the base of the widest portion of the right labium minus. The investigator then returned to the room and established correct position of the thermistor-clip. Sexual activity inventory and moods scale were completed, temperature readings obtained, and video films begun.

The sexual activity inventory dealt with the quantitative and qualitative aspects of sexual relationships, solitary and social sexual activities, dyspareunia and orgasm. This inventory was 32 questions in length. The moods scale consisted of 10 items to be described as "positive," "negative," or "indistinct." The film series included a neutral film followed by an erotic film. After the erotic film, the sexual arousal and feelings list was completed. The sexual and feelings questionnaire explored perceived sexual arousal, genital and extragenital physiological responses, and psychological emotional feelings following the erotic film. The session was completed with a short debriefing, and the blood glucoses were repeated.
Slob et al. (1990) found no significant difference ($p < .05$) in the scores for positive mood. Although blood glucose measurements were significantly higher in the diabetic group ($p < .01$). Blood glucose values did not change significantly in either group during testing ($p < .01$). No significant change in labial temperature was noted during the erotic video in 8 diabetic or 8 nondiabetic women. Subjective responses were not significantly different. Although a positive correlation between body temperature and sexual arousal was found in the nondiabetic group ($p = .01$), no significant difference between body temperature and sexual arousal was found in the diabetic group. Thus, researchers concluded that Type I diabetic women experienced similar subjective responses to erotic videos comparable to nondiabetic women. Objective genital arousal was lower in the diabetic group. Sexual activity did not vary significantly in the two groups, and neither sexual nor urogenital problems were statistically significant.

Results of the study by Slob et al. (1990) suggest that clients must be viewed as beings comprised of diverse components which create a holistic person. Humans are sexual beings and the sexual aspects of each individual must be addressed. Also, the findings imply that diabetic women must be recognized as being a population at risk for sexual dysfunction. The nurse practitioner must be
prepared to offer helpful interventions or informed referrals. While Slob et al. (1990) accentuated the physiologic aspect of sexuality, the current study addressed not only the physiologic portion of sexuality, but investigated the effects that insulin-dependent diabetes mellitus has on the psychological components of sexuality.

In order to explore sexuality in the diabetic female LeMone (1993) directed a recent qualitative study. LeMone (1993) utilized Caucasian subjects (n = 11), 6 men and 5 women, who resided in a rural area of the midwestern portion of the United States. Subjects ranged in age from 27 to 70 years who had been diagnosed as insulin-dependent diabetics as adults from 1 to 28 years. Convenience sampling was employed to gain this sample.

Audiotaped interviews varying in length from 30 minutes to 1 hour were performed. Initially questions were more general questions, and the interviewer ended with more specific questions concerning sexuality. This facilitated data collection by eliciting generous amounts of information. After the first interview, data analysis provided guidance for future data collection. When data from the initial interview were transcribed and coded, more focused questions were developed for subsequent interviews. Initially, data were organized by open coding, but as data were compared, categories were revealed. Axial
coding was utilized to show connections between categories.

A core category, transforming, emerged from the data analysis. Transforming described the changes in sexuality experienced by adults with insulin-dependent diabetes. A subcategory of transforming identified was valuing self. Several conditions affected valuing self. These were accepting self as diabetic, feeling different and experiencing loss, and maintaining control. Another subcategory of transforming was meeting intimacy needs. The conditions affecting meeting intimacy needs were experiencing a change in sexual function and maintaining the relationship.

LeMone (1993) concluded that the insulin-dependent diabetic men and women experienced changes in sexuality based on the manner in which they valued themselves as sexual beings and the manner in which they met intimacy needs in their relationships. These changes in sexuality were described by transforming, and transforming is expedited by valuing self and meeting intimacy needs. LeMone (1993) recommended further study using the findings of this study as a base of additional theory development about sexuality in the adult insulin-dependent diabetic female. LeMone suggested that insulin-dependent diabetics from different ethnic and socioeconomic backgrounds be included. Also, studies concerning adults diagnosed as
children or adolescents could be the focus of a research study. The effects of other chronic illnesses on sexuality was also a suggestion for further study. In accordance with the recommendations of LeMone (1993), this current study utilized a sample largely composed of African American women to expand LeMone's findings by including this ethnic group.

Young and Bailey (1989) examined and compared the dyadic relationships and sexual functioning concerns of diabetic and nondiabetic women. The participants in the diabetic group were members of a county diabetic association group, and the nondiabetic group was comprised of members from two women's community organizations. The diabetic group had 30 members, and the nondiabetic group had 30 members. The sample ranged in age from 18 to 70 years. All of the women were involved in dyadic relationship, and most of these relationships were over 20 years in length. The diabetic group was comprised of noninsulin-dependent and insulin-dependent diabetic women.

A descriptive comparative design was utilized to compare the sexual functioning of the two groups. Convenience sampling was employed to enlist participants in the study. The diabetic group (n = 30) was accessed by mailing questionnaires to female members of a local diabetic association. The nondiabetic group (n = 30) was accessed by mailing questionnaires to two local women's
organizations. In order to strengthen analysis, the returns from the nondiabetic women were matched with the 30 questionnaires from the diabetic respondents for age, race, and marital status. Thus, a matched sample of 30 diabetic and 30 nondiabetic women was used for statistical analysis.

Instrumentation incorporated two different scales. Spanier's Dyadic Adjustment Scale (DAS) and Koch's Sexual Functioning Concerns Scale (KSFCS). The DAS measured adjustment in dyadic relationships, including marriage. This questionnaire consisted of 32 items designed to measure dyadic satisfaction, cohesion, consensus, and affectional expression. The second measurement instrument (KSFCS) measured both the frequency and impact of 20 different sexual functioning concerns that may occur when relating with a sexual partner. In addition, respondents completed questions eliciting background information and health status during the past 3 months. Diabetic respondents were further asked to complete questions on the effects and management of their diabetes, duration of diabetes, type of diabetes, and level of control of diabetes, as well as the presence of any of the symptoms of diabetic complications.

Young and Bailey (1989) found that scores of dyadic consensus, affectional expression, dyadic cohesion, and dyadic satisfaction were not significantly different for
the diabetic women compared with the nondiabetic women. In addition, diabetic women experienced more and were bothered more by performance anxiety than nondiabetic women. Fifty percent of the diabetic women experienced performance anxiety more than 50% of the time. Only 19.2% of nondiabetic women described feeling anxious about their sexual performance this frequently. Finally, Young and Bailey (1989) found no statistical significant difference between the sexual functioning concerns and dyadic adjustment in diabetic and nondiabetic women.

As a result of the findings, Young and Bailey (1989) concluded that sexual and marital factors operate independently since no significant relationship was found between either group's overall sexual concern scores and dyadic adjustment scores. Moreover, the affectional aspect of the relationship was significantly negatively related to overall sexual concern for the nondiabetic women. Finally, the finding that diabetic and nondiabetic women have similar dyadic adjustments, even though they may experience differing frequency and impact of specific sexual functioning concerns, may be an indication that these middle-aged women have learned to work through sexual concerns in such a way as to avoid dyadic discord in their long-term relationship. One recommendation for further study included examining the methods used by diabetic women for coping with sexual functioning
concerns. Another recommendation for further study entailed comparing the sexual functioning of diabetic women, nondiabetic women, and women with another chronic illness. Considering Young and Bailey's (1989) final recommendation for further study, the current study examined the sexual functioning of diabetic women and women without chronic illness. In the current study, a younger population was utilized.

Watts (1995) employed a descriptive comparative design to determine the difference in levels of sexual functioning in diabetic and nondiabetic African American women. In addition the researcher examined relationships between levels of sexual function with relevant biochemical and clinical indices. The sample of diabetic women were women between the ages of 22 and 60 years, sexually active within the previous 3-month period, and free of severe complications. Severe complications were further delineated as amputation, blindness, or end-stage renal disease. Nondiabetic women were subjects without any chronic illness or medication usage which interfered with sexual functioning.

Convenience sampling was employed to recruit subjects (N = 72). African American (n = 39) women from a diabetic outpatient clinic in a tertiary care facility in an urban community were referred by nurses, nurse practitioners, or physicians. A comparison group (n = 33) of nondiabetic
individuals employed in the hospital was utilized. This group was solicited by the principal investigator. The two groups were similar in race, marital status, and age.

A researcher-designed instrument, the Watts Sexual Functioning Questionnaire, and various clinical measures were used to evaluate sexual function. The Watts Sexual Functioning Questionnaire consisted of 17 items that assessed the major components of sexual function and contained four scales that evaluated perceptions of sexual desire, arousal, orgasm, and satisfaction. A 5-point Likert scale was employed with responses varying from always to never, and the possible range of scores was 17 to 85. The questionnaire was administered during a routine clinic visit for the diabetic group. The researcher administered the questionnaire to the nondiabetic group at varying times. The other clinical measures previously mentioned (body mass index and hemoglobin A1c) were extracted from the chart. Hemoglobin A1c was measured by chromatography and was used as an indicator of long-term glycemic control. Body mass index was calculated as weight in kilograms divided by one half of the height in meters.

Watts (1995) found control subjects reported higher levels of total sexual function and higher levels of sexual desire than the diabetic group. As diabetic subject's age increased, sexual desire, orgasm, satisfaction, and total sexual function decreased. For the
nondiabetic group, this inverse relationship was only true between age and arousal. For the diabetic group, only one relationship was determined \( p < .03 \) between the body mass index and sexual satisfaction. In addition, hypertensive diabetics using medications for blood pressure control did not differ in sexual function from diabetics without hypertension. Finally, insulin-dependent diabetics reported lower levels of sexual function than noninsulin-dependent diabetics.

Watts (1995) concluded that diabetic African American women reported lower levels of sexual desire than nondiabetic African American women. Also, relationships between psychometric measures of sexual function with biophysical and clinical indices were not found to be significant. Finally, the aging diabetic woman may be more susceptible to sexual difficulty than her nondiabetic counterpart. Furthermore, recommendations were made to conduct further study to compare sexual function to insulin-dependent diabetic and noninsulin-dependent diabetics. Watts (1995) study is germane to the current study as both included physiologic and psychologic components of sexuality, as well as a comparison between diabetics and nondiabetics.

In contrast to the studies previously reviewed, Schreiner-Engel, Schiavi, Vietorisz, and Smith (1985) sought to compare differences in psychosexual and
interpersonal dimensions of sexuality in diabetic and nondiabetic women. The subjects (N = 100) in the diabetic female group (n = 50) were between the ages of 22 and 57 and had been diagnosed with Type I or Type II diabetes for at least one year and no other major medical illness other than diabetes. The individuals in the control group (n = 50) were matched for age, ethnic background, occupation, and duration of relationship with a sexual partner. Subjects of both groups had to be living with a sexual partner and not pregnant.

Convenience sampling was utilized to enroll the diabetic females from the Mount Sinai Diabetic Outpatient Clinic. The control group was a convenience sample taken from a gynecology clinic.

Psychological aspects of sexual behavior were gathered using the DSFI. The DSFI is a multidimensional questionnaire that provides a comprehensive assessment of cognitive and psychological variables known to influence sexual functioning. The DSFI provides data on 10 primary sexual domains: Information, Experience, Drive, Attitudes, Symptoms, Affect, Gender Role, Fantasy Themes, Body Image, and Sexual Satisfaction. The DSFI has two global scores which give summary indices of the individual's level of sexual functioning and satisfaction with her sexual relationship. In addition, dyadic factors were evaluated by the Lock-Wallace Marital Inventory (L-W) which measures
marital adjustment and satisfaction. The L-W furnishes information on the accommodation of spouses to each other on resolving or avoiding conflict, feelings of satisfaction with the marriage and with the partner, sharing of interests and activities, and fulfilling marital expectations. Finally, sexual behavior was assessed by an extensive semistructured Interview Schedule (IS). The IS elicits information about the nature and frequency of sexual experiences, sexual relationships, sexual satisfaction, and perceived partner attitudes. During a 2½-hour session with each subject, a female psychologist or female doctoral students obtained informed consent, administered the two standardized inventories, and conducted the semistructured interview.

Although no significant difference was found between diabetics and controls in age, race, religion, occupation, or type and duration of relationship with a sexual partner, educational level was significantly different (p < .02). Schreiner-Engel et al. (1985) found no significant difference in gynecological histories for the two groups. The diabetic group consistently had lower scores than the nondiabetic group on the DSFI. The diabetic group had significantly less varied sexual experiences (p < .03) and significantly less sexual drive (p < .05). The diabetic subjects used fewer positions for intercourse and engaged in less oral or anal stimulation.
Also, no significant differences existed in information about sex, sexual attitudes, psychopathology, affect, fantasy themes, body image, and sexual satisfaction. Overall, the diabetic group had a significantly lower global level of sexual functioning ($p < .006$) and scored more than one standard deviation below the normative mean on this global scale of the DSFI.

In addition, when examining the results of the L-W Inventory, the diabetic women reported significantly less marital adjustment and satisfaction than the nondiabetic group. Diabetic women engaged in significantly fewer leisure time activities with their sexual partners ($p < .02$) and reported greater disagreement in preferred leisure time activities than nondiabetic subjects ($p < .03$). The overall degree of happiness and the frequency of masturbation or intercourse experienced by diabetic and nondiabetic women in their relationships were not significantly different. Diabetic women were found to have less desire for sexual intercourse than controls and to be more distressed by a lack of desire. The diabetic group differed in whom they preferred to initiate sexual activity. Diabetic individuals preferred the initiation to be equal while control subjects preferred partner initiation. The diabetic women engaged in shorter foreplay than the controls and tended to lubricate less during foreplay. Of the women who had sexual experience before
the onset of diabetes, 47% reported no change in lubrication after diabetes developed, 47% reported lessening of lubrication after development of diabetes, and 6% reported an increase in lubrication since onset of diabetes. No differences were found between diabetic and control women in their reported degree of subjective arousal during coitus. No differences in ability to orgasm during masturbation, coitus, oral, or manual stimulation were found between groups.

Schreiner-Engel et al. (1985) concluded that diabetes had a nonspecific effect on a wide range of psychosexual and interpersonal factors but did not overtly impair the physiological mechanisms mediating sexual response in subjects. Also, the researchers concluded that diabetic women consistently responded with lower scores on the DSFI and the L-W compared to the nondiabetic subjects which resulted in significantly lower levels of sexual functioning and less satisfaction with their relationships. Moreover, sexual desire was concluded to be significantly lower among the diabetic women which was exhibited by scores on subscales of the DSFI and by subsections of the IS. This lack of desire had a small, but insignificant, impact on their frequency of coitus and no effect upon the couple's satisfaction with their sexual activities. The female diabetics had relatively little impairment in their sexual responses as demonstrated by a
lack of significant difference on the IS in sexual arousal, adequacy of vaginal lubrication for coitus, orgasmic capacity, frequency of masturbation, and satisfaction with sexual activities and relationships.

Although Schreiner-Engel et al. (1985) focused on the psychological as well as physiological dimensions of sexuality, the current study did not assess dyadic factors in relation to sexuality. Participants in the current study were not limited to females in long-term relationships, but included all young diabetic women. The DSFI was also utilized in the current study.

In summary, considering the paucity of data concerning the effects of insulin-dependent diabetes on the physiologic and psychologic components of sexuality, the current study included both of these viewpoints. Ellenberg (1977) utilized two groups of diabetic females. The current study employed a control group of nondiabetic females in order to determine if a difference existed in the sexuality of the two groups. Schreiner-Engel et al. (1985) incorporated both physiological and psychological dimensions of sexuality into their study, but stimulated a long-term relationship as criteria for entering the study. The current study did not inspect the dyadic factors in relation to sexuality. Also, the review of the literature mandated this investigation utilizing a predominantly female African American sample. Slob et al. (1990) and
LeMone (1993) employed Caucasian subjects. The current study utilized predominantly African American female subjects. Through the differences, the current researcher sought to bridge these gaps in the existing literature. Therefore, the comparison of sexuality in women with insulin-dependent diabetes mellitus and women without chronic illness emerged as the focus of the study.
Chapter III
The Method

The nurse practitioner has been impeded in educating the diabetic female concerning sexuality because of a lack of empirical evidence concerning the effects of diabetes mellitus on sexuality in the female diabetic. The purpose of this study was to determine if a difference existed in the sexuality of the insulin-dependent diabetic female and the female without chronic illness. In this chapter, the methods utilized to examine the phenomena of interest will be described.

Design of the Study

A descriptive, comparative design was employed to establish whether or not a difference existed in the sexuality of the insulin-dependent diabetic female and the female without a medical diagnosis of any chronic illness. Since the intention of the study was to describe the relationship between sexuality and insulin-dependent diabetes, a descriptive design was utilized because descriptive research has the purpose of observing, describing, and documenting phenomena. The comparative design was employed because comparison studies provide a
framework for interpreting the findings (Polit & Hungler, 1995).

Research Hypothesis

One null hypothesis guided this study: There is no difference in perceived sexuality for women with insulin-dependent diabetes and women without chronic illness.

Setting, Population, and Sample

The setting for the study was the Mississippi Delta. The Mississippi Delta includes Bolivar, Coahoma, Desoto, Humphreys, Isaquena, Leflore, Panola, Quitman, Sharkey, Sunflower, Tallahatchie, Tate, Tunica, and Washington counties (Cox, 1995). The Mississippi Delta is an alluvial flood plane which provides the geography for the economical backbone of the region, agriculture. Approximately 50% of persons 25 years of age and older have a high school education in the Mississippi Delta, and approximately 10% of persons 25 years of age and older have a bachelor's degree in the Mississippi Delta. In Bolivar County, the largest county in the Mississippi Delta, approximately 35.4% of the population is considered below poverty level, and in Tunica County, approximately 50.5% of the population is considered below the poverty level (Mississippi Institute of Higher Learning, 1993).

Clinics of primary care physicians and nurse practitioners were utilized to procure participants. These
clinics were located in various parts of the Mississippi Delta. Belzoni, Cleveland, Greenville, Hollandale, and Leland are towns in the Mississippi Delta where the clinics are located that were utilized in this study. The clinics were chosen based on convenience for the researcher. These clinics have nurse practitioners and family practice physicians as the health care providers.

The incidence of diabetes mellitus in Mississippi is estimated at 164,000 with 82,000 remaining undiagnosed. Members of the black population are 60% more likely to have diagnosed diabetes than white Mississippians. In addition, approximately 1,600 Mississippians die each year as a result of complications of diabetes mellitus (Centers for Disease Control, 1994). The population for the current study was all females in the Mississippi Delta between the ages of 21 and 40 years who had not experienced surgical menopause and who had either insulin-dependent diabetes or no history of chronic illness.

A convenience sample from the primary care clinics in the Mississippi Delta was obtained from all insulin-dependent diabetic females and all females without chronic illness. The participants fulfilled criteria for participation as delineated in the definition of the insulin-dependent diabetic female and the female without chronic illness. The physicians and nursing personnel in these clinics made recommendations for participants based
on the criteria described in the definitions of both groups. A total of 30 participants, 15 individuals in each group, was obtained by this method.

Methods of Data Collection

**Procedures.** Permission to conduct the study was obtained from Mississippi University for Women Committee on Use of Human Subjects in Experimentation (see Appendix A). Telephone calls and personal visits to various nurse practitioners and physicians in the Mississippi Delta clinics were made to obtain initial consent for involvement in this research study concerning sexuality. Clinic staff members were acquainted with the research study, and lists were compiled of prospective individuals for the insulin-dependent diabetic female group for the study. When the clients deemed appropriate for the study for the insulin-dependent diabetic group were chosen, the next appointment date for each client in the various clinics was ascertained. Written consent from the physician or nurse practitioner (see Appendix B) was obtained at the appointment date for each individual. During the routine appointment date for the insulin-dependent diabetic female, the study was explained to the patient and the option of participation was offered to the patient. Each participant was assured confidentiality. Oral and written consent was obtained (see Appendix C). Before the questionnaire was administered, the subject was
instructed on the sexually explicit nature of the questionnaire and was instructed to omit any material she found to be personally offensive. In addition, the woman was reassured that withdrawing from the study was possible any time during the testing period. The woman was reassured that participation in the study would in no way affect the care she received in the clinic. Data were collected after the appointment with the health care provider. An empty examination room was utilized as the site for data collection. Demographic forms (see Appendices D and E) appropriate to the client and the group in which the individual belonged to were administered. The Derogatis Sexual Functioning Inventory was then administered. The researcher remained in close proximity in the room that was used for data collection, but privacy was maintained. In order to access a group for comparison, females who visited the clinic and had no chronic illness were approached for participation in this study. The same procedures for data collection were followed for the control group as for the insulin-dependent diabetic female clients.

Instrumentation. The instrument utilized for measuring sexuality in this study was the Derogatis Sexual Functioning Inventory (DSFI). In addition, the researcher-developed demographic data questionnaires were administered with the DSFI. The demographic tools were
different for each group. The demographic data tool for the nondiabetic group included questions about age, educational level, current medications, surgical menopause, significant others, and issues that affect sexuality. The demographic data tool for the insulin-dependent diabetic group included questions about age, educational level, duration of diabetes, duration of insulin treatment, current medications, surgical menopause, frequency of bladder infections, frequency of yeast infections, significant others, and issues that affect sexuality.

The DSFI, developed by Leonard R. Derogatis in 1975, was a self-report inventory designed to measure the quality of the current sexual functioning of an individual. The DSFI was comprised of 10 substantive dimensions that are judged to reflect the principal components of sexual behavior. The 10 subtests were Information, Experience, Drive, Attitude, Psychological Symptoms, Affects, Gender Role Definition, Fantasy, Body Image, and Sexual Satisfaction. Section I, the Information section, assessed general information concerning sexual functioning. This section was composed of 26 dichotomous items requiring the respondent to answer "true" or "false." Section II, the Experience section, was composed of 24 sexual behaviors ranging from very fundamental behaviors to various forms of sexual intercourse and
oral-genital activities. The respondents indicated with a mark under the "Yes" or "No" column dependent upon having had the sexual experience or not having had the sexual experience. Another column directed the respondent to indicate with a check mark (✓) if they had the experience in the last 60 days. Section III, the Drive section, consisted of four sexual activities, and the subjects indicated by using a 5-choice rating scale that originated at a frequency of "not at all" and terminated at "4 or more/day." This section also included three questions that required the subject to respond with a specific number. Section IV, the Attitude section, was a Likert scale composed of 30 declarative statements concerning several sexual behaviors. Section V, the Psychological Symptoms section, contained 53 multiple-choice questions concerning certain complaints or problems experienced by some individuals. The respondents indicated on a 4-point Likert scale to what degree these conditions affected them. Section VI, the Affects section, was similar to Section V because 40 multiple-choice questions were utilized to determine if the respondents had experienced certain feelings or emotions in the past 2 weeks. Section VII, the Gender Role Definition section, employed a 4-point Likert scale that allowed the subjects to indicate to what degree each of the 30 personality characteristics described their own personality. Section VIII, the Fantasy section,
required the respondent to indicate with a check mark (✓) if they had encountered any of 20 sexual ideas or fantasies. Section IX, the Body Image section, had another numbered scale with which the individual signified how they viewed their bodies. Section X, the sexual satisfaction section, had 10 statements concerning Sexual Satisfaction which the subject responded true or false. This section was composed of a rating scale which indicated how satisfying the current sexual relationship was for the individual. The questionnaire required approximately 30 minutes for each subject to complete.

The DSFI had 10 separate scores which contributed to a total global score termed the Sexual Functioning Index. The global score quantified the individual's level of sexual functioning and satisfaction with her sexual relationship.

Published studies by both the author of the scale and numerous other investigators suggest the DSFI was highly reliable and a valid measure of the construct of sexual functioning. Reported internal consistency reliability coefficients based on N = 325 between .60 and .97 and test-retest coefficients across a 14-day interval ranging predominantly from the high .70s to low .90s. Over 48 published studies currently exist using the DSFI as a measure of functional discrimination and outcomes in a broad variety of medical treatment populations. These
studies have shown the DSFI to have been highly sensitive to naturally occurring and disease-induced interference with sexual functioning, as well as positive treatment effects. The questionnaire was available and purchased through Clinical Psychometric Research, Inc.

Data Analysis

In order to analyze the data, $z$ scores were employed. This method of data analysis was utilized because $z$ scores were the fundamental strategy for testing differences in groups of means (Polit & Hungler, 1995). Descriptive statistics were utilized to examine the information gained in the demographic data tools because descriptive statistics are used to describe and summarize data (Polit & Hungler, 1995).

Summary

This chapter sought to describe the method used to determine the difference in the sexuality of insulin-dependent diabetic females and the sexuality in women without chronic illness. The research method, including sampling techniques, data collection, and data analysis were presented. The research design, variables, and instruments were discussed.
Chapter IV
The Findings

The purpose of this study was to compare the sexuality of females with insulin-dependent diabetes mellitus and females without chronic illness. In this chapter, a description of the participants is presented followed by results of the data analysis related to the research question.

Description of the Sample

The population included all female health care recipients in primary care clinics located in the Mississippi Delta who had not experienced surgical menopause and were aged 21 to 40 years. Interview contacts were made with 55 individuals. Of these, 5 were too old to participate, 5 were too young to participate, 8 had experienced surgical menopause, and 7 did not wish to participate. The remaining sample consisted of 30 females who met the criteria and were willing to participate.

The control group \( (n = 15) \) was comprised of females without self-reported chronic illness, and the research group \( (n = 15) \) consisted of females with a self-reported diagnosis of insulin-dependent diabetes mellitus. The mean age of the diabetic group was 34.4 years, and the mean age
of the control group was 28.40 years. The average number of years of education for the diabetic group was 12.33 years, and the average number of years of education for the control group was 12.73 years. Detailed demographic characteristics of the sample may be seen in Table 1.

Table 1

Demographic Characteristics of the Sample

| Characteristic       | Research Group |  | Control Group |    |
|----------------------|----------------|--------------------------|----------------|
|                      | f  | %       | f  | %       |
| Age (years)          |    |         |    |         |
| 21-25                | 1  | 6.7     | 5  | 33.3    |
| 26-30                | 3  | 20.0    | 4  | 26.7    |
| 31-35                | 3  | 20.0    | 5  | 33.3    |
| 36-40                | 8  | 53.3    | 1  | 6.7     |
| Education            |    |         |    |         |
| 0-10 years           | 1  | 6.7     | 0  | 0.0     |
| 11-12 years          | 9  | 60.0    | 11 | 73.3    |
| 13-16 years          | 5  | 33.3    | 4  | 26.7    |
| Significant other    |    |         |    |         |
| Yes                  | 15 | 100.0   | 15 | 100.0   |
| No                   | 0  | 0.0     | 0  | 0.0     |
| Other sexuality issues|   |         |    |         |
| Yes                  | 0  | 0.0     | 0  | 0.0     |
| No                   | 15 | 100.0   | 15 | 100.0   |
Additional information was obtained from the diabetic group. This additional information can be seen in Table 2.

Table 2

Demographic Characteristics of the Insulin-Dependent Diabetic Group

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of time of diagnosis of insulin-dependent diabetes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-4 years</td>
<td>4</td>
<td>26.7</td>
</tr>
<tr>
<td>5-12 years</td>
<td>3</td>
<td>20.1</td>
</tr>
<tr>
<td>13-18 years</td>
<td>2</td>
<td>13.4</td>
</tr>
<tr>
<td>19-25 years</td>
<td>6</td>
<td>40.0</td>
</tr>
<tr>
<td>Length of insulin usage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-4 years</td>
<td>4</td>
<td>26.7</td>
</tr>
<tr>
<td>5-12 years</td>
<td>3</td>
<td>20.1</td>
</tr>
<tr>
<td>13-18 years</td>
<td>2</td>
<td>13.4</td>
</tr>
<tr>
<td>19-25 years</td>
<td>6</td>
<td>40.0</td>
</tr>
<tr>
<td>Frequent urinary tract infections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
<td>6.7</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>93.3</td>
</tr>
<tr>
<td>Frequent yeast infection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
<td>6.7</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>93.3</td>
</tr>
</tbody>
</table>
Results of Data Analysis

The Derogatis Sexual Function Indexes of the participants in the two groups were compared. The level of sexual functioning is considered to be higher as the numerical value of the Derogatis Sexual Functioning Index rises. The mean scores of the research and control group can be seen in Table 3.

Table 3

Differences in Sexuality in the Insulin-Dependent Diabetic Female and the Female Without Chronic Illness

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulin-dependent</td>
<td>25.07</td>
<td>12.66</td>
</tr>
<tr>
<td>No chronic illness</td>
<td>37.07</td>
<td>9.57</td>
</tr>
</tbody>
</table>

The null hypothesis which guided this study was there is no difference in perceived sexuality for women with insulin-dependent diabetes mellitus and women without chronic illness. Females in the insulin-dependent diabetic group scored significantly lower on the DSFI than the females without chronic illness, \( z(28) = 2.93, p = .007 \). Therefore, the researcher rejected the null hypothesis. The author of the DSFI indicated that individual subtest scores for Affect could be analyzed independent of the total score, but the researcher chose not to extrapolate these scores for this study.
Limitations

A limitation in the current research study could have been that the small sample size was not representative of the females with insulin-dependent diabetes mellitus. In addition, the method of measurement may not have accurately measured sexuality in this sample. Alternate methods of measurement of sexuality in addition to self-report methods could be used with the diabetic female. Methods such as record keeping, partner interviews, and assessment of vascular changes in the vagina could be utilized.

Summary

This chapter included a description of the participants in this study which sought to determine if a difference in sexuality existed in insulin-dependent diabetic females and in females without chronic illness. The results of data analysis were included, and the findings of the data analysis relevant to the research hypothesis were also presented. In addition, limitations were addressed. In Chapter V, the conclusions extracted from the findings will be discussed.
Chapter V
The Outcomes

Diabetes mellitus has long been considered a chronic illness which affects sexuality in males, but few research studies concerning sexuality in diabetic women have been conducted. For years, research conclusions pertaining to sexuality in the diabetic male have been applied to the management of the female diabetic. This incongruency fostered this descriptive comparative study which explored sexuality in the insulin-dependent diabetic female. Roy's (1984) Adaptation Model served as the theoretical framework. The null hypothesis that guided the study was there is no difference in perceived sexuality for women with insulin-dependent diabetes mellitus and women without chronic illness. Data were analyzed using \( z \) scores and descriptive statistics.

This chapter includes a discussion of the findings of the study. The conclusion, implications, and recommendations which emerged from the findings also are presented.

Summary of Significant Findings

The Derogatis Sexual Functioning Inventory (DSFI) was administered to 30 health care recipients in primary care
clinics in the Mississippi Delta. Of the participants, 15 were females without self-reported chronic illness, and 15 were females with self-reported diagnosis of insulin-dependent diabetes mellitus. The mean age of the insulin-dependent diabetic group was 34.5 years, and the mean age of the females without chronic illness was 28.4 years. Sixty-three percent of the sample had completed high school, and 16% had completed 2 years of college.

The insulin-dependent diabetic group had been diagnosed with diabetes for a mean of 13 years. The mean length of time for usage of insulin also was 13 years. One individual (6.7%) in the insulin-dependent diabetic group reported having had frequent yeast infections. Another individual (6.7%) in the insulin-dependent diabetic group reported having had frequent urinary tract infections.

All of the participants currently had a significant other. None of the participants revealed other issues which they believed affected their sexuality.

The mean score on the DSFI in the group of females without chronic illness was 37.07. The mean score on the DSFI in the group of females with insulin-dependent diabetes mellitus was 25.07. Since a significantly lower score emerged for the sexuality of the insulin-dependent diabetic females when compared to the females without chronic illness ($p = .007$), the researcher rejected the null hypothesis.
Discussion

The researcher determined that the effects of insulin-dependent diabetes mellitus in females are profound as the participants perceived their sexuality at lower levels as measured by the DSFI. A study in which the DSFI also was utilized (Schreiner-Engel et al., 1985) established that a diabetic group consistently had lower sexual functioning scores than a nondiabetic group. Also, LeMone (1993) reported that the insulin-dependent diabetic experienced changes in sexuality. Additionally, Watts (1995) found that control subjects reported higher levels of total sexual function and sexual desire than a diabetic group. Further, Newman and Bertelson (1986) concluded that the majority of diabetic women in their study reported sexual problems. These findings of LeMone (1993), Newman and Bertelson (1986), Schreiner-Engel (1985), and Watts (1995) support the findings of the current researcher.

Conversely, researchers who have evaluated areas related to sexuality found diabetic women's responses to be comparable to nondiabetic females. Slob et al. (1990) found no significant difference in sexual arousal between a group of diabetic women and nondiabetic women. Furthermore, Young and Bailey (1989) found that scores of dyadic consensus, affectional expression, dyadic cohesion, and dyadic satisfaction were not significantly different for diabetic women when compared with nondiabetic women.
In the current study, age may have effected the results as the insulin-dependent diabetic females were significantly older than the females without chronic illness \( (p = .005) \). This researcher postulates that a woman's self-concept or sexual perception may impact negatively and positively by physical changes as she ages.

Another possible explanation for the findings could be the duration of the diabetes. Forty percent of the females in the insulin-dependent diabetic group had been diagnosed with diabetes mellitus for at least 19 years. The vascular changes associated with diabetes mellitus which alter physiological sexual function could have affected the way these women perceive their sexuality so that they may have been less aroused or physically responsive to sexual notions.

While interviewing prospective subjects, the researcher noted that the insulin-dependent diabetic females displayed a less accepting disposition and were more hesitant about participating than the females without chronic illness. The researcher further noted that the insulin-dependent diabetic females had a more depressed affect as compared with the control group. The researcher surmised that this impression may be attributed to the depressed socioeconomic environment associated with the Mississippi Delta. Although the Affect Balance Scale scores were not extrapolated in this current study,
Schreiner-Engel et al. (1985) found no significant difference between diabetics and nondiabetics in the area of affect.

Perhaps the current diabetic sample was impacted by continuously adjusting to demands of a chronic illness. The female insulin-dependent diabetic's sexuality may not have modified or may not have adapted through Roy's (1980) four modes which would account for the lower scores on the DSFI.

Additionally, the small sample may not have been representative of the population. Although the DSFI has been utilized repeatedly in diabetic women, the utilization of the DSFI may not have accurately measured sexuality in these diabetic women. Alternative methods of measuring sexuality could be utilized, such as partner interviews, record keeping, and measurement of vascular changes in the vagina.

**Conclusions**

This researcher concluded that women with insulin-dependent diabetes mellitus had significantly lower perceived sexuality than women with no chronic illness. This determination was supported by researchers with similar results (LeMone, 1993; Newman & Bertelson, 1986; Schreiner-Engel, 1985; Watts, 1995). Additionally, the researcher concluded that the women with insulin-dependent
diabetes mellitus were significantly older than the females without chronic illness.

**Implications for Nursing**

A number of complications for the nurse practitioner in the primary care setting were derived from this study. Implications were suggested for practice, research, theory, and education.

The nurse practitioner must be aware of the more inclusive nature of sexuality. Genital sex is strongly emphasized in the present society. This is merely one representation of our attraction for, our drive to know, and our way of relating to each other. Clearly, sexuality encompasses psychological, interpersonal, social, cultural, and spiritual aspects which for women are as important as the biological facets.

The inclusion of sexual assessments in all clients should be a requisite facet of a holistic assessment with every individual. In light of the results of the current study, the sexual assessment would be of particular importance in the insulin-dependent diabetic female.

Another implication for the nurse practitioner in the primary care setting would be the significance of sex education in all clients with special concern for the insulin-dependent diabetic female. The sex education should include psychological aspects as well as physiological elements of sexual functioning.
Nurses in advanced practice must be informed about the importance of sexuality in their clients. In order for the advanced practitioner to be effective in primary practice, he or she must understand the significance sexuality plays in the life of all individuals. Developing therapeutic relationships that allows for exchange of issues pertaining to sexuality is an initial strategy to improve assistance to clients with sexual concerns.

The results of the current study have implications for nursing research. Limited research was found regarding sexuality in the diabetic female. Therefore, additional research is needed to gain valuable insight in the sexuality of the female with diabetes mellitus.

Research tests and validates nursing theory. Roy's (1984) Adaptation Model should be tested in future studies to supplement the base of knowledge about issues concerning sexuality. The goal of the advanced practice nurse in primary care is to recognize maladaptive responses and the stimuli which generate these responses in order to assist individuals to adapt in ways which result in higher levels of wellness.

The current study has implications for nursing education. Nurse educators could use the findings of the study to enlighten nursing students on the importance of sexual assessments and sexual health education in all clients, especially in the diabetic female clients.
Defining sexuality, performing sexual assessments, developing plans of care for clients with sexual concerns, and evaluating those plans of care must be included in all basic nursing education, as well as advanced practice nursing education. Sexuality is germane to all aspects of nursing care.

Recommendations

Based on the findings of this study, the following recommendations are made:

Research

1. Replication of the study with a larger sample.
2. Utilization of alternate methods of measuring sexuality.
3. Comparison of the Affects Balance Subtest of the DSFI in future studies with diabetic women and women without chronic illness.
4. Utilization of a qualitative study dealing with diabetic women in order to further explore the psychological impact of this disease process on sexuality in females.

Nursing

1. Publication of the findings of this research study and other research studies examining sexuality in the insulin-dependent diabetic female.
2. Incorporation of curricula in schools of nursing that address the issue of sexuality.
3. Inclusion of sexual assessments as a requisite facet of a physical examination.

4. Inclusion of sex education as a routine component of client education.
REFERENCES
References


APPENDIX A

APPROVAL OF MISSISSIPPI UNIVERSITY FOR WOMEN
COMMITTEE ON USE OF HUMAN SUBJECTS
IN EXPERIMENTATION
March 5, 1996

Ms. Beth Eubank  
c/o Graduate Program in Nursing  
Campus

Dear Ms. Eubank:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed research provided the following requirements are met:

a) The facility and/or physician must consent.

b) The study should be limited to persons age 21 or older and if not, appropriate consents must be obtained.

I wish you much success in your research.

Sincerely,

Susan Kupisch  
Vice President  
for Academic Affairs

SK:wr

cc: Mr. Jim Davidson  
    Dr. Mary Pat Curtis

Where Excellence is a Tradition
APPENDIX B

AGENCY CONSENT FORM
Agency Consent Form

I have been asked to allow Beth Eubank to enlist some of my clients in a research study concerning sexuality. I understand that this involves the client completing a questionnaire that will require approximately 30 minutes. Also, I understand that the client's confidentiality will be preserved.

Your cooperation will be most appreciated.

I have read the above statement, and I agree to allow my clients to be approached for this study.

Signed:_________________________________________________________

Date:___________________________________________________________
Informed Consent

I have been asked to participate in a study concerning my sexuality. This study requires completion of a questionnaire. My participation in this study is voluntary. All the information I give is completely confidential, and my name will not be on the questionnaire or the results. I understand there are no risks involved, and participation will in no way affect the care I receive. I may withdraw from the study at any time before completion of the questionnaire.

Your cooperation would be most appreciated.

I have read the above statements. I understand that this study will not interfere with the care I receive at this facility.

_____ Yes, I will participate.

Signed:______________________________________________

Date:______________________________________________

If you have any questions regarding this study, please contact:

Beth Eubank
253 Avondale Road
Lamont, MS 38703
(601) 335-8489
APPENDIX D
DEMOGRAPHIC DATA
Demographic Data

1. Age:________

2. What level of education did you obtain?

3. List any medications you are currently taking.

4. Have your ovaries or uterus been removed?
   ___ Yes
   ___ No

5. Do you have a significant person in your life currently (like a husband or boyfriend)?
   ___ Yes
   ___ No

6. Are there any issues that you believe may affect your sexuality?
   ___ Yes
   ___ No

If so, would you please share those things?
APPENDIX E

DEMOGRAPHIC DATA
(INSULIN-DEPENDENT DIABETICS)
Demographic Data
(Insulin-Dependent Diabetics)

1. Age:___________

2. Indicate the last grade you have completed or degrees you have obtained.

______________________________________________________________

3. How long have you had diabetes?_____________________________

4. How long have you been on insulin?__________________________

5. List any medicines you are currently taking.

______________________________________________________________

______________________________________________________________

6. Have your ovaries and uterus been removed?
   ___ Yes
   ___ No

7. Do you experience frequent bladder infections?
   ___ Yes
   ___ No

8. Do you experience frequent yeast infections?
   ___ Yes
   ___ No

9. Do you have a significant person in your life (like a husband or boyfriend)?
   ___ Yes
   ___ No

10. Are there any issues in your life that you believe may affect your sexuality?
    ___ Yes
    ___ No

If so, would you please share those things?

______________________________________________________________

______________________________________________________________