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Perceived Impact of Prostate Surgery on Sexual Stability

by

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PERCEIVED IMPACT OF PROSTATE SURGERY ON SEXUAL STABILITY

Patricia W. Nishimoto

Abstract

The purpose of this study was to explore a previously unexamined phenomenon, the perceived sexuality of men who have undergone surgery for either prostate cancer or benign prostatic hyperplasia. The conceptual framework, derived from Johnson's Behavioral Model and Symbolic Interaction, permitted examination of not only postoperative physiological changes but the person's interpretation of them and their impact on sexual behavior.

The use of a qualitative design and a semi-structured one and one-half hour interview schedule provided the strategy to obtain sensitive information ethically. Forty-three men, 60-74 years of age, met the study criteria; 21 were diagnosed with cancer and 22 with benign prostatic hyperplasia. They were predominantly Caucasian, married, Protestant, and had at least a high school education. Qualitative analysis of the transcribed interviews showed intercoder reliability of .79 and intracoder reliability of .94.

Regardless of variations in demographic variables or surgical techniques, all 43 men perceived postoperative sexual subsystem instability. Instability was characterized by four properties: belief that there would be no instability, regret that there was, acceptance of instability, or belief that instability was justified. The degree and

duration of instability were unique for each man, depending on his regulating and controlling mechanisms. Six properties of sexual behavior emerged from the data: sexual disenfranchisement, cessation of intercourse, decreased frequency of behaviors, modification or adaptation, no change, and increased behavior. The subjects considered both traditional and folk alternatives to meet their goal to establish stability. The major finding of the study was that even men who had ceased all sexual behavior perceived sexuality as an important aspect of their lives.

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TABLE OF CONTENTS

CHAPTER II (continued)

CHAPTER III

CHAPTER IV

CHAPTER V

CHAPTER VI

APPENDICES

LIST OF TABLES

CHAPTER I

INTRODUCTION

Purpose

The twofold purpose of this study is: 1) to examine the perceived effects of prostate surgery on sexual behavior in men between 60-74 years of age; and 2) to examine differences in perceived effects between men who have had prostate surgery for a diagnosis of benign prostatic hyperplasia and those with a diagnosis of malignancy.

Impetus

The impetus for this study was the researcher's experiences in clinical nursing practice. For example, during ward rounds, chemotherapy treatment, or dressing changes, clients often initiated questions about the impact of prostate surgery on their "sex life". Partners were quick to follow with questions of their own.

To find answers to clients' and partners' questions, the investigator reviewed the available literature. It focused primarily on physiologic changes in erection and ejaculation produced by prostate surgery. Possible changes in sexuality were then deductively hypothesized by the authors. This deductive approach did not address

the questions being asked by clients or their partners. Furthermore, the available literature, both anecdotal and research-oriented, was pessimistic about the possibility of optimal sexual functioning following surgery, generating more questions than answers.

This information was disseminated to clients and their partners. However, it became quite clear based on discussions with clients and partners that much of the information provided was contradicted by their own experiences.

Thus, it became evident to the researcher that there existed a critical need for validated information based not on a narrow range of physiologic responses but on a broad spectrum of variables, including perceptions and accounts of clients' experiences. For this particular target age group, the variable of perceptions is of particular importance. Research has demonstrated that elderly persons' perceptions of physiological changes contribute more to decreases in sexual activity than the changes themselves (White, 1982). At the same time, it was also clear that such a study would have to be conducted inductively in order to close the gap between existing data and the reported experiences of clients and their partners.

Significance

While a number of factors lend significance to this study, two changing demographic factors are especially important: 1) the incidence of both prostate cancer and benign prostatic hyperplasia (BPH) increases with age, and 2) the American population is growing older. Between 1960 and 1982, Americans under the age of 15 decreased by 7%

while those over 65 years of age increased by 54%. By the year 2024, an estimated 50 million Americans will be 60 years of age or older (Baustein, 1982; Rosen & Rosen, 1981). Although men represent less than half of this population, the partners of men who undergo prostate surgery are also affected by the consequences of the surgery and are oftentimes women in the same age group.

In 1985, 910,000 Americans were diagnosed as having cancer, with 19% or 86,000 diagnosed with prostate cancer. Further, BPH is the most prevalent of all pathologic entities in aging males and is found in 80.1% of men older than 40 years of age (Harbitz & Haugen, 1972; Rotkin, 1983). Thus, the number of clients diagnosed with BPH or prostate cancer is expected to increase. Since these diagnoses account for the majority of prostate surgeries, a continuing increase in these procedures can also be expected.

Birkhoff (1983) associated the dramatic increase of prostatectomy for a diagnosis of BPH with several other factors: safer surgery, greater patient acceptance, better health insurance, and more urologists. Birkhoff estimated that "a 50 year old man would have a 20-25% chance of having a prostatectomy during his lifetime if surgery remains at the same rate" (p. 7).

The incidence of BPH and prostate cancer, the two most common reasons for prostate surgery, has resulted in a wealth of carefully conducted research about its etiology, epidemiology, and treatment. Most current studies have been conducted by physicians for the purpose of improving surgical techniques to maintain erection and ejaculation ability. Such deductive studies tend to focus on a small number of discrete physiologic phenomena such as coital frequency, the number and

strengths of erections, and the force of ejaculations (Finkel & Taylor, 1981; Gold & Hotchkiss, 1969; Hargreaves & Stephenson, 1977; Holtgreave & Volk, 1964; Madorsky, Ashamalla, Schussler, Lyons, & Miller, 1976; Pearlman, 1972; Walsh & Donker, 1982.)

There are serious limitations to existing literature in light of a growing body of knowledge about sexuality and the elderly. For example, physiologic variables are important, but intercourse accounts for only 10% of what has been defined as human sexual experience (Althof, Coffman, & Levine, 1984). In addition, there is a problem of counting the number of sexual acts when studying sexuality in the elderly. Although physiologic variables are often used in sexuality studies in the young and middle aged, they do not always mean sexual success to the elderly. Frequency of intercourse or erections excludes the majority of sexual behaviors found rewarding by them (Robinson, 1983; Weg, 1983).

Despite the abundance of studies about prostate surgery, the literature on sexuality after surgery is scarce (Jonas, Lindner, & Ohru, 1983; Nishimoto, 1984). This very unfortunate fact occurs in a context of increased recognition of the relationship between sexuality and health in the elderly. Sexual activity contributes positively to the maintenance of good health in the elderly; whereas, unmet sexual needs may result in regression or even clinical depression (Butler & Lewis, 1973; Haberle, 1978; Sviland, 1981; Wineberg, 1982).

Another important factor widening the gap between what is known and what is needed is the growing acknowledgment among nurses (and other health professionals) that satisfactory sexual life is an important indicator of the quality of life and therefore falls within the domain

of nursing (Burkhalter & Donley, 1978; Ellis, 1977; Krinzinofski, 1973; Zalar, 1982).

The American Nurses' Association and the Oncology Nursing Society (1979) developed ten outcome standards as a nurse's guide to assist clients and their families in achieving the highest level of attainment possible depending upon intellectual, physical, and psychological capacity. In recognition of the importance of sexuality, Standard IX states, "The client and partner can identify aspects of sexuality that may be threatened by disease and can enumerate ways of maintaining sexual identity" (p. 9).

A further indication of the growing appreciation of the importance of sexuality among health care professionals is a focus on the quality of life by the American Cancer Society. With recent advances in cancer therapy, more patients are either having longer life expectancies or being cured (ACS, 1983; Marino, 1981). While there is still a need to help the terminally ill which was the focus of nursing care in the past two decades, the present emphasis is to help people live with disease (Burkhalter & Donley, 1978; Kubler-Ross, 1969; Marino, 1981). One important aspect of the emphasis on living with cancer which has been ignored, forgotten, or seen as inappropriate is sexuality (Gochros & Gochros, 1977; Kolodny, Masters, Johnson & Biggs, 1979; Woods, 1984). In part, this omission has been due to the equation of cancer with death and sexuality with life--resulting in a lack of research on how sexuality is affected by cancer and its treatment (Burkhalter & Donley, 1978). The American Cancer Society recognizes this advance and focus on quality of life by "targeting sexual functioning morbidity as an important end-point in psychological research" (Anderson, 1985, p. 1835).

In a different forum, the development of nursing theory that focuses on the whole person requires the nurse to consider other variables besides physiologic ones as a basis for selecting nursing interventions. For example, Johnson's Behavioral Model (JBM) identifies the physiological, psychological, and environmental variables affecting sexual behavior. Using Johnson's Behavioral Model, the nurse must consider the client's perceptions of physiologic changes as well as his ability to adapt. The nurse must also acknowledge the symbolic importance of sexual activity, particularly for those stigmatized with such labels as "sick" or "cancer patient" (Golden, 1983; Hertoft, 1983).

The significance of this study rests in the fact that it examines a previously ignored area of research: the perceived sexuality of men who have undergone prostate surgery and the use of a nursing framework in the conduct of research. Research data collected will contribute to an expansion of general knowledge related to men after prostate surgery who are trying to achieve sexual stability. A related contribution will be the indirect effects of the findings in an often overlooked population: the sexual partners of such men. It is hoped that the findings from this study will stimulate nurses to question and also to stimulate further work which will influence the development of intervention plans in clinical nursing practice.

The Study

This descriptive study uses Johnson's Behavioral Model (JBM) and Symbolic Interaction (SI) as a framework, which allows flexibility in exploring a variety of aspects of sexuality. Use of this framework

allows exploration of areas and questions pertinent to nursing practice which have never been examined from a nursing perspective.

The domain of nursing includes assisting clients to function in a way that is satisfying and safe in view of their health condition. Current research has yielded physiologic information about postoperative nerve damage and its effect on erection. Now what is needed is information about how men perceive these physiologic changes, what men do to achieve sexual stability, what the choices are, and how the nurse can assist in this process.

This qualitative design describes and analyzes the murky but real world of two groups of men treated surgically for benign or malignant prostate disease. The design enables an explicit rendering of the structure, order, and patterns found among these men (Lofland, 1971). The criteria for subjects were: 1) volunteer male adults treated surgically for a diagnosis of prostate cancer or BPH; 2) surgery done July 1, 1983 to December 31, 1984; 3) surgery done at two teaching hospitals in California; 4) mental and physical ability to participate; and 5) ability to understand the English language.

Procedurally, the volunteer subjects met with the investigator for a confidential 1 1/2 hour semi-structured, taped interview at a place of their choice. The open-ended question schedule allowed the subjects to use their own terms to describe their experiences. This allowed subjects to set their own pace and facilitated the investigator's desire to conduct an honest, thoughtful, and ethical interview. Demographic data were collected from the subjects and their medical records.

Report of the Study

The report of the study is organized in the following manner. Chapter I introduces the problem area, the impetus for the study, and the significance of the study.

Chapter II is a critical evaluation of previously conducted research, including the theoretical underpinnings. The influence of theory on research and its findings is used to illuminate the strengths and weaknesses of past work. Chapter II also provides an explanation of Johnson's Behavioral Model and Symbolic Interaction, the framework chosen for this study. This framework may correct many of the gaps of previous research and build nursing knowledge to provide better nursing care.

Chapter III includes the research questions, research design, population, interview schedule, data collection methodology, personnel involved, operational and theoretical definitions, and data analysis methodology. Chapter IV considers the demographic characteristics of the sample and the research findings.

Chapter V ascribes meaning to the data and interprets the research findings. Chapter VI provides a summary, conclusions, limitations, implications, and suggestions for further research.

CHAPTER II

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

The purpose of this chapter is twofold: 1) to review the literature pertinent to this study and 2) to critically analyze related research within the context of pertinent theoretical frameworks. This review and analysis will provide an expanded awareness of the many gaps and limitations of past works that may be attributed to weaknesses in the theoretical frameworks chosen to conduct the studies (Singer, 1985). Because this study marks a significant theoretical reorientation in an approach toward sexuality research, a thorough consideration of the theoretical issues and research issues will be presented.

In this chapter the focus will be on examining and analyzing the relationships between research findings, theoretical frameworks, and resulting data in previous works in sexuality. This chapter is organized and presented as follows:

1. A concise summary of the influence of theory on both the research process and the study of sex to provide a baseline;
2. An analysis of two major frameworks, the biological and psychoanalytic models, most commonly used in sexuality studies, with a critique of research using these frameworks;
3. A brief summary of other theoretical frameworks used in a limited number of sexuality studies;

4. An explanation of the rationale for the use of Symbolic Interaction (SI) and Johnson's Behavioral Model (JBM) as the framework for this study.

Due to the magnitude of information relating to the biological and psychoanalytic models, the following topics are interwoven in the discussion of each model: 1) historical development of each model, 2) strengths and weaknesses of each model, and 3) a review/critique of pertinent research which used each model.

The bulk of the literature relating to the anatomy and physiology of the prostate gland, benign prostatic hypertrophy (BPH), and prostate cancer is well-established and not controversial. Therefore, this literature will not be critiqued, but reviewed in order to provide a baseline to better understand the work on sexual functioning. Only literature on prostate surgery as it relates to sexuality and is pertinent to this study will be critiqued.

Overview of Theory and Its Implications

Nurses are mandated by society to utilize their knowledge and skills for the betterment of humans (Hardy, 1978). Traditionally, nursing knowledge and skills have not been theoretically grounded, but were based instead on authority, experience, logical reasoning, and trial and error (Johnson, 1959). However, the most reliable method for expanding knowledge and minimizing bias is the use of the scientific method. The scientific method enables nurses to ascertain facts and employ a mechanism for coordinating independent research endeavors. This, in turn, increases the scope of empirical findings and contributes

to the fruitfulness of research (Hurley, 1979). An inherent component of the scientific method is the requirement to use a theoretical framework or theory. The purpose of theory is to broaden knowledge and understanding by providing a systematic way to describe the relationships between facts (Ellis, 1968; Polit & Hungler, 1978). Thus, theory helps to explain and predict and serves as the basis for broadening knowledge and understanding by establishing a framework or context in which new ideas and facts may be tested and correlated.

Theory is constructed of concepts linked together into propositions (Kreuger, Nelson, & Wolanin, 1978) which, when systematically related, attempt to explain and predict events which may then be used to prescribe interventions (Hardy, 1978; Jacox, 1974; Peterson, 1977; Turner, 1978). By definition, a theoretical framework makes certain assumptions and prescribes certain interrelated or predictive parameters or conditions. Consequently, theory guides all phases of the research process: the scope of the study, the nature of problems studied, the facts considered, and the research outcomes (Duke, 1976; Fawcett, 1978). Thus, the theoretical perspective not only signals what aspects of behavior are to be studied or ignored (Petras, 1978), but also guides the development of interventions to affect that behavior (Cox, 1982).

The need for theory is nowhere more profoundly evident than in sexuality research (Gagnon, 1976). It is recognized that theories of health are oftentimes based on value systems (Allen & Whatley, 1986; Fee, 1976; Susser, 1974). Value systems, like moral judgments, are time and culture specific and must be separated from the scientific analysis (Nass, Libby, & Fisher, 1981). In the case of emotionally charged

theories of sex, which often have been sexual ideologies in disguise, the need for theory is even more urgent (Faulkner, 1980; Gagnon, 1983).

Theoretical Frameworks Used for Research in Sexuality

Although multiple theoretical frameworks have guided previous research in sexuality, most have tended to have an unidimensional quality. This unidimensional focus can be useful and appropriate to answer certain research questions. However, restrictive theoretical frameworks can result in highly compartmentalized and fragmented findings. In the study of human sexuality, which is much more than the physical act of coitus, the focus can be too narrow in scope (McFarlane & Rubenfeld, 1983). Research in sexuality must be conducted in a way that acknowledges that 1) human sexuality is a holistic phenomenon (Ford & Beach, 1951; Kirkendall, 1979) and 2) client perceptions are determinants of major importance. The significance of client perception is highlighted by the findings of Butler and Lewis (1973), Haberle (1978), and Wineberg (1982) that the perception of health in the elderly is an important factor in individual well-being. The lack of recognition of client perception in previous sex research may be because the theory chosen automatically prescribed inherent delimitations, not only in process, but also in terms of research outcomes (Fawcett, 1978).

The following example illustrates how theory concerned with sexual satisfaction not only influences variables studied but also gives different research outcomes. Sexuality research using a biological framework may find that a penile implant permits erection and conclude,

therefore, that the client will enjoy an improved sex life. Sexuality research on the same client, using a psychological framework, may find that the man may not have resolved his oedipal complex and conclude, therefore, that his sex life has not improved. A third framework, symbolic interaction, enables researchers to examine three variables not considered when using a biological or psychological framework: what an erection means to a particular man, how his partner interprets it, and how that man thinks his partner feels about the implant. These are the three variables which have been found to correlate with success or failure of penile implants in recent studies (Binkhorst, 1979; Hollander & Diokno, 1984; Renshaw, 1979).

The unidimensional focus of the biological framework limits the study of human sexuality to the biological aspects. Similarly, the psychological framework limits the study to the psychological aspects. When operationalized into both frameworks, the research design has led to the derivation of certain conclusions which may be supported by the theoretical constructs. However, research results are often not integrated or reconciled with client perceptions (Bohlen, 1983) and suffer from being time and culture-limited (Moglia & Whitney, 1982). These limitations may account for the assertion by Janeway (1980) that theories of sexuality are no longer accepted as explanatory, predictive, or prescriptive in nature as is characteristic of the third and fourth levels of theory development (Dickoff & James, 1968).

The loss of predictive and prescriptive power of the theories of sexuality was a major area of discussion and argument at the 1982 Society for the Scientific Study of Sexuality Conference. It would seem, as Kuhn (1970) concluded, that when the old theories lose their

usefulness, a revolution results with the old being overthrown and new theories being developed. Perhaps a revolution best describes the present state of sexual theories--in the midst of an upheaval and not yet settled into agreement of a new paradigm (Haberle, 1983).

Although a theoretical revolution may be occurring, this does not mean present research should be atheoretical (Elias, 1979) during the interim so that a new consensus on sexual theory can evolve. Atheoretical research would result in a collection of isolated facts without conceptual order, thereby becoming trivial and not advancing the discipline (Chinn & Jacobs, 1978; Fawcett, 1978). An inductive approach does not violate the premise that research should be based on theory because it is not limited to data collection. Instead, the inductive research organizes the data into concepts as precursors to the development of theory.

Unfortunately, many oncology-sexuality studies either have been atheoretical or, at the least, have not clearly stated the theoretical underpinnings (Beck & Nikorovicz, 1980; Burnham, Lennard-Jones, & Brooke, 1977; Dennerstein, Woods, & Burrows, 1977; Frank, Dornbush, Webster, & Kolodny, 1978; Hymis, Fisher, Kubli, & Reinholz, 1977; Kierman, Hubert, Beahro, & Martin, 1981; Lieber, Plumb, Gertenzang, & Holland, 1976; Rolstead, Wilson, & Rothenberger, 1983; Todres & Wojtiuk, 1979; Wabrek, Wabrek, & Burchell, 1980; Winderlein, 1979). While these studies ask questions pertinent to clinical practice surrounding rectal, breast, and gynecological malignancies plus oncology treatments, their end results are a hodge-podge of atheoretical answers. However, these kind of data do give direction for more controlled research designs.

The theoretical framework chosen for this study attempts to 1) minimize the unidimensional qualities of previous sexuality research and 2) provide appropriate recognition of and emphasis on client perception. It is expected that research findings guided by this framework will provide a more accurate reflection of current nursing practices and a clearer, more comprehensive direction for prescribing future nursing interventions.

Biological Model as a Framework

Strengths and Weaknesses: Literature Review and History

The majority of past studies on sexuality and oncology and, in particular, the study of sexuality following prostate surgery for benign and malignant tumors, have used a biological framework. This was an excellent choice for the specific kinds of questions that were asked.

However, there are significant criticisms of the framework and the research conducted using this framework. These well-documented criticisms are based on the fact that investigators using the biological model to study sex are often experts in fields other than sexuality. As a consequence, they are frequently more adept at using theories from their own fields of expertise than theories from fields that may be more appropriate for the study of sex (Bullough, 1983).

While well-intended, these investigators may be unaware that selected theoretical frameworks predetermine and restrict the research questions asked about sexuality, the variables to be studied, the samples selected, and the methodology to be used. As a consequence, the research may generate findings of limited value.

In conducting the research, instruments used may be precise and quite reliable but lack construct validity. For example, an instrument may measure penile tumescence accurately, but to operationally define this as a measurement of the ability to enjoy coitus lacks construct validity. An investigator with inadequate background information may not be aware that sex is more than an erect penis (Labby, 1982). There are also instances in which the research instrument consists of a poorly constructed series of questions which are asked of clients at the end of a surgical follow-up appointment. While the questions may be of clinical interest, they often have little or no theoretical basis. The manner in which those questions are phrased can also affect the response (Pomeroy, Flax, & Wheeler, 1982).

In many oncology sexuality studies investigators were primarily physicians interested in improving their surgical technique (Aso & Yasutomic 1974; Balslev & Harbing, 1983; Bergman, Nilsson, & Paterson, 1979; Bitran & Roth, 1976; Blatt, Mulvihill, Ziegler, Young, & Poplack, 1980; Dempsey, Buchbaum, & Morrison, 1975; Lamont, Petrillo, & Sargent, 1978; Lieber, Plumb, Gertenzang, & Holland, 1976; Narayan, Lange, & Fraley, 1982; Nilsson, Kock, & Kylberg, 1981; Noguchi, Tsukahara, Fukuta, & Iwai, 1980; Pluchinotta & Fabris, 1980; Seible, Freeman, & Graves, 1980; Wabrek, Wabrek, & Burchell, 1980; Weinstein & Roberts, 1977; Weiss, Schlecker, Wein, & Hanno, 1985; Williams & Slack, 1980; Yeager & Van Heerden, 1980). In these studies, the biological model was used to develop surgical techniques for tumor removal without damage to crucial nerves. Thus, erection, ejaculation, intercourse, or gonadal function were the main variables of sexuality studied.

Sexuality research by physicians on non-cancer patients has a similar focus. Male sexuality is viewed from a perspective of erection, ejaculation, and fertility. Female sexuality is viewed from a perspective of fertility control (Kolodny, Masters, Johnson, & Biggs, 1979; Thornton, 1979). This orientation is consistent with the belief that much of physician-based sexuality research is focused on fertility because it is a legitimate concern of medicine (Chigier, 1981; Henderson, 1981).

In stark contrast, other aspects of sexuality are seldom studied. Factors believed to influence this orientation include: 1) sex is not a life-saving concern; 2) the pleasuring side of life is not within the domain of medicine; and 3) physicians are influenced by the same cultural background as their patients, that is, the purpose of sex is heterosexual intercourse between a young married couple resulting in pregnancy (Chigier, 1981). This is not a criticism of physicians but rather a recognition of the difficulty of one professional group learning to develop skill and comfort in sexology (Ephross, 1981). In fact, sexual knowledge has been greatly expanded by these physician research pioneers who used the medical model. The development of sexology resulted from their finding that the medical model was too restrictive (Haberle, 1983).

Previous research in sexuality conforms to the ideal experimental positivist model of research with controlled manipulation of one or a few variables. This positivist model also helps to explain the focus on erection, ejaculation, and fertility; all are more 'controllable' than desire, patterns, or changes and are more likely to be included in the domain of medicine.

The focus of the biological framework on observable, measurable responses to stimuli (Hogan, 1980) is not a recent phenomenon. During the 16th and 17th centuries, research using the biological framework contributed to a greater knowledge of anatomy and led to better understanding of reproduction (Haberle, 1978).

Just as early studies on sex focused on anatomy and physiology, so do many present studies (Haberle, 1978; Wineberg, 1982). In the empiricist tradition of biological research, it seems more scientific to measure the "reality" of the number of erections registered on the plysmograph and then to correlate sexual satisfaction with the number of registered erections. But elaborate statistical analysis cannot correct research imprecisely and inaccurately conceptualized (Ephross, 1981). "Hearsay" and what clients say about sexual satisfaction may seem to be less scientific. Unfortunately, what is forgotten is that "hard" data, such as the plysmograph, are not always value-free, nor as valid as believed. The validity of penile tumescence measured by the plysmograph is a complex issue which has not yet been fully resolved (Rosen, 1983).

It is the blind obedience to empiricist tradition that must be challenged. Otherwise, scientists can mistakenly believe there are "permanent, ahistorical standards for grounding knowledge in reality" (Thompson, 1985, p. 61). When choosing a framework, scientists need to recognize that no theory can reveal the whole truth about the human being (Charon, 1982), and that all frameworks involve bias. Resultant information and knowledge are then more productive since they may be considered in the context of the acknowledged biases and other impacting parameters (Gagnon, 1983; Thompson, 1985).

The biological model has contributed a great deal to the knowledge base of cancer, cancer treatment, and the physiological effects on sexual functioning (Abitol & Davenport, 1974; Aso & Yasutomic, 1974; Balslev & Harbing, 1983; Blatt et al., 1980; Chapman, Rees, Sutcliffe, Edwards, & Malpas, 1979; Danzi, Feruland, Abate, & Califano, 1983; Delgado, 1978; Dempsey, Buchsbaum, & Morrison, 1975; Fazio, Fletcher, & Montague, 1980; Fossa, Abyholm, Norman, & Loeb, 1985; Goldstein, Feldman, Deckers, Babayan, & Krane, 1984; Graham et al., 1979; Lamberti et al., 1978; La Monica, Aubiso, Tamburini, Filiberti, & Ventafridda, 1985; Lesniak, Szymusik, & Charzanowski, 1972; Narayan, Lange, & Fraley, 1982; Noguchi, Tsukahara, Fukuta, & Iwai, 1980; Schover, Gonzales, & von Eschenbach, 1986; Seibel, Freeman, & Graves, 1980; Shalet, Hann, Lendon, Morris-Jones, & Beardwell, 1981; Weinstein & Roberts, 1977; Yaegar & Van Heerdon, 1980). Because the biological component can be well-defined, the findings are valuable and may lead to more comprehensive and stronger studies (AMA, 1972).

Development of Biologic Sexuality Research

The biological/behavioral model was the cornerstone of Kinsey's research on sexuality as he attempted to fill the void created by a dearth of research information needed for lectures at Indiana University (Kinsey, Pomeroy, & Martin, 1948, 1953). Kinsey believed the works of Krafft-Ebing (1886) and Freud to be prescientific, that is, lacking statistical validity. Therefore, as Kinsey began his research, he utilized statistical analysis to form a firm quantitative foundation. This methodology revolutionized sex research (Brecher, 1969).

Another positive effect of Kinsey's work was the discovery of a wide range of sexual behaviors. This outcome led to a new view of sex laws as unrealistic and outmoded (Gagnon, 1975; Haberle, 1978; Henderson, 1981). Kinsey's findings about the wide range of sexual behaviors provoked religious leaders to condemn his work (Hiltner, 1953; Pittenger, 1954). The work of Kinsey also legitimized the study of sexuality and provided the groundwork for the physiological research of Masters and Johnson in the 1960s (Gagnon, 1975; Pomeroy & Schaefer, 1978).

However, Kinsey's reliance on numbers and willingness to make findings available to the general public also set a precedent for lay persons to make judgements about their sexual performance. Some authors believed Kinsey provided Americans with a new standard of performance in sexuality, and the desire to "beat the averages" with all its associated tensions of competition and failure became the norm (Bernard, Clancy, & Krantz, 1978).

Despite his pioneering work, Kinsey lost credibility with the scientific community for several reasons: a positivist model was not used; there was a selective emphasis on emotional and social aspects of sex; it was not possible to interpret responses to sexual stimulation due to the non-experimental research design; mainly college-educated, Caucasian volunteers were used; non-judgmental examinations of sexual behavior many believed to be "wrong" were found to be common behavior; research findings were made available to the general public (Crooks & Bauer, 1980; Masters & Johnson, 1966; Reiss, 1981; Weg, 1983). Some of the limitations stemmed from the fact that neither Kinsey nor his research assistants were anatomists, physiologists, or clinicians

(Henderson, 1981). As a result, Kinsey's contribution to science was not recognized until after his death (Pomeroy, 1972).

During the same period, the Sex Information and Educational Council of the United States (SEICUS) was formed for the purpose of incorporating human sexuality into education (Nass, Libby, & Fisher, 1981). The World Health Organization (WHO) (1975) defined sexual health as the "integration of the somatic, emotional, intellectual, and social aspects of sexual being, in ways that are positively enriching and that enhance human personality, communication, and love." SEICUS and the WHO definitions were part of a movement to integrate the social, psychological and physical aspects of sexuality. The absence of this integration is evident in Kinsey's work and later in that of Masters and Johnson.

Masters and Johnson are criticized for ignoring what Hall (1969) terms "the soft, unscientific" part of what people say they do and for their limited focus on the observed response to stimulation in a laboratory situation (Crooks & Bauer, 1980). This focus on the strictly biological aspects by Masters and Johnson was in great part due to their deliberate maintenance of scientific posture in order to avoid professional censure. Keenly aware of the fate that befell Kinsey, Masters and Johnson intentionally wrote their findings as scientifically technical as possible in order to avoid a connotation of pornography (Henderson, 1981). This strategy enabled Masters and Johnson to break the barrier of publication of their work in major medical journals (Daly, 1985).

The greatest contribution of Masters and Johnson was careful attention to detail, resulting in clarification of physiologic response

to sexual stimulation. Their work succeeded in five areas: 1) questioning Freud's premise that a vaginal orgasm was the "mature" one, 2) breaking the taboo of conducting sex research, 3) developing short-term sex therapy, 4) recognizing the importance of total body stimulation, not just genital, and 5) recognizing that sex involves two or more people and that there is therefore no such thing as an uninvolved partner (Daly, 1985). Their work led to the development of new therapeutic approaches in the treatment of sexual dysfunction (Weg, 1983).

Kinsey's work and that of Masters and Johnson, which followed were landmarks in sex research. Many of the limitations of their studies were avoided in later studies (Reiss, 1981).

The major limitation of the biological model continues to be that it artificially isolates the physiologic from other components that make up human sexuality (Sherfey, 1974). The model too narrowly explains the phenomena of sexuality at what Dickoff and James (1969) characterize as the fourth level of theory: situation-producing. For example, physiologically an erection is produced when the penis is stimulated in a specific manner. However, the model does not explain why that stimulation produces an erection when the man is with Partner A and yet cannot be replicated with the same stimulation with Partner B. Thus, while the biological model can isolate the physiological component, the totality of human sexuality will still be unexplained.

To summarize, the biologic model does not account for variations within the individual at different times, is not value-free, and is not comprehensive at the third level of theory to explain sexuality. Investigators are becoming aware of these limitations and are beginning

to incorporate psychophysiologic interactions, record data in the home as well as the laboratory, and pay more attention to subject selection and protection (Bohlen, 1983). Thus, researchers using the biologic model in sexuality research are facilitating the evolution of the biologic model from one of isolated hypotheses into a more complete theoretical framework for sexuality research (Shope, 1975).

The majority of physiological studies use the biological model in exploration of the physiology of the prostate. The selection of Symbolic Interaction (SI) and Johnson's Behavioral Model (JBM) as the conceptual framework allows a broader perspective which includes not only the physiologic but also the person's interpretation of the physiologic and its influence on behavior (Lobo, 1985). The use of this framework thus requires a review of pertinent physiological studies. The studies are grouped into three major divisions: the sexual response cycle of older men; the anatomy and physiology of the prostate gland; and the effect of prostate surgery on sexual functioning.

Sexual Response Cycle of Older Men

Benign prostate disease and prostate cancer usually occur in older men. Due to a longer life span of Americans, sexuality is becoming an important issue for older Americans, especially since a change in sexual functioning affects their image of themselves (Hammond & Bonney, 1985). A frequent misconception is that older people are not interested in sex. Confounding this misconception is the mistaken belief that sex becomes unimportant when disease occurs, especially cancer (Hurny & Holland, 1985; Renshaw, 1985).

Theories about older people, just as theories about sexuality, are socially constructed versions of reality. This knowledge takes on the character of objective reality and influences the perception of problems faced by the elderly and how to intervene. Thus, the aged have social problems "given" to them by the experts who have developed paradigms to explain their world (Kuhn, 1970; Newcomer, Estes, & Freeman, 1985). An invaluable contribution of biological research has been to combat myths and replace them with facts about the physiological changes which occur in the sexual response cycle.

Physiological changes in the five phases--Excitement Phase, Plateau Phase, Orgasmic Phase, Resolution Phase, and Refractory Phase--of the sexual response cycle in older men are numerous. Although all phases are affected by aging, the two most sensitive are orgasm and the refractory period (Kaplan, 1974).

The EXCITEMENT PHASE in older men changes in seven areas: 1) erection is no longer stimulated by visual/psychic stimuli alone and tactile stimulation is necessary (AMA, 1972; Ayres, 1982); 2) it may take two to three times longer to attain an erection. Once attained erection may not be as firm; 3) full erection is not attained until immediately prior to ejaculation; 4) while men of all ages lose full erections several times during the sexual experience, older men have difficulty returning to full erection. Some men may experience "paradoxical refractory periods", that is, inability to regain erection for 12-24 hours; 5) the angle of the penis at the abdomen is less acute secondary to decreased elasticity of connective tissue; 6) the penis is less rigid due to a decrease in elastic fibers of the tunica albuginea;

7) nipple erection diminishes (Blaustein, 1982; Masters & Johnson, 1966; Newman & Northup, 1983).

Changes that occur during the PLATEAU PHASE may include: 1) less testicular elevation and scrotal sac vasocongestion; 2) a decrease in the amount or a complete absence of pre-ejaculate fluid; 3) an increase in the ability to delay ejaculation; 4) absences of color changes at the coronal ridge of the penis after age 60 (Woods, 1984).

ORGASMIC PHASE changes may include: 1) a decrease in the frequency of rectal sphincter contractions; 2) a blending of two well-differentiated stages of ejaculatory inevitability and ejaculation into one; 3) a decrease in prostatic contractions during ejaculation from five to six contractions to only one or two at 0.8 second intervals and a decrease in the expulsive force from 12-24 inches to 3-12 inches or even just a seepage; 4) a reduction in the amount of semen produced in 24 hours from 3-5 cc to 2-3 cc and a reduction in the viscosity of seminal fluid (Butler & Lewis, 1976; Masters & Johnson, 1966, 1970; Weg, 1983).

The RESOLUTION PHASE is more rapid. Additionally, testicular descent and penile detumescence occur quickly.

The REFRACTORY PERIOD, the time during which a man is unable to ejaculate although partial or full erection is sometimes maintained, may be extended up to 12-24 hours or longer. Further, it may take longer to attain a second erection (Griggs, 1978; Masters & Johnson, 1966; Newman & Northup, 1983). Of interest is the finding of Masters and Johnson (1970) that the subjective desire to ejaculate is reduced from each encounter to every second or third encounter.

These multiple physiological changes in the sexual response cycle do not in themselves impair sexual function (Kaplan, 1974; Ludeman, 1981; Masters & Johnson, 1966; 1970; Renshaw, 1985; Robinson, 1983). The changes occur over time and so are seldom noticed (Marson, 1983). When changes are noticed, they may be misinterpreted as loss of sex drive (Caplan & Caplan, 1976). Thus, a majority of sexual complaints of the elderly are a product of aversive psychological reactions to normal changes (Kaplan, 1974; Marson, 1983). To avoid this, information dissemination about these normal changes is needed, without implying that aging sex is a degenerative form of youthful sex (Hammond & Bonney, 1985; Rowland & Haynes, 1978).

Although the work of Masters and Johnson on the sexual response cycle is well known and often cited, their work is not universally accepted. Their model focuses on the physiological and is unable to explain why or how the psychological impacts on sexuality. This is the same limitation this investigator noted with past biological models used to study sexuality. To incorporate the psychological component, Kaplan (1979) defines the sexual response cycle as a tri-phasic concept of desire, excitement, and orgasm. Kaplan's model eliminates two major criticisms of Masters and Johnson's model: the relationship of the phases is not clear-cut and the transition between phases is not well defined; and second, the emphasis on vasocongestion and myotonia does not incorporate the psychological variables (Bragonier & Bragonier, 1979; Rosen, 1983).

Gerard (1982) conceptualizes the link between the physiological, the psychological, and the impact of perceptions on the sexual response cycle. He identifies three components for sexual arousal to occur:

physiological changes such as genital vasocongestion; the subjective perception of those physiological changes; and the cognitive labeling of the subjective changes as sexual.

A number of criticisms have been leveled at research on sexuality and aging. Many reported studies have been atheoretical (Maddox & Campbell, 1985). Studies on sexuality of the elderly have tended to follow traditional conventions with over-reliance on statistical manipulation of frequency of coitus (Weg, 1983) and little use of non-parametric tests that convert raw data into meaningful information. Sexual activity is often defined as "all or none." As a consequence, little or no data are available with regard to frequency, intensity, or interaction between variables. Non-genital sexual behaviors, equally valid expressions, are seldom included in studies (Corby & Zarit, 1983). Samples usually consist of volunteer married couples, excluding widowed, single, or gay subjects and those with multiple partners (Ludeman, 1981; Palomore, 1981; Robinson, 1983). The omission of these people as subjects may suggest that they are asexual or should be asexual.

Studies have shown coital frequency seems to decline with age (Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953; Martin, 1981; Pearlman & Kobashi, 1972; Udry, 1980; Venvoedt, Pfieffer, & Wang, 1969). Married men in their teens have sex resulting in orgasm an average of 4.8 times per week (Kinsey, 1948; Newman & Nichols, 1966). Frequency decreases to 1.8 times per week at age 50 and 0.9 times at age 70, although some males at age 70 had sexual intercourse three times a week. Subjects who are asked why coital frequency decreases state adamantly that it is not age but other factors. The Starr Weiner survey (1981) supports the conclusion that

age is not the primary factor for a change in sexuality. Of the 800 adults between the ages of 60 and 91 who were surveyed, 91% desired a sexual relationship and 80% were still sexually active.

There are several explanations for the discrepancy between past studies which indicated increasing age results in decreasing coitus. Chronological age is recognized as being a weak explanatory variable and must either be more carefully specified or substituted for by the use of cohorts which index person/environment interaction (Maddox & Campbell, 1985). George and Weiler (1979) suggest that the "straight slope" described by Kinsey and others may be produced by methodological artifacts and sampling problems. In some studies, cross-sectional samples are made up of cohorts who grew up in different eras. Thus, a group of 50 year olds may be very different from a group of 60 year olds because each group reached sexual maturity in a different time. To corroborate this, George and Weiler examined the aggregate and intraindividual longitudinal patterns of 502 subjects aged 45-69 years of age and found 75% of the men had stable sexual activity over a six year period.

Another criticism of sampling in previous research is that sexually active adults are often grouped together with sexually inactive adults. As more people become sexually inactive due to chronic disease or death of a partner, the number of those who remain sexually active decreases and thus the average rates of coitus decline (Rosen & Rosen, 1981).

> In our experience, old folks stop having sex for the same reason they stop riding a bicycle: general infirmity, thinking it looks ridiculous, or no bicycle. (Comfort, 1974, p. 440)

In studies in which age is controlled, other factors emerge as possible influences on sexual behavior. Among these other factors are

cultural opinion (this factor is strong not only in the United States but in 105 other cultures as well), partner availability, income, social class, and health and life satisfaction, all of which have been positively correlated with sexual activity (Hogan, 1982; Kolodny, Masters, Johnson, & Biggs, 1979; Salzberger, 1980). Previous sexual activity and sexual enjoyment are strong determinants of later sexual activity. Acute or chronic illness appear to have negative impact on sexual activity (Martin, 1981; Masters & Johnson, 1970; Pfeiffer & Davis, 1972; Starr-Weiner, 1981; Winn & Newton, 1982). When sexual activity does stop, the reasons are usually the attitudes or physical condition of the male partner (George & Weiler, 1979; Martin, 1977; Rinehart & Schiff, 1985).

While cognitive determinants of masturbation in the aged have seldom been examined, Catania and White (1982) found a strong correlation between masturbation frequency and an internal locus of control, with a smaller variance explained by sexual knowledge and sexual status. As reported by Palomore (1981), the Duke study of older Americans found that men with high socio-economic-status (SES) level engaged more frequently in masturbation, petting to climax, and having nocturnal emissions. Socioeconomic status (SES) may not be the real variable but may instead be more of an indicator of either the level of inhibition or the health status of the individual.

No relationship was found between sex and demographic variables such as attitudes, marital adjustment, or demographics of marital status such as age of first marriage, number of years of marriage, age at first coitus, and number of coital partners before age 40. Commitment to

religion, no matter which religion, correlated with a decreased amount of all forms of sexual activity except coitus (Palomore, 1981).

Masters & Johnson (1966) identified six factors that contribute to loss of sexual responsiveness of the male:

1. Monotony or boredom of repetitious relationship
2. Preoccupation with career or economic pursuits
3. Mental or physical fatigue
4. Overindulgence in food or drugs, especially alcohol
5. Physical or mental infirmities of individual or his partner
6. Fear of unsatisfactory performance associated with or resulting from any of the above.

Physiological research has yielded valuable information about three of the six factors identified above: illness, medication, and fatigue. Eighty percent of elderly persons have one or more chronic diseases often resulting in fatigue and requirement for medication. Thus, the need for information about the sexual impact of illnesses and medications is especially urgent (Ellison, 1985; Salzberger, 1980; U.S. Bureau of Census, 1983). Diabetes, spinal injury, and cardiac disease are the illnesses usually studied, although many more are currently being explored.

Research on chronic illness and sexuality is a relatively new area and the majority of the studies focus on males. The predominantly male focus is probably due to two factors. Fewer women than men are diagnosed with the diseases usually studied, and sexuality is seen as more important to males than to females (Glass & Padrone, 1978; Hall, 1969). Similarly, most studies on the effects of drug therapy on sexual

functioning focus on males. This is due to the ease with which the male sexual response can be observed and quantified (Kaplan, 1974; Segraves, 1977). In general, drugs acting on the sympathetic system affect ejaculation, whereas drugs acting on the parasympathetic system affect erection. Drugs which affect both sympathetic and parasympathetic, such as ganglionic blocking agents, can cause complete erection failure. Hormonal agents can affect libido and secondary sex characteristics (Kaplan, 1974; Lee, 1981; Lion, 1982; Van Arsdaler & Wein, 1984; Woods, 1984).

Anti-psychotic drugs acting on the central nervous system can affect libido, erection, and ejaculation. Antidepressants, including alcohol, can result in physiologic erection difficulty, painful ejaculation, or decreased libido (Van Arsdaler & Wein, 1984). However, both types of drugs may decrease anxiety so that the man displays an increase in libido despite the sedative effect (Kaplan, 1974).

Organic causes, of a chemical, endocrine, neurologic, mechanical, or inflammatory nature, can contribute to 50-75% of all erection dysfunctions (Benson, 1985; Smith, 1981), but organic causes seldom operate alone. Emotional components must be examined in conjunction with the medical reasons (Federman, 1982).

Research on diseases and medications is subject to the same limitation as past research: lack of comprehensive information resulting from the use of a unidimensional theory. Unidimensional theory, which focuses on the physiological variables, prevents accurate prediction of the effects of medication on sexual functioning because of numerous interactions among other variables, including the client's perception of the effects of drugs on his sexual performance. Kaplan

(1974) uses the example of LSD to demonstrate this. Physiologically, LSD has no effect or even a depressive action on libido. Yet when taken by someone who believes it enhances his ability, the subject reports an unusually intense encounter.

The Prostate: Anatomy and Physiology

Using the biological framework, investigators have discovered valuable information about the anatomy and physiology of the prostate and the disease entities of BPH and prostate cancer and related surgical treatment.

The cone-truncated shaped prostate weighs 20 grams, has a 4 cm base, 2 cm depth and is approximately 2.5 cm long anteroposteriorly (Dunphy & Way, 1979; Loehning, 1985). This is approximately the size of a chestnut (Catalona & Scott, 1986). This "fibromuscular glandular body surrounding the first part of the male urethra" lies below the bladder and two inches above the rectum. It has the consistency of the tip of the nose (Catalona & Scott, 1986). Functionally, the prostate muscle affects: 1) the emission of seminal fluid by contractions, and 2) sphincter action at the bladder neck to maintain closure of the bladder neck at rest, and also at the preprostatic sphincter to prevent retrograde ejaculation (Blacklock, 1982). The prostate is made up of five lobes of which three, the two lateral lobes and the subcervical lobe, traditionally have been believed to be prone to develop BPH. The prostate is made up of three zones. The peripheral zone, site of most cancers, makes up the two largest glandular regions and traditionally is believed to comprise 75% of the prostate. The central zone, relatively immune to cancer, is anatomically close to the ejaculatory ducts. The

transitional zone, lateral to the sphincter, makes up less than 5% of the prostate (Loehning, 1985). This traditional belief of which specific lobes or zones are more prone to develop BPH or cancer has recently been recognized to be unhelpful. The reason is that these substructures of the prostate gland are difficult to delineate in adults. What remains true is that the majority of prostate cancer is in the periphery of the gland and enucleation, e.g., transurethral prostatectomy, does not remove the cancer-bearing portion of the gland (Ansell, 1982).

The prostate produces large amounts of acid phosphatase which enters the blood stream when prostate cancer develops. The level of acid phosphatase varies with the circadian rhythm. The highest level occurs at 1400 hours and the lowest at 2300 hours (Catalona & Scott, 1986). Prostatic manipulation can sometimes spuriously elevate serum levels, so blood should not be drawn for 18 hours after rectal exam or manipulation (Lange, 1986).

Alkaline phosphatase titers, unlike acid titers, do not fluctuate during the day. Alkaline titers are more frequently elevated in patients with metastatic prostatic cancer than acid titers, but alkaline titers are less specific since elevations can occur with metabolic bone disorders or hepatobiliary disease (Catalona & Scott, 1986; Farnsworth, 1982). The prostate also produces seminal fluid which makes up 20% of ejaculate and increases its alkalinity (Bernard, Clancy, & Krantz, 1978; Loening, 1985).

Of all the urologic organs, the prostate is the one most frequently affected by benign and malignant tumors. The danger of hypertrophy is not the growth itself but obstruction to the urethra, which can result in urinary retention, hydronephrosis, and renal infection. This is true

of prostate cancer also, with metastases an additional complication (Smith, 1984).

Benign Prostatic Hyperplasia

Although benign prostatic hyperplasia (BPH) is one of the most common neoplastic growths in men, the cause of BPH is still unknown (Walsh, 1986). Epidemiologic studies have implicated age of first coitus, number of sexual partners, venereal disease, and other sexual variables with regard to the development of BPH. However, poor design, incomplete data, biased samples, and poor operational definitions have produced contradictory results (Rotkin, 1983).

Research on the incidence of BPH is equally confusing because of unclear operational definitions, poor pathology examination, subjective criteria, and incomplete statistics. Despite the limitations of past work, certain information is believed to be true. BPH appears to occur most often in Blacks and Caucasians and is least common in Chinese and Japanese (Lytton, 1983; Rotkin, 1983). Eighty-five percent of all men are estimated to develop detectable prostate hypertrophies during their lifetime (Rotkin, 1983).

Common signs and symptoms of bladder outlet obstruction associated with BPH are hesitancy, decreased caliber and force of stream, terminal dribbling, a sensation of incomplete emptying of the bladder, acute urinary retention, infection, and hematuria (Dunphy & Way, 1979; Smith, 1984). With increasing prostatic obstruction, 50 to 80% of men will develop secondary irritative lower urinary tract symptoms of dysuria, frequency, and urgency (Walsh, 1986). It is uncommon for symptoms to develop before age 50, although most men have some enlargement by that

age and the majority of men have enlargement by age 60. The peak age of symptom onset is 55-75 years of age (Lytton, 1983). Not all enlargements result in symptoms since the size of the prostate has little or no correlation with symptomatology (Birkhoff, 1983). Symptoms are related more to speed of growth than size. With gradual growth the bladder can compensate for increased peripheral resistance (Brunner, 1982). BPH is not always progressive. In fact, approximately 50% of those patients with BPH may not clinically change for years (Smith, 1984).

Initial treatment consists of relieving prostatic congestion three to four times every two weeks by intercourse, masturbation, or prostatic massage. The rationale for orgasm is that the prostate secretes increased fluid during sexual arousal. If ejaculation does not occur, the prostate can become congested and inflamed, which increases symptoms (Hogan, 1980).

Infections are treated with antibiotics that decrease bladder irritability and further reduce symptoms. Clients are encouraged to avoid highly seasoned foods, void frequently, and not overdistend the bladder. Clients who drink copious fluids in a short time or do not void, decrease vesical tone and may experience acute urinary retention. Alcohol with its diuretic effect, infection, anticholinergics, antidepressants, tranquilizers, or decongestants can also result in acute retention and the need for catheterization (Walsh, 1986).

Surgical intervention is done only when there is a threat to renal function or when symptoms severely disrupt a client's life. This conservative approach is due to the belief that the older the client, the greater the surgical risk (Dellefield, 1986). The incidence of BPH

severe enough to warrant surgery increases with age (Birkhoff, 1983). One of four surgical procedures is selected on the basis of the client's symptoms, the size of the gland, the client's physical condition, presence of other diseases, and the surgeon's expertise (Brunner, 1982). Transurethral resection of the prostate (TURP), the most common surgical procedure, occurs in 90-95% of all surgically treated cases of BPH. This is due to a low mortality rate (0-1.3%), good results, and improvements in surgical equipment (Garlick, 1983; Mebust, 1983).

The prostate capsule thickens with age. An analogy is the thin peel of an apple which is closely connected to the fruit and the thick peel of the naval orange which is easily peeled off. During a TURP, the prostate is "shelled out", leaving behind a surgical capsule that includes the posterior lobe, site of most prostate cancers (Smith, 1984). Therefore, a disadvantage of this particular procedure is that it does not prevent development of prostate cancer (Loening, 1985).

The other three types of surgery are open methods and include transvesical prostatectomy, retropubic extravesical prostatectomy, and perineal prostatectomy. Only subjects who had TURP for BPH are included in the present study.

Prostate Cancer

As in BPH, the etiology of prostate cancer is similarly unclear and inconclusive (Drago, 1986). Sexual variables seem to have a stronger correlation to prostate cancer than BPH. Unfortunately, the same flaws in the epidemiologic studies of BPH are evident in the studies of prostate cancer. Research findings are contradictory on

sexual variables. However, all work concludes that sex is a strongly suspected correlate.

Schuman, Mandel, Blackard, Bauer, Scarlett, and Hugh (1977) correlate prostate cancer with a higher number of partners, use of prostitutes, prior venereal disease, partners with genital infections, higher fertility, early first intercourse, early first marriage, higher titers for herpes virus and cytomegalic virus, and desire for "more intercourse than occurred" (p. 185).

Rotkin (1977) replicated Schulman's findings about the repression of sexuality, but directly contradicted Schulman's (1977), Krain's (1973), and Steele's (1972) findings about the number of partners. That is, Rotkin reported men who developed prostate cancer had fewer sexual partners than controls during all adult ages. Rotkin found that first ejaculation occurred later for those diagnosed with cancer. He found statistical significance for delayed sexual drive and development and also premature cessation of sexuality. These findings led Rotkin to conclude that limiting sexual activity may increase the risk of prostate cancer.

Rotkin, Moses, Kaushal, Cooper, Osburn, and Benjamin (1979) conducted a second study (N = 410) using factor analysis and replicated earlier findings. The man at increased risk for prostate cancer has a "stronger than normal sexual drive" arising early in life and continually represses "sexual activity from adolescence through adulthood and into the later years" (p. 517). This finding is not limited to the American population. Mishina, Watanabe, Araki, and Nakao (1985) studied 100 controls and 100 prostate cancer cases in Japan and found cancer cases were more likely to occur in middle lower

socioeconomic classes, in those who marry young and have a long married life, those who are precocious, those who have a vigorous sex life followed by a decrease when older, and those with western food habits. While the above studies are contradictory, agreement occurs on the variable of "increased sex drive" correlating with prostate cancer.

Interest in sex variables related to prostate cancer encouraged Michalek, Mettlin, and Priore (1981) to study Catholic priests and their celibate lifestyles. While inconclusive, findings that New York priests have 30% less prostate cancer than the general public tend to support the hypothesis that sex variables may be implicated. To further confuse the issue, Ross, Despen, Casagrande, Paganini-Hill, and Henderson (1981) studied 1379 priests in Los Angeles and found them to have a slightly higher incidence of prostate cancer, thus not supporting the hypothesis that risk of prostate cancer is related to sexual contact.

The incidence (number of new cases reported per 100,000 population per year) of prostate cancer increases with each decade after age 50, and the median age of incidence is 70 years (Cohen & Dix, 1985; Rubin, 1978). By age 80, 50% of the male American population has prostate cancer (Ahmann, 1985), but only about one third of prostate cancers become clinically manifest during a man's lifetime (Catalona & Scott, 1986). The prostatic tumor cell has a doubling time of 50-120 days, taking 12-15 years to reach a palpable size of Stage B1 (Drago, 1986). The American College of Surgeons (Murphy et al., 1982) found 53% of Caucasian cases were diagnosed in Stages A and B, whereas only 39% of Black cases were diagnosed in the two early stages. There is disagreement on the breakdown of stage when clients first report to physicians. Garnick (1985) reports more sobering statistics than the

American College of Surgeons. Only 25% report at Stage A and B, 45% at Stage C, and 30% at Stage D. This estimate agrees more closely with Gibbons' (1984) report of 10-20% cases diagnosed at Stage B.

The incidence among Blacks is almost twice that of Caucasians and uncommon in Orientals living in non-westernized countries (Boxer, 1977; Catalona, 1984; Marino, 1981; McConnell & Zimmerman, 1983; Murphy, 1981). The incidence of prostate cancer is increased in Orientals who immigrate to the United States and eat a westernized diet with a high fat content (Smith, 1984).

Differentiating between prostate cancer and BPH has always been a diagnostic problem. Prior to the 19th century, they were considered the same disease (Boxer, 1977). Both diseases occur in the same age group of men, but cancer is found incidentally in 5% to 15% of men having surgery for BPH (Akdes, Ozen, Tasar, & Remzi, 1986; Hodges & Won, 1983; Smith, 1984). Early prostate cancer is either asymptomatic if there is no coincidental BPH or the same as BPH, i.e., urinary frequency, etc. (Smith, 1984). Any of the five prostate lobes can be the site of origin, although usually it is in the posterior lobe (Boxer, 1977; Brunner, 1982). Ductal carcinomas, of which there are four types--transitional cell, intraductal, mixed ductal, and endometroid--make up less than 5% of all prostate cancers. Carcinosarcomas--chondrosarcoma, rhabdomyosarcoma, osteosarcoma, fibrosarcoma, or mixtures of these elements--compose the remaining malignant prostate tumors. In general, the carcinosarcomas have a poor prognosis (Catalona & Scott, 1986). The ethical stance of this investigator is to work with subjects with an excellent prognosis and therefore ductal and carcinosarcoma prostate cancers, which have a poor prognosis, are excluded from the present

study. Only men with a primary prostate adenocarcinoma, the most common prostate neoplasm, are included in the present study.

Adenocarcinoma is staged as follows:

Stage A1: Focal tumor, found incidentally

A2: Multifocal or poorly differentiated, found incidentally

B: Palpable, asymptomatic tumor confined to the prostate capsule,
(10-20% of adeno. diagnosis are Stage B [Gibbons, 1984])

C: Regional metastases but not to the lymph nodes or bone

D: Distant metastases

(Garnick, 1985; Mariani, Tom, Hariharan, & Stams, 1983; Smith, 1984; Witmore, 1984).

Staging of the tumor is actually more important in assessing prognosis than tumor grade, but grading is a factor in assessing prognosis (Ansell, 1982). The use of the Gleason (1966) system for tumor grading assesses not only the degree of glandular differentiation but also the growth pattern and is the grading system used by the two hospitals in this study.

Treatment for prostate cancer is surrounded by controversy (Ahmann, 1985; Elder, Gibbons, Correa, & Brannen, 1985; Fowler, 1985; Gibbons, 1984; Schmidt, 1984). Only Stages A and B, which are commonly believed to be amenable to curative therapies and which are treated surgically, are included in this study (Lange, 1986). Radical retropubic prostatectomy which allows direct exposure, complete tissue removal,

and precise bleeding control is the most common surgical treatment (McConnell & Zimmerman, 1983). This is one of three "open" approaches which removes the entire prostate and its capsule (Gault, 1977). The efficacy of retropubic versus perineal surgical approach is not clear due to lack of prospective randomized trials (Ahmann, 1985). For purposes of control in this study, only subjects with primary adenocarcinoma prostate cancer who have had retropubic prostatectomy are included because the perineal approach has a higher incidence of nerve damage affecting erection ability (Finkle, 1962).

Effect of Prostate Surgery

In order to predict a change in sexual functioning resulting either from BPH, prostate cancer, or prostate surgery, multiple factors must be considered, which is why a unidimensional theory cannot be used to study the phenomenon. These factors include: 1) the sexuality functioning before the disease began; 2) the side effects of the disease, such as fatigue or depression; 3) the psychological status of the client including his perception of why he got the disease, such as punishment for sexual activity; 4) the side effects of the treatment; and 5) the attitude of the sexual partner and how the client interprets that attitude (Shope, 1975).

The sexual impact of BPH before surgery is controversial (Madorsky, Drylie, & Finlayson, 1976). No rigorous studies have been conducted. A few studies on the effect of benign tumors on female sexuality have resulted in vague findings related more to the specific symptoms than benign disease itself (DeCherney, Greenfeld, & Polan, 1985). The anecdotal literature on BPH reports a range from no sexual impact

(Boyarsky & Boyarsky, 1983; Kolodny, Masters, Johnson, & Biggs, 1979) to sexual "impotence" (Donahue & Bennett, 1978; Hogan, 1980; Zinman, Friedell, Schwartz, & Shipley, 1978). Men with BPH and concurrent prostatitis may experience penile pain during and after ejaculation. Their testicles and lower back may also ache during sexual excitement (Biggs & Spitz, 1975; Carrera, 1985).

The sexual impact of prostate cancer before surgery is unclear. Schover and von Eschenbach (1983) in a prospective study of 22 Stage B and C subjects, found 23% had painful ejaculations and 40% had erection dysfunction. The prostate becomes congested during penile tumescence. Physiologically, a tumor can cause painful ejaculation but not erection dysfunction unless autonomic nerves surrounding the prostate capsule are involved. Therefore, researchers believe that the correlation between erection dysfunction and untreated malignancy is probably incidental. Thus, BPH may have impact on the excitement, orgasmic, and/or resolution phases and cancer may only impact the orgasmic phase. The diagnosis of BPH or prostate cancer does not end sexual functioning, but it can potentially create sexual instability. That is, the diagnosis can be seen as a stressor, either positive or negative, which affects usual sexual behavior patterns (Loveland-Cherry & Wilkerson, 1983).

There is agreement among past investigators that prostate surgery affects "potency", which is usually defined by erections and ejaculation. They disagree on the incidence; 5-40% in the transurethral approach versus 85-100% in radical surgery (DeBacker, Lauwerijns, & Willen, 1977; Eggleston & Walsh, 1985; Finkle & Prian, 1965; Finkle & Taylor, 1981; Finkle & Williams, 1985; Holtgreave & Valk, 1964; Madorsky, Ashamalla, Schussler, Lyons, & Miller, 1976; Walsh & Donker,

1982; Walsh, Lepor, & Eggleston, 1983; Wasserman, Pollak, Spielman, & Weitzman, 1980). Contradictory studies find the type of surgery (transurethral versus radical) not to be statistically significant (Gold & Hotchkiss, 1969; Hargreaves and Stephenson, 1977). In addition to type of surgery, other variables found not to be statistically significant are tumor grade, stage, (Finkle & Taylor, 1981; Holtgreave & Valk; 1964), pelvic lymphadenectomy (Finkle & Taylor, 1981), and arterial blood flow to the penis (Walsh & Donker, 1982).

What is agreed upon is that when men are physiologically unable to have erections after prostate surgery, it is usually due to damage of the parasympathetic nerves of the prostatic plexus (Lue, Takamura, Schmidt, & Tanagho, 1983; Schover & Fife, 1986; Walsh, Lepor, & Eggleston, 1983; Walsh & Mostin, 1984). It can take up to six months for the parasympathetic nerves to heal or regenerate (Schover & Fife, 1986).

Retrograde ejaculation is expulsion of seminal fluid into the bladder instead of the urethra (Lipshultz, McConnell, & Benson, 1981). This complication results from surgical damage to the sphincter of the bladder causing incomplete closure of the bladder neck. This condition has no physiological impact on erection, but there may be a psychological impact for some men (Kolodny et al., 1979).

Postintercourse bleeding may occur if "sex relations" are resumed before the severed surfaces of the prostate gland have had time to epithelialize. This is due to the physiological fact that during penile tumescence, the prostate gland becomes congested. If congestion occurs before the prostatic blood vessels have completely healed, bleeding can result.

Epididymitis, a postoperative complication, can cause pain during coitus or ejaculation due to the pressure on the inflamed area. The pain can persist even after swelling and inflammation have subsided. A secondary effect is the anxiety caused and the fear that the pain may never resolve.

Another common postoperative complication which might impact on sexual functioning is urethral strictures. This can occur when the urethral epithelium is damaged by passage of a transurethral instrument or the postoperative use of a catheter. The physiological cause is unclear, but these men may complain of pain on ejaculation and occasionally on erection (Rowan, 1985).

Despite intense physiological research, the causes of changes in sexual performance are still unclear. Changes have been speculated to correlate with poor preoperative counseling (Finkle & Moyers, 1960; Zohar, Meiraz, Maoz, & Durst, 1976), preoperative prostatic symptom of poor urinary stream (Hargreave & Stephenson, 1977), the patient's general satisfaction with life and level of preoperative anxiety (Zohar et al., 1976), marital status (Finkle & Moyer, 1960), the diagnosis of cancer versus benign disease (Pearlman & Kobashi, 1972), and the combination of age and prostate capsular penetration by the cancer (Walsh & Donker, 1972). While these variables are interesting, the findings have not always been replicated in other studies.

Improved surgical techniques now preserve parasympathetic nerves associated with erection (Weiss, Schlecker, Wein, & Hanno, 1985). Thus, most authors currently believe that the majority of causes of sexual dysfunction following prostate surgery are psychogenic and not physiological. Possible psychological causes that have been advanced

include: surgery provides an acceptable, convenient excuse for men who desire to end sex; partners may avoid coitus due to fear and misunderstanding; lack of preoperative counseling or even iatrogenic causes secondary to the physician's attitude that sex is no longer necessary for older clients; or fear that sex may physically damage the surgical repair or imperil health (Gonick, 1976; Kolodny et al, 1979). Lending support to psychogenic causes are studies of nocturnal penile tumescence which found no significant changes before and after prostate surgery. These findings indicate that blood and innervation to the penis were still intact although approximately half the men did have a decreased quality of postoperative erections (Madorsky et al., 1976). Wasserman et al. (1980) also did a nocturnal penile tumescence case study following TURP and suggest erectile dysfunction is not psychological but physiological.

In sum, limitations of previous studies on the effects of prostate surgery include: the lack of operational definition for potency, the restriction of the definition of sexuality to erection and ejaculation, the lack of control groups, the use of erroneous within group comparisons, the lack of information on medications or co-existing health problems, the lack of information about sex counseling given if any, the lack of instrument reliability and validity, the use of incomplete charts, the use of interviewers with little or no experience in sexuality research, and the selection of only those male subjects with female partners. However, these studies did contribute information about physiological changes following prostate surgery and stimulated further research in this area.

Psychoanalytic Theory

History, Strength and Weakness, and Literature Review

Psychoanalytic theory is considered separately from the other developmental and personality theories because it is the oldest and most influential (Giovacchini, 1977). In fact, Winestein (1982) identifies the three major influences on western culture beliefs about sexuality as religion, Freud, and research in human sexuality. The influence of Freud, 43 years after his death, is demonstrated by the use of Freudian terminology, such as "penis envy" and "Freudian slip", in everyday language (Gagnon, 1975; Hogan, 1980).

Psychoanalysis developed from Freud's attempt to explain and treat the psychopathology of his patients (Giovacchini, 1977). Freud developed psychoanalytic theory in Vienna in the early 1900s and therefore many of the biases of the times, such as male superiority, are reflected in the theory (Gagnon, 1976; Hogan, 1980). Examples of biased views are: 1) the female ovum waits passively for the active and mobile sperm; 2) women have a lower sex drive and are, thus, sexually inferior to men; and 3) the clitoral orgasm is an immature orgasm (Hogan, 1980; Sherfey, 1972; Wineberg, 1982).

Psychoanalytic theory has been criticized for lack of operational definitions, a masculine bias, and lack of evidence that the libido moves in an orderly fashion through oral, anal, phallic, and oedipal stages (Fee, 1976; Hogan, 1980; Loevinger, 1976; Person, 1980). Masters and Johnson (1966), in a critique of Freud's work, noted that physiologic research would have strengthened his work and corrected some misconceptions, such as that of the immobile ovum. Other criticisms of

psychoanalytic theory include: 1) alternate theories have been more powerful in explaining the phenomena; 2) the conservative perspective on female sexuality has been shown to have a cultural and time-limited bias; 3) psychoanalysts have focused on clinical practice rather than research; and 4) psychoanalysis has a poor success rate in addition to being costly and time-consuming as a treatment for sex problems (Gagnon, 1977). Masson's (1984) work while Director of the Freud Archives has created further furor over the seduction theory.

A basic tenet of this chapter is that the theory used can dictate interpretation of findings. As O'Rourke (1982) has stated, psychoanalytic theory may make good observations but the interpretations and labeling lead to problems. Halper's (1973) psychoanalytic-based research is an example of labeling and interpretation problems, for example,

> Women who masturbate by running water over their clitoris are using this form of masturbation to express their supplementary fantasies: I have my father's penis and can urinate/ejaculate like a man, and I am able to urinate and destroy/castrate with my powerful stream in revenge for castration. (p. 526)

Faulkner (1980) notes that theories of sexuality have often been sexual ideologies in disguise. Psychoanalysis is perhaps one of the major offenders. Freud at first kept morality and psychoanalysis separate in his quest to be a scientist. Unfortunately, after meeting with Putnam, a Boston psychiatrist, Freud included morality in his book, The Future of an Illusion. Rosenbaum (1980) pleads with psychoanalysts to discontinue the use of morality in their work because the definition of morality changes with time. Thus, the inclusion of morality in a scientific work is a deterrent to sound research that builds scientific knowledge.

Despite criticisms of his work, Freud contributed a great deal to the knowledge of sexuality (Masterson, 1976; Person, 1980; Servadio, 1978). He legitimized the discussion of sexuality in an age of prudery and hypocrisy, extended the concept of sexuality beyond intercourse, and asserted that women have the right to be sexually gratified (Ash, 1972; Rieff, 1979; Szaz, 1980; Wineburg, 1982). Freud's focus on the importance of sexuality in human development and his rediscovery of the sexuality of children laid the foundation for later research (Fisher, 1982; Haberle, 1978; Nijs & Steppe, 1978; Riech, 1971). In addition, Freud recognized that his theory was not timeless. He believed that psychology in the future would have to incorporate an organic foundation in order to explain the total phenomenon of sexuality (Beach, 1977). Freud's belief is substantiated by Borneman's work on childhood sexuality. His findings that there is a "Cutaneous Phase" prior to the anal, oral, and genital phases; that separation anxiety and the Oedipal complex are not phenomena that must occur for all children; and that sexual behavior is independent of genital maturity strengthens Janeway's assertion that old theories need to be continually questioned for they are not timeless (Daly, 1985).

Studies of sexuality in men who have had prostate surgery have seldom been done from a psychoanalytic framework. Fisher's (1979) work with women following total pelvic exenteration seems to use psychoanalysis and crisis intervention as a framework but but does not do so explicitly. Sanger and Reznikoff (1981) and Wellish, Jamison, and Pasnau (1978) studied women following mastectomy with an unstated psychoanalytic framework.

Multiple research studies on erection and ejaculation dysfunctions have used the psychoanalytic framework (Kaplan, 1974). Until 1959, 90% of erection dysfunction was believed to be psychogenic in origin; thus, this framework was appropriate because it focused on psychological variables (Benson, 1985; Magee, 1980; Nagler, White, Blavias, 1985). Advances in medical technology, such as instruments to measure hormone levels, detect penile blood flow, and measure penile tumescence, have led to a downward revision of the percentage of psychogenic erection dysfunction to 50% (Federman, 1982; Spark, White, & Connelly, 1980; Wagner & Metz, 1980; Williams, 1985). The change in identification of etiology emphasizes the need for holistic approaches in studying all aspects of sexuality. If one framework is used exclusively, important facets may be ignored or unintentionally omitted. In summary, psychoanalytic theory takes a reductionist approach that limits sexuality to instinct/reflexes. This approach does not have sufficient explanatory power to account for sexual behavior (Merleau-Ponty, cited in Dillon, 1980).

Developmental Theories

Developmental theories growing out of Freud's work have been useful in determining changes in sexuality that occur over the life-span (Broderick, 1971; Hogan, 1980; Kimmel, 1980; Rowe, 1966). One developmental theorist, Erikson, expanded basic psychoanalytic concepts to include biological and cultural aspects of sexuality. Erikson's theory blends the psychoanalytic focus on inner psychic processes with a behaviorist focus on observable, measurable behavior (Hogan, 1980).

Developmental theory is not viewed as a unique theory but one that combines the Freudian theory of developmental stages, the structural-functional theory of role, and the dynamic aspect of symbolic interaction of interacting personalities (Rowe, 1966). Developmental theory incorporates the concept that sexual behavior may have continuity throughout the lifespan but the meanings attached to the behavior may change over time (Adams & Turner, 1985). Thus, sexuality is a dynamic phenomenon which is redefined by each person at various stages (McFarlane & Rubenfeld, 1983). A developmental approach to the study of sexuality can begin to answer questions about the role of learning in the development of sexual behaviors (Symons, 1981).

One obstacle to using developmental theory to study sexuality is the need for longitudinal design. Hill and Rodgers (1964) suggest alternatives to overcome this obstacle: cross-sectional data, retrospective history taking, segmented longitudinal studies, and segmented longitudinal studies with controls. Limitations of this theory are imperfect concepts, lack of ability to predict with certainty, costly and time-consuming designs, questionable validity of retrospective data, underemphasis on individual variation, and absence of interaction between historical, cultural, and social factors (Kimmel, 1980; Rowe, 1966). The high cost of a longitudinal design often forces an investigator to try and get maximum use of the data. This results in multiple purposes and can create compromises in design that reduce the integrity of the study through the introduction of instrument error and subject fatigue (Maddox & Campbell, 1985). In addition, underemphasis on individual variation is a major limitation because an adequate

life-span theory would account for positive as well as negative changes in sexuality (Adams & Turner, 1985).

Several recent oncology-sexuality studies have used developmental theory. Schover and von Eschenbach (1985) were able to use it successfully in their study on testicular cancer and sexuality. Gerand (1982) seems to be implicitly using developmental theory to examine the effect of mastectomy surgery on sexuality. When the prostate is the site of the malignancy, Ellison (1985) has hypothesized four developmental tasks which occur: 1) adjustment to multiple chronic diseases; 2) adjustment to reduced, fixed income after retirement; 3) physiological changes in sexual functioning due to aging; 4) possible erection dysfunction or urinary incontinence following prostate surgery.

Developmental theory is especially useful in looking at the developmental stages at which certain cancers occur in specific age groups, i.e., young leukemia versus older prostate subjects (Nevidjon, 1984). Of interest would be the major developmental tasks of the different age groups, for example, older adults whose task is ego integrity (Erikson, 1958). Persons in this age group are usually relieved of the time-consuming tasks of parenthood and employment. Thus, they may be at an ideal time for the fulfillment of sexual integrity. There is no need to rush sex before the children wake or before going to work (McFarlane & Rubenfeld, 1983). Developmental theory is also useful in studying different stages of diagnosis (stage I versus stage III), as well as treatment (the first week of radiation versus the week after radiation completion). Chronological age is not as important in adult development as milestones, such as the beginning of chemotherapy treatment (Kimmel, 1980; Sarrel & Sarrel, 1984).

Developmental theory has begun to be used more widely in sexuality and aging, although most work on the elderly is atheoretical (Adams & Turner, 1985). What is often forgotten, however, is that age norms, especially sexual norms, change over time (Neugarten & Hagestad, 1978). Findings of a 1975 study on 60 year olds may not be true of the same age group in 1985 (Marson, 1983).

Inherent in developmental theory are assumptions that people change with time, that changes are orderly and unidirectional, and that there are processes of growth and maturation. Processes of decay, deterioration, and death are not addressed (Chin, 1979; Rowe, 1966). The omission of death may explain why oncology-sexuality studies have not used this theory more extensively.

Other Theories

Psychoanalytic and behavioral/biological frameworks have been the most influential in creating understanding of human sexuality, but many other frameworks/theories have been used to examine the phenomenon. Social network, conjugal role organization, role theory, existential psychology, the humanistic psychologic perspective of Jourard, Fromm, and Rogers, conflict theory, attribution theory, and exchange theory have all been used to some degree to examine the phenomenon of sex (Aldous, 1970; Burr, Hill, Nye, & Reiss, 1979; Hogan, 1980; Kelley, 1977; Turner, 1978). None of these theories has been used in oncology-sexuality studies and therefore will not be discussed as to their limitations and advantages.

Reports of research in the literature often do not describe theoretical frameworks, but the terms and operational definitions provide clues to what the investigators may have used, for example, Nilsson, Kock, and Kylberg's (1982) study on ostomy surgery that uses cognitive dissonance, Woods and Earp's (1978) work with social support, Bullard et al.'s (1980) epidemiologic approach of a needs assessment of sexual information for people with cancer, and Wood and Tombrink's (1983) use of body image. Krouse and Krouse (1981) look at women with gynecological or breast cancer using crisis theory, and Capone, Good, Westie, and Jacobson (1980) appear to use crisis theory to look at gynecological cancer and its effect on sexuality.

The significance and value in the variety of theories being used are that they "lead not to different bodies of knowledge but to different aspects of a single body" (Crawford, Dufault, & Rudy, 1979, p. 347). The diversity of thinking results in refinement of theory, creation of new theories, and stretches imagination to look at new ideas of research (Leininger, 1969).

Thus, the need is not for one theory to be used uniquely by each discipline but for theories from any discipline that can be used in the investigator's own way from his or her particular disciplinary perspective. For example, carbon-dating was developed by physicists but it has revolutionized anthropology (Moser, 1982). Moser has stated that sex should be studied by a variety of disciplines using a variety of theories. However, each researcher must have a primary interest in sex because a large amount of sex information must be synthesized to design

a rigorous study. Often investigators read several articles on sexuality, but a quick review does not permit a thorough understanding of a very complex subject and this results in poorly designed research.

Rationale for the Selection of Johnson's Behavioral Model and Symbolic Interaction for This Study's Conceptual Framework

The decision to use JBM with SI as a framework for this study is based on a critical analysis of theories used in past research, consideration of the research question posed for the study, and the potential of the theory for answering the question and providing direction for appropriate nursing interventions. The choice between competing theories is based on a mixture of objective and subjective factors because no single theory is perfect (Kuhn, 1977). The challenge is to select the theory which best provides insight into the question being asked (Meleis, 1978). The combined JBM and SI framework incorporates psychological and biological variables without trying to separate them artificially. This is an important consideration since nowhere else is the connection so difficult to separate as in sexual matters (Ephross, 1981; Maurice, 1985).

The limitations of past work resulting from theoretical inadequacies have already been discussed. These limitations justify the selection of JBM with SI as a framework for the study of sexuality in prostatectomy patients and their partners. Johnson's Behavioral Model meets the criteria of a useful model. It is dynamic and permits flexibility, incorporates an underlying nursing knowledge base, applies

not only to specific clinical problems but the entire nursing domain, is ethically sound, and is consistent with previous research findings on human behavior (Walker & Nicholson, 1980). Symbolic interaction is a powerful tool that allows the researcher to view sex as a symbol and thus allows analytic questioning never before addressed in "naturalistic" views of sex (Ortner & Whitehead, 1981).

Surgery of the prostate can affect sexual behavior and yet will affect each individual differently, depending on his partner's reaction; physiological aspects, such as other co-existing diseases; culture, for example, the elderly seen as asexual; and other variables mentioned in this chapter. Thus, sexual behavior involves much more than genital performance (Woodard & Rollin, 1981). The need to observe and describe this process completely and to ensure a unique client-provider interaction rather than relying on "known facts" requires a model and theory capable of accomplishing this (Cox, 1982; Ortner & Whitehead, 1980; Scalzi, 1973). Similarly, research needs to have a sex-positive orientation which is open to what is actually occurring (Nass, Libby, & Fisher, 1981). SI and JBM serve to explore the multiple and complex interrelation (Cox, 1982).

The theory of SI is used in conjunction with JBM because of its ability to explain and predict. The nursing model facilitates assessment and intervention (Lovejoy, 1983; Riehl & Roy, 1980). More importantly, the use of JBM allows a nursing perspective to view the phenomenon of sexual stability (Williams & Schulte, 1982). Together JBM and SI strengthen the framework for the proposed study.

Symbolic Interaction

An Overview of Symbolic Interaction Theory

Symbolic interaction focuses upon the mental processes during which people define situations and attach meanings to symbols. In accordance with SI, it is then on the basis of these definitions or meanings that the individual acts or interprets the situation or symbol (Ruefli, 1985). Humans constantly evaluate and act upon events based upon their interpretation of those events (Schroeder, 1981). Thus, human beings are dynamic rather than stable and fixed (Charon, 1979).

> Sexual behavior is viewed as social behavior, entered into and endowed with meaning by social actors whose interpersonal relationships are bound together by common and shared understandings and communications that are the product of their common and shared social and cultural worlds. Sexual behavior is, above all, learned behavior; sexual conduct is "neither fixed by nature or by the organs themselves." Social scripts organize our understanding of the participation in sexual activity. A sexual situation exists when the actors involved are responding to a socially constructed definition of what is sexual with strategies for doing the sexual. "The social meaning given to the physical acts releases biological events." In other words, it is the meaning assigned to behaviors by the actors involved--not the behaviors themselves --that determines whether a situation or activity is sexual or not. (Miller & Fowlkes, 1980, p. 262)

Historical Origins

Symbolic interaction (SI) theory has been influenced both by its founders and by the historical contexts in which it was developed. The theory has a pragmatic, philosophical base that results from the influence of British empiricists Hume, Locke, and Berkely, who worked during the Age of Enlightenment. This historical period was characterized by a change from "moralistic" to "scientific" explanations of reality (Burr, Leigh, Day, & Constantine, 1979). A basic building

block of SI theory is that people interact with their environment and choose the stimuli to which they will respond on the basis of the meaning of the stimuli. Thus, communication and the use of symbols is an integral part of SI.

Simmel was the first to explore the taken-for-granted phenomenon of interaction/"sociability". His major contribution was the emphasis on personality that is formed by the group with which its interacts. People think of themselves and act as a result of group interaction (Turner, 1978). Weber was interested in the macro structure but recognized the importance of the micro scope of meaningful and symbolic interactions of individuals (Turner, 1978). James (1948) clarified the concept of "self" and "primary group". Cooley (1909) elaborated James' "self" to the "looking glass self". Dewey (1922) identified the capacity for thinking as unique to humans and believed that human characteristics develop from the process of adjusting to life (Burr, Hill, Nye, & Reiss, 1979; Turner, 1978). Simmel, Weber, James, Cooley, and Dewey all influenced Mead, the theorist credited with founding SI theory.

Mead synthesized the premises of behaviorists (reinforcement guides behavior), pragmatists (people are practical and learn to deal with the real world), and Darwinists (characteristics that facilitate survival of the fittest will be passed generation to generation) in order to create SI (Mead, 1962). Mead's work with SI then developed into three schools of thought: Chicago, Iowa, and Minnesota.

Blumer (1969) of the Chicago school built on Mead's work of the interactionist perspective and the use of symbols to communicate (Burr, Leigh, Day & Constantine, 1979). In fact, Blumer is the theorist

credited with interpreting and integrating Mead's work on SI. This is due to Mead's reluctance to write and his reliance on oral or written accounts by students of his lectures (Charon, 1979). The Chicago school emphasized the indeterminate, unpredictable, and subjective aspects in contrast to Kuhn's positivist emphasis in the Iowa school on operationalizing Mead's concept, e.g. self. Rose (1962) and Stone at the University of Minnesota focused on the more predictable aspects of the theory. By the 1970s, three divergent schools of thought began to converge into an integrated perspective, which was then used by Park, Moreno, and Linton to develop more fully the concepts pertaining to role (Turner, 1974).

Major Concepts

The concepts chosen for a theory serve to identify the subject matter. These concepts, which are abstractions representing reality, make up the conceptual framework and lay the foundation for the quality level of the theory (Burr, Leigh, Day, & Constantine, 1979; Jacox, 1974). Therefore, the concepts of self, generalized other, significant other, symbol, mind, and role will be operationally defined in Chapter III.

Assumptions

The decision of which theory to use cannot be made casually for it truly directs what will be studied and how. It is especially important to identify and consider the assumptions of a particular theory. As Merton explains, assumptions dictate the variables to be taken into account, provide a roadmap for theory development, and affect theory

more than research or data. Data can be gathered to 'self-fulfill' the initial assumptions of the researcher (Duke, 1976). Assumptions that characterize SI are:

1. Humans live in a symbolic environment as well as a physical environment, and they acquire complex sets of symbols in their minds.
2. Humans value.
3. Symbols are important in understanding human behavior.
4. Humans are reflective, and their introspection gradually creates a definition of self.
5. The self has several different parts.
6. The human is actor as well as reactor.
7. The infant is asocial.
8. Society precedes individuals.
9. Society and man are the same.
10. The human mind is indelible.
11. Man ought to be studied on his own level.

(Burr, Leigh, Day, & Constantine, 1979, pp. 46-48; Shott, 1979)

The Focus of Symbolic Interaction

The value of SI in research is its unique perspective that the best way to understand human behavior is to deal with the meanings and values of individuals and their personal definitions of sexuality. For the older male subjects of this study, the use of SI allows exploration of how they interpret the physiological aspects of aging and also how they perceive society views sexual behavior for them. If society labels and

stereotypes the elderly as undesirable and asexual, the elderly may begin to believe sexual feelings are abnormal and attempt to repress or even conform to the asexual role (Kaas, 1978). Sarrel and Sarrel (1984) found illness, either minor or major, had a negative effect on sexual functioning of older subjects depending on the meaning of the illness.

A man who defines sex as ability to get an erection when his wife puts on her red nightgown, and is then unable to get an erection one night, may define himself as asexual (Griggs, 1978). The inability could be related either to the physiological aspects of aging when visual stimuli is no longer enough and tactile stimulation is needed, or to having a friend tell him "it's all over after your prostate's gone." In either situation, the client becomes very aware of his penis (called spectatoring by sexologists) and is then unable to get an erection. This example illustrates an interweaving of JBM, which explains the physiologic aging aspect, and SI, which deals with the meaning of the situation and interaction with others.

Another man may have the same experience but describe himself as sexual because erection does not have the same meaning to him as it does to the first man. This example illustrates that the meaning of the same incident is modified and handled through an interpretive process that is unique for each individual (Petras, 1978). According to SI theory, a person's perception of reality can affect his future behavior (Rubinson, Ory, & Marmata, 1981). "The capacity to experience and appreciate sexual arousal is not only individual, but variable, and the only true authority regarding a person's sexual satisfaction in any given episode is that individual" (Bragonier & Bragonier, 1979, p. 10). In other

words, reality is defined by each person, who then acts on that perception (Hardy & Conway, 1978).

Although symbolic interaction focuses upon defining situations and attaching meanings to symbols, this does not mean that SI is similar to psychoanalysis. SI does not concern itself with the id, ego, superego because these psychoanalytic concepts are not believed to influence behavior as much as SI does (Burr, Leigh, Day, & Constantine, 1979). Similarly, the focus of SI on perceptions and interaction does not imply that the mind is the only variable. In fact, SI addresses societal-structural variables, behavioral and interaction variables, and the I. All of these variables are given meaning by the individual before they influence behavior. Reinforcement theory is also very different from SI because reinforcement ignores personal interpretation (Burr, Leigh, Day, & Constantine, 1979).

Symbolic interaction when used alone as a conceptual framework has great potential for enhancing understanding and exploring the sexuality of elderly men with prostate disease. The theory allows an examination of postoperative sexual behavior on the basis of individual meanings attached to surgery and sexual functioning (Petras, 1978). Meanings a man attaches to his prostate surgery are explored by examining the words used to describe it. The words a man uses reveal how he sees himself (Schroeder, 1981). However, symbolic interaction theory is not at the fourth level, cannot prescribe treatment, and thus has limited value when used alone for clinical nursing practice. Symbolic interaction also has the disadvantage of focusing on social and psychological aspects with little attention to physical variables (Schroeder, 1981).

Johnson's Behavioral Model

An Overview of Johnson's Behavioral Model

Johnson's Behavioral Model is a model that incorporates systems theory and stability in order to understand and influence human behavior in health and illness. Johnson (1968) identifies man as a behavioral system. A behavioral system differs from a biological system, the domain of medicine, by focusing on a person's actions and behaviors. Incorporated into the model are the biological, psychological, and sociological factors which influence the behavior. All behavior is seen as having a purpose and facilitating balance. This striving for balance does not preclude the individual from actively engaging in new behavior or changing behavior based on learning experiences which may create temporary imbalance (Loveland-Cherry & Wilkerson, 1983).

Johnson's (1980) model defines seven interdependent, yet open, subsystems of behavior (attachment/affiliative, dependency, ingestive, eliminative, sexual, aggressive, and achievement). The attachment/affiliative behavior is the first subsystem to emerge developmentally. Its function is security, including social inclusion, intimacy, and social bonding. The dependency subsystem consists of behavior that encourages nurturance, approval, attention, or physical assistance. The ingestive subsystem encompasses not only what is eaten for biological survival, but also social and psychological reasons for appetite. The eliminative subsystem includes not only what is eliminated, but when and how. The ingestive and eliminative subsystems are not just biological systems but involve recognition of societal influences. The broad scope of these two subsystems brings it well within the domain of nursing.

The sexual subsystem is not only biological sex but associated behaviors, such as how one dresses or walks. The aggressive subsystem is for protection and preservation of self and society. The achievement subsystem attempts to manipulate the environment in order to master or control events or self (Johnson, 1980).

Each subsystem carries out a specialized task for the system as a whole. Each subsystem has a structure composed of goals, set, choices, and behaviors. Goals are at two levels: conceptual goals are those common to all people and essential for survival, and personal goals are those unique for each individual. The overall goal for any society is behavior acceptable to society at large (Lobo, 1985). Set is the predisposition to act in a hierarchical manner to meet the goal. For example, a man who has several options to regain sexual subsystem stability following surgery may rank those options and pick the one most desirable. Choices are those behavior alternatives available to the individual, behaviors beyond the individual's usual set of behavior. Individuals have the ability to add to their behavior repertoire and the more adaptable the individual, the larger the choices. It is a fallacy to believe the adage "You can't teach an old dog new tricks." Old age does not cause rigidly fixed behavior (Ellison, 1985). Eaid (1971) found many elderly subjects actively sought new sexual techniques, especially if they had a new partner. Scott, Oberst, and Bookbinder (1984) studied men with genitourinary carcinoma and found a trend that those with a higher educational level and higher Critical Thinking Appraisal scores approached problems more creatively and used more alternative solutions and contingency plans. Behaviors are observable actions in response to internal or external stimuli taken to meet the

goals. Each subsystem or group of behaviors also has three functional requirement--protection, nurturance, and stimulation--which can be met either by the individual or by outside assistance. When the subsystems meet these functional requirements, a person (the behavioral system) is seen as self- maintaining and self-perpetuating (Lobo, 1985).

Together, the seven integrated subsystems make up the person, the behavioral system. Because they are interdependent, a disturbance in one subsystem affects the other subsystems. For example, a disturbance in the sexual subsystem, such as premature cessation, can accelerate physiological and psychological aging. Disuse of the sexual subsystem will usually lead to concomitant changes in other areas of life (Kirkenall & Rubin, 1969; McFarlane & Rubenfeld, 1983). Disturbances require that man has sufficient flexibility to adapt and adjust so that balance can be achieved. Usually man has enough flexibility to adjust to common daily disturbances. However, illness or surgery can be stressors, either negative or positive, disturbing all seven subsystems and resulting in behavioral instability (Derdiarian, 1983). When equilibrium is disturbed, tension can occur and the behavioral system, man, must increase energy usage to regain behavioral system equilibrium. The goal of nursing when the individual is unable to restore stability is to help restore system balance and prevent further disturbances to the system (Johnson, 1968, 1980).

Historical Origins

Both Johnson's Behavioral Nursing Model (JBM) and Symbolic Interaction (SI) have pragmatic, philosophical bases (Johnson, 1980). JBM is based upon the work of role theorist Parson (Lovejoy, 1983).

According to Johnson, the domain of nursing is human behavior during health and illness (Johnson, 1974; Lovejoy, 1983).

Johnson's Behavioral Model was created by Dorothy Johnson, whose experiences as a pediatric nurse influenced its development. For example, the subsystem of affiliation is based on Johnson's observation of separation anxiety in her pediatric population (Derdiarian, 1983).

The historical period during which the model was developed, the 1960s, influenced Johnson's focus on "stability." The emphasis on stability contrasts to a focus in the 1970s on "change" and the nurse as a "change agent". The 1960s was also a period of popularity for systems theory (Lovejoy, 1983) as developed by von Bertalanffy (1968). Systems theory corrected the reductionist/mechanistic tradition in science which explained events in a linear, stepwise, cause and effect equation (Steinglass, 1978). System theorists, Chin, Buckley, and Rapport, influenced Johnson's assumptions about behavioral systems (Lobo, 1985). Another influence of the late 1960s on Johnson's work was the new emphasis on sexuality in medical and nursing schools (Wineberg, 1982). The specific attention to sexuality was a major innovation in nursing models.

Just as Mead's work with SI was expanded, Johnson's work with JBM has been expanded by theorists such as Grubbs, Auger, and Lovejoy. Lovejoy (1983) has developed a chart to illustrate changes in JBM made by other theorists. One basic change is the addition of an eighth subsystem--restorative--which Johnson originally incorporated in the subsystems of dependency and aggressive-protection.

Grubbs' (1980) unique contribution to JBM was observation of an inconsistency between the holistic goal of the model and the design of

separate subsystems each with an individual entry and exit (Lovejoy, 1983). To address this inconsistency, Grubbs (1980) modified the model so that the entire system has a single entry and single exit. This is believed to meet the goal of holism identified by Johnson. The concept of holism grew during the 1940s when the emphasis in nursing was placed on involvement with "whole person". Another contribution of Grubbs was the addition of a second layer of intervention modes consisting of nurturance, stimulation, and protection. In addition, Grubbs developed a nursing assessment tool and nursing process sheet.

Auger's unique contributions were to subdivide set into preparatory set and perservatory set (Lovejoy, 1983) and to develop a patient classification system (Broncatello, 1980; Dee & Auger, 1983). Glennin (1974) contributed standards of performance for nursing practice. A unique contribution of Wu, a contemporary of Johnson, was her allowance for periodic instability for growth (Lovejoy, 1983). Each of the nurse scientists mentioned expanded Johnson's model; however, models must be tested and evaluated for their efficacy in practice (Rawls, 1980). Thus, nurses in geriatrics, pediatrics, oncology, and other specialties have begun to test JBM. In fact, Damus (1974, 1980), Dee and Auger (1983), Holaday (1980), Kaas (1978), Lovejoy (1983), Rawls (1980), and Skolny and Riehl (1974) used JBM in their work with a variety of patients, thus demonstrating not only the efficacy but the versatility of the JBM.

Assumptions of Johnson's Behavioral Model

Assumptions are inherent in theories. In fact, they are the foundational core and thus must be made explicit (Ellis, 1968; Loveland-

Cherry & Wilkerson, 1983). Many assumptions have been identified in JBM, some of which apply to nursing, the role of nursing, man and behavior, behavioral theory, and system theory. Only those assumptions specifically pertinent to the present study are included here. For a full view of the assumptions, Grubbs (1980) and Loveland-Cherry and Wilkerson (1983) have made comprehensive tables.

1. Just as medicine has the obligation to seek the highest possible level of biological functioning and overall stability, nursing has the obligation to seek the highest possible level of behavioral functioning. Both are limited by current knowledge and the value judgments of society.
2. There are no established and universally accepted standards for behavior that represent a "better" or "higher" level in any absolute way.
3. Nursing can contribute, through research, to further understanding of the significance and consequence of certain behaviors. Nursing can also use, but judiciously, the knowledge available. In no case, however, can the individual nurse afford to impose upon the patient her judgments as to what is desirable.
4. Behavior is determined by multiple complex interactions of physical, biological, and social factors.
5. The behavior of an individual at any given point is the product of the net aggregate of consequences of those biological, physical, and social factors that have not been adequately fulfilled.

6. When these regularities and constancies are disturbed, the integrity of the person is threatened and the functions served by such orders are not adequately fulfilled.
7. Behavioral system is stabilized, for varying periods of time, at levels that represent adaptation and adjustment (to changing conditions) which are successful for the individual in some way and to some degree.
8. Balance is self-maintained and self-perpetuated so long as the functional requirements of the subsystem are adequately met and fluctuations in environmental conditions are within the current capacity of the system to adjust.
9. Change in the structure and dynamic of the behavioral subsystems and/or the whole system is associated with:
   a. Inadequate drive satisfaction
   b. Inadequate fulfillment of the functional requirements of the subsystem
   c. Fluctuations in environmental conditions that exceed the system's capacity to adjust.

   (Grubbs, 1980, pp. 218-226; Johnson, 1968, 1978, 1980)

Strengths of Johnson's Behavioral Model

1. Concepts are consistent with systems and behavioral theories.
2. "... allows for additions of new behavior components without destroying the integrity of the whole system" (Stevens, 1979). This allows for evolution and flexibility.
3. The empirical, inductive approach used to develop the model anchors it firmly in reality.

4. Assumptions are explicitly stated so that the user can make decisions about applicability of the model (Johnson, 1968).
5. Sexuality as a concern of nursing is explicitly stated.
6. The idea of client uniqueness is identified and serves as a basis for client centered care (Cos, 1982).
7. The emphasis on the bio-psycho-socio-cultural factors influencing behavior permits application in all clinical settings (Auger & Dee, 1983).
8. The identified universal patterns of behavior are applicable to individuals of all ages (Auger & Dee, 1983).
9. The model focuses attention on the aspects specific to the domain of nursing and suggests how to evaluate the source of stress and how to intervene (Fawcett, 1984; Johnson, 1968)

Inadequacies of Johnson's Behavioral Model

1. The model does not deal with interrelationships between subsystems (Stevens, 1979). This may be due more to the level of development than to the model itself.
2. The use of complex and unique terminology requires extensive elaboration to understand (Rawls, 1980), but this limitation can be easily remedied by studying the model (Fawcett, 1984).
3. Johnson (1968) sees man as reacting and acting to stimuli in contrast to the original systems theory which views man as an active creator (von Bertalanffy, 1969). Further elaboration of JBM has recognized this and suggests man actively seeks temporary disequilibrium.

4. Johnson stresses the need for the nurse or external regulator force instead of focusing on strengths of the patient and his/her ability for self-care and decision-making. The focus is on the nurse to restore balance (Paternalism).
5. Johnson did not personally conduct research to test the model.
6. The model has low explanatory power due to the use of few propositions (Meleis, 1981, personal communication).

Johnson's Behavioral Model when combined with SI provides a framework for gathering data that includes the physical and allows individual research findings to build a scientific knowledge base specific to nursing (Meleis, 1985). The use of a theory with a nursing model provides depth and information pertinent to nursing care in the following ways: by systematically identifying patient problems with which nursing is concerned; allowing nurses to examine the source of the stress, e.g., functional or structural; and facilitating intervention strategies, thus providing a means of establishing standards to measure the effectiveness of the intervention (Johnson, 1968; Nicholl, Meyer, & Abraham, 1985).

Summary

In this chapter, the limitations of previous works have been discussed from the perspective of conceptual frameworks and their influence on the variables studied and the methodology used. In sum, the major weaknesses and gaps of past work have stemmed either from the lack of or choice of framework (Singer, 1985). Many of the researchers were more comfortable with the use of a biological framework. This

influenced their main focus, i.e., variables, of the study. They were often interested in improving their surgical technique on maintaining erection capability, part of their identified domain of medicine.

Physicians and sexologists often use unidimensional models (Brecher, 1969; Ephross, 1981). The advantages of research conducted in or by multiple disciplines are a continuing freshness of approach and a variety in research questions. Further, no one view is advanced that is biased by a single discipline. The lack of integration of findings is the major disadvantage of unidimensional work (Reiss, 1982; Shope, 1975).

The lack of interdisciplinary teams and lack of expertise in sexology led to further weaknesses in the research design and the use of instruments which lacked validity. A lack of sexual expertise resulted in the use of pejorative words such as "impotence" with either no operational definitions, lack of unanimity in definitions, or very heterosexually biased definitions (Graber & Kline-Graber, 1981; Magee, 1980; Newman & Northup, 1983).

The critical analysis of theoretical weaknesses and related inadequacies in previous work led to the choice of SI/JBM as the framework for the present study. The investigator acknowledges that no framework is perfect or without bias. Thus, the investigator actively chose a framework with believable assumptions, with the ability to ask and answer the questions pertinent to her domain of practice, with the ability to guide an inductive study and to explore variables which may have been overlooked in past studies, and with power at the fourth level of theory development to guide future studies on nursing intervention.

CHAPTER III

METHODOLOGY

Organization of Chapter

In this chapter, the research questions, the research design, population, instrument, data collection methodology, personnel involved, operational and theoretical definitions, and data analysis methodology will be presented. Preceding the discussion of the methodology, an introductory overview will be presented in which the methodological context and parameters are discussed.

Introductory Overview

Due to the selection of Johnson's Behavioral Model (JBM) and Symbolic Interaction (SI) as the conceptual framework for this study, an inductive research design was selected as the most appropriate design. An inductive design permits formulation of a new conceptual direction and this approach best answers the research questions asked.

As discussed in Chapter II, the conceptual framework predetermines not only the variables studied but leads to their operational definitions. In the context of the conceptual framework selected for this study, a semi-structured interview was chosen instead of the standardized instruments often used in data collection. This method

best complimented the inductive research design. Further, a semi-structured interview was believed to produce a collection of data that would provide the most insightful answers to the research questions posed.

Within the parameters set forth by the research questions and research design, the criteria and procedure for sample selection with an explanation of the setting and demographics are presented. Ethical issues of entry and the use of investigators with an expertise in sexuality research are examined in the context of their effect on data collection. One aspect of research methodology is the task of operationally defining the theoretical concepts used in the framework. Finally, the method of data analysis, which includes both quantitative and qualitative data, is presented.

Research Questions

The genesis of the research question was the investigator's clinical observation that people diagnosed with cancer have many questions about sexuality. After a review and critique of available reported research and conceptual frameworks, it was concluded that the SI/JBM was the most appropriate conceptual framework for this study.

The formulation of the research question has been recognized as the most important aspect of research, for a question well-stated is a question half-answered (Isaac & Michael, 1981; Polit & Hungler, 1978). Or, as a Chinese philosopher once said, "The answer is in the question" (Brink & Wood, 1983). The questions are:

1. Do men perceive their sexual behavior as being stable post-prostate surgery?
2. Are there differences in perceptions of sexual stability among men who undergo surgical treatment for benign prostatic hyperplasia and those who undergo surgical treatment for prostate cancer?
3. What perceived changes in sexual behavior do men experience post-prostate surgery?
4. What sexual alternatives do men perceive as being available to them post-prostate surgery?
5. Are there differences in perceived sexual alternatives used by men with prostate surgery for benign versus malignant conditions?
6. Who do men perceive as helping them expand their sexual choices post-prostate surgery?
7. Have the goals for sexual behavior changed post-prostate surgery and, if so, how have they changed?
8. Are there differences in sexual goals among men who undergo surgical treatment for benign prostatic hyperplasia and those who undergo surgical treatment for prostate cancer?
9. Do men who have undergone prostate surgery perceive their partners as influencing their sexual stability?

Research Design

The choice of theoretical framework and ethical considerations greatly influences research design. Symbolic Interaction requires

exploration and inspection of the empirical world by direct observation and by evaluating the situation as it is seen by the actor (Blumer, 1980). Therefore, experimental design has little theoretical value to SI. The method of choice when using SI is observational, unstructured interviews in order to understand the mental world of the actors, and how they construct courses of action.

Qualitative designs are relevant and congruent with the perspective and goals of nursing (Leininger, 1985; Sandelowski, 1986), especially when capturing clients' points of view (Ragucci, 1972). A qualitative design provides a different form of data about sexual functioning following prostate surgery. Thus, there is no fundamental clash between quantitative and qualitative design, but only a way to look at the same data in two different ways (Glaser & Strauss, 1967; Tripp-Reimer, 1985).

Qualitative design is the "methods and techniques of observing, documenting, analyzing, and attributing the patterns, characteristics, and meanings of specific, contextual, or gestaultic features of phenomena under study" (Leininger, 1985, p. 5). A qualitative design is essential to discover the holistic perspective and allow the discovery of covert and subtle realities about the meaning and expressions of health in individuals (Leininger, 1985).

Study Population

Criteria for sample selection include men who were:

1 - Volunteer adults with a diagnosis of prostate adenocarcinoma or benign prostatic hyperplasia (BPH) treated surgically. The requirement of surgical intervention controls for extraneous

variables of being too ill to endure surgery or the unknown impact of radiation therapy or hormonal manipulation on sexual functioning. This criteria also serves to exclude men diagnosed with Stage C or D cancer.

2. Between the ages of 60 and 72 at the time of surgery. This age range was selected because one of the hospital sites does not routinely perform radical retropubic prostatectomies (RRP) on men diagnosed with prostate cancer after the age of 72.
3. Treated at one of the two large government teaching hospitals on the West Coast.
4. Able (per telephone) to satisfactorily complete a preliminary screening that grossly tests for memory ability, physical and emotional ability to perform the interview.
5. Able to speak English.
6. Have no diagnosis of cancer in any site other than the prostate.
7. Living within a 50-mile radius of the hospital site and able to be interviewed face-to-face.

Procedure for Sample Selection

At Site #1, a list of names of men with prostate cancer diagnosed between the dates of March 1983 to July 1985 was collected from the Tumor Board Registry. Age, residence, previous diagnosis of cancer at other sites, stage of cancer, and treatment were noted on the registry form. These names were then cross-checked with the Urology Clinic list of surgical patients. All men with Stage A or B prostate cancer treated surgically, either by transurethral prostatectomy (TURP) or radical

retropubic prostatectomy (RRP), were included in the study. Men with the diagnosis of BPH who were treated surgically were also found on the Urology Clinic Surgical list. These names could not be cross-checked since the Tumor Registry does not collect data on benign tumors. This list gave only diagnosis, age, address, and treatment.

The Urology Clinic at Site #2 did not keep the same type of records as Site #1 so it was not possible to collect names from a surgical roster. The oncology clinic often received requests for consultation from urology for some of the men with prostate cancer. Thus, the oncology clinic had only an incomplete file system which did not include all men diagnosed with prostate cancer. These names were then cross-referenced with the Operating Room (OR) surgical list.

The OR list provided names, diagnoses, and treatment of all men treated surgically for the study period. Addresses, sites of previous tumors, and phone numbers were not available. Because this information was necessary to mail letters, charts had to be individually requested from the Records Room. The use of actual records rather than a surgical list resulted in screening many men out of the study even before contact. This procedure differed from Site #1, where records were not reviewed until after the interview.

All men diagnosed with Stage A or B prostate cancer and treated surgically were included in the study due to the small number of this group. The diagnosis of BPH is approximately 4:1 to prostate cancer, and this national ratio was similarly reflected at both hospital sites. Therefore, to obtain an equal number number of men diagnosed with BPH and prostate cancer, a table of random numbers was used to select names of men diagnosed with BPH.

After a list of names was prepared, a letter signed by the Urologist at each site was sent to the potential subject's home. A cover letter explained the purpose of the study, possible risks, who to contact for further information, and a statement about the investigator; a stamped postcard was included to be returned within 10 days if further contact was not desired. This strategy helped to further reduce bias of the traditional card-back system (McTiernan, Weiss, & Daling, 1986).

After 14 days, the investigator would call the men and explain the study in greater detail. The men would be asked the four screening questions, and those who wanted to participate were scheduled for an interview at the place of their choosing.

Adequacy of Subject Selection

Bentler and Abramson (1981) have discussed four issues that should be addressed when assessing adequacy of subject selection in a sexuality study. Those four issues are: 1) the sampling unit should be the one most appropriate to the research problem; 2) the chosen population should be appropriate for the study; 3) the method of sampling from the population should be as optimal as possible, given the reality constraints; and 4) the sample size should be adequate to the problem.

In this study, the sampling unit is the individual. The research question concerns the perception of how a man believes prostate surgery has affected his sexual behavior. Although a contributing factor of the perception of the man is how the individual man perceives how his partner and/or physician believes the surgery will affect his sexual behavior, the key point of this study is the man's perceptions and not what a significant other says or does. The underlying assumption of

symbolic interaction is the premise that what a person perceives as reality is reality to him. The individual is then the appropriate sampling unit.

The issue of an appropriate population being chosen for the study was carefully considered. As a military nurse interested in the population of men treated by government institutions, the investigator selected two sites which treat such men. Due to denial of entry at two other government institutions which served the same population of men who lived in more rural surroundings, the population is probably skewed to men who choose to live in or very near a large city on the West Coast. Thus, the generalizability has been reduced.

The third issue of sampling method has the initial problem of volunteer bias. Brecher and Brecher (1986) note that while volunteer samples prevent definitive answers on proportions, it does allow examination of linkages, such as prostate surgery and postoperative instability. They state if the linkage is spurious in the real world, it is likely to be unmasked as spurious in the sample, with any difference between sample and population to be a matter of degree rather than kind.

One strategy employed to reduce additional bias was to ask all men who had a diagnosis of prostate cancer and who met the criteria to participate in the study, and to use a table of random numbers to select an equal number of men who were diagnosed with BPH and who similarly met the criteria to participate in the study. In addition, the sample was chosen from the two sites of one large city on the West Coast, and no samples were selected from other large cities in the same or different states. The relationship between the actual sample and all men at the

two sites who met the criteria is assumed to be the same since a table of random numbers was used to select from the larger subsample of men with BPH.

The fourth issue of adequate sample size is resolved when considering the intent of the study, the research design, and the conceptual framework. The purpose was not to statistically analyze responses of large numbers of men on a multitude of tests; the question was to ask what are the pertinent variables as perceived by these men. Research with a large number of subjects requires attention to only a few attributes and necessitates a greater distance between the researcher and the research data, which may inhibit the ability to consider the data and findings on a broadscale holistic basis. In contrast, dimensional sampling of a small number has the advantage of close and extensive familiarity with each case (Arnold, 1970). Additionally, sample size in qualitative research is typically small because of the large volume of verbal data that must be analyzed (Sandelowski, 1986).

The Question of Sample Bias

The question of bias and in particular volunteer bias is an especially pertinent concern in research about sexuality (Catania, McDermott, & Pollack, 1986). Overall, in any type of psychological research, volunteers are not generally a representative group as they tend to have higher educational levels, higher occupational status, higher need for approval, more intelligence, and lower authoritarian scores than non-volunteers (Rosenthal & Rosnow, 1969), although differences in personality characteristics have not been found to be

statistically significant between volunteers and nonvolunteers (Morokoff, 1986; Wolchik, Brawer, & Jensen, 1985). Additionally, people tend to volunteer for studies in which they are interested, with more men than women tending to participate in unconventional research.

Findings about the differences between subjects and non-subjects on sexual variables, such as liberal sexual attitudes, sexual permissiveness, sexual curiosity, sexual experience, and number of sexual partners, have not been consistent (Morokoff, 1986). In fact, Barker and Perlman (1975) found the stereotype of volunteer subjects in sex research being an atypical, deviant group to be untrue. Catania, McDermott, and Pollack (1986) found no difference between volunteers and nonvolunteers of a face-to-face interview on sexuality on the dimensions of overall sexual pathology and behavioral frequency scores.

Selection bias does seem to be correlated with the amount of effort required to participate and whether the study involves direct genital measurement versus self-report (Wolchik, Brawer, & Jensen, 1985). This study was designed to decrease that potential bias by making it extremely easy to participate and to not include nocturnal penile tumescence readings. The response rate was also increased by ensuring that the mailed request had a professional appearance (Polit & Hungler, 1978).

Fitzgerald and Fuller (1982) looked specifically at the demographics of responders versus nonresponders in the same geographical area as the present study. They found their results compared well with similar studies in other parts of the country. Nonresponders were more prone to live in central cities as opposed to suburbs or rural areas, were 50 years or older, married and separated, and people who lived in

high-rise apartments, duplex, town, or row houses. They found no significant difference in race between those who participated and those who refused.

Of the 69 men who were asked to participate in this study, 20 men (29%) did not participate. One of the 20 men wrote back on the refusal form that he would do the study but had found "no change in activity" and was "normal all the way" and therefore felt he would not be helpful for the study. The investigator felt the man would have participated if he knew the study included men who were doing well but, according to the wishes of the ethics committee, the man was not contacted.

Other men contacted but not participating in the study included three men who had moved, leaving no forwarding addresses, and could not be contacted despite various strategies. Three men were too sick to participate. One man was going out of the state for an extended vacation but asked to participate when he returned. He returned after the completion of data collection so was not included. Of the remaining men, two said they were very busy but wanted to do the interview over the phone and two men had moved out of the state but wanted to participate either by phone or a written questionnaire. The response rate of 71% for a mailed request is much higher than the usual 50% rate (Polit & Hungler, 1978).

Setting

An initial pilot study was attempted at a teaching hospital in another geographical area. Among the ethics committee's expressed concerns were: the study topic would be offensive to the dominant

ethnic group within the community; subjects might have mental collapses and the hospital would be financially responsible for their care; and nurse researchers may lack the capabilities of physician researchers.

A number of strategies were employed in the attempt to allay the concerns of the hospital ethic's committee. A male physician known to the ethics committee agreed to serve as principle investigator, and a complete resume of the investigator's past experience with sexuality research, several articles about the response of subjects in a sex study, and an unpublished article by the investigator on the ethics of conducting such research were provided to the committee. Despite all of these efforts, the pilot study never reached the data collection phase. The results of the first pilot study was the finding that ethics committees need background information about the investigator, sexuality, and how participants in other sexuality studies have reacted to sensitive topics. The six-month process of trying to gain entry through the ethics committee provided an insightful experience which helped to prepare this investigator for the conduct of this research study.

A second pilot study involving volunteers not under hospital care was conducted with the approval of the University of California Ethics Committee. This second pilot study involved five volunteers diagnosed with cancer and known by the investigator to have expressed previous interest in the study. The purpose and focus of this second pilot study was the testing of an interview guide. In one instance, a male interviewee with a diagnosis of cancer insisted his wife be present during the interview. The importance to the man of having his wife present and the impact of the wife's presence on the answers resulted in

changes in the interview guide to include the collection of additional data regarding who was present, a description of the setting, and any interruptions. An additional finding arising from the second pilot study was the eagerness, which has been observed by other researchers (Nowinski & Ayres, 1981; Strauss, 1982), of the couple to discuss their sexuality.

This detailed explanation of problems associated with gaining entry into hospital facilities for the purpose of conducting research in sexuality highlights the underlying reasons for selecting two large government teaching hospitals in the Western Region rather than smaller private hospitals. The other reason for the choice of setting was the investigator's background as an Army nurse with extensive clinical experience and as a current member of the Army Reserve Corps. The investigator's background resolved the earlier problem in the pilot study of the unfamiliarity of hospital staff with the investigator, her expertise, or her ability to conduct sex research ethically.

The setting influences the generalizability of the study. Private hospitals, non-teaching hospitals, or hospitals not in the Western Region will not necessarily have the same type of patients. This study must be replicated in other settings for comparison.

Instruments

Fox (1976, p. 214) states that the difficulty in nursing research "lies in determining what needs to be measured." Unlike major studies in sexuality (Hite, 1976; Kinsey, 1948; Masters & Johnson, 1978; Bell & Weinberg, 1978, Pietropinto & Simeneur, 1977), the purpose of this study

is not to measure frequency of sexual behavior but to examine the concept of perceptions (Turner, 1978).

Roberts (1981) notes that some researchers believe that a problem that cannot be approached "scientifically" must be ignored until rigorous tools are available for testing it. Perhaps a lack of rigorous tools explains why very little is known about the sexuality of men following prostate surgery (Walterhouse & Metcalf, 1986).

Multiple tools designed to assess sexual functioning were reviewed for use in the present study. The tools reviewed had a number of limitations. The major limitation was the inability to adequately measure the variables of interest owing to the instruments' atheoretical base or theoretical base contrary to JBM/SI (Buros, 1979). Other limitations included the instruments' excessive length, lack of standardized reliability and validity, primary use with groups other than older population groups, and instruments designed for use with people without a medical diagnosis or surgical intervention (Andersen & Jochimsen, 1985; Buros, 1979; Hudson, Harrison, & Crosscup, 1981; Lamberti, Green, & Vaneta, 1978; Nowinski, 1979; Stuart, Stuart, Maurice, & Szaz, 1975). An additional limitation was that some instruments were designed specifically for women (Bransfield, Hoist, & Malrid, 1984; Dennerstein, Wood, & Burrow, 1976; Fisher, 1979; Woods & Earp, 1978).

One instrument, the Hanson Assessment of Sexual Health (HASH) seemed promising as an interview tool for use in assessing sexual functioning of people diagnosed with a chronic illness (Hanson & Brause, 1983). The investigator felt it would potentially identify men at different levels of sexual stability, but the instrument was not ready

for use. Ventura, Hinshaw, and Atwood (1981) note authors of instruments must be responsible for not releasing instrument prematurely for general use.

Polit and Hungler (1978) posit that exploring and describing what is "going on" is most powerfully secured through a face-to-face interview. Fox (1976) distinguishes three levels of questioning: surface, subsurface, and depth. Surface level questions involve demographic information that are nonthreatening. Responses obtained are assumed to be honest and accurate. Subsurface questioning involves opinions and is more personal. This level requires an interviewer who is experienced and sophisticated in the techniques. Depth level questioning is of a deeply personal nature and answers at this level involve a wide range of responses. When interpreted correctly, data from depth questioning is richer and provides greater insight than the first two levels. According to Fox, interviews are not appropriate or necessary unless information is sought at the subsurface or depth level. Interviews regarding sexuality certainly meet these criteria.

Oakley (Roberts, 1981) criticizes the traditional interviewing technique, especially if the purpose of the research is to discover peoples' subjective experiences. She sees interviewing as a two-way, social interaction that, if not allowed to happen, results in incomplete data. It is the process of the interview which facilitates or hinders the extensiveness of the content. That is, the quality depends a great deal on the relationship between the subject and the interviewer. The investigator of this study recognized this and sought to establish an open climate to allow revelation of intimate details and yet remain professional and non-therapeutic during the interview (Strauss, 1982).

The advantages of the interview include the following: it can be used with people who do not read or write well; it gains greater cooperation of subjects; questions misunderstood can be reworded; it is the most appropriate technique for gaining information about emotional topics; the person can be put at ease; and it results in fewer refusals than other techniques (Polit & Hungler, 1978; Selltiz, Wrightsman, & Cook, 1976).

The next decision concerned the most appropriate type of interview. It was decided to not use a standardized interview because it is too rigid. The questions which are asked in exactly the same way for each respondent (Selltiz et al., 1976), would not have been appropriate for the sensitive topic of sexuality. The investigator needed the flexibility to be sensitive to the subjects' nonverbal behavior.

To meet the need for flexibility, an open-ended question format was chosen to allow the interviewer to probe. A non-directive, guided flow of conversation helped keep intrusive, extraneous comments of the investigator to a minimum (Strauss, 1982). The subject was able to give personal thought without being forced into a pre-selected category. It was useful in collecting complex data in a relatively little explored area (Schatzman & Strauss, 1973) and allowed branching off to explore areas of interest (Isaac & Michaels, 1981).

The decision to use open-ended questions in a semi-structured interview also allowed rewording and rearranging the order of the questions according to the situation. In keeping with the suggestions of Kinsey (Pomeroy, 1972) and Pomeroy, Flax, and Wheeler (1982), the questions began with the non-threatening information of demographic data. However, there is no evidence that question sequence is necessary

(Catania, McDermott, & Pollack, 1986) and, in fact, several men wanted to answer questions about sexual functioning first.

Unethical questions and unethical wording were avoided. An example of this is, "You don't do anything 'perverted', like play with yourself, do you?" The interview was constructed to modify the language according to the situation and to use the subjects' terminology (Pomeroy, 1972).

In developing the interview schedule, a table of specifications served as a guide to prevent omissions or imbalances in the tool (Polit & Hungler, 1978). In this study, a literature review supplemented by clinical observations and the comments of two nurses, each with a diagnosis of cancer, created the initial specifications for interview questions. Ver Steeg's (1981) sexuality assessment for urologic cancer patients was used to further complement the questions specifically about urology.

Validity

This study marks the beginning of research for which precedence does not exist and for which the traditional validation methods of criterion-related and construct validity cannot be established (Allen & Yen, 1979). Because the research design involves human perceptions, instrument validation will be limited to face validity. Although face validity is the least sophisticated, it is an important consideration for this study. This is because subjects who feel that questions are totally irrelevant are not as inclined to give thoughtful consideration to their answers. With additional research, it may be possible to apply other validation criteria.

Reliability

Reliability of information is a traditional concern when dealing with older respondents (Herzog & Dielman, 1985). Yet studies have demonstrated this as an unjustified bias; in fact, older subjects may actually be more accurate due to their increased carefulness (Perry, 1982).

The three traditional methods of estimating quantitative tool reliability--test/retest, split-halves method parallel forms, and internal consistency (Carmines & Zeller, 1981)--were not appropriate for this qualitative study.

Coder reliability is a valuable source of reliability in qualitative research (Collins & Kaltor, 1978). In this study, four nurse faculty members and the investigator separately coded seven pages of transcribed field notes. The committee members were given the operational definitions of the variables of set, choice, goal, and subsystem. Their task was to code by naturally occurring "chunks" of sentences. The five interviews were then reviewed collectively. A 70% intercoder reliability is the minimum percentage and 90% is preferred. The formula is: Reliability = Number of agreements/Total number of agreements plus disagreements. The intercoder reliability was 76%. In addition, a doctoral candidate trained in qualitative research coded 32 pages of two different interviews, and those were then compared to the investigator's coding. This coding was done at a more precise level of detail, 19 pages of word by word and 13 pages of line by line analysis. The intercoder reliability was 79%.

To evaluate intra-rater reliability, the investigator double-coded four interviews. The first coding was done after the transcription was completed and the second coding was done 4 to 10 weeks later. By the fourth interview, the double-coding reliability was 94%.

The reliability of occupational coding for the subjects, their partners, and their parents was done in accordance with the occupational classifications set forth in the Dictionary of Occupational Titles (U.S. Department of Labor, 1965) and was also tested. The investigator and a personnel classification consultant independently coded the occupations into the nine categories. There was an initial 97% inter-rater reliability and, when the occupations in question were discussed, the inter-rater reliability was increased to 100%.

Methods for Minimizing Risks

Anonymity was protected by the use of code numbers and secured files. Information gained by the interviewer was not shared with client, partner, nor physician.

The potential for psychological discomfort was minimized by the fact that all interviews were conducted by a Registered Nurse prepared at the graduate level who continuously assessed both verbal and nonverbal cues of discomfort during the interview. The use of a semi-structured interview allowed the researcher to reword and reorder questions according to the subject's response. This strategy further minimized the risk of psychological discomfort. Participants were informed that they may decline to answer specific questions and may postpone or terminate the interview at any time.

Data Collection Procedure

A list of potential subjects was developed. A letter signed by the urologist was mailed to potential subjects (see Appendix A). Included with the letter was a preaddressed postcard which was to be returned in 10 days if they did not want to be contacted by the investigator. Fourteen days after the letter was sent, potential subjects were contacted by phone. They were asked four screening questions and, depending on the responses, asked if they would like to participate. A time and site for the interview was selected.

The following message was left for subjects who were not home: the investigator working with Dr. "A" of Hospital "A" was calling about the research study. Persons answering the phone were never told the nature of the study. If the phone number was incorrect, the telephone operator was contacted for the new number. If there was no new number, the investigator contacted the urology clinic secretary to request the new number.

One day before the interview, the subject was called to remind him of the interview appointment and reconfirm his willingness to be in the study. The investigator attempted to arrive one-half hour before each appointment. This allowed for parking time, recording first impressions of the neighborhood, and how the investigator felt, i.e., nervous, excited, or tired. To convey the importance of the study, the investigator dressed conservatively in a business suit or dark-colored dress. Often the preliminary ritual included either introducing the investigator to others in the house, offering her a soda, and/or deciding where to sit for the interview.

If the site was at one of the hospitals, the investigator arrived early to obtain a private office at Site #1 or to unlock the door and straighten the office for her use at Site #2. The subject was met at the hospital lobby and escorted to the office by the investigator. This provided several minutes of small talk about the weather, the traffic, and parking.

Once seated, the subject read the research consent (see Appendix B), asked questions if desired, and signed it. He then read and signed the second consent which permitted the investigator to review his medical record at the hospital (see Appendix C). (The use of the second consent helped to further protect anonymity so that records clerks would not know the subject of the study.) Copies of the consent were given to the men for their personal reference.

Originally, the interview was structured with a 20 minute warm-up period of demographic information to allow the men a chance to become comfortable. This quickly changed when the men met the investigator at the door and began relating intimate details about their sexuality even before being seated. The interview schedule (see Appendix D) took one to two hours, depending on the man being interviewed. Following verbal consent, a tape recording was made of each interview.

Several times, the men requested that their partner be allowed to be present for the interview. Usually the women sat quietly at the side and did not speak unless directly asked a question by their partner. At the end of the interview partners often commented on the process and content.

The interview ended with subjects being asked if they would like a copy of the results. This was also the time the investigator would

answer clinical questions which had occurred during the interview and offer to mail additional information.

Approximately one month after the interview, charts were reviewed for pertinent details and the information was placed on the demographic form. At this same time, a thank you letter and any additional information requested were mailed (see Appendix E).

Personnel Participating in Study

Site #1: The Assistant Chief of Urology actively assisted during the Ethics Committee Meetings, paved the way for access to records, and served as medical consultant for potential problems during the study. A psychiatric nurse clinician agreed to serve as psychiatric consultant and sex counselor to subjects if they requested help. A consultant was required both by UCSF and the hospital to prevent "mental distress" of subjects participating in the study.

Site #2: The Chief of Urology agreed to sign letters to potential subjects, serve as principle investigator at Site #2, and serve as medical consultant. The Director of Nursing Research helped gain entry. The Urology Clinic nurse actively helped find new alternatives when there were difficulties, answered multiple clinical questions which arose during the study, and served as a major resource for clients.

A concern of the ethics committees was the potential reaction of older men to discussing intimate sexual details with the younger female investigator. This concern was addressed in part by the investigator's experience with gay men in the AIDS study who commented that it was easier to speak with a female. In addition, the findings of Darrow and

colleagues (1986) confirmed that the sex of the interviewer and setting of the interview do not affect interview reliability. Strauss (1982) also found older men did not object to a female interviewer.

Theoretical and Operational Definitions

Self. Theoretical Definition: Self is a process that evolves and continues to change out of interacting with others through the use of symbolic communication (Kimmel, 1980). Since self is such a process, a baby at birth does not have a self yet.

Mead (1962) subdivides self into the I, which is the thinking and feeling experiences of the moment and the me, which is the objective characteristics experienced by the five senses, for example, hair color, body shape, body odor, and tone of voice.

The I and the me interact constantly. That is, the I experiences how a partner reacts negatively to retrograde ejaculation following prostate surgery (part of the me). The me, in return, demonstrates the experience of the I by no longer initiating sexual activity.

When studying the sexuality following prostate surgery, one would be interested in the self. For example, how would the I experience the me of retrograde ejaculation, surgical scar, or dribbling urine.

The earlier example of the baby at birth can be used to identify the development of self. A newborn experiences wet diapers and hunger, but he cannot conceptualize these experiences and communicate them. Later, as he begins to suck his toe and play with his fingers, the infant begins to differentiate the me from his mother or father. Language really helps the child to develop the self and to interact with

others. Abstract thinking in adolescence allows the child to begin thinking of the generalized other.

Operational Definition: The mens' verbal responses to interview schedule questions #2, 6, 8, 13, 14, 15, 16, 21, 22, and 23.

Generalized Other. Theoretical Definition: This concept involves the ability to think abstractly about society and its attitudes (Burr, Hill, Nye, & Reiss, 1979; Kimmel 1980). Attitudes of society could be related to myths about sexuality and the disabled (Ayers & Thornton, 1979; Georgetown Sex & Disability Project, 1979), myths about the sexuality of the elderly (Gochros & Gochros, 1977; Rezendes, 1981; Schain, 1981; Wasow & Loeb, 1977; Wineberg, 1982), or even health professionals' beliefs in myths about sexuality and the ill (Conine, Christie, Hammond, & Smith-Minton, 1980; Hogan, 1980). Blaustein (1982) and Labby (1982) both address the issue of doctors' power in creating sexual dysfunction by treating patients as asexual.

The generalized other of religion and how attitude toward sexuality is interpreted can affect sexual behavior (Haberle, 1978; Hogan, 1980; Nass, Libby, & Fisher, 1981). Culture (Heiss, 1967) and published surveys and research about human sexuality (Pomeroy & Schaefer, 1978) are other forms of generalized other which can impact on the actor.

Operational Definition: The verbal responses of the subjects to the interview schedule questions of #4, 24, 26, 27, 29, and 31.

Significant Other. Theoretical Definition: The concept of significant other is similar to generalized other, but it deals with the people who are especially influential in the evolving self (Kimmel, 1980). For example, how people in New Guinea feel about sex has less meaning to a client in New York than how his best friend in New York

feels about sex. Although a physician may indicate that sexuality is terminated with prostate surgery, a partner who still sees the subject as sexual and responds accordingly usually has more influence as a significant other. However, it should be remembered that clients often rely heavily on their physicians who may, in turn, become a new significant other.

Operational Definition: The verbal responses of subjects to the interview schedule questions of #7, 10, 12, 15, 17, 24, 27, 28, and 29.

Propositions of Symbolic Interaction

The theoretical propositions of SI pertinent to this study are:

1. The definition of a sexual situation influences the effects of that situation in such a way that effect tends to be congruent with the definition.
2. The greater the perceived value of sexuality, the greater effect it tends to have in social processes.
3. The perceived quality of role enactment in a sexual relationship influences the satisfaction individuals have in the relationship.
4. The more important the sex role expectation is to a person, the greater the effect the quality of role enactment has on that person's satisfaction.
5. The more anticipatory socialization about the sexual role, the greater the ease of transition into that role.
6. If clients define themselves as asexual, that asexuality is real in the consequences.

Johnson's Behavioral Model

In Johnson's Behavioral Model, man is viewed as an open behavioral system comprised of seven interactive and interdependent subsystems. Each of the seven subsystems has four structural elements: drive/goal, set, choice, and behavior. The intensity and significance of the drive/goal is unique to each person and can change with time for each individual. Set is the person's predisposition to act in certain ways to obtain the goal. This predisposition is developed through maturation, learning, and experience, but once it is developed is relatively stable and hierarchically arranged. Set greatly determines choice. Choice is all the behaviors available to the individual to obtain his goals. Nursing can intervene by teaching new choices or helping the person to modify existing ones in order to enlarge the scope of behaviors. The more choices a person has, the more adaptable he is, and the more easily he can maintain or regain system balance. The fourth structural element, behavior, is the only one directly observable. Of concern to nursing is whether the behavior is effective, appropriate, and economical.

In addition to the four structural elements, each subsystem has a function. Brink's (1966) interpretation of the sexual subsystem's function is used for this study:

-- reduce tension produced by sexual needs

-- produce a self-concept or self-identify based on sex

-- attract a desired sex object

-- project an image of oneself as a sexual being

-- enjoy sex play or achieve gratification through sexual acts

-- achieve orgasm

-- maintain the physiological function of sex organs.

In other words, the sexual subsystem function of reduction of tension is the result of the person's behavior. There are three groups of functional requirements: protection which facilitates avoidance of harmful stimuli, nurturance which supplies the essentials to grow and survive, and stimulation which selectively encourages positive stimuli and discourages negative stimuli (Johnson, 1977; Rawls, 1980). The amount and the specific functions needed for each individual changes with each situation and time (Grubbs, 1974).

Major Concepts

The major concepts of SI--self, generalized other, significant other, symbol, mind, and role--were discussed earlier according to how they could be used in an oncology-sexuality study. The major concepts of JBM--illness, behavior, behavioral system, energy, stability, nursing, external regulatory force, and variables--will be discussed in a like manner.

Illness. "Illness is an event experienced by people that manifests itself through observable and/or felt changes in the body, causing an impairment of capacity to meet minimum physical, physiological, and psychosocial requirements for appropriate functioning at the level designated for the person's age, sex, and development, or handicapped state" (Wu, 1973, p. 23). Perception by the client and his partner of his "illness" can influence recovery and, if it is seen as a problem, it can disrupt usual behavior (Taylor, Bandura, Ewart, Miller, & Debuck, 1983; Woodard & Rollin, 1981). Thus, one man with BPH may view

prostatectomy as a major threat to his sexual behavior. This may be demonstrated in the man's behavior by sexual aggressiveness toward the nurses or by avoiding his partner's sexual overtures (Scalzi, 1973). Another man with prostate cancer may view prostatectomy as curing his "illness" and thus may believe that his sexual behavior will either remain stable or even improve now that the symptoms of prostate cancer are gone. Thus, there is a need to explore with clients their perception of BPH or cancer as an "illness" and how it affects their behavior. This question demonstrates how SI and JBM work well together to explore the phenomenon of sex following prostate surgery.

Behavior. Greater value and importance is being placed on human behavior (Scalzi, 1973) and, indeed, behavior is the cornerstone of JBM. Behavior is the only structural element directly observed which is in response to an internal or external stimuli (Grubbs, 1980). The focus is on behavior interaction, a concept that facilitates the use of JBM and SI together as the conceptual framework for this study.

Behavioral system. The behavioral system is made up of the seven subsystems. Its boundary serves as a membrane of a cell to filter the incoming stimuli which are then processed before a response results, such as behavior (Broncatello, 1980). A man may receive stimuli from friends who say that prostatectomy ends sex, from the physician who says nothing about sex but says the client will be 'better than ever', and from the nurse who explains physiologically how the surgery affects the sexual behavior. The man's behavioral system serves to filter this information which he then integrates with his perception. Then the man exhibits behavior based on this process.

Behavior can become unstable when man is unable to act in the usual pattern. For example, a man whose usual sexual behavior consists only of intercourse may become unstable, upset, and dissatisfied if he is unable to have an erection postoperatively. Environmental stresses such as hospitalization and lack of privacy may also produce changes in usual patterns and behavior performance (Broncatello, 1980).

Energy. The seven subsystems of behavior require varying degrees of energy. Extra energy is distributed to the subsystem in need. Of particular importance in a study of elderly prostate clients is that prolonged subsystem inactivity can result in atrophy and entropy. This is confirmed physiologically by Masters and Johnson (1966) and Butler and Lewis (1976), who report that older people who continue to have regular sexual activity are better able to maintain effective sexual expression. For example, aging women have thinner vaginal barrels, shorter length and diameter of the vaginas, and shrinking labia majora which can cause dysparunia. However, women who have coitus once or twice a week are able to lubricate and expand their vaginas much better than women with irregular coitus. Likewise in aging men, the most important factor in effective sexuality is consistency of activity. Thus, a 70 year old client with a prostatectomy may not engage in sexual activity up to three months, because of pre-operative symptoms and then post-operative instructions. This subsystem inactivity can result in atrophy and entropy. Energy imbalance is called instability, which can be caused by subsystem dominance or insufficiency (Johnson, 1980).

Kaas (1978) describes atrophy and entropy of the sexual subsystem in elderly due to 'geriatric sexual conformity'. That is, the elderly incorporate and accept the attitude of society that they are asexual.

Those who make choices to conform to the sexless role lose their sexual skills.

> We need only observe Sudanese women readily enforcing brutal Pharaonic circumcision upon their daughters and granddaughters in 'the name of lineage honor', or the fact that Imperial China seemed never to have lacked for recruits to the palace eunuch staff (eager young men from the provinces showed up to apply, carrying their genitals in a jar), to be reminded of the power of social considerations override libidinal ones, both in fantasy and in practice. (Ortner & Whitehead, 1981, p. 24)

Stability. Stability and behavioral system balance are the primary goals of nursing (Johnson, 1980). Stability is not stagnation but is a dynamic process which the person is usually able to maintain in daily fluctuations. In fact, the person often seeks out new experiences which cause fluctuations in balance but not disruption (Grubbs, 1980). The reason the concept of stability is important to nurses is that stability requires only a minimum of expended energy, insures biologic and social survival, and can result in personal satisfaction for the client (Grubbs, 1980). Instability has been addressed in the behavioral system and energy concept sections and will not be repeated with an example.

Nursing. Nursing is rooted in the value of "caring" for the sick. Nursing's functions are not only care and comfort, but protection and conservation of the patient, assisting the patient to identify problems of behavioral instability, and helping him to cope by promoting stability (Johnson, 1964; 1978). For example, to protect and conserve the sexual subsystem, nursing would provide concise pre-operative information about what to expect sexually: erection is not possible with a catheter in place; fatigue and the assault of major surgery may hamper erection for a time period; alcohol will not help but hinder recovery of erection. Nursing would also help the client to identify

grabbing at female doctors as behavioral instability and help him devise new and better coping methods. Nursing's intervention may be either functional or structural and may be accomplished by one of four modes: restricting, defending, inhibiting, or facilitating behavior (Rawls, 1980).

Regulating and controlling mechanisms. These are the variables to be considered by a person in order to decide what behavior is appropriate for the situation (Grubbs, 1980). Symbolic interaction, which includes perception, values, and beliefs fits into the JBM at this point (Lovejoy, 1983). In fact, "behavior is determined by subjective reality" of the regulating and controlling mechanisms (RCM) (Wu, 1973, p. 113), thus reinforcing the importance of SI. The systems theory portion of JBM portrays RCM as feedback subdivided into biophysiologic, psychologic, and sociologic categories (Rawls, 1980).

Reinforcing that perception plays an important factor affecting recovery is the work by Glass and Padrone (1977). In fact, perception of impairment is as critical as the actual impairment in recovery (Woodard & Rolling, 1981). Taylor et al.'s (1983) work also demonstrates the importance of exploring the spouse's perception, for he has shown that wives' perceptions can aid or retard recovery in their husbands after myocardial infarction.

Variables. Variables are those elements liable to influence or change behavior (Holaday, 1980, p. 256). The categories of variables which can affect behavior are: biologic, developmental, cultural, ecologic, environment, familial, pathologic, sociologic, and level of wellness. Any of these nine variables can be internalized and become RCM (Grubbs, 1980). Thus, the pathologic variable of cancer can

influence the choice of behavior in many subsystems just as the cultural variable of asexual elderly can influence the sexual subsystem.

Propositions of Johnson's Behavioral Model

The theoretical propositions of JBM pertinent to this study are:

1. Given a particular goal, the action alternatives of the individual are not only comparatively few and highly selective, but are also hierarchially arranged.
2. The more efficient and effective the behavior in goal attainment, the more successful the consequence.
3. In the sexual subsystem, there is a totality of behavioral repertoire available to the individual for the achievement of a particular goal.
4. If conditions in the internal and external environment of the system are not orderly and predictable, the conditions and resources necessary to their functional requirement are not met. The malfunction then becomes apparent in behavior that is in part disorganized, erratic, and dysfunctional (Hattar, 1982).

Four Domains Identified in the Interviews

The faculty consultants were asked to identify the four domains of interest pertinent to the research questions and conceptual framework. These four domains were set, choice, subsystem, and equilibrium. The domains were defined from the literature to determine if the theoretical definitions were pragmatic for analysis. Two of the faculty were

familiar with JBM and stated they had little difficulty in coding. The other two faculty members had minimal experience with JBM and noted uncertainty of their coding. This discomfort was not found to affect the interrater reliability, which was 76%.

In addition to the four domains they were asked to identify, the consultants were given a list of four questions to assess change. They were not expected to address the four questions but were given them so they could be aware of the secondary analysis which would be done by the investigator. Also included in the packet to the consultants was Fawcett's (1984) method of analyzing system functioning.

It was unknown at that point of data collection and analysis whether or not the next two levels of analysis could be performed on the type of information obtained during the interviews. The four domains, the questions about assessment of change, the nursing diagnoses, and the analysis of system functioning follow. These concepts were defined as:

SET: Tendency to act in a certain way in a given situation to achieve subsystem goal (Johnson, 1977)

CHOICE: Alternative behaviors in a situation which are compatible with set. Expanded through modeling, observation, and involvement in learning situations (Auger, 1976)

SUBSYSTEM: Linked and open, thus interactive and interdependent. They are integrated in a balanced relationship (steady state).

DISEQUILIBRIUM: Caused by ineffective goal achievement. May be caused by a structural stressor, which deals with internal control mechanism, such as ineffective behavioral response. May also be due to functional stressor which most often arises from the environment, such as lack of partner.

Assessment of Change (or Alteration) in Usual Pattern

The second level of analysis, after determining set, choice, subsystem, and disequilibrium, was to assess if the men perceived a change in their usual pattern. The four following questions were asked by the investigator as she analyzed the data concerning the men's perceptions about postoperative change.

1. Is there a change? (potential, anticipated, or actual?)
2. Is there an increase or decrease in the pattern?
3. Is this change positive or negative?
4. What is the cause of the change?

To Analyze System Functioning

The third level of analysis was to determine satisfaction with system functioning and compatibility with social and biological survival as defined by Fawcett (1984).

1. Is the behavior succeeding or failing to achieve the consequences sought?
2. Are more skillful motor, expressive, or social skills needed?
3. Are the choices attainable/desirable?
4. Is the sequence of action purposeful and orderly; does it demonstrate economy of action; is the action socially and biologically appropriate? (Fawcett, 1984, p. 62)

Method of Data Analysis

The Statistical Package for the Social Sciences (SPSS) computer program was used to analyze the demographic data. Statistical tests

included cross-tabulation of two variables, Chi-square, Kendall's Tau B or C, depending upon the configuration of the cross-tabulation (square or rectangular), Pearson's correlation coefficients, t-tests, and description statistics. Descriptive statistics consisted of frequency, percent, valid percent, cumulative percent, mean, median, range, and standard deviation where appropriate.

Because of small sample size, cross-tabulation tables often had cells with less than five observations. Consequently, certain variables were reduced in order to better visualize trends of the data. Perceived socio-economic status was reduced from five choices to three: 1) lower and lower middle class; 2) middle class; and 3) upper middle and upper class. Educational level was reduced from six categories to two: less than high school graduation, and high school graduation and/or education beyond high school.

Qualitative analysis was a continuous process. After each interview was transcribed, it was analyzed for new or continuing concepts, such as the issue of loss of fertility, which were then incorporated into later interviews for the purpose of determining whether or not the observed concern was a unique concern or a group concern. Continuing concepts were incorporated into the subsequent interviews to validate the appropriateness of the raw data interpretation by the investigator. Ideally, the investigator would have met a second time with all subjects after final analysis to validate the findings; however, the ethics committees requested that the second interview be deleted from the study design to avoid potential additional psychological or physical stress to the subjects.

The interpretive strategy used in this study conforms to the constant comparative method described by Glaser and Strauss (1967), which was based on Heideggerian (1962) phenomenology. However, unlike the Glaser and Strauss approach, the intent of this study's interpretative strategy was to identify meanings and content rather than derive theoretical terms.

The interpretative strategy employed in this study enables the investigator to focus on the process of synthesis, rather than analysis and development of theory. For example, the meaning of a sentence cannot be understood by analyzing the words alone. Rather, one understands a sentence as part of a larger whole and interprets its meaning from the context in which it is found. With the example in mind, this study's interpretative strategy provides the process in which the most meaningful and manageable yet rich description of the research data will occur.

With an interpretive approach, the intentions and understandings of the participants, who are the ultimate sources of meanings, are taken into consideration and seen as dependent on a shared world of meanings. For example, the men were asked during the interviews to describe with as much detail as possible how they perceived their sexuality to have changed since having prostate surgery. Working from transcriptions of the interviews and field notes, four interpretations presented as domains were identified. The domains are in no way intended as an exhaustive or even comprehensive list.

The identification and derivation of these major domains involved careful reciprocation between the analysis of the individual components and the "whole", with careful attention to the resolution of

incongruities with the four domains being presented to the faculty consultants for consensual validation. The two major advantages of this method of interpretative analysis are: 1) actual rather than hypothetical perceptions are described; and 2) this interpretative methodology employed provides a much richer description, which might not be available if another analytic methodology were used. Thus, the description is synthetic, or holistic, rather than elemental and procedural.

CHAPTER IV

RESULTS

The purpose of this study was to describe and compare the perceptions of men about their sexual functioning following prostate surgery. The nine research questions presented at the outset of this study serve as the framework within which the research findings are presented: 1) Perceptions of Sexual Subsystem Stability; 2) Perceptions of Change in Sexual Behavior; 3) Choice; 4) Goals; and 5) Significant Other.

This chapter is organized in the following manner. First, there is a discussion of demographic characteristics of the sample using data collected from medical charts and interviews with subjects. Research findings are presented as derived generalizations or common themes moving throughout the interviews. Specific illustrative quotations from the interviews reflecting each theme are cited to convey the richness and authority of the research findings. In addition, selected aspects of the research findings are treated quantitatively and the results presented for consideration. An analysis and discussion of the findings are presented in Chapter V.

Characteristics of the Sample

A total of 43 subjects met the study criteria and were selected for participation. Twenty-one were from Site #1 and 22 from Site #2. Twenty-one men had prostate surgery for cancer and twenty-two for benign prostatic hyperplasia (BPH). Twenty-five men had transurethral prostatectomy (TURP) and 18 had radical retropubic prostatectomy (RRP). Of the twenty one men with a prostate cancer, 11.6% (5 men) were diagnosed at Stage A1, 9.3% (4 men) at Stage A2, 18.6% (8 men) at Stage B1, and 7% (3 men) at Stage B2. Only one man was without a stage noted in his chart. Although medical records are known for the frequency of missing data, they are often the best or only source for certain types of data (Fessel & Van Bruent, 1972).

A total of 43 men met the research criteria and were interviewed. The ethnicity of the men was predominantly Caucasian (67.4%); 25.6% were Black and 7% were Hispanic or part-Hispanic. The majority of the men were married (65.1%), 11.6% were single, 9.3% were divorced, 4.7% were living with a partner, 4.7% were widowed, and 2.3% were separated.

The length of time in the present marital status ranged from less than one year to 65 years, with the mean and also the median being 27 years. The formal educational background of subjects ranged from grade school to a PhD. Only 16.3% of the sample had less than a high school diploma and 48.9% had formal education beyond high school.

One man still worked full-time, but the rest were either retired or semi-retired. Previous jobs held by subjects were categorized according to the Dictionary of Occupational Titles (U.S. Department of Labor, 1965), which incorporates 35,550 job titles into nine occupational

categories. A majority of men (39.5%) had held professional, technical, or managerial occupations; 18.6% of the men had held clerical and sales occupations.

A majority of men identified themselves as Protestant (58.1% - 25 men) or as Catholic (27.9% - 12 men). Two men (4.7%) identified themselves as Other: one man stated no preference and one as combination Protestant/Catholic. When asked to identify their level of commitment to the doctrines of their religion, 25.6% (11 men) were not committed, 20.9% (9 men) were slightly committed, 37.2% (16 men) were moderately committed, and 16.3% (7 men) were highly committed. The frequency of church attendance ranged from never (12 men - 27.9%) to every week (6 men - 14%), with the mean between once a year/several times a year and the median as several times a year.

The perception of the men of their present socio-economic status ranged from lower middle class (10 men - 23.3.%) to upper class (2 men - 4.7%). The mean and median were middle class. When questioned, 31 (72.1%) men said they drank alcohol and 18 (41.9%) reported they smoked tobacco.

Perceptions of Sexual Subsystem Stability

The first two research questions posed in this study are related to perceived sexual subsystem stability following prostate surgery: 1) How do men who have had prostate surgery perceive the stability of their sexual subsystem? 2) What is the difference in perceptions about sexual subsystem stability between clients whose diagnosis was benign prostatic hyperplasia (BPH) versus prostate cancer?

All 43 men perceived sexual subsystem instability following prostate surgery irrespective of variations in demographic variables and surgical techniques. The educational level of subjects at both study sites was similar. The majority of men at both sites were high school graduates or graduates of post high school training. No correlation was found between type of diagnosis and educational level ($r = -0.11$, $p = 0.25$). Further, a two-tailed t-test with pooled variance estimates indicated that there was no statistically significant difference between the two groups of men from the two study sites with regard to: 1) the number of postoperative months at the time of the interview ($t = -1.5$, $df = 41$, $p = 0.14$); 2) the age at the time of surgery ($t = -1.42$, $df = 41$, $p = 0.16$); or 3) the length of time in the present marital status ($t = 0.52$, $df = 41$, $p = 0.61$). Based on the preceding data, it is concluded that men from the two sites were, for statistical purposes, essentially interviewed at similar time periods after surgery, their ages were similar at the time of surgery, and the stability/length of their marital status was similar.

Similarly, a two-tailed t-test with pooled variance estimates indicated that there was no statistically significant difference between the two groups of men with benign versus malignant disease with regard to: 1) the number of postoperative months at the time of the interview ($t = -0.47$, $df = 41$, $p = 0.64$); 2) age at the time of surgery ($t = 1.42$, $df = 41$, $p = 0.16$; and 3) length of time in the present marital status ($t = 0.77$, $df = 41$, $p = 0.45$).

No significant statistical differences were found between the groups with respect to their perceptions of instability related to the following variables: surgical procedure of TURP versus RRP, benign

versus malignant diagnosis, ethnicity, marital status, educational level, previous work experience, religious preference, frequency of church attendance, and perceived socio-economic status. When diagnoses are compared by hospital site, no differences in educational levels were found between the four groups. To further determine if there were differences between the four groups, a one-way ANOVA (between and within groups) and the Scheffe procedure were done on the variables of: 1) the number of months postoperative when interviewed (see Table 1), 2) age at the time of the surgery (see Table 2), and 3) length of time in their present marital status (see Table 3). No significant differences were found at the 0.05 level.

Four themes related to subsystem instability emerged from interviews with study subjects. These themes were: 1) belief that there would be no subsystem instability; 2) expressions of regret for the lack of foresight; 3) acceptance of subsystem instability; 4) belief

Table 1

Number of Months Postoperative at Time of Interview: ANOVA

Group	n	$\bar{X}$	SD	df	F	p
Site 1: Cancer	11	15.0	6.62			
Site 2: Cancer	11	12.7	8.13			
Site 1: BPH	10	17.2	8.01			
Site 2: BPH	11	12.8	6.27			
Between Groups				3	.88	.46
Within Groups				39		

Table 2

Age at Time of Surgery:
ANOVA

Group	n	$\bar{X}$	SD	df	F	p
Site 1: Cancer	11	64.5	3.64			
Site 2: Cancer	11	68.0	5.04			
Site 1: BPH	10	64.5	2.99			
Site 2: BPH	11	64.5	3.64			
Between Groups				3	2.13	.11
Within Groups				39		

Table 3

Length of Time in Present Marital Status:
ANOVA

Group	n	$\bar{X}$	SD	df	F	p
Site 1: Cancer	11	30.6	13.05			
Site 2: Cancer	11	27.5	11.41			
Site 1: BPH	10	26.3	14.39			
Site 2: BPH	11	24.6	21.93			
Between Groups				3	.27	.84
Within Groups				39		

that instability was justified. Each of these themes is illustrated by presenting direct quotes from transcribed interviews with the subjects. The data for 88% (38 men) of the sample emerged into four distinct categories, but for 12% (5 men) there were no common themes.

Subsystem Instability Theme 1: Belief that there would be no subsystem instability postoperatively. "To be frank, I didn't think that this would happen, you know, that your sexual life would be completely over almost."

Nine subjects (21%) believed there would be no change in sexual ability following prostate surgery. This belief seems to be associated with 'magical' thinking that sexual problems happen only to other people and not to them. Some men did not recall being told preoperatively that there might be a change. Of the nine men who expressed the belief that there would not be subsystem instability, five had cancer and four had BPH. There was no correlation between a subject's diagnosis and his belief.

The subjects (with diagnosis in parentheses) expressed this belief in the following ways:

> "I never did dream that I would be impotent and it did come out that I was impotent. And it was a big deal for me." (CA)
>
> "I was hoping I'd be one of the lucky ones. (The doctor) said I've got about a 90% chance that I'd be impotent. Well, I have always gotten by being kind of young for my age, I always enjoyed it (sex). I've seen people my age that seem to be old men, you know, so I consider myself young although I'm not a stud or anything." (CA).
>
> "Actually, I thought I'd be back to normal in about six days. I just didn't think there was much to it. I didn't think about asking any questions, I thought it was a simple operation, a simple matter; little did I know." (CA)

> "I asked the gal and she said, 'Don't worry, we'll have you back just as good as new', which is a lie. The good part is the operation cleared up everything (can urinate now), but the bad part is it sure knocked the sex life, even the interest in it. That's something I want back. I'm 60 years old and and I'm too young to stop sex. All this crap it did ... even the erections are not as hard as they used to be. Then when we did have sex and nothing came out, that really confused me. I perform but what the hell's the result, there's nothing there to show for it. (BPH, wants to get wife pregnant)

Subsystem Instability Theme 2: Expression of regret for the lack of foresight. "If they (doctors) had told me more what to expect before surgery, I don't think I would have rushed into this."

Four subjects, two cancer and two with BPH, expressed a desire for being able to look into the future in order to know what the effects of prostate surgery were going to be prior to surgery.

> "If I had known that nothing bad would happen to men for 10 or 15 years (if he did not have the surgery), I wouldn't have had this done because I'm 65 (years old) now and in 15 years, I'll be 80. Who cares (then if they cannot have sex)" (CA)

> "I wish I had gotten a second opinion. If they (doctors) had told me more what to expect before surgery, I don't think I would have rushed into this." (BPH)

Subsystem Instability Theme 3: Acceptance of subsystem instability. "There's no use to worry about something that you can't control"

In contrast to subjects who would not have had the surgery or at least would have delayed it as long as possible, seven men--four with BPH and three with cancer--did not view avoiding or delaying surgery as a viable option. Their comments illustrate a feeling that surgery had created sexual instability but that the instability was not

overwhelming. The solution as expressed by one subject was 'just take it as it comes and goes.'

> "They said that it shouldn't change my sex life what-so-ever but it didn't make any difference because there was actually no sex life there anymore. (We have children) and there is a time when this thing stops and when it stops, that's it. My goodness, anybody would like to make love again, of course. I was hoping (surgery) would help." (CA, this man had wet dreams pre-op, but post-op, he had only 1 retrograde ejaculation)

> "I think at this age you accept a slow-down, sexual drive and all this. Well, I think probably I regretted it (retrograde ejaculation) but I felt that it was a stage in my life. I mean I really didn't feel ... I'm not going to go around trying to reproduce the world or anything. (He felt he would not have retrograde ejaculation. The subject waited two months to try it "solo".) (BPH)

> "We took the attitude, 'Hey, it's alright, we're ahead of the game, if I still don't get an erection, I'll be alive.' That's the way we looked at it. There's no use to worry about something that you can't control. So that's how it was and it turned out good for us. (Still able to have an erection although firmness has decreased since surgery.) I said, 'Well, shall we try?' And she said, yes, to take it easy, and so we did. When I was done, I said, 'Would you look to see if my head's still on because I feel I just blown my head off.' It was such a sensation. In our way, we both feel that it's better now than it was before." (BPH)

Subsystem Instability Theme 4: Belief that subsystem instability was justified. "I figured it (being able to get an erection) wasn't the biggest price to pay for not having cancer."

Twelve men expressed perceptions that either the preoperative symptoms they had experienced or the seriousness of their diagnosis was sufficient reason to incur sexual instability. Seven men had a diagnosis of cancer and five had a diagnosis of BPH. They expressed their perceptions in the following ways:

"(The doctors) didn't give me much more than 20% chance (of getting an erection) at my age. I thought, well, if it comes to having erections or dying of cancer, I'd rather take my chances with no erections. (My wife) thought it would be better to have me and not sex, to be honest." (CA)

And so when the odds were somewhat favorable that you're not going to become impotent, I look at the favorable side. And when they do surgery, they attempt not to cut the nerves that would stimulate the flow of blood into your penis or interfere with the sexuality if they could possibly avoid it. But on occasion they can't, it's not that easy. And the important thing was that the cancer has not spread into the lymph nodes and into my bones, and that's your primary concern. It's a question of live or die, you know. Everything becomes somewhat irrelevant from that point on." (CA)

(My friends) "told me it was going to be a rough thing and that I wouldn't be able to do this and I wouldn't be able to do that after the operation. I figured it was foolishness (so he never asked the doctor if it was true.) You know, why make a fool of myself, you know. I just listened to what they said had to be done and I said if it has to be done, let's have it done, get it over with. (The first time he had retrograde ejaculation) it scared the hell out of me. You get the full benefits but it seems that it's funny that it goes into the bladder. (Friends told him he would not get erections) but my God, I get them every day. My friend said I shouldn't go through it. But I had to go through with something and I couldn't take it (frequent urination) no longer. (Orgasm is stronger and more enjoyable but) I feel like I've lost something. There's no way that it can be corrected. It's done, it's done. So I just go along with it." (BPH)

"Although I had the urge to urinate, I just couldn't urinate. I had a complete 'stoppage.' I stopped right on Route 99 and said, 'I have to try and urinate.' I couldn't and I said, 'I've got to get to a hospital.' My whole attitude was take care of the blockage (and don't worry about sexual side effects.) 'Cause that was painful, it really was." (BPH)

Subsystem Instability Theme 5: Uncategorized instability.

Five subjects expressed a change in stability but they were not categorized. Four had a diagnosis of BPH and one had diagnosis of cancer. The changes in stability were expressed in the following ways:

(The doctor said) "that there was no more possibility of having children. I said that at my age, I wasn't worried about that. And then he said about having sex, the ejaculation normally the sperm will not come out, it will go into the bladder. I asked him what happens to me? He says don't worry about that, it's dissolved with the urine and you get rid of it that way. I have a feeling that the doctor that I had, he's a rather young doctor, and maybe he felt that he couldn't talk to me so much because he's so much younger than I am. I don't know, I don't think that he should feel that way because doctors are trained for it. He explained, very mechanical-like, you know, clinical. If I had a doctor of my age talking to me, he'd probably go into a lot more detail. (BPH)

"Once in a while, I used to wake up before the surgery, wake up in the middle of the night and let's say, how would you put it? You'd have an erection in the night and then if you were careful, you moved around too much, you would have an ejaculation and you're wet all over, I don't have that no more. Also (before the surgery, seeing) some fantastic looking woman or something like that, you'd fantasize the thing and it would affect the sexual. Now it doesn't bother me much anymore. It used to (bother me) because it would remind me of the past." (CA)

"Figured it (sex) would be all over but it might be a relief (at his age). (Had pain with ejaculation the first three months postop and thought) if that's it, I'll give it up. It (the pain with ejaculation) felt like a needle stuck in you. You just don't have sex like you used to but the urge is still there. You still got the roving eyes but you stay home now ... It's not as good as before surgery, not that thrust (with ejaculation) like before." (BPH)

(Before surgery), "I had no trouble performing the act or anything like that. (The doctor) said I'll still have an erection but he said there is a problem that I won't ejaculate out the end of the penis, it may flop up into the bladder. He didn't promise that I'd get an erection afterwards but he said in 99 cases out of 100 do. (Had first erection) about 5 hours after surgery with the catheter in. I felt sorry for the poor little penis. I thought, 'Oh, Lord!' but I was glad to see it but I thought that's activity over and above the call of duty. (Has retrograde ejaculation and orgasm) the initial feeling seems more pronounced than it did before but somehow it doesn't seem to last quite as long as before." (BPH)

(The doctor) "said for one thing that I wouldn't be able to ejaculate normal. And I would never be able to foster any children or anything like that. At my age I'm not worried. (Woke up with an erection two weeks after surgery) I tried to block all of it out of my mind for the six weeks because I didn't want to rupture anything inside. (First ejaculation

seven weeks after surgery) It was disappointing because it was over so fast. Where prior to the operation coming out the tube it would last a little longer, but this way it's gone before you even realize it. It happens so fast. It was just like a gun shot going off." (BPH)

(One man had such faith in his physician that even when he thought he might have an erection, he did not even look at his groin. The physician had said erection would not be possible; therefore, the erection must be his imagination.) "I've had the feeling, you know, but when the doctor said that (the penis) will never raise, I said forget about it. I might be sitting, I might be looking at a show and I maybe think or read about something and all of a sudden I get an urge. I let it (the urge) go away. It felt like (I was getting an erection) one day last week. So I said to myself 'Nah, a lot of bunk when the doctor told me he took care of that, that it'll never get up.' Then I said, 'No, that' a lot of bunk.' Sex was important before, part of my daily life ever since I was a kid, but not now. " (CA)

Perceived Change in Sexual Behavior

Although all men perceived sexual instability following prostate surgery, not all men noted a change in their usual behavior (set). The degree and length of instability were unique for each man depending on his regulating and controlling mechanisms (RCM). Six perceived change in set themes were also derived from interviews of subjects. These themes were: 1) termination of sexual intercourse; 2) a decrease in frequency of sexual intercourse; 3) no change in usual behavior (set); 4) sexual disenfranchisement; 5) modification or adaptation of sexual activities; and 6) increased sexual activity.

Perceived Change Theme 1: Termination of sexual intercourse. "I says, you know, them days are gone."

Of the 43 men, 17 no longer engaged in intercourse following surgery because they felt their erections were not firm enough. Twelve of these men had surgery for a diagnosis of cancer and five for a diagnosis of BPH. In order to preserve subject confidentiality, demographic data about the type of surgical procedure was not placed with the interviews. Therefore, it is not possible to determine surgical procedure, which is often a factor in postoperative erection function.

> "The desire was there; the erection was not there, was not maintained. Even now, it's not maintained. So (because I wasn't able to have intercourse) my live-in-lover said au revoir and moved out and so forth." (CA)
>
> "I think we have attempted (coitus) a few times. I wasn't aggressive (erect) enough to enter her. I expressed my regrets not being able to service her." (CA)
>
> "I lost my wife eight years ago. I've gone out dancing with a lot of (ladies). (Since the surgery,) that hasn't changed at all. But I can't get an erection firm (enough to have intercourse since surgery.) I'm the only one in the dance group that (used to have intercourse with the single women), I wish I could (again.) (BPH)
>
> "Right now I don't want nobody in the bed with me. When we got a new bed, she would come and get into my bed and I would say, 'go home.' I couldn't keep my penis hard enough to have a normal intercourse or anything." (CA)
>
> (The erection) was there, then prior to putting it in it just ... got soft. After she coaxed it, it got a little firm after that (but still unable to have intercourse.) (Retrograde ejaculation is a greater sensation) and that part's good; it's just the erection that's the sad part." (BPH)

<u>Perceived Change Theme 2</u>: A decrease in the frequency of sexual intercourse. "After the surgery, it tapered off like that, you know."

Nine men perceived a decrease in frequency of their usual sexual behavior. Three men had been diagnosed with cancer and six with BPH. Often, subjects perceived a decrease in sexual behavior that began months or even years before surgery. However, sexual activity decreased even more after surgery.

> "Well, my penis is shorter secondary to the surgery and doesn't stay up as it should. So I have to get into position (so that it is possible to have intercourse. The subject is unable to have intercourse in bed because the mattress is not firm enough to support his new position. Therefore, it is a special effort to have intercourse and the frequency has decreased.) (CA)

> "I just don't have sex (as frequently) like I used to but the urge is still there. You know, before the surgery, I did it when I went to bed but now do it at 4 am. (Since surgery, he has been waking at 4 with an erection. States they're retired and do not have to get to work so there is a longer foreplay), not a quickie. It's (the longer foreplay) probably good for her. It's not a rabbit deal, not me. I've never been an 'in and out' man. You still got the roving eyes but you stay home." (BPH)

> "It's affected our sex life. And more on my part because I just don't go after it as much, you know. I'm weary of it, you know." (BPH)

Perceived Change Theme 3: No change in usual behavior (set). "It (sex) didn't change for me; it just didn't change at all (after surgery)."

Twelve men, four diagnosed with cancer and eight with BPH, perceived no change in their usual sexual behavior. They did attribute to their prostate surgery perceptions that it had created sexual subsystem instability. However, postoperatively, subjects have expanded their choices to regain equilibrium.

"Sure, I suppose at my age, the only thing is that I don't have as much sexual intercourse. I can't just think about sex, I have to have some contact (fantasy is no longer sufficient to obtain an erection.) Other than that, no change. (Feels age and not surgery caused changes in behavior, although it did cause some instability.) (BPH)

"I think all that (change in sexual behavior) happened quite a long time ago. It (sex) didn't change for me; it just didn't change at all (after surgery.) Oh, I guess it's just a case where you get kind of old and we're still interested in each other, but it's hard to say what the reason for that is. We still love each other, why wouldn't we want to cuddle, we do cuddle occasionally and enjoy it very much when we do. We certainly don't do it like we should do." (CA)

"My God, I get them (erections) every day. No problem at all --for an old man like me. And like I already said, there's no way that it (retrograde ejaculation) can be corrected, it's done, it's done. So I just go along with it, you know. Not that I'm out for sex everyday." (BPH)

"Some people don't bother with not feeling it, but I never have been very happy sexually. If I had sex once a week, I would say, 'Gee, that's overdoing it, having it so much.' Even when I was young, I didn't have sex like that, once a week, maybe twice a month. And now I still do. As I grew older, I still was doing the same. I didn't cut down because of my age or like some people say, 'Well, now that I'm old I can't do it.' Or this and that. I didn't cut down because I had always been very slow on that. I haven't changed my pattern." (BPH)

"The first thing, my wife don't care for it anymore so I respect her wishes." (Have not had sexual contact for several years before the surgery.) (CA)

Perceived Change Theme 4: Sexual disenfranchisement. "I know I can't have intercourse, so what the hell is the sense of needing a woman, you know?"

Two men stopped all sexual activity following prostate surgery. One man stopped due to eliminative problems but is working on regaining equilibrium and then plans to attempt to resume sexual activity. The other man, who is widowed, has decided to stop all sexual activity with

women because he can not have intercourse. He does continue to flirt and date them but does 'not bring them home.'

> "The only thing about this (surgery) is my damn wet britches that keeps me from wanting to cuddle and which, you know, you equate that. But otherwise, no way. As soon as I get this thing taken care of, I'm going to be right back in the saddle again." (Has had urine dripping since surgery and has stopped all sexual activity until he can get that repaired.) (CA)

> "Just my sex life (has stopped), that's all, but nothing else. I still run around, mess around, you know. When the broads say, 'Hey, let's get married.' What do I want to get married for, I can't do anything, I'd just as soon stay by myself. 'Sorry, I'll go to sleep with you, but that's all we'll do is sleep.' I know I can't have intercourse, so what the hell is the sense of needing a woman, you know." (CA)

Perceived Change Theme 5: Modification or adaptation of sexual activities. "You have to take a little more time to get up to it, no more spontaneous or anything like that, but believe when you get up there, it's much, much better."

Two men (BPH) reported no change in the type or frequency of sexual activity since surgery. They had changed the tempo by slowing the pace, which both feel helps to increase their enjoyment.

> "I'll tell you one thing, I remember my first intercourse I had (after surgery), I had an 'ejection'. Of course, they say it goes back in the blood, I'll tell you it's a tremendous different feeling. I thought what happened! What happened! It felt like two battle ships went off, you know. I don't know what those other told you but, of course, if you're young you just run and jump in bed. But you don't do that now. You have to take a little more time to get up to it, no more spontaneous or anything like that, but believe when you get up there, it's much, much better. My wife enjoys it much, much better. We took and changed our positions but she loves it much better now. (She doesn't miss the ejaculation), because she still feels the thump. (BPH)

Perceived Change Theme 6: Increased sexual activity. "It's better to the point that I've even got the name of a sexologist and I was going to do something along this line just to increase my knowledge."

One man perceived greater enjoyment of sexuality following prostate surgery. He decided to make major changes in his usual sexual pattern.

> "Masturbation was my only thing. I was an alcoholic until I was 56. After the first two or three years of being removed from alcohol, my consciousness was raised, my fear of intimacy or whatever. I haven't had intercourse with a girl in 14 years. (Orgasm pleasure has increased dramatically since prostate surgery.) It's better to the point that I've even got the name of a sexologist and I was going to do something along this just to increase my knowledge. I remember so clearly the orgasm with intercourse and I think it would be enhanced (now that he has had prostate surgery. Is unsure how to be with a woman and so wants to have sex first with a sexual surrogate. Has become an active member of a consciousness raising group and met many women there. Is unsure of how it will be to have sex with an 'old wrinkly lady' but wants to try.) (BPH)

Choice

Three of the research questions pertain to choice: 1) What sexual alternatives do men perceive as being available to them?; 2) What, if any, are the differences in sexual alternatives between the two groups?; 3) Whom do the two groups perceive as having discussed alternatives with them?

In order to collect data relevant to these research questions, subjects were asked open-ended questions about what strategies they had considered or used to deal with sexual changes following prostate surgery. At first common practices, such as reading "sexy" magazines,

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watching adult movies, or self stimulation were discussed. However, if during the interview the subject expressed any discomfort, evidenced by behavior such as fidgeting, changing their tone of voice, or expressing disgust, the investigator ceased further probes of even less traditional choices. The investigator then returned to the focus of the interview by restating the purpose of the study and the relevance of the questions to the study. Several men asked the investigator to turn off the tape recorder in order to discuss alternatives they had considered. These comments were not placed in the notes of that specific interview but compiled on a worksheet with no identifying notations. During the interviews, men noted options not originally mentioned by the investigator, and these were then incorporated as probes in subsequent interviews.

Eleven commonly expressed alternative themes were identified from the interviews. The themes usually involved self-initiated experimentation and included: 1) rectal stimulation, 2) use of penis circulation restrictors ("cockrings"), 3) use of mechanical erection aides, 4) change in sex partner, 5) election not to use any alternative; 6) use of "aphrodisiacs", 7) medication, either self or physician prescribed, 8) use of visual stimulators, 9) penile prosthesis, 10) expanding the choice of the sexual partner, and 11) seeking the assistance of a sex therapist.

Alternatives Theme 1: Rectal Stimulation. "We don't do that (rectal stimulation), we just don't happen to do that."

When asked if rectal stimulation had been considered as an alternative, several men adamantly expressed that they were not gay and did not understand why anyone would use such an alternative.

"We don't do that, we just don't happen to do that." (BPH)

"I don't know how. That would mainly be for homosexuality, not me." (BPH)

Alternatives Theme 2: Use of penis circulation restrictors (cockrings). "(I had a friend whose) brother was president of the company that made those cockrings."

Several men had used cockrings or homemade cockrings made of rubberbands. When other men were subsequently asked if they had considered this alternative, some responded with questions such as, "What are they? Yeah, I've thought of them but where do I get them?" These responses stimulated real concerns in the investigator about the possibility of unsafe practices and other ethical considerations. A specific concern was the possibility that the subject might view the investigator as a "sex expert" and then try alternatives about which she had inquired, believing them to be safe because a sex expert had discussed them. A related concern was the possibility of introducing alternatives to subjects that they had not actually considered, thus contaminating their perceptions of alternatives with those of the investigator.

In order to address these concerns, the investigator contacted medical consultants at both sites and the nursing consultant to the study. A decision was made to prepare a response about the safe use of "cockrings". There was no literature available about safety

precautions, only articles about injuries occurring with their use. Three criteria were developed, based upon the ethical concerns of the investigator, the clinical experiences of the physician consultants, and deductive reasoning.

The first criterion is related to the safe use of "cockrings". The first precaution was not to leave the device on the penis too long. A safe length of time was to be determined by physical changes in the penis, such as the development of tingling sensations, loss of feeling, and/or color changes. There were several problems with this precaution. First aging men may not be as aware of skin sensation and may, in fact, have diminished sensation. Second, many subjects were concrete thinkers who wanted specific time limits. To resolve this dilemma, the nursing consultant suggested a time limit of two hours and the medical consultant concurred. For maximum safety, the investigator told interested subjects to limit the use of "cockrings" to one hour and set an absolute limit of 90 minutes. Subjects were also instructed to discontinue the use of the device at any time if symptoms of poor circulation developed.

The second criterion dealt with describing the type of "cockring" least likely to cause injury. For example, devices with wide bands were described because they would distribute pressure more widely. Devices made of rubber or plastic were described because they can be quickly and easily cut in case of an emergency. The use of rubber bands was actively and strongly discouraged.

The third criterion was to share this information only with subjects who were already using "cockrings" or who expressed an interest in experimenting with them. This criterion was developed to encourage

the safe use or experimentation with this alternative without recommending its use.

> "And I heard about them, but I don't know what they're supposed to do or what--do they make the blood remain in the penis? Is it a prescription item?" (BPH)
>
> "I feel if you put something on like that, a gadget like that and it suppresses the top of the sexual organ it creates something that is not good for the penis, maybe back pressures or veins or arteries or something like that. I feel it's not worth to even try that. Even if it would hold, it would still back pressure an artery or a vein or something." (CA)
>
> "You're kidding! I wouldn't use one of those, I don't even like to use a contraceptive." (BPH)

Alternatives Theme 3: Use of mechanical erection aids. "In the Family Practice educational magazine they said there is a device, a non-invasive vacuum constriction device."

One man said he had heard of a friend using a vacuum cleaner hose in order to increase suction on the penis and get an erection. In studying the taped interview, the investigator discovered a judgmental tone of voice that was incongruent with the nonjudgmental words used. Further introspective analysis by the investigator helped to identify a fear of a request for permission giving and fear of subsequent injury as sources of the judgment tone. A possible consequence of the judgmental voice tone in this interview was the prevention of disclosure by the subject that he was the "friend" who used the vacuum cleaner. In later interviews, subjects were questioned about the use of vacuum cleaners, but only one had heard of that option. This man felt a vacuum cleaner to be unsafe but believed the principle to be correct. Other

interventions designed by subjects as aids to erection were investigated more closely after several men revealed practices that were unsafe.

> "Then there's one other thing I did. In the Family Practice educational magazine they said there is a device, a non-invasive vacuum constriction device. It's free for 90 days. (Asked his neighbor who is a physician about the device) and she didn't see anything wrong with it. She wrote the prescription for it. I just ordered the thing, it cost $167. I find it almost totally what it is is a vacuum cleaner suction thing. It says to put a rubberband at the base of the penis and I find it very painful. I certainly couldn't ejaculate with it. I think I'm going to send it back." (CA)

> "Another thing we used was, like the sticks you use for tongue blades, and some tape. We put it on my penis so it was like stiff in a way. I just felt good, you know. But I couldn't (have intercourse)--because it was wrapped around too tight and it didn't work. All those months, it's kind of funny the things you do and the things you will try just to make sure you can have intercourse. Another time I tried a band-aide and that's just about it. And it did work with me, it was awkward, but it did work." (CA)

Alternatives Theme 4: Change in sex partner. "Frankly, I had an offer last week from a 39 year old gal who was at this party last Saturday and she was attracted to me for whatever reason I don't know."

Five married men were considering having an affair. They felt a new partner would increase excitement and improve their erection ability. One man had been approached by a woman who wanted to have oral sex with him, and he was considering an affair because his wife refused to have oral sex. He had never had oral sex with a woman and wanted to learn exactly how. Other men had considered an affair and decided against it.

"Frankly, I had an offer last week from a 39 year old gal who was at this party last Saturday and she was attracted to me for whatever reason I don't know. And directly making a play, and it was great for my ego." (CA)

Alternatives Theme 5: Election not to use any alternative. "I never tried any of those quick fixes, you know."

Some of the men decided the alternatives were too costly, too kinky, too dangerous, unobtainable, or too painful.

"I never try anything (when asked if he used creams, zinc supplements, or other alternatives) I guess I accept being old and I figure when a guy's getting a certain age, he couldn't be as good as he was when he was young. After all, I'm telling you I'm 65 years old. I just take life as it is, you know, do the best I can. If that don't satisfy the next person, I can't ... I can't help it." (BPH)

"The concept of oral sex is just absolutely abhorrent to me. No, I just would not be able to imagine that." (CA)

(Used to drive taxi cabs the night shift and got to know many prostitutes at work.) "Paradoxically, I'm not a trick, I can't purchase, I can't buy sex. And I never wanted to make it with anybody unless I liked them." (BPH)

"I never tried any of those quick fixes, you know. Our friend has. He says I can get this, I say that I don't need it, I don't need it. He says it keeps your mind right. I feel that you're going to use something for a crutch, you're not doing yourself any good. I think you should get your mind together, get the parts thinking together, not the negative, the positive and everything will work. I've seen a lot (of those quick fixes) in these magazines and these gossip magazines." (BPH)

"I kid around with (women but I don't take them home with me anymore.) Cuddling is too minor. What is sexy about holding on and kissing? What is sexual about that? I have to have the real thing." (CA)

"I'm not horny or a homosexual neither, I don't believe in that at all. If you ask a girl to dance and she says no, you're rejected. If you're a person who doesn't want that and you see a little bit of that happening, you kick it off and don't get back to it. (Reply to question of why he hasn't dated since his surgery.) (BPH)

Alternatives Theme 6: Use of "aphrodisiacs". "I thought about them (lotions) but I never got any."

Creams, powders, and lotions were used by a variety of men to regain their erection. Most of the men who had tried magic lotions were disappointed in them and felt they were a waste of money. But one man swore by the powdered horn of the black rhino from Africa. "I tried the white rhino horn but that stuff don't work, just the black rhino."

> "I thought about them (lotions) but I never got any. There's some that I saw that I would have gotten but I thought they were too expensive. I still think it's alright (and I might use them in the future.) I have a tube of (novacaine) downstairs. (I used it) a long time ago. It prolonged (erection)" (CA)

> "I think I used (lotion) one time when I was married years back in the service. Hell, it didn't do nothing anyway." (BPH)

> "You see all these ads and stuff about that (creams and lotions.) I've heard about it but never even thought about it, to be honest. Like I said, I don't think that we were into sex as great as a lot of people think you ought to be." (CA)

> "I heard about that (lotions) but I never tried, as a matter of fact, I don't know where to buy it. That's one of the reasons (I didn't try it), I didn't have it." (CA)

> "I've never heard about that. I'm not educated in those things. Like I said, I was raised on a farm and never knew about that stuff." (CA)

Alternatives Theme 8: Medication--either self or physician prescribed. Self-medication with vitamins, herbs, or other over-the-counter compounds. "Now if you take one of these (zinc tablets) every day, it goes straight to your gonads and helps the erection." Or use of prescribed medication. "Let me know, if you don't mind, what Dr. X says" (about using medication to ejaculate).

Men used traditional and nontraditional types of "pills" to try to regain erection and ejaculation ability. Methods ranged from vitamins to the use of hormones. For some men, retrograde ejaculation was a very large concern. When asked if they were aware of medication that might possibly change retrograde ejaculation, such men would ask how to obtain it and were referred to their physician. The medical consultants were aware of the medication, but had never offered it to men following prostate surgery.

> "Let me know, if you don't mind, what Dr. X says (about using medication to ejaculate). That is what I miss. I wouldn't take it (the medication) real constantly anyway." (BPH)

> "I read the pamphlet. I don't remember reading about ejaculations. I know that you can get implants so that you could get a hard-on again, an erection. I remember them saying that you could still have children. She wants another child. I'd like to have it (ejaculation) back." (BPH)

> "I tried Demeana. You take it once a day. I have another one that I bought some time ago. I take one capsule (of Jinseng) a day. I tried Vitamin E. Now that did help me, I think, some time ago but not now. At the same time, I was taking the hormone shots too."

> "I remember when my mom had a hysterectomy when I was a little kid. She was a young woman, I didn't realize it then but I've realized since then--well, I think she was in her 40s, 45, and my dad didn't say, "Hey, woman." But back then they didn't have the hormones and stuff like that, and a lot of men take hormones after they have their prostate removed. They don't think they're good for anything." (CA)

> "They have a procedure now where they give you some drugs that give you an erection. See, if you want to get it up and when you want to take it down, then it takes you down. I heard about it on TV. They said at the beginning (of the show), if you play with this, you might get it going and can't get it back down so you've got to be careful. Because it could go on and on and you can't stop it. It might be a good idea if I was married or something and you want to be a good partner, it would be a good idea because then you can make your partner happy. The main thing is I don't want it. Psychologically, it could be like a placebo." (BPH)

"We tried the testicle type pills and they don't work. The stomach acid seems to neutralize them before they reach any system that turn things on, let's say. So he (the doctor) was going to try shots, but he moved away before we got it. We tried different things, different medicines, and nothing seemed to sustain that or bring it up to its usual for a sexual act. We haven't tried any creams but mostly it was pills or tablet under the tongue or something like that. On the side so it would go slower through the system, that did no good either. They call that bilingual or something (sublingual)." (CA)

"I don't know why, but one doctor told me to drink wine. Well, I've been drinking wine (since)." (BPH)

Alternatives Theme 8: Use of visual stimulators "I've tried to read some dirty books to get in the mood."

Reaction to questions about reading "sexy" magazines or watching "sexy" movies included the following:

"I tried magazines. I think that made it worse because they were just nasty. I like to have a woman with a little bit of clothes on, that gives me more joy than seeing them all naked and all the sex organs exposed and some of that stuff makes you sick to your stomach. See, we didn't see this kind of stuff, that was taboo. We're not used to that kind of nasty rotten sex. It was more of a shock that anything else." (CA)

"I tried that (looking at magazines) a couple of times, yeah. But it never turned anything on. (Reading magazines did help him get an erection before the surgery.) I think any man looks at the stuff just out of curiosity. No turn on whatsoever. I tried it postoperatively just to see if I could turn myself on. I haven't gone to a movie or anything like that." (CA)

"I've tried to read some dirty books to get to you in the mood. She (girlfriend) says she'll take me down to one of these skin shows. If I went to one of them things, someone else would be chasing me around in there. All I need is some strange person. That might help, I don't know, it would put you in the mood for it at least." (BPH)

Alternatives Theme 9: Penile Prosthesis. "I thought seriously about going back to the doctors about that damn implant, you know."

Of the thirteen men who mentioned implants (penile prosthesis), ten of the men had a diagnosis of cancer. Comments relating to implants included the following:

> "I know a guy that had something like that done in the hospital when I was down there. It gave him a permanent erection and that bothered him, he didn't like that. I couldn't see that kind of stuff. To each his own, whatever they want to do is their business. If you can't get your own erection, what's the use of having it? I give this kind of thing because I love my wife." (CA)

> "I read up on them (implants) and we have a library and I read an article about implants. It gave the run-down of the possibilities of something on the outside and they give you whys and why nots and the why nots got me. It might cause more damage than is already there, I'm not sure. I decided against that. It just doesn't seem right, doesn't seem real. It doesn't have the intimacy. It's between you and the wife, it just doesn't seem right somehow. You both have to enjoy it, if it's only one-sided, it just doesn't work right." (CA)

> "And I think she (wife) feels that if I had surgery (penile implant) and had a penis that stayed hard, I might be looking for a younger woman. That's part of her thinking." (CA)

> "I think that my life was just about ending because I had a fear I was ... it was something very personal to me. But the doctor said that by having an implant I'd be able to continue just as I was doing before. We waited about three or four months after the operation and I had the implant and it worked beautiful. It's very, very awkward because sometimes it is always rigid. It feels like you're going to have ... I'm sorry, I might have to say the word, you know, a hard on and it looked like it, really. They say you sit down and move it up and you feel kind of awkward and it looks like if you're with a lady and you're not thinking about sex and you get up and you know and maybe the lady doesn't know that you had the operation might think that you're looking at the lady with sex eyes, and you were not. So it is awkward, very, very awkward. I hear there's a new one now. The one I have, I don't recommend." (CA)

"That's been talked about. I think I've talked with my wife about it very fleetingly. But the concept of the damn thing embarrasses me or something. I just would not be comfortable. Now I'm being selfish, but I wouldn't be comfortable with the concept. Maybe I should discuss it with her more thoroughly. I'd not want to pump up and blow up or something. It doesn't correspond with my imagination or values or whatever you want to say. (It's the idea that) it's artificial, very artificial." (CA)

Alternatives Theme 10: Expand the choice of the sexual partner. "Your wife is going to have to find an alternative way of having sex."

One subject felt an appropriate intervention was to not just expand the choices of men who had the prostate surgery but to expand the choice of the sexual partner.

(Suggests pamphlet given to men before surgery include information that) "your wife is going to have find an alternative way of having sex. (What would he suggest?) I don't know. I really couldn't say. It's according what kind of rapport you and your wife have. Whether how you've done before, if there's any ways that you think would help, you know. Gee whiz, it's going to affect their whole marriage, their whole life together because all of a sudden ... some people are not mature minded enough to know that there's more to life than news, weather, and sports ... let's put it like this. After sex, there is nothing, that's what some think. They might have a good relationship or rapport and all of a sudden it's shot. So, if you could just sit her down and tell her what was going to happen, you're going to have to be patient with this man. If you can, help him." (CA)

Alternatives Theme 11: Assistance of sex therapist. "I even got a name of someone who is a sexologist and I was going to do something along this just to increase my knowledge and find out if there were sexual surrogates."

Several men included the use of a sex therapist or a counselor in their options of possible alternatives.

> "I'm not going to start going to a head shrink or something to find out what the problem is." (BPH)

The third question concerning choice related to whom the subjects perceived as helping them to expand their choices. Not one single man remembered a nurse discussing sexual changes which might occur after prostate surgery. Subjects did remember nursing care and perceived it as very professional and efficient. But no one remembered nurses suggesting sexual alternatives.

Subjects perceived four types of people as being helpful in expanding choice: 1) self, 2) friends, 3) physicians, and 4) available literature. There was no difference between the two diagnostic groups in where they got their information to expand choice, except for men who had radical retropubic prostatectomy. These men were more likely to remember specifically the physician's offer of an implant if the surgery affected their erection ability.

Goals

The next two research questions pertain to goals following prostate surgery. The majority of men perceived the goal of their sexual subsystem to be procreation. The issue of 'lost fertility' and there being no 'real' reason to continue having sex was repeated interview after interview. Even the three men who identified themselves as gay commented that now they would never be able to father children. Often the comments about fertility were said in a joking manner, but it was a

continuous theme for all men who experienced retrograde ejaculation following prostate surgery.

> "We just kidded about it. Well, we can't have no babies. But that was no problem at our age, I mean 65 ..." (BPH)

> "She jokes about that we're never going to have babies anymore. She's a little older than I am so there's no way to get her pregnant, I mean that part." (BPH)

The goal of sexual gratification and/or relief of sexual tension was not as consistently repeated in the interviews. Although the mean age of these subjects was 67 years at the time of surgery, they still perceived the unspoken goal of procreation until they experienced retrograde ejaculation.

Significant Other

The final research question pertains to the issue of support received from the significant other, as defined by the subject. Thirty-one (72.1%) subjects perceived their wives or live-in lovers as their significant other. Of the remaining twelve men, eight identified 'girlfriends' as their significant other. The mean length of time in the present status for all 43 men was 27 years. Only seven men (16.3%) had less than ten years in their present status. It was a relatively stable group.

Theme 1: Supportive. All but five subjects perceived their partners as supportive. Support was defined as the partners following the mens' decision of how to act. That is, if the men chose to decrease or stop sexual activity, the partners followed suit, or if the men chose actively to enlarge their choices, the partners engaged in the pursuit or were willing to enlarge their choice.

"It doesn't seem to bother her. She has never been one to initiate it, but she's very good about it as far as not showing in any way." (CA)

"So she said she would understand and she did." (CA)

"I lost my wife eight years ago. I go out with a lot of women (now)." (Partners accept he no longer has intercourse with them.) (BPH)

"My wife happens to be an extremely understanding person. No, she said nothing (about the loss of erection.)" (CA)

"We always try to make sure the other person gets satisfaction. I know I got to take my time. She knows we got to take time. So we had to look for other ways for doing it and this worked out better for us." (BPH)

"We're just as in love today as the day we met." (CA)

"They (multiple partners) haven't said anything." (CA)

Theme 2: Unsupportive. Five men perceived their partners as not fully supportive because they did not follow the man's lead in sexual behavior.

"Now it's (sex) a risk because you don't want to fail because it embarrasses both (of you.) That is why I come all the time (to the hospital) to find out for sure, to pin it down to see what the cause is." (CA)

"She's not aggressive, but she's certainly not passive." (No longer able to have intercourse, which wife does not mind, but she expects more cuddling. He is learning to enjoy cuddling because) you've got to compensate." (CA)

"So my live-in lover said au revoir and moved out and so forth." (CA)

(Girlfriend left him because he was no longer able to have an erection.) (BPH)

Summary

A total of 43 subjects were interviewed about their perceptions of sexual subsystem stability following prostate surgery. All men perceived that they had experienced a period of instability following surgery. Four properties of instability emerged from the data. Those properties were: 1) belief that there would be no subsystem instability; 2) expressions of regret for the lack of foresight; 3) acceptance of subsystem instability; and 4) belief that subsystem instability was a small price to pay. The six themes about perceived set which emerged from the data coding were: 1) termination of sexual intercourse; 2) a decrease in frequency of sexual intercourse; 3) no change in usual behavior; 4) sexual disenfranchisement; 5) modification or adaptation of sexual activities; and 6) increased sexual activity. Eleven properties about perceived choice were identified from the interviews. These alternatives usually involved self-initiated experimentation and included: 1) rectal stimulation; 2) use of penis circulation restrictors; 3) use of mechanical erection aides; 4) change in sex partner; 5) election not to use any alternative; 6) use of "aphrodisiacs"; 7) medication, either self or physician prescribed; 8) use of visual stimulators; 9) penile prosthesis; 10) expand the choice of the sexual partner; and 11) seek the assistance of a sex therapist. Subjects perceived four types of sources (self, friends, physicians, and available literature) as helping to expand choice. In Chapter V, these findings are discussed.

CHAPTER V

DISCUSSION OF FINDINGS

So, go lively brisk old man
Do not let sadness come over you
For all your white hairs
You can still be a lover.
(Goethe in DeBeauvoir, 1973, p. 488)

Overview

It is the twofold purpose of this chapter to ascribe meaning to the data and to interpret the research findings presented in Chapter IV.

The context within which all other findings will be considered is: Sexual behavior is important to elderly men who have had prostate surgery. Although they may choose to discontinue intercourse, decrease sexual behavior, or even stop sexual behavior, the research findings clearly indicate that men continue to find sex important. In fact, sexuality is so important to these men, even those without current partners, that they were willing to share the most intimate details of their personal sex lives with an investigator they had never met.

Discussing their sexuality with a perceived expert was so important that some respondents telephoned clinics, wards, and nursing service in order to find the investigator. Some subjects drove 100 miles round trip or took a three-hour bus ride to discuss sexuality with the

investigator. None of the subjects received monetary compensation or reimbursement for their efforts. This finding directly contradicts the literature about the lack of interest in sexuality among the elderly, the concerns of ethics committees, and the beliefs of many health providers.

Chapter V is organized into two sections. The first section involves a detailed presentation of the research findings reported in Chapter IV using as a framework the five conceptual categories to answer the nine research questions: 1) perceived change in subsystem stability, 2) change in sexual behavior, 3) choice, 4) goals, and 5) significant other. The second section contains a discussion of serendipitous findings of this study, which may be as valuable as the research findings.

Presentation of Research Findings

Perceptions of Sexual Stability

All 43 subjects in this study perceived they experienced sexual instability following prostate surgery, in that usual sexual behaviors needed to be modified or new ones developed. This sexual instability produced tension which subjects sought to reduce. According to the Johnson Behavioral Model, nursing needs to help patients restore their sense of sexual stability by helping them either to conserve energy or use their energy effectively.

Previous sexuality studies have not used JBM as a conceptual framework and thus have not examined sexual instability. However, some studies have incorporated physiological changes of retrograde

ejaculation and erection, factors which influence sexual stability. For example, Hargreave and Stephenson (1977) found that, of 41 men who had TURP, 18 had no change in ejaculation, one had reduced ejaculation, and 22 had retrograde ejaculation. Of 21 men who had RRP, five had no change in ejaculation and 16 had retrograde ejaculation. Six months after surgery, the men were interviewed about their 'potency' which was defined as the ability to have "satisfactory erections of the penis for intercourse", ejaculation of sperm, satisfactory orgasm at the climax of the sex act, and the desire for sexual intercourse. Of the 57% of men who were potent before surgery, only 25% did not regain preoperative potency six months after surgery. This definition of potency includes three phases of the sexual response cycle, has a heterosexual bias, is not clearly defined, and uses the perjorative word of impotence. Despite these limitations, results suggest that instability had been found in this study.

The present study of 43 men resulted in four properties of instability emerging. The first property to emerge was typified by one respondent's comment, "Because despite any warnings, I'm optimistic by nature so I felt it couldn't happen to me." The second property of regret was typified by, "I wish I had gotten a second opinion. If the (doctors) had told me what to expect before surgery, I don't think I would have rushed into this."

Acceptance of subsystem instability, the third property, was expressed as, "You get my age, you know, you enjoy whatever you can get out of it." The property that instability was a small price to pay was characterized by, "My wife wanted me to get the cancer out of there and

I did too. I figured (being unable to get an erection) wasn't the biggest price to pay for not having cancer."

Twelve percent (n = 5) of those men interviewed provided responses which did not fall into any of the properties of sexual instability. This finding may reflect the sample size. A larger sample size might have identified additional properties consistent with these responses. No difference was found in the four properties between men treated for benign versus malignant disease (X^2 = 0.1863, p = 0.9798, df = 3) (see Table 4).

Table 4

Four Properties of Perceived Instability
Following Prostate Surgery

	Cancer		BPH	
Properties	n	%	n	%
Believe no instability	5	25.00	4	26.67
Regret lack of foresight	2	10.00	2	13.33
Expectance of instability	5	25.00	3	20.00
Believe instability justified	8	40.00	6	40.00
Total	20	100.00	15	100.00

X^2 = 0.1863; df = 3; p = .9798

Perceived Changes in Sexual Behavior

Tension created by disruption of usual sexual behaviors may be causally related to efforts by the subjects to re-examine and to adapt their usual behavior. Subjects in this study expressed a broad spectrum of changes in sexual behavior following prostate surgery, ranging from sexual disenfranchisement to sexual enhancement and increased sexual activity. There was a difference in changes in sexual behavior of men treated for benign versus malignant disease ($X^2 = 10.1979$, $p = 0.0372$, $df = 4$), with men treated for cancer more likely to discontinue intercourse (see Table 5)

Table 5

Five Properties of Perceived Change in Usual Behavior Following Prostate Surgery

	Cancer		BPH	
Properties	n	%	n	%
Termination of intercourse	12	57.14	5	22.73
Decrease in frequency	3	14.29	6	27.27
No change in behavior	4	19.05	8	36.36
Sexual disenfranchisement	2	9.52	0	0.00
Modification or adaptation	0	0.00	3	13.64
Total	21	100.00	22	100.00

$X^2 = 10.1979$; $df = 4$; $p = .0372$

What is impressive about the data is that so few of the men developed Geriatric Sexuality Breakdown Syndrome, that is, the process of negative change in the I and me view of self-sexuality, the view of society of the elderly being asexual, leading to a sexual conformity of becoming non-sexual (Kaas, 1983). What occurred instead was the emergence of independent men who sought creative ways to maintain their sexuality. Although their set (usual behavior) changed, only one actually gave up striving to meet the goal of the sexual subsystem.

Although 17 men stopped having intercourse and nine men decreased the frequency of sexual behavior, they continued to expand their choices and were still attempting to meet the goal of sexual gratification. An example of this choice expansion is one man's comment, "It gets kind of embarrassing even with the wife that you want to (have coitus), see, but then at a certain point you cannot sustain the erection or the sexual act. We might hug each other now and then, but it has lessened." Another man notes, "Well, I'll always be a man, I'll always be a male. I don't know about the man that I am right now. It does bother me (that I no longer have an erection.) Cuddling is still important. When we have to cut down on one, you have to go with something else. You've got to compensate."

Of the three men who perceived they had 'stopped' all sexual behavior, one made a conscious decision to regain eliminative stability before focusing on his sexual needs, yet he still gave quick pats to his wife. The second man noted, "I know I can't have intercourse, so what the hell is the sense of needing a woman." Yet he continued to date women and flirt with them. He was quite proud of his 'dapper'

appearance and even showed the investigator his new vest. The third man experienced feelings of sexual excitement but forced away the feelings, believing them to be unfounded wishes after the physician told him all sex would be over.

Choice

Many of the men were aware of both traditional and folk alternatives. Traditional alternatives included abstinence, the use of prescribed medication for correction of retrograde ejaculation, hormone treatment, penile prosthesis, sex therapists, and expanding the choice of the partners. These alternatives were not necessarily used by the subjects, but they were aware of the possibilities and so were part of their choices.

Folk alternatives came from common sense or homemade remedies. These included rectal stimulation, penis circulation restrictors, mechanical erection aids, a change of sexual partners, aphrodisiacs, self-medication, and visual stimulation. Folk alternatives were often discovered by the person through experimentation. Friends or 'experts' in the lay literature and media were usually sources of folk alternatives. In contrast, traditional alternatives were usually suggested by health professionals.

The use of alternative sexual behaviors was also characterized by feelings of ambivalence on the part of some subjects, being personally repugnant to some subjects. This finding may indicate the strong desire of subjects to reach the goal of sexual gratification.

Goals

According to most literature, older men or those diagnosed with cancer no longer view sexual gratification as a goal. However, findings from this study clearly contradict this conclusion. Achieving sexual gratification was of primary importance to the men who participated in this study. Subjects expended considerable time and energy exploring alternatives in order to achieve sexual gratification. Data from the study also suggest that many men participated in the study hoping for information that would help them expand choices to meet the goal of sexual gratification.

As noted in Chapter II, it is a common assumption that men at this age no longer consider fertility as one of the goals of sexual activity. This assumption was found to not be true for men in this study. Although subjects recognized that procreation as a goal had ended long before surgery, the onset of postoperative retrograde ejaculation seemed to finalize this phase. One subject clearly mourned the loss of his procreative abilities and other subjects were ambivalent.

Significant Other

The perceptions of men about supportive and nonsupportive partners were interesting. Generally, subjects considered supportive partners to be those who agreed with what subjects said or did. "My wife and I worked hard for a real good life together. She met my needs and I met her needs and both, we had a rapport, sometimes we can sit right and look at each other and listen to the radio and she read the paper and I read the paper and we both just know that we are here. We don't have to

have no (sex). Just as I say, my wife and I have this thing, I go by and I pat her, you know."

Unsupportive partners were those who did not agree or who suggested alternatives with which subjects did not agree. "I think she feels that if I had surgery (a penile implant) and had a penis that stayed hard, I might be looking for a younger woman too." Even partners who suggested alternatives that seemed to have intrinsic value, such as 'cuddling' were perceived by subjects as being unsupportive.

One explanation for these findings may be differences in meanings and values attached to sexual behaviors by subjects and their partners. For example, alternative suggestions from partners may have been perceived by subjects as advice giving rather than being empathic and accepting. These findings underscore the value of symbolic interaction theory in this study.

When men perceived their significant other to be supportive, they were helped by that support to regain equilibrium. When men perceived their significant other to be non-supportive, they experienced greater instability. When there was no significant other, some men perceived that being partnerless contributed to feelings of sexual stability, but others perceived that being without a partner created a greater sense of instability.

None of the subjects with prostatic cancer brought up any concerns about cancer contagion as a factor influencing sexual behavior with a significant other. In addition, none of the subjects perceived their partner as having concerns about cancer contagion.

Serendipitous Findings

The use of a qualitative research design was the single most important factor which contributed to the success of data collection as evidenced from the responses of the research subjects. The men wanted to tell their story in their own way. They disliked being rushed or being asked to make a forced choice. When asked to give a choice, subjects wanted to elaborate each statement because they felt they needed to make clear their rationale for each selection. Other research designs would not have permitted the expansion of focus that resulted from the opportunity to ask the second, third, and more follow-up questions (Bogdan & Taylor, 1975). This approach generated a great deal of information (Pomeroy, Flax, & Wheeler, 1982). In some respects, subjects became a "co-investigator" as they explored their sexuality with the investigator. The research design allowed for interaction between the investigator and subjects. This, in turn, encouraged subjects to 'open up', revealing a wealth of important new information.

There is a belief that when discussing a sensitive topic such as sex, people tend to 'embellish' the truth (Pomeroy, Flax, and Wheeler, 1982). Yet, just as Perkins (1982, p. 190) found "a significant trend toward increasing veracity with increasing age", so did the older men in this study demonstrate an open honesty. Some literature implies that older people are forgetful and not reliable. However, in this study, subjects, although older, were fastidious about detail. They wanted to give the correct information and would often spend the night before the interview writing down exact dates, confirming with sexual partners the effects of surgery, and retrieving written material. Some men tape-

recorded the interview in order to share it later with their partners. Several men discovered a discrepancy and contacted the investigator to inform her. Other subjects encouraged the investigator to call back if additional questions needed to be asked. This attention to detail further indicates the importance of the study subject to the participants.

It is a commonly expressed fear and perception that men do not want to discuss their sexuality. However, from the experiences and results of this study it is quite clear that men do want to talk about their sexuality and, in fact, are eager to talk. The language the older men used to describe sex was fascinating, for example, "burning like a fire" and "laser blasting away".

Subjects were often so prepared to talk that the investigator had to interrupt gently in order to get their consent to conduct the interview. It was frequently difficult to get subjects to stop talking even after a one and one-half hour interview. Subjects sometimes walked the investigator to her car while continuing to add more details. The importance to subjects of this study and the opportunity to discuss their sexuality may be inferred from the fact that some of the subjects actively sought out the investigator. Men who heard of the study but had not been asked to participate called the urology clinic to volunteer and expressed disappointment when told they could not participate.

On a number of occasions, the subjects actually complained about the 10-day waiting period required by the ethics committee before a contact could be made. Subjects stated the waiting period was too long and feared that the investigator might have forgotten them. Of special interest and concern is the possibility of significant discrepancies

between the perceptions of clients and those of ethics committee members and health professionals. There may be unfounded biases, such as: no one will participate in sexuality studies; only 'weirdos' will participate in sexuality studies; the investigator will receive obscene telephone calls; the men will suffer 'emotional collapses' when reminded of something they can no longer do; the men are too embarrassed; the men are forgetful. These and similar biases result in the imposition of unnecessary research constraints that directly contradict desires of the subjects whom ethics committees are attempting to protect. Fears of the ethic committees were not confirmed in this study and may not be reality based.

It was quite clear from the interviews that subjects had a thirst for information on sexuality. The subjects in this study wanted to expand their choices and were eager to talk with someone they viewed as an expert. The men for the most part were explorers, innovators, seekers. These characteristics, combined with their view of the investigator as a sex expert, created problems. Unsafe sexual practices were explored with subjects as part of the study. A concern arose in the investigator that such discussions could lead to experimentation and injury. However, this concern was addressed by obtaining expert advice about unsafe practices and incorporating this advice into the interview schedule immediately following discussion of each unsafe practice. The anticipation of and appropriate response to dangerous practices or situations discovered in the course of conducting sexuality research are of critical importance.

Although every effort was made to "stay on task" and adhere to the focus of the interview, subjects often requested additional information.

Information was sent to subjects after the interview. Pomeroy, Flax, and Wheeler (1982) noted one of the primary reasons why a person volunteers is his belief the investigator will correct misinformation, provide specific information, and determine if he is 'normal'.

Talking about sex was a very emotional event for some men. Many of the men were found to be sensitive and sensual persons who got teary-eyed or even cried during the interviews. The first two times this occurred, the investigator worried about the potential for offending the men. However, when this concern for the emotional expression of the men was pursued, the men replied, "This has been good for me. I've never gotten to talk to anyone about my feelings." Perhaps one of the reasons the men allowed themselves to be vulnerable during the interview was a change in focus for them. The focus of other health professionals had been limited almost exclusively to the prostate itself. This was a new experience to have the focus on the whole person rather than just a gland.

The findings also show that most subjects attach considerable importance to erection and ejaculation. However, the meaning of the finding is unclear. The focus on erection and ejaculation is a prominent feature of many previous studies. Results of this study expand the scope of those investigations by confirming with actual perceptions of subjects what has previously been assumed to be important by investigators. Subjects in this study have been influenced by a variety of cultural emphases on erection and ejaculation, such as gender orientation, medical and surgical intervention on the penis and prostate, and lack of information about changes in sexual functioning to be expected after surgery. When these factors are combined with the

findings related to choice and requests for additional information, the possibility of a new process involving expansion of previously held perspectives on sexuality has to be considered.

A very large conceptual/reality gap was discovered between the concept of holistic nursing care that includes sexuality and the fact that none of the men interviewed perceived or recalled any of their nurses ever discussing sex with them, except to say "don't" until six weeks after surgery. Postoperatively, the majority of men at the follow-up clinic appointment were asked by physicians about the ability to void but seldom about sexual functioning. Unless the men were assertive, few received sexual information following surgery.

The implications of the findings of the study are discussed in the following chapter. In addition, the usefulness of JBM/SI as a conceptual model for practice, education, and research is discussed.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this chapter is four-fold: 1) to summarize the study, including the research questions posed, methodology used, and major findings; 2) to discuss both methodological and ethical limitations of the study; 3) to describe the implications for nursing practice and education; and 4) to suggest directions for further research.

Summary of the Study

The purposes of this study were: 1) to examine the perceived effects of prostate surgery on sexual stability in men between 60-74 years of age; and 2) to examine differences in perceived effects between men who have had prostate surgery for a diagnosis of benign prostatic hypertrophy (BPH) and those with a diagnosis of malignancy.

Previous research studies have used restrictive theoretical frameworks which resulted in highly compartmentalized and fragmented findings. For research about human sexuality, which is more than the physical act of coitus, the focus of previous studies was too narrow in scope (McFarlane & Rubenfeld, 1983). Johnson's Behavioral Model (JBM) and Symbolic Interaction (SI) were selected as the conceptual framework

because it was essential to acknowledge that 1) human sexuality is a holistic phenomenon (Ford & Beach, 1951; Kirkendal, 1979) and 2) client perceptions are determinants of major importance.

The decision to use JBM with SI as a framework for this study was based on a critical analysis of theories used in past research, consideration of the research question posed for the study, and the potential of the theory for addressing the question and providing direction for appropriate nursing interventions. The combined JBM and SI framework incorporated psychological and biological variables without artificially separating them--an important consideration because nowhere else is the connection so important to preserve than in sexual matters (Ephross, 1981; Maurice, 1985).

The nine research questions posed in this study and answered in Chapter IV were:

1. Do men perceive their sexual behavior as being stable post-prostate surgery?
2. Are there differences in perceptions of sexual stability among men who undergo surgical treatment for benign prostatic hyperplasia and those who undergo surgical treatment for prostate cancer?
3. What perceived changes in sexual behavior do men experience post-prostate surgery?
4. What sexual alternatives do men perceive as being available to them post-prostate surgery?
5. Are there differences in perceived sexual alternatives used by men with prostate surgery for benign versus malignant conditions?

6. Who do men perceive as helping them expand their sexual choices post-prostate surgery?
7. Have the goals for sexual behavior changed post-prostate surgery and, if so, how have they changed?
8. Are there differences in sexual goals among men who undergo surgical treatment for benign prostatic hyperplasia and those who undergo surgical treatment for prostate cancer?
9. Do men who have undergone prostate surgery perceive their partners as influencing their sexual stability?

A qualitative design was used to describe and analyze the real world of two groups of men treated surgically for benign or malignant prostate disease. The design enabled an explicit rendering of the structure, order, and patterns found among these men (Lofland, 1971).

Procedurally, volunteer subjects met with the investigator for a confidential 1 1/2 hour semi-structured, tape-recorded interview. This allowed subjects to use their own terminology to describe their experiences and to set their own pace.

The major findings of the study were: 1) there were perceptions of sexual instability by all subjects irrespective of type of surgery, age, diagnosis, or existence of subsystem instability prior to surgery; 2) the subjects were very innovative in changing their usual sexual behaviors and expanding their choices in order to meet sexual subsystem goals; and 3) nurses were not perceived as helpful in facilitating sexual subsystem stability. Underlying the specific findings of this study was the broader finding that sexuality is an important topic to older men and that they need an opportunity to discuss their sexual concerns. This empirical evidence that older men view sexuality as an

important concern "checks the frequently unbridled addictions to making assertions about the world" that older men are not concerned about sexuality (Kerlinger, 1979, p. 14).

Limitations

Visintainer (1968, p. 38) states that theory is an amalgamation of particular perspectives and therefore remains only a tool used to understand and alter the world. It is in this respect that the conceptual framework of this study was a working draft from which exploration of new possibilities from different perspectives was encouraged. There are limitations to all theoretical frameworks. In the framework used for this study the limitation was that none of the existing sexuality assessment tools incorporate the variables of JBM or SI; thus, concurrent validity of the present interview schedule was not possible. This limitation pertains to not only internal consistency of the framework but also instrument validity.

Methodologically, the limitation of qualitative research is lack of control of the independent variables, that is, the diagnosis or treatment, so that causal relationship between the independent variables and sexual stability can not be determined. In this study, full understanding of the causal relationship between the variables is not the purpose, but rather to determine how men perceive the independent variables to affect their stability. Thus, the methodological limitation is not a major problem when using SI as a conceptual framework.

In this study, four limitations of past studies were eliminated.

1. Operational definitions of sexuality were determined by subjects themselves. Potency was not equated with sexuality because sexuality is much broader in meaning. In fact, the term potency was not used because it is inappropriate and perjorative (Elliot, 1985).
2. There was the use of a comparison group of subjects with benign prostate disease who were the same age group and had surgery on the same organ as those with malignant prostate disease.
3. The interviewer was an oncology nurse highly skilled and experienced in conducting sex research, unlike past studies in which investigators had little expertise in sexuality.
4. Because the research question focused on threats to the sexual stability, men without partners, with multiple partners, and with male partners, as well as married men, were included as subjects. Previous studies examined only married men.

Limitations not eliminated in the study were incomplete data due to incomplete medical records and the use of a volunteer sample.

Implications for Nursing Practice and Education

The finding that none of the study subjects perceived or acknowledged that any nurse discussed or provided any information about their sexuality is a serious indictment of nursing, which has identified sexuality as an integral component of the whole person and thus an object for assessment and intervention. This finding confirms earlier

reports of the absence of counseling. For example, Pinderhughes, Grace, Reyna, and Anderson (1972) report that only 25% of 307 inpatients had physician-initiated discussions about sexuality. Vincent, Vincent, Greiss, and Linton (1975) found 70% of women in their study on cervical cancer received no sexual counseling by health professionals. They found the women seldom requested sexual information and would discuss it only when health professionals initiated discussion.

In this study, few subjects reportedly initiated discussions with health professionals about changes in sexuality following prostate surgery. However, all subjects were eager to discuss the topic when provided an opportunity by the investigator. This finding indicates the need for nurses in clinical practice to provide opportunities for clients to discuss sexual concerns before and after surgery. It should not be assumed that the client who does not initiate discussion does not have concerns.

Once the need to address possible sexual concerns of the client has been recognized, the nurse in clinical practice must answer the questions of how, where, and when best to raise the topic. Findings from this study indicate that an open-ended question format such as that used during the interviews yields a variety of information that is meaningful to the client. Such questions should be asked in a setting that provides privacy and time during which neither the client nor the nurse will be interrupted.

When raising the issue of sexuality, the nurse in clinical practice should exercise caution. Clients should experience the questioning as an opportunity rather than pressure to discuss sexuality. Some clients either do not associate quality of life with sex or place sex low on the

importance of things in their life. What must be remembered is that permissiveness works both ways, that is, clients can be given permission to act or not act on their sexuality (Robinson, 1983).

Findings from the study also indicate that the nurse in clinical practice can anticipate a variety of verbal and emotional responses from clients when discussing changes in sexuality associated with prostate surgery. The use of lay terminology and euphemisms by clients to describe sexual organs, sexual functions, and sexual behavior is common, and nurses need to understand this terminology in order to communicate effectively with clients. Some clients may be moved to tears or other emotional expressions (as were some of the subjects in this study) when discussing sexual issues of vital concern; therefore nurses may need to provide follow-up care.

Findings clearly show that most clients and their partners are eager for information about changes in sexuality following prostate surgery. Thus, the nurse in practice needs to develop and maintain an accurate and current data base in sexuality. In addition, the identification of local experts who can serve as professional resources to nurses and clients is highly desirable. Findings from this study indicate that nurses should not assume that physicians are experts in sexuality who will automatically take care of all topics of sexuality.

Nurses in clinical practice are caring for an increasing number of elderly persons in the hospital, in nursing homes and extended care facilities, in homes, doctors' offices, and clinics. Findings from this study suggest the need for nurses in practice to recognize the importance of sexuality to persons in this age group. Although some subjects in this study had no partners, sex was still important to them.

If one of the joys of nursing practice is the opportunity to assist clients with matters of vital concern to them, the deliberate or inadvertent exclusion of sexuality from the nurse's view of the client greatly reduces the scope of that practice.

Findings in this study underscore the need for and value of a sound theoretical foundation. The conceptual framework used in this study was selected, in part, for its ability to provide direction to nursing practice as well as in the design and data organization of nursing research. Thus, findings from this study may be especially useful for those professional nurses who practice using either SI or JBM as a model.

There is an urgent need to convey implications of this study that sexuality is important to older men following prostate surgery to urologists, ethics committees, educators, and other health professionals who influence directly or indirectly the care and/or counseling of clients following prostate surgery. Nurses in practice need to seek and obtain appointments on ethics committees in health care delivery systems. Some of the concerns of ethics committees about the potential harm of sexual research on human subjects could be allayed by nurses with expertise in sexual counseling. It is even possible that the barriers experienced by the researcher seeking sites in which to conduct this study parallel the barriers felt by subjects who were reluctant to ask health professionals for assistance. Overprotection of potential research subjects creates unnecessary obstacles to the development of new knowledge in sexuality (Bullough, 1985; Wasow, 1982). Even more importantly, overprotection of subjects may be harmful as clients are

left alone to wrestle with changes in sexuality and choose unsafe sexual practices.

Many health professionals continue to perpetuate sexual myths, such as single, older men have no sexual needs, which can cause guilt and anxiety about normal sexual behavior. Sex researchers tend to isolate themselves from the perpetuators of these myths. Solid scientific data are presented in sexuality journals or at sexuality conferences that contradict myths and inaccuracies published in lay and professional literature. It is not enough to present the work to peers who may already be aware of the misinformation. Experts in sexuality must begin to actively inform the public and other professionals of research findings (Meyers, 1981). Thus, the findings of this study that sexuality is an important concern of older men who have prostate cancer, no matter what the diagnosis, need to be replicated.

Findings from this study also have implications for nursing education. For example, the use of lay terminology and euphemisms by subjects in this study can be taught to students studying sexuality. Students in supervised clinical practice can be helped by faculty to develop a variety of specific verbal openings that provide opportunities for clients to discuss sexual concerns. Schools of nursing using JBM to guide curriculum may find this study especially useful in developing a curriculum about the sexual behaviors of older men. Schools of nursing can also provide learning experiences that help students to become comfortable, first, with their own sexuality and, second, with discussions of sexuality.

Suggestions for Further Study

Sexuality changes with time. Future generations may engage in more, and varied, sexual behavior. Hopefully, they will invest the concept of sex with less power and less mystery, allowing sex to assume more balance with the rest of life's activities (Elias, 1979; Lottes, 1985).

Future investigators should not be as cautious about asking direct questions about specific sexual activities for fear of offending subjects. The use of euphemisms conveys to subjects that it is improper to speak directly about sex and there is an implied need to talk around or soften sexual discussions for the comfort, not of the subjects, but the investigator (Pomeroy, Flax, & Wheeler, 1982).

The use of a semi-structured question with flexibility to follow the subject's lead is vital. If the subject begins openly to discuss an area not yet on the schedule and is abruptly cut off, the message is conveyed that the topic is out of bounds. Spontaneity is destroyed and the information given may be ignored.

In future studies, it would be informative to interview the partners. The purpose could be twofold: 1) to inquire about their concerns and if nursing could facilitate their possible need for a change in set, choice, or goals; and 2) to examine how their 'reflected perceptions' of the men following surgery shape the self-perception of the men (Hertoft, 1983; Moth, Andreasson, Jensen, & Bock, 1983; Schilder, 1935; Thompson & Walker, 1982). The use of SI would facilitate examination of how their interaction helps or hinders return to sexual instability (Abernathy & Daniel, 1982), for the interaction of

couples is far more complex than the sum of parts (von Eschenbach, 1981).

In addition, research using the same conceptual framework and both quantitative and qualitative methodologies is needed to verify the reliability of the findings from this study. Future studies should be designed so that as many of the variables are controlled by sample selection as possible. This would enable investigators to predict the variance attributable to the most significant factors. After specification, such factors may be the subject of series and longitudinal studies for the purpose of determining factor stability over time. Studies such as Krouse's (1985) work on adjustment over time of gynecological cancer patients and specific sexual concerns which commonly occurred with each stage needs to be done with men who have prostate surgery. Investigators have reported breast cancer patients develop sexual problems 3-4 months postoperative which remain up to two years when untreated (Maguire, Lee, Bevington, Kuchemann, Crabtree, & Cornell, 1978; Morris, Greer, & White, 1977). This work needs to be replicated with prostate surgery clients to examine if postoperative sexual instability when untreated also remains up to two years (Andersen & Jochimsen, 1985).

Beyond verification of findings from this study, experimental designs need to be conducted to establish causal relationships between independent variables and dependent variables. Clinical trials could be employed to test the relationships of these factors to a clinically significant change in set, choice, and stability of men following prostate surgery.

Two issues not specifically examined in the present study but discussed by subjects warrant further investigation. The first issue is how long to wait after surgery to "have sex". Multidisciplinary work needs to be conducted on the length of time necessary for physiological recovery before resuming sexual activity, the exact type of sexual activity which must be postponed until recovery, and the profile of the men who resume activity when advised by physicians versus men who resume activity before or after the advised time period. Included in the issue of time is the question of how sexual partners impact on the waiting period, and the question of how eliminative subsystem instability, such as urine dribbling or diarrhea, affect the waiting period. The second issue concerns retrograde ejaculation. Preliminary work needs to be done on the profile of men who perceive sexual instability to occur with the loss of ejaculatory ability. Further multidisciplinary studies then need to be conducted on appropriate interventions, such as the use of sexual therapy or the use of sympathomimetic drugs to prevent retrograde ejaculation.

The issue of cancer contagion was not initiated by any of the subjects. However, at two poster sessions of the study, nursing faculty and staff nurses discussed their concern about contagion with the investigator (Dmochowski & Ohsuki, 1979). It would be pragmatic to examine the issue of possible contagion as perceived by subjects, their partners, and health professionals.

Investigators who examine sexuality of people diagnosed with cancer frequently focus on cancer sites traditionally associated with sexuality, such as breast, uterus, or prostate. Several investigators have examined 'non-sexual' malignancies or even examined sexuality of

all subjects receiving the same treatment, such as chemotherapy (Bullard et al., 1980; Wasow, 1982; Wood & Tombrink, 1983). Dixon and Moritz (1983) suggest sample homogeneity be based on nursing diagnosis versus medical diagnosis. A suggestion for future research is to examine these relatively unexplored areas using JBM/SI as a conceptual framework.

Research directly evolving from the present study concerns the profile of men who use different kinds of patterns to return to sexual stability. Of interest would be the profile of men who are more likely to use a greater number of alternatives and to examine the underlying assumption that a greater number of alternatives is intrinsically the better strategy.

In summary, the use of JBM/SI as a conceptual framework encourages and facilitates nurses to incorporate sexuality into their nursing practice. Clinically, JBM is being used on a variety of nursing units with standards being developed. It has been found to be a pragmatic instrument in guiding nursing practice and nursing education (Derdiarian, 1985).

Research is the one area in which JBM is not as well-developed or as widely used in examining the sexual subsystem, although nursing scientists have demonstrated its ability to increase nursing's body of knowledge about the other subsystems (Loveland-Cherry & Wilkerson, 1983). It is the belief of this investigator that JBM has great potential to provide empirical clarity to the sexual subsystem.

BIBLIOGRAPHY

Abernathy, V., & Daniel, D.G. (1982) The role of the partner in male sexual dysfunction. Journal of Sex Education and Therapy, 3-5.

Abitol, M.M., & Davenport, J.H. (1974) Sexual dysfunction after therapy for cervical carcinoma. American Journal of Obstetrics and Gynecology, 119, 181-189.

Adams, C.G., & Turner, B.F. (1985) Reported change in sexuality from young adulthood to old age. Journal of Sex Research, 21 (2), 126-141.

Ahmann, F.R. (1985) Dilemmas in managing prostate carcinoma (part I): Localized disease. Geriatrics, 40 (7), 34-42.

Akdas, A., Ozen, H.A., Tuncer, I, Tason, C., & Remzi, D. (1986) Incidental carcinoma of the prostate: Factors influencing prognosis. British Journal of Urology, 58 (2), 164-166.

Aldous, J. (1972) Strategies for developing family theory. Journal of Marriage & Family, 8, 407-417.

Allen, D.G., & Whatley M. (1986) Nursing & men's health: Some critical considerations. Nursing Clinics of North America, 21 (1), 3-13.

Allen, M.J., & Yen, W.M. (1979) Introduction to measurement theory. Monterey, CA: Brooks/Cole.

Althof, S.E., Coffman, C.B., and Levine, B.B. (1984) The effects of coronary bypass surgery on female sexual, psychological, and vocational adaptation. Journal of Sex and Marital Therapy, 10 (3), 176-184.

American Cancer Society. (1983) 1982 cancer facts and figures. New York: American Cancer Society.

American Medical Association. (1972) Human sexuality (2nd ed.). New York: AMA.

Anderson, B.L. (1985) Sexual functioning morbidity among cancer survivors: Current status and future directions. Cancer, 55, 1835-1842.

Anderson, B.L., & Jochimsen, P.R. (1985) Sexual functioning among breast cancer, gynecological cancer, and healthy women. Journal of Consulting and Clinical Psychology, 53 (1), 25-32.

Ansell, I.D. (1982) Histopathology of prostatic cancer. In G.D. Chilson & D.I. Williams (Eds.), Scientific foundations of urology (2nd ed.) (pp. 473-485). Chicago: Year Book Medical.

Arnold, D.O. (1970) Dimensional sampling: An approach for studying a small number of cases. The Americal Sociologist, 5, 147-149.

Ash, M. (1972) Freud on feminine identity and female sexuality. Medical Aspects of Human Sexuality, VI (7), 101-115.

Aso, R., & Yasutomic, M. (1974) Urinary and sexual disturbances following radical surgery for rectal cancer, and pudendal nerve block as a countermeasure for urinary disturbance. The American Journal of Proctology, 25 (3), 60-70.

Auger, J.A. (1976) Behavioral systems and nursing. Englewood Cliffs, NJ: Prentice-Hall.

Auger, J.A., & Dee, V. (1983, April) A patient classification system based on the behavioral system model of nursing: Part I. The Journal of Nursing Administration, 13, 38-43.

Ayres, T.A. (1982) Course on human sexuality. University of California, San Francisco.

Ayres, T.A., & Thornton, C. (1979) Myths and facts about illness, disability, and sexuality. Handout for course on human sexuality. University of California, San Francisco.

Balslev, I., & Harbing, H. (1983) Sexual dysfunction following operation for carcinoma of the rectum. Diseases of the Colon & Rectum, 26 (12), 785-788.

Barker, W.J., & Perlman, D. (1975) Volunteer bias and personality traits in sexual standards research. Archives of Sexual Behavior, 4 (2), 161-171.

Batey, M.V. (1971) Conceptualizing the research process. Nursing Research, 20 (4), 296-301.

Beach, F.A. (Ed.). (1977) Human sexuality in four perspectives. Baltimore: Johns Hopkins University Press.

Beck, A., & Nikorovicz, R. (1980) Sexual life after radical operation of cervical carcinoma. (Abstract) Aut Onkologie, 3 (1), 26-30.

Bell, M.S., & Weinberg, M.S. (1978) Homosexualities: A study of diversity among men and women. New York: Simon & Schuster.

Benson, R.C. (1985) An updated approach to correcting impotence in elderly men. Geriatrics, 40 (2), 87-101.

Bentler, P.M., & Abrahamson, L. (1981) The science of sex research: Some methodological considerations. Archives of Sexual Behavior, 10 (3), 225-247.

Bergman, B., Nilsson, S., & Paterson, I. (1979) The effect on erection and orgasm of cystectomy, prostatectomy and vesiculectomy for

cancer of the bladder: A clinical and electromyographic study. British Journal of Urology, 51, 114-120.

Bernard, M.U., Clancy, B.J., & Krantz, K.E. (1978) Human sexuality for health professionals. Philadelphia: W.B. Saunders.

Biggs, M., & Spitz, R. (1975) Treating sexual dysfunction: The dual-sex therapy team. In R. Green (Ed.), Human sexuality: A health practitioner's text. Baltimore: Williams & Wilkins.

Binkhorst, S.K. (1979) Penile prosthesis: For best results, consult woman, too. Medical World News, 3, 16-17.

Birkhoff, J.D. (1983) Natural history of benign prostatic hypertrophy. In F. Hinman Jr. (Ed.), BPH. New York: Springer-Verlag.

Bitran, J.D., & Roth, D.G. (1976) Acute leukemia during reproductive life: Its course, complications and sequelae for fertility. The Journal of Reproductive Medicine, 17 (4), 225-230.

Blacklock, J.J. (1982) Surgical anatomy. In G.D. Chilson & D.I. Williams (Eds.), Scientific foundations of urology (2nd ed.) (pp. 473-485). Chicago: Year Book Medical.

Blaustein, A. (1982) Older patients shouldn't do that! Sexual Medicine Today, 6 (6), 32.

Blumer, H. (1969) Symbolic interactionism: Prospective and method. Englewood Cliffs, NJ: Prentice-Hall.

Bogdan, R., & Taylor, S. (1975) Introduction to qualitative methods. New York: Wiley & Sons.

Bohlen, J.G. (1983) State of the science in sexual physiological research. In C.M. Davis (Ed.), Challenges in sexual science: Current theoretical issues and research advances. Lake Mills, Iowa: Graphic Publishing.

Boxer, R.J. (1977) Adenocarcinoma of the prostate gland. Urological Survey, 27 (3), 75-79.

Boyarsky, S., & Boyarsky, R.E. (1983) Psychosexual counseling: Informed consent. In F. Hinman Jr. (Ed.), Benign prostatic hypertrophy. New York: Springer-Verlag.

Bragonier, J.R., & Bragonier, B.J. (1979) The physiology of sexual function. In V. Bullouger (Ed.), The frontiers of sex research. New York: Prometheus.

Bransfield, D.D., Hoist, J., & Malrid, A. (1984) Development of a scale for assessing sexual functioning after treatment for gynecological cancer. Journal of Psychosocial Oncology, 2 (1), 3-19.

Brecher, E.M. (1969) The sex researchers. Boston: Little, Brown and Company.

Brecher, E.M., & Brecher, J. (1986) Extracting valid sexological findings from severely flawed and biased population samples. The Journal of Sex Research, 22 (1), 6-20.

Brink, P. (1966) Lecture notes. University of California, Los Angeles.

Brink, P.J., & Wood, M.J. (1983) Basic steps in planning nursing research, from question to proposal (2nd ed.). Monterey, CA: Wasworth Health Sciences Division.

Broderick, C.B. (1971) Beyond the five conceptual frameworks: A decade of development in family theory. Journal of Marriage & Family, 33 (1), 139-159.

Broncatello, K.F. (1980) Auger in action: Application of the model. Advances in Nursing Science, 13-23.

Brunner, L.S. (1982) The Lippincott manual of nursing practice (3rd ed.). Philadelphia: J.B. Lippincott.

Bullard, D.G., Causey, G.G., Newman, A.B., Orloff, R., Schanche, K., & Wallace, D.H. (1980) Sexual health care and cancer: A needs assessment. In J.M. Vaeth (Ed.), Frontiers of radiation and therapeutic oncology (p. 37). Basel, Switzerland: Krager.

Bullough, V.L. (1983) Mythology of the difficulties of an interdisciplinary science. In D.M. Davis (Ed.), Challenges in sexual science: Current theoretical issues and research advances. Lake Mills, Iowa: Graphic Publishing.

Bullough, V.L. (1985) Problems of research on a delicate topic: A personal view. Journal of Sex Research, 21 (4), 375-386.

Burkhalter, P.K., & Donley, D.L. (1978) Dynamics of oncology nursing. New York: McGraw-Hill.

Burnham, W.R., Lennard-Jones, J.E., & Brooke, B.N. (1977) Sexual problems among married ileostomists: Survey conducted by the ileostomy association of Great Britain and Ireland. Gut, 18, 673-677.

Buros, O. (1972) The seventh mental measurement yearbook. Highland Park, NJ: Gryphon Press.

Burr, W.R., Hill, R., Nye, F.I., & Reiss, I.L. (Eds.). (1979) Contemporary theories about the family: Vol. 2. General theories/ theoretical orientations. New York: The Free Press.

Burr, W.R., Leigh, G.K., Day, R.D., & Constantine, J. (1979) Symbolic interaction and the family. In W.R. Burr et al. (Eds.), Contemporary theories about the family: Vol. 2. General theories/ theoretical orientations. New York: The Free Press.

Butler, R.N., & Lewis, M.I. (1973) Aging and mental health: Positive psychosocial approaches. St Louis: C.V. Mosby.

Butler, R.N., & Lewis, M.I. (1976) Love and sex after sixty. New York: Harper & Row.

Caplan, T., & Caplan, H.W. (1976) Sexual ignorance as a cause of poor sexual adjustment. Medical Aspects of Human Sexuality, 10, 109-115.

Capone, M.A., Good, R.S., Westie, K.S., & Jacobson, A.F. (1980) Psychosocial rehabilitation of gynecologic oncology patients. Archives of Physical Medical Rehabilitation, 61, 128-132.

Carmines, E.G., & Zeller, R.A. (1981) Reliability and validity assessment. Beverly Hills: Sage University.

Carrera, M. (1985) Sex & health. Glamour, 9, 398.

Catalona, W.J. (1984) Prostate cancer. Orlando, FA: Grune & Stratton.

Catalona, W.J., & Scott, W.W. (1986) Carcinoma of the prostate. In P.C. Walsh, R.F. Grittes, A.D. Perlmutter, & T.A. Stamey (Eds.), Campbell's urology, Vol. 2 (5th ed.) (pp. 1463-1534). Philadelphia: W.B. Saunders.

Catania, J.A., McDermott, L.J., & Pollack, L.M. (1986) Questionaire response bias and face-to-face interview sample bias in sexuality research. The Journal of Sex Research, 22 (1), 52-72.

Catania, J.A., & White, C.B. (1982) Sexuality in an aged sample: Cognitive determinants of masturbation. Archives of Sexual Behavior, 11 (3), 237-245.

Chapman, R.M., Rees, L.H., Sutcliffe, S.B., Edwards, C.R.W., & Malpas, J.S. (1979) Cyclical combination chemotherapy and gonadal function. The Lancet, 1 (8111), 285-289.

Charon, J.M. (1979) Symbolic interactionism: An introduction, an interpretation, an integration. Englewood Cliffs, NJ: Prentice-Hall.

Chigier, E. (1981) Sexual counseling of the disabled. Paper presented at the Jake Gimbel lecture, San Francisco, 22 October.

Chin, R. (1979) The utility of system models and developmental models for practitioners. Nursing Digest, VI (4), 75-83.

Chinn, P.L., & Jacobs, M.K. (1978) A model for theory development in nursing. Advances in Nursing Science, 1, 1-12.

Cohen, P., & Dix, D. (1985) On the role of aging in cancer incidence: An interpretation of the prostate cancer anomaly with implications for routine screening. Prostate, 6, 437- 443.

Collins, M., & Kaltor, C. (1978) Coding verbatim answers to open questions. Journal of the Market Research Society, 22 (4), 239-247.

Comfort, A.D. (1974) Sexuality in old age. Journal of American Geriatric Society, 22, 440-442.

Conine, T.A., Christie, G.M., Hammond, G.K., & Smith-Minton, M.F. (1980) Sexual rehabilitation of the handicapped: The roles and attitudes of health professionals. Journal of Allied Health, 9 (4), 260-267.

Cooley, C.H. (1909) Social organization. New York: Scribner's.

Corby, N., & Zarit, J.M. (1983) Old and alone: The unmarried in later life. In R.B. Weg (Ed.), Sexuality in the later years: Roles & behavior. New York: Academic Press.

Cox, C.L. (1982) An interaction model of client health behavior: Theoretical prescription for nursing. Advances in Nursing Science, 5 (1), 41-56.

Crawford, G., Dufault, S.K., & Rudy, E. (1979) Evolving issues in theory development. Nursing Outlook, 27 (5), 346-351.

Crooks, R., & Bauer, K. (1980) Our sexuality. Menlo Parks, CA: Benjamin/Cummings.

Daly, J.M. (1985) History of psychosexual medicine. In M. Farber (Ed.), Human sexuality: Psychosexual effects of disease. New York: Macmillan.

Damus, K. (1980) An application of the Johnson behavioral system model for nursing practice. In J.P. Riehl & C. Roy (Eds.), Conceptual models for nursing practice (2nd ed.). New York: Appleton-Century-Crofts.

Danzi, M., Feruland, G.P., Abate, S., & Califano, G. (1983) Male sexual function after abdominoperineal resection for rectal cancer. Diseases of Colon & Rectum, 26 (3), 170-171.

Darrow, W.W., Jaffe, H.W., Thomas, P.A., Haverkos, H.W., Rogers, M.A., Guinan, M.E., Auerbach, D.M., Spira, T.J., & Curran, J.W. (1986) Sex of interviewer, place of interview, and responses of homosexual men to sensitive questions. Archives of Sexual Behavior, 15 (1), 79-88.

DeBacker, E., Lauwerijns, A., & Willen, C. (1977) Sexual behavior after prostatectomy. European Urology, 5, 295-298.

DeBeauvoir, S. (1973) The coming of age. New York: Warner Paperback Library.

DeCherney, A.H., Greenfeld, D.A., & Polan, M.L. (1985) Human sexuality and benign neoplasia. In M. Farber (Ed.), Human sexuality: Psychosexual effects of disease. New York: Macmillan.

Dee, Y., & Auger, J.A. (1983, May) A patient classification system based on the behavioral system model of nursing: Part 2. The Journal of Nursing Administration, 13, 18-23.

Delgado, G. (1978) Plastic procedures in cancer of the lower genital tract. American Journal of Obstetrics and Gynecology, 131 (7), 775-777.

Dellefield, M.E. (1986) Caring for the elderly patient with cancer. Oncology Nursing Forum, 13 (3), 19-27.

Dempsey, G.M., Buchsbaum, H.J., & Morrison, J. (1975) Psychosocial adjustment to pelvic exenteration. Gynecologic Oncology, 3, 325-334.

Dennerstein, L., Wood, C., & Burrows, C.D. (1977) Sexual response following hysterectomy and oophorectomy. Obstetrics Gynecology, 49, 84-96.

Derdiarian, A. (1981) Nursing conceptual frameworks: Implications for education, research, and practice. In D. Vredevoe (Ed.), Concepts of oncology nursing. Englewood Cliffs, NJ: Prentice-Hall.

Derdiarian, A.K. (1983) An instrument for theory and research development using the behavioral systems model for nursing: The cancer patient. Nursing Research, 32 (4), 196-201.

Dewey, J. (1922) Human nature and conduct. New York: Henry Holt.

Dickoff, J., & James, P. (1968) A theory of theories: A position paper. Nursing Research, 17 (3), 197-203.

Dillon, M.C. (1980) Merleau-Ponty on existential sexuality: A critique. Journal of Phenomenological Psychology, 11 (1), 67-81.

Dixon, J.K., & Moritz, D. (1983) Sample heterogeneity versus sample homogeneity in cancer nursing research. Oncology Nursing Forum, 10 (1), 40-45.

Dmochowski, L., & Ohtuski, Y. (1979) Oncongenic viruses in prostatic cancer: A review. Cancer Detection & Prevention, 2 (4), 531-563.

Donahue, W.C., & Bennett, A.H. (1978) Sexual dysfunction in cancer. In Cancer: A manual for practitioners (5th ed.). Boston: American Cancer Society.

Drago, J.R. (1986) Diagnostic techniques in prostatic cancer. Postgraduate Medicine, 80 (1), 214-224.

Duke, J.T. (1976) Conflict and power in social life. Provo, Utah: Brigham Young University.

Dunphy, J.E. & Way, L.W. (1978) Current surgical diagnosis and treatment (4th ed.). Los Altos, CA: Lange Medical Publishing.

Eaid, C.R.M. (1971) Counselling about geriatric sexual behavior. Presented at Banff Workshop, Calgary, Canada.

Eggleston, J.C., & Walsh, P.C. (1985) Radical prostatectomy with preservation of sexual function: Pathological findings in the first 100 cases. Journal of Urology, 134 (6), 1146-1148.

Elder, J.S., Gibbons, R.P., Corsca, R.J., & Brannen, G.E. (1985) Efficacy of radical prostatectomy for Stage A2 carcinoma of the prostate. Cancer, 56 (9), 2151-2154.

Elias, V.D. (1979) Interpreting data on sexual conduct and social change. In V. Bullough (Ed.), The frontiers of sex research. Buffalo, NY: Prometheus Books.

Elliot, M.L. (1985) The use of "impotence" and "frigidity": Why "impotence" survived. Journal of Sex & Marital Therapy, 11 (1), 51-56.

Ellis, R. (1968) Characteristics of significant theories. Nursing Research, 17 (3), 217-222.

Ellis, R. (1977) Fallabilities, fragments, and frames: Contemplations on 25 years of research in medical-surgical nursing. Nursing Research, 26 (3), 177-182.

Ellison, S.A. (1985) Geriatric oncology: A developmental approach. Cancer Nursing, Supplement, 28-32.

Ephross, P.H. (1981) Sex and physicians: Why is it so difficult to "tell it like it is?" The Journal of Nervous and Mental Disease, 169 (10), 605-607.

Erikson, E. (1958) Identify, youth, & crisis. New York: W.W. Norton.

Farnsworth, W.E. (1982) Physiology and biochemistry of prostatic secretion. In G.D. Chilson & D.I. Williams (Eds.), Scientific foundations of urology (2nd ed.) (pp. 485-490). Chicago: Year Book Medical.

Faulkner, W. (1980) The obsessive orgasm: Science, sex and female sexuaity. In L. Binke & S. Best (Eds.), Alice through the microscope: The power of science over women's lives. London: Virago.

Fawcett, J. (1978) The relationship between theory and research: A double helix. Advances in Nursing Science, 1 (1), 49-62.

Fawcett, J. (1984) Analysis & evaluation of conceptual models of nursing. Philadelphia: F.A. Davis.

Fazio, V.W., Fletcher, J., & Montague, D. (1980) Prospective study of the effect of resection of the rectum on male sexual function. World Journal of Surgery, 4 (2), 149-152.

Federman, D.D. (1982) Impotence: Etiology and management. Hospital Practice, 3, 155-159.

Fee, E. (1976) Women and health care: A comparison of theories. Nursing Digest, IV (5), 74-78.

Fessel, W., & Van Bruent, E. (1972) Assessing quality of care from the medical record. New England Journal of Medicine, 286, 134-138.

Finkle, A.L. (1962) Sexual potency after perineal prostatectomy. Western Journal of Surgery, Obstetrics and Gynecology, 70 (2), 55-57.

Finkle, A.L., & Moyers, T.G. (1960) Sexual potency in aging males: IV. Status of private patients before and after prostatectomy. Journal of Urology, 84 (1), 152-157.

Finkle, A.L., & Prian, D.V. (1966) Sexual potency in elderly men before and after prostatectomy. Journal of Americal Medical Association, 196, 139-143.

Finkle, A.L., & Taylor, S.P. (1981) Sexual potency after radical prostatectomy. Journal of Urology, 125, 350-352.

Finkle, A.L., & Williams, R.D. (1985) Sexual potency before and after radical prostatectomy. The Western Journal of Medicine, 143 (4), 474-475.

Fisher, S.G. (1979) Psychosocial adjustment following total pelvic exenteration. Cancer Nursing, 2 (3), 219-225.

Fisher, S. (1982) The scientific vitality of Freud's theories. Contemporary Psychology, 27 (9), 680-681.

Fitzgerald, R., & Fuller, L. (1982) I hear you knocking but you can't come in. The effects of reluctant respondents and refusers on sample survey estimates. Sociological Methods & Research, 11 (1), 3-32.

Ford, C.S., & Beach, F.A. (1951) Patterns of sexual behavior. New York: Harper & Rowe.

Fossa, S.D., Abyholm, T., Norman, N., and Loeb, M. (1985) Post-treatment fertility in patients with testicular cancer. British Journal of Urology, 57, 210-214.

Fowler, J.E. (1985) Radical prostatectomy for Stage A2 & B prostatic carcinoma. Urology, XXVI (1), 1-3.

Fox, D.J. (1976) Fundamental of research in nursing (3rd Ed.). New York: Appleton-Century-Crofts.

Frank, D., Dornbush, R.L., Webster, S.K., & Kolodny, R.C. (1978) Mastectomy and sexual behavior: A pilot study. Sexual Disability, 1 (1), 16-26.

Gagnon, J.H. (1975) Sex research and social change. Archives of Sexual Behavior, 4 (2), 111-141.

Gagnon, J.H. (1976) Sexual dimorphism in erotic function: A psychosocial approach. In R. Gemme & C. Wheeler (Eds.), Progress in sexology. New York: Plenum Press.

Gagnon, J.H. (1983) Modern sexual theory and sexual reform: Emergence, transformation, & criticism. In C.M. Davis (Ed.), Challenges in sexual science: Current theoretical issues and research advances. Lake Mills, Iowa: Graphic Publishing.

Garlick, W.G. (1983) Overviews: Transurethral prostatectomy: Most accepted method to relieve bladder outlet obstructions. In E.D. Whitehead (Ed.), Current operative urology (2nd ed.). Philadelphia: Harper & Row.

Garnick, M.B. (1985) Novel endocrine approaches in the management of prostate cancer. Mediguide to Oncology, 5 (1), 1-4.

Gault, P. (1977) The prostate. Nursing 77, 4, 34-38.

George, L.K., & Weiler, S.J. (1981) Sexuality in middle and late life. Archives of General Psychiatry, 38 (7), 919-923.

Georgetown Sex and Disability Project. (1979) Who cares? Washington, DC: Georgetown Sex and Disability Project.

Gerard, D. (1982) Sexual functioning after mastectomy: Life versus lab. Journal of Sex & Marital Therapy, 8 (4), 305-315.

Giovacchini, P.L. (1977) Psychoanalysis. In R.J. Corsini (Ed.), Current personality theories. Itasca, IL: F.E. Peacock.

Glaser, G.B., & Strauss, A.L. (1967) The discovery of grounded theory: Stragegies for qualitative research. New York: Aldine.

Glass, D.D., & Padrone, F.S. (1978) Sexual adjustment in the handicapped. Journal of Rehabilitation, (1), 43-47.

Gleason, D.F. (1966) Classification of prostatic carcinomas. Cancer Chemotherapy Report, 50, 125-130.

Glennin, C. (1974) Formulation of standards of nursing practice using a nursing model. In J.P. Riehl & C. Roy (Eds.), Conceptual models for nursing practice. New York: Appleton-Century-Crofts.

Gochros, H., & Gochros, J. (1977) The sexually oppressed. New York: Association Press.

Gold, F.M., & Hotchkiss, R.S. (1969) Sexual potency following simple prostatectomy. New York State Journal of Medicine, 69, 2987-2989.

Golden, J.S. (1983) Sex and cancer. Danish Medical Bulletin, 30 (2), 4-6.

Goldstein, I., Feldman, M.I., Deckers, P.J., Babayan, R.K., & Krane, R.J. (1984) Radiation - associated impotence: A clinical study of its mechanisms. Journal of the American Medical Association, 251, 903-910.

Gonick, P. (1976) Urologic problems and sexual functions. In W.W. Oaks, G.A. Melchiode, and I. Fisher (Eds.), Sex and the life cycle (pp. 191-192). New York: Grune and Stratton.

Graber, B., & Kline-Graber, G. (1981) Research criteria for male erectile failure. Journal of Sex & Marital Therapy, 7 (1), 37-48.

Graham, S., et al. (1983) Genital cancer in wives of penile cancer patients. Cancer, 8 (4), 45-54.

Griggs, W. (1978) Sex and the elderly. American Journal of Nursing, 78, 1352-1354.

Grubbs, J. (1974) The Johnson behavioral system a model. In J.P. Riehl & C. Roy (Eds.), Conceptual models for nursing practice. New York: Appleton-Century-Crofts.

Grubbs, J. (1980) An interpretation of the Johnson behavioral system model for nursing practice. In J.P. Riehl & C. Roy (Eds.), Conceptual models for nursing practice (2nd ed.). New York: Appleton-Century-Crofts.

Haberle, E. (1978) The sex atlas. New York: Seabury Press.

Haberle, E.J. (1983) The manufacture of gladness: Some observations of sex therapy. In C.M. Davis (Ed.), Challenges in sexual science:

Current theoretical issues and research advances. Lake Mills, Iowa: Graphic Publishing.

Hall, M.H. (1969) A conversation with Masters & Johnson. Psychology Today, 3 (2), 50-58.

Halpert, E. (1973) On a particular form of masturbation in women: Masturbation with water. Journal of the American Psychoanalytic Association, 21, 524-526.

Hammond, D.B., & Bonney, W.C. (1985) Results of sex education for support persons working with the elderly. Journal of Sex Education and Therapy, 11 (2), 42-45.

Hanson, E.I., & Brouse, S.H. (1983) Assessing sexual implication of functional impairment associated with chronic illness. Journal of Sex Education and Therapy, 9 (2), 39-50.

Harbitz, T.M., & Haugern, O.A. (1972) Histology of the prostate in elderly men. Acta Pathology Microbiology Scandinavica, 80, 756-758.

Hardy, M.E. (1978) Perspectives on nursing theory. Advances in Nursing Science, 1 (1), 37-48.

Hardy, M.E., & Conway, M.E. (1978) Role theory: Perspectives for health professionals. New York: Appleton-Century-Crofts.

Hargreave, T.B., & Stevenson, T.P. (1977) Potency and prostatectomy. British Journal of Urology, 49, 683-686.

Hattar, M. (1982, Spring) Unpublished paper for N 202. University of California, San Francisco.

Heidegger, M. (1962) Being and time. New York: Harper & Row.

Heise, D.R. (1967) Cultural pattern of sexual socialization. American Sociological Review, 32 (5), 726-739.

Henderson, H. (1981) Exploring the human sexual response. Sexual Medicine Today, 5 (4), 6-16.

Hertoft, P. (1983) To be unreserved. Danish Medical Bulletin, 30 (2), 2-4.

Herzog, A.R., & Dielman, L. (1985) Age differences in response accuracy for factual survey questions. Journal of Gerontology, 40, (3), 350-357.

Hiltner, S. (1953) Sex ethics and the Kinsey reports. New York: Association Press.

Hite, S. (1976) The Hite report: A nationwide study of female sexuality. New York: Dell.

Hodges, C.V., & Won, S.T. (1983) The relationship between benign prostatic hyperplasia and prostatic cancer. In F. Hinman (Ed.), Benign prostatic hyperplasia. New York: Springer-Verlag.

Hogan, R. (1980) Human sexuality: A nursing perspective. New York: Appleton-Century-Crofts.

Hogan, R.M. (1982) Influences of culture on sexuality. Nursing Clinics of North America, 17 (3), 365-376.

Holaday, B. (1980) Implementing the Johnson model for nursing practice. In J.P. Riehl & C. Roy (Eds.), Conceptual models for nursing practice (2nd ed.). New York: Appleton-Century-Crofts.

Hollander, J.B., & Diokno, A.C. (1984) Success with penile prosthesis from patients' viewpoint. Urology, XXIII (2), 141-143.

Holtgreave, H.L., & Volk, W.L. (1964) Late result of transurethral protatectomy. Journal of Urology, 92, 51-55.

Hudson, W.W., Harrison, D.F., & Crossup, P.C. (1981) A short form to measure sexual discord in dyadic relationships. Journal of Sex Research, 17 (2).

Hurley, B.A. (1979) Why a theoretical framework in nursing research. Western Journal of Nursing Research, 1 (1), 28-41.

Hurny, C., and Holland, J. (1985) Psychosocial sequelae of ostomies in cancer patients. CA-A Cancer Journal for Clinicians, 35 (3), 170-183.

Hymis, W., Fisher, W., Kubli, F., & Reinholz, H. (1977) Social, sexual and psychosomatic aspects of endometrial carcinoma. (Abstract) Med. Welt, 44, 1786-1789.

Isaac, S., & Michael, W.B. (1981) Handbook in research and evaluation (2nd ed.). San Diego: Edits.

Jacox, A. (1974) Theory construction in nursing: An overview. Nursing Research, 23 (1), 4-12.

James, W. (1948) Essays in pragmaticism. Ed. A. Castell. New York: Hatner Publishing.

Janeway, E. (1980) Who is Sylvia? On the loss of sexual paradigms. In E.R. Stimpson & E.S. Person (Eds.), Women: Sex and sexuality. Chicago: University of Chicago.

Johnson, D. (1959) A philosophy of nursing. Nursing Outlook, 7 (4), 198-200.

Johnson, D.E. (1968a, April 25) One conceptual model of nursing. Paper presented at conference at Vanderbilt University, Nashville, TN.

Johnson, D. (1968b) Theory in nursing: Borrowed and unique. Nursing Research, 17 (3), 206-209.

Johnson, D.E. (1974) Development of theory: A requisite for nursing as a primary health profession. Nursing Research, 23 (5), 372-377.

Johnson, D.E. (1977, June 14) The behavioral system model for nursing. Paper presented at conference at the University of Delaware, Newark, DE.

Johnson, D. (1978) Development of theory: A requisite for nursing as a primary health profession. In N.L. Chaska (Ed.), The nursing profession: Views through the mist. New York: McGraw-Hill.

Johnson, D. (1980) The behavioral system model for nursing. In J.P. Riehl & C. Roy (Eds.), Conceptual models for nursing practice (2nd ed.). New York: Appleton-Century-Crofts.

Jonas, P. Lindner, A., & Ohrv, A. (1983) Postprostatectomy impotence in elderly patients. Geriatrics, 38 (9), 113-117.

Kaas, M.J. (1978) Sexual expression of the elderly in nursing homes. The Gerontologist, 18 (4), 372-378.

Kaas, M.J. (1983) Geriatric sexual conformity. Unpublished focus paper for preliminary examination, University of California, San Francisco.

Kaplan, H.S. (1974) The new sex therapy. New York: Brunner/Mazel.

Kaplan, H.S. (1979) Disorders of sexual desire. New York: Brunner/Mazel.

Kelley, H.H. (1977) An applicatino of atribution theory to research methodology for close relationships. In G. Leninger and H.L. Rouser (Eds.), Close relationships: Perspectives on the meaning of intimacy. Amherst: University of Massachusetts.

Kelly, J. (1977) The aging male homosexual: Myth and reality. The Gerontologist, 17 (4), 328-332.

Kierman, P.D., Hubert, J.P., Beahro, D.H., & Martin, M.J. (1981) Patient acceptance of mastectomy for cancer. The American Journal of Surgery, 142 (4), 517-518.

Kimmel, D.C. (1980) Adulthood and aging (2nd ed.). New York: John Wiley & Sons.

Kinsey, A.C., Pomeroy, W.G., & Martin, C.E. (1948) Sexual behavior in the human male. Philadelphia: Saunders.

Kinsey, A.C., Pomeroy, W.C., & Martin, C.E. (1953) Sexual behavior in the human female. Philadelphia: Saunders.

Kirkendall, L.A. (1979) Aims and objectives in sexual research and theory. In V. Bullough (Ed.), The frontiers of sex research. Buffalo, NY: Prometheus Books.

Kirkendall, L.A., & Rubin, I. (1969) Sexuality & the life cycle. SEICUS Study Guide No. 8, 24.

Kolodny, R.C., Masters, W.H., Johnson, V.E., & Biggs, M.A. (1979) Textbook of human sexuality for nurses. Boston: Little, Brown, and Company.

Krafft-Ebing, R. (1886) Psychopathia sexualis. New York: Pioneer.

Krain, L.S. (1973) Epidemiologic variables in prostatic cancer. Geriatrics, 28, 93-95.

Krizinofski, M.T. (1973) Human sexuality and nursing practice. Nursing Clinics of North America, 8, 673-679.

Krouse, H.J. (1985) A psychological model of adjustment in gynecological cancer patients. Oncology Nursing Forum, 12 (6), 45-49.

Krouse, H.J., & Krouse, J.H. (1981) Psychological factors in post-mastectomy adjustment. Psychological Reports, 48, 275-278.

Krueger, J.C., Nelson, A.H., & Wolamin, M.O. (1978) Nursing research: Development, collaboration, & utilization. Germantown, MD: Aspen Systems.

Kubler-Ross, E. (1969) On death and dying. New York: Macmillan.

Kuhn, T.S. (1970) The structure of scientific revolutions (2nd ed.). Chicago: University of Chicago.

Kuhn, T.S. (1977) The essential tension. Chicago: University of Chicago Press.

Labby, D.H. (1982) "Doctorpower": Cause of sexual dysfunction? Sexual Medicine Today, 6 (9), 30.

Lamberti, J., Green, M., & Vanetta, P. (1978) Sexual behavior of patients with neoplastic disease tested with chemotherapy. New England Journal of Medicine, 286, 124-127.

LaMonica, G., Audiso, R.A., Tamburini, M., Filiberti, A., & Ventafridda, V. (1985) Incidence of sexual dysfunction in male patients treated surgically for rectal malignancy. Diseases of Colon and Rectum, 28 (12), 937-940.

Lamont, J.A., De Petrillo, A.D., & Sargeant, E.J. (1978) Psychosexual rehabilitation and exenterative surgery. Gynecologic Oncology, 6 (3), 232-242.

Lancaster, W., & Lancaster, J. (1981) Models and model building in nursing. Advances in Nursing Science, 3 (3), 31-42.

Lange, P.H. (1986) Management of localized prostatic cancer. Postgraduate Medicine, 80 (1), 235-245.

Lee, G.L. (1981) Drug-induced sexual dysfunction. Pharmacy & Therapeutics Forum-UCSF, 29 (2), 1-4.

Leiber, L., Plumb, M.M., Gertenzang, M.L., & Holland, J. (1976) The communication of affection between cancer patients and their spouses. Psychosomatic Medicine, 38, 379-389.

Leininger, M. (1969) Ethnoscience: A new and promising research approach for the health sciences. Image, 3 (1), 2-8.

Leininger, M. (1985) Nature, rationale, and importance of qualitative research methods in nursing. In M. Leininger (Ed.), Qualitative methods in nursing. Orlando: Grune & Stratton.

Lesniak, R., Szymusik, A., & Charzanowski, R. (1972) Multidirectional disorders of sexual drive in a case of brain tumor. Forensic Science, 1 (3), 333-338.

Lion, E. (Ed.). (1982) Human sexuality in nursing process. New York: John Wiley & Sons.

Lipshultz, L.I., McConell, J., & Benson, G.S. (1981) Current concepts of the mechanisms of ejaculation. Journal of Reproductive Medicine, 26 (10), 499-507.

Lobo, M.L. (1985) Dorothy E. Johnson. In J. G. George (Ed.), Nursing theories: The base for professional nursing practice (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Loening, S.A. (1985) The prostate. In D.A. Culp, B. Fallan, & S.A.H. Loening (Eds.), Surgical urology. Chicago: Year Book.

Loevinger, J. (1976) Ego development. San Francisco: Jossey-Boss.

Lottes, I.L. (1985) The use of cluster analysis to determine belief patterns of sexual attitudes. The Journal of Sex Research, 2 (4), 405-421.

Lovejoy, N. (1983) The leukemic child's perceptions of family behaviors. Oncology Nursing Forum, 10 (4), 20-25.

Loveland-Cherry, C., & Wilkerson, S.A. (1983) Dorothy Johnson's behavioral systems model. In J. Fitzpatrick & A. Whall (Eds.), Conceptual models of nursing: Analysis and application. Bowie, Maryland: Robert J. Brady.

Ludeman, K. (1981) The sexuality of the older person: Review of the literature. The Gerontologist, 21 (2), 203-208.

Lue, T.F., Takamura, T., Schmidt, R.A., & Tanagho, E.A. (1983) Potential preservation of potency following radical prostatectomy. Urology, XXII (2), 165-167.

Lytton, B. (1983) Interracial incidence of benign prostatic hypertrophy. In F. Hinman Jr. (Ed.), BPH. New York: Springer-Verlag.

Maddox, G.L. & Campbell, R.T. (1985) Scope, concepts and methods in the study of aging. In R.H. Binstock & E. Shanes (Eds.), Handbook of aging and the social sciences (2nd ed.) (pp. 3-31). New York: Van Nostrand Reinhold.

Madorsky, M.L., Ashamalla, M.G., Schussler, Il, Lyons, H.R., & Miller, G.H. (1976) Postprostatectomy impotence. Journal of Urology, 115 (2), 401-403.

Madorsky, M., Drylie, C.M., & Finlayson, B. (1976) Effect of benign prostatic hypertrophy on sexual behavior. Medical Aspects of Human Sexuality, 15, 8-22.

Magee, M.C. (1980) Psychogenic impotence: A critical review. Urology, XV (5), 435-441.

Mariani, A.J., Ton, C., Heriharan, A., & Stams, U.K. (1983) Prostate cancer: The paradox of early diagnosis. Hawaii Medical Journal, 42 (2) 34, 36, 38.

Marino, L.B. (1981) Cancer nursing. St. Louis: C.V. Mosby.

Marson, S.M. (1983) Sexuality among the aging: Problems and solutions. Journal of Social Work & Human Sexuality, 1 (3), 95-109.

Martin, C.E. (1977) Sexual activity in the aging male. In J. Money and H. Musaph (Eds.), Handbook of sexology. New York: Excerpta Medica.

Martin, C.E. (1981) Factors affecting sexual functioning in 60-79 year old married males. Archives of Sexual Behavior, 10, 399-420.

Masson, J.M. (1984) The assault on truth: Freud's suppression of the seduction theory. New York: Farrar, Strauss, & Grune.

Masters, W.H., & Johnson, V.E. (1966) Human sexual response. Boston: Little & Brown.

Masters W.H., and Johnson, V.E. (1970) Human sexual inadequacy. Boston: Little, Brown.

Maurice, W.L. (1985) Sexual medicine. Canadian Medical Association Journal, 132, 1123-1125.

McConnell, E.A., & Zimmerman, M.F. (1983) Care of patients with urologic problems. Philadelphia: J.B. Lippincott.

McFarlane, E.A., & Rubenfeld, M.G. (1983) The need for sexual integrity. In H. Yura & M.B. Walsh (Eds.), Human needs 3 & the nursing process. Norwalk, CT: Appleton-Century-Crofts.

McTiernan, A., Weiss, N.S., & Daling, J.R. (1986) Bias resulting from using the card-back system to contact patients in an epidemiologic study. American Journal of Public Health, 76 (1), 71-73.

Mead, G.H. (1962) Mind, self, & society. Chicago: University of Chicago.

Mebust, W.K. (1983) Commentary: Transurethral prostatectomy. In E.D. Whitehead (Ed.), Current Operative Urology (2nd ed.). Philadelphia: Harper & Row.

Meleis, A.I. (1978) A model for theory description, analysis, & critique. In N. Chaska (Ed.), The nursing profession: Views through the mist. New York: McGraw Hill.

Meleis, A.I. (1985) Theoretical nursing: Development and progress. Phildaelphia: J.B. Lippincott.

Michalek, A.M., Mettlin, C., & Priore, R.L. (1981) Prostate cancer mortality among Catholic priests. Journal of Surgical Oncology, 17, 129-133.

Miles, M.B., & Huberman, A.M. (1984) Qualitative data analysis. Beverly Hills, CA: Sage.

Miller, P.Y., & Fowlkes, M.R. (1980) Social & behaviorial constructions of female sexuality. In C.R. Stimpson & E.S. Person (Eds.), Women: Sex and sexuality. Chicago: University of Chicago.

Mishina, T., Watanabe, H., Araki, H., & Nakao, M. (1985) Epidemiological study of prostate cancer by matched-pair analysis. Prostate, 6, 423-436.

Moglia, C., & Whitney, A. (1982, November) A cultural paradigm for sexologists. Paper presented at the meeting of the Society for the Scientific Study of Sexuality, San Francisco.

Morokoff, P.J. (1986) Volunteer bias in the psychophysiological study of female sexuality. The Journal of Sex Research, 22 (1), 35-51.

Moser, C. (1982, November) The development and future of sexological method: A radical perspective. Paper presented at the meeting of the Society for the Scientific Study of Sexuality, San Francisco.

Moth, I., Andreasson, B., Jensen, S.B., & Bock, J.E. (1983) Sexual function and somapsychic reactions after vulvectomy. Danish Medical Bulletin, 30 (2), 27-30.

Murphy, G.P. (1981) Prostate cancer: Continuing progress. CA-A Cancer Journal for Clinicians, 31 (2), 96-110.

Murphy, G.P., Natanojan, N., Pontes, J.E., Schmitz, R.L., Smart, C.R., Schmidt, J.D., & Mettlin, C. (1982) The national survey of prostate cancer in the United States by the American College of Surgeons. Journal of Urology, 127 (2), 928-934.

Nagler, H.M., White, R., & Blavias, J.G. (1985) Impotence: Diagnosis & treatment. In M. Farber, (Ed.), Human sexuality: Psychosexual effects of disease. New York: Macmillan.

Narayan, P., Lange, P.H., & Fraley, E.E. (1982) Ejaculation and fertility after extended retroperineal lymph node dissection for testicular cancer. Journal of Urology, 127, 685-688.

Nass, G.D., Libby, R.W., & Fisher, M.P. (1981) Sexual Choices. Belmont, CA: Wadsworth.

Nevidjon, B. (1984) Sexuality. In S.N. McIntire & A.L. Cioppa (Eds.). Cancer nursing: A developmental approach. New York: John Wiley & Sons.

Newcomber, R.J., Estes, C.L. & Freeman, H.E. (1985) Strategies of reserach for program design and intervention. In R.H. Binstock & E. Shanes (Eds.), Handbook of aging and the social sciences (2nd ed.) (pp. 619-640). New York: Van Norstrand Reinhold.

Newman, G., & Nichols, C.R. (1966) Sexual activities and attitudes in older persons. Journal of American Medical Association, 173, 33-35.

Newman, H.F., & Northup, J.D. (1983) Problems in male organic sexual physiology. Urology, XXI (5), 443-450.

Nicoll, L.H., Meyer, P.A., & Abraham, I.L. (1985) Critique: External comparison of conceptual nursing models. Advances in Nursing Science, 7 (4), 1-9.

Nie, N.H., Hull, C.H., Jenkins, J.G., Steinbrenner, K., & Bent, D.H. (1975) SPSS: Statistical package for the social sciences (2nd ed.). New York: McGraw-Hill.

Nijs, P., & Steppe, A. (1978) Masters and Johnson's sex therapy: (Anti) psychotherapy? A historic and methodologic analysis. In R. Forleo & W. Parsini (Eds.), Medical sexology. Littleton, MA: PSG Publishing.

Nilsson, L.O., Kock, N.G., & Kylberg, F. (1981) Sexual adjustment in ileostomy patients before and after conversion to continent ileostomy. Disease of the Colon and Rectum, 24 (4), 287-290.

Nishimoto, P.W. (1984, May) A critical analysis. Unpublished paper for Qualifying Examination. University of California, San Francisco.

Noguchi, H., Tsukahara, Y., Fukuta, T., & Iwai, S. (1980) Studies on our modified radical hysterectomy. Journal of Japanese Cancer Therapy, 15 (1), 10-15.

Nowinski, J.K., & Ayres, T.A. (1981) Sexuality and major medical conditions: A pilot study. In D.G. Bullard & S.E. Knight (Eds.),

Sexuality and physical disability: Personal perspectives. St. Louis: C.V. Mosby.

Oncology Nursing Society, & ANA. (1979) Outcome standards for cancer nursing practice. Kansas City: American Nurses' Association.

Ortner, S.B., & Whitehead, H. (1981) Introduction: Accounting for sexual meanings. In S.B. Ortner & H. Whitehead (Eds.), Sexual meanings: The cultural construction of gender and sexuality. New York: Cambridge University Press.

Palomore, E. (1981) Social patterns in normal aging: Findings from the Duke longitudinal study. Durham, NC: Duke University Press.

Pearlman, C.K. (1972) Frequency of intercourse in males at different ages. Medical Aspects of Human Sexuality, 11, 92-113.

Pearlman, C.K., & Kobashi, L.I. (1972) Frequency of intercourse in men. Journal of Urology, 107 (2), 298-301.

Perkins, R.P. (1982) Sexuality in pregnancy: What determines behavior? Obstetrics & Gynecology, 59 (2), 189-198.

Perry, B.C. (1982) Validity and reliability of responses of the aged to surveys and questionnaires. The Journal of Family Practice, 15 (1), 182-183.

Person, E.S. (1980) Sexuality as the mainstay of identity: Psychoanalytic perspective. In C.R. Stimpson & E.S. Person (Eds.), Women: Sex and Sexuality. Chicago: University of Chicago Press.

Peterson, C.J. (1977) Questions frequently asked about the development of a conceptual framework. Journal of Nursing Education, 16 (4), 22-31.

Petras, J.W. (1978) The social meaning of human sexuality (2nd ed.). Boston: Allyn & Bacon.

Pfeiffer, E., & Davis, G.C. (1972) Determinants of sexual behavior in middle & old age. Journal of the American Geriatric Society, 1, 753-7589.

Pfeiffer, E., Vervoodt, A., & Davis, G. (1972) Sexual behavior in middle life. American Journal of Psychiatry, 128, 1262-1267.

Pietropinto, A., & Simenauer, J. (1977) Beyond the male myth. New York: Simon & Schuster.

Pinderhughes, C.A., Grace, E.B., Reyna, L.J., & Anderson, R.T. (1972) Interrelationships between sexual functioning and medical conditions. Medical Aspects of Human Sexuality, 6 (10), 52-59.

Pittenger, W.N. (1954) The christian view of sexual behavior: A reaction to the Kinsey report. Greenwich, CT: The Seabury Press.

Pluchinotta, A.M., & Fabris, G. (1980) Sexual function after abdominoperineal resection of the rectum. American Journal of Proctology, Gastroenterology & Colon & Rectal Surgery, 31 (6), 18-21.

Polit, C., & Hungler, B. (1978) Nursing research: Principles & methods. Philadelphia: J.B. Lippincott.

Pomeroy, W.B. (1972) Dr. Kinsey and the institute for sexual research. New York: Harper & Row.

Pomeroy, W.B., Flax, C.C., & Wheeler, C.C. (1981) Taking a sex history. New York: Macmillan.

Pomeroy, W., & Schaefer, L.C. (1978) Impact of published survey and research on public concepts of human sexuality. In R. Forleo & W. Pasini (Eds.), Medical sexology. Littleton, MA: PSG Publishing.

Ragucci, A.T. (1972) The ethnographic approach and nursing research. Nursing Research, 21, 485-490.

Rawls, A.C. (1980) Evaluation of the Johnson behavioral model in clinical practice. Image, XII (1), 13-16.

Reiss, J.L. (1982) Trouble in paradise: The current status of sexual science. Journal of Sex Research, 18 (2), 97-113.

Renshaw, D. (1979) Sex and the senior citizen. Medical Times, 107 (12), 27-33.

Renshaw, D. (1985) Sex, age, and values. Journal of the American Geriatrics Society, 33 (9), 635-644.

Rezendo, J.B. (1981) The triple whammy: Aging, sexuality, and terminal illness. Generations, VI (1), 19-21.

Rinehart, J.S., & Schiff, I. (1985) Sexuality and the menopause. In M. Farber (Ed.), Human sexuality: Psychosexual effects of disease. New York: Macmillan.

Roberts, B. (1981) Doing feminist research. London: Routledge & Kegan Paul.

Robinson, P.K. (1983) The sociological perspective. In A.B. Weg (Ed.), Sexuality in the later years: Roles and behaviors. New York: Academic Press.

Rolstad, B.S., Wilson, G., & Rothenberger, D.A. (1983) Sexual concerns in the patient with an ileostomy. Diseases of Colon & Rectum, 26 (3), 170-171.

Rose, A.M. (Ed.). (1962) Human behavior and social processes. Boston: Houghton Mifflin.

Rosen, R.C. (1983) Psychophysiological methods in sex research and therapy. In C.M. Davis (Ed.), Challenges in sexual science:

Current theoretical issues & research advance. New York: Syracuse University.

Rosen, R., & Rosen, L.R. (1981) Human sexuality. New York: Alfred A. Knopf.

Rosenthal, R., & Rosnow, R. (1969) The volunteer subject. In R. Rosenthall & R.L. Rosner (Eds.), Artifact in behavioral research. New York: Academic Press.

Ross, R.K., Despen, D.M., Casagrande, J.T., Paganini-Hill, A., & Henderson, B.E. (1981) A cohort study of mortality from cancer of the prostate in Catholic priests. British Journal of Cancer, 43, 233-235.

Rotkin, I.D. (1977) Studies in the epidemiology of prostatic cancer: Expanded sampling. Cancer Treatment Reports, 61 (2), 173-180.

Rotkin, I.D. (1983) Origins, distribution, & risk of benign prostatic hypertrophy. In F. Hinman Jr. (Ed.), BPH. New York: Springer-Verlag.

Rotkin, I.D., Moses, V.K., Kaushal, D., Cooper, J.F., Osburn, W.C., & Benjamin, J.A. (1979) Groups of variables available for prevention of prostatic cancer. Cancer Detection & Prevention, 2 (4), 517-529.

Rowe, G.P. (1966) The developmental conceptual framework to the study of the family. In I.F. Nye & F. Bernardo (Eds.), Emerging conceptual frameworks in family analysis. New York: Macmillan.

Rowland, K.F., & Haynes, S.N. (1978) A sexual enhancement program for elderly couples. Journal of Sex & Marital Therapy, 4 (2), 91-113.

Rubin, P. (Ed.). (1978) Clinical oncology for medical students & physicians (5th ed.). Rochester, New York: American Cancer Society.

Rubinson, L., Ory, J.C., & Marmata, J.N. (1981) Differentiation between actual and perceived sexual behaviors amongst male and female college students. Journal of Sex Education & Therapy, 7 (1), 33-36.

Ruefli, T. (1985) Explorations of the improvisional side of sex: Charting the future of the sociology of sex. Archives of Sexual Behavior, 14 (2), 189-199.

Salzberger, G.J. (1980) Fatigue and geriatric sexual responses. Resident & Staff Physician, (7), 59-62.

Sandelowski, M. (1986) The problem of rigor in qualitative research. Advances in Nursing Science, 8 (3), 27-37.

Sanger, C.K., & Reznikoff, M. (1981) A comparison of the psychological effects of breast-saving procedures with the modified radical mastectomy. Cancer, 48, 2341-2346.

Sarrel, L.J., & Sarrel, P.M. (1984) Sexual turning points: The seven stages of adult sexuality. New York: Macmillan.

Scalzi, C.C. (1973) Nursing management of behavioral responses following an acute myocardial infarction. Heart & Lung, 2 (1), 62-29.

Schain, W.S. (1981) Sexuality & aged cancer patients. Geriatics, VI (1), 30-31.

Schatzman, L., & Strauss, A.L. (1973) Field research: Strategies for a natural sociology. Englewood Cliffs, NJ: Prentice-Hall.

Schilder, P. (1935) The image and appearance of the human body. Psychiatric Monographs London: Kegan Paul.

Schmidt, J.D. (1984) Treatment of localized prostatic carcinoma. Urologic Clinics of North America, 11 (2), 305-310.

Schover, L.R., & Fife, M. (1986) Sexual counseling of patients undergoing radical surgery for pelvic or genital cancer. Journal of Psychological Oncology, 3 (3), 21-41.

Schover, L.R., Gonzales, M., & von Eschenbach, A.C. (1986) Sexual and marital relationships after radiotherapy for seminoma. Urology, XXVII (2), 117-123.

Schover, L.R., & von Eschenbach, A.C. (1983) Erectile function in bladder & prostate cancer patients before treatment. Presented at Meeting of the American Urological Association, Los Vegas, abstract #17.

Schover, L.R., & von Eschenbach, A.C. (1985) Sexual & marital relationships after treatment for nonseminomatous testicular cancer. Urology, XXV (3), 251-255.

Schroeder, M.A.K. (1981) Symbolic interactionism: A conceptual framework useful for nurses working with obese persons. Image, 7 (1), 33-36.

Schuman, L.M., Mandel, J., Blackard, C., Bauer, H., Scarlett, J., & McHugh, R. (1977) Epidemiologic study of prostatic cancer: Preliminary report. Cancer Treatment Reports, 61 (2), 181-186.

Scott, D.W., Oberst, M.T., & Bookbinder, M.I. (1984) Stress-coping response to genitourinary carcinoma in men. Nursing Research, 33 (6), 325-329.

Segraves, R.T. (1977) Pharmocological agents causing sexual dysfunction. Journal of Sex & Marital Therapy, 3 (3), 157-176.

Seibel, M.M., Freeman, M.G., & Graves, W.L. (1980) Carcinoma of the cervix and sexual function. Obstetric & Gynecology, 55 (4), 484-487.

Selltiz, C., Wrightsman, L.S., & Cook, S.W. (1976) Research methods in social relations (3rd ed.). New York: Holt, Rhinehart, & Winston.

Servadio, E. (1978) The meaning of sexuality. In R. Forleo & W. Pasini (Eds.), Medical sexology. Littleton, MA: PSG.

Shalet, S.M., Hann, I.M., Lendon, M., Morris-Jones, P.H., & Beardwell, C.G. (1981) Testicular function after combination chemotherapy in childhood for acute lymphoblastic leukemia. Archives of Disease in Children, 56, 275-278.

Sherfey, J.J. (1972) The nature and evolution of female sexuality. New York: Vintage Books.

Sherfey, M.J. (1974) Some biology of sexuality. Journal of Sex & Marital Therapy, 1 (2), 97-109.

Shope, D.F. (1975) Interpersonal sexuality. Philadelphia: W.B. Saunders.

Shott, S. (1979) Emotion and social life: A symbolic interactionist analysis. American Journal of Sociology, 84 (6), 1317-1334.

Shulman, L.M. (1977) Epidemiologic study of prostatic cancer: Preliminary report. Cancer Treatment Reports, 61 (2), 181-186.

Singer, B. (1985) A comparison of evolutionary & environmental theories of erotica reponse. Part II: Empirical arenas. Journal of Sex Research, 21 (4), 345-374.

Skolny, M.A., & Riehl, J.P. (1974) Hope: Solving patient and family problems by using a theoretical framework. In J.P. Riehl & C. Roy (Eds.), Conceptual models for nursing practice. New York: Appleton-Century-Crofts.

Smith, A.D. (1981) Causes and classifications of impotence. The Urological Clinics of North America, 8 (1), 79-90.

Smith, D.R. (1984) General Urology (11th ed.). Los Altos, CA: lnge Medical Publishing.

Spark, R.F., White, R.A., & Connolly, P.B. (1980) Impotence is not always psychogenic. JAMA, 243 (3), 750-755.

Starr, B.D., & Weiner, M.B. (1981) The Starr-Weiner report on sex and sexuality in the mature years. New York: Stein & Day.

Steele, R. (1972) Sexual factors in prostatic cancer. Medical Aspects of Human Sexuality, (8), 70-81.

Steinglass, P. (1978) The conceptualization of marriage from a systems theory perspective. In T.J. Palino & B.S. McCrady (Eds.), Marriage and marital therapy: Psychoanalytic behavorial & systems theory perspective. New York: Brunner/Mazel.

Stevens, B.J. (1979) Nursing theory: Analysis, application, and evaluation. Waltham, MA: Little, Brown & Co.

Strauss, D. (1982) The interview as a research instrument for obtaining sexual information. In Z. Hoch & H.I. Lief (Eds.), Sexology: Sexual biological behavior and therapy (pp. 37-41). Amsterdam: Excerpta Medica.

Stuart, F., Stuart, R.B., Maurice, W.L., & Szaz, G. (1975) Sexual adjustment inventory. Champaign, IL: Research Press.

Susser, M. (1974) Ethical components in the definition of health. International Journal of Health Services, 4 (3), 539-548.

Sviland, M.A.P. (1981) Sexuality and intimacy in later life. In R. Kastenbaum (Ed.), Old age on the new scene. New York: Springer.

Symons, D. (1981) The evolution of human sexuality. Oxford: Oxford University Press.

Szaz, T.S. (1980) Sex by prescription. Garden City, NY: Doubleday.

Taylor, C.B., Bandura, A., Ewart, C.K., Miller, N.H., & DeBusk, R.E. (1983) Raising spouse's and patient's perception of his cardiac capabilities following a myocardial infarction. Unpublished paper. Stanford University.

Thompson, J.L. (1985) Practical discourse in nursing: Going beyond empiricism & historicism. Advances in Nursing Science 7 (4), 59-71.

Thompson, L., & Walker, A.J. (1982) The dyad as the unit of analysis: Conceptual and methodological issues. Journal of Marriage and the Family, 11, 889-900.

Thorton, C.E. (1979) Sexuality counseling of women with spinal cord injuries. Sexual Disabilities, 2, 267-277.

Todres, R., & Wojtiuk, R. (1979) The cancer patient's view of chemotherapy. Cancer Nursing, 2 (4), 283-286.

Tripp-Reiner, T. (1985) Combining qualitative and quantitative methodologies. In M. Leininger (Ed.). Qualitative methods in nursing. Orlando, FA: Grune & Stratton.

Turner, J.H. (1978) The structure of sociological theory. Homewood, IL: Dorsey.

Udry, J.R. (1980) Changes in the frequency of marital intercourse from panel data. Archives of Sexual Behavior, 9 (4), 319-325.

U.S. Bureau of the Census. (1983) Statistical abstract of the US: 1983. Washington, D.C.: GPO.

U.S. Department of Labor. (1965) Dictionary of occupational titles: Vol. 1. Definition of titles (3rd Ed.). Washington, DC: U.S. Government Printing Office.

Van Arsdaler, K.N., & Wein, A.J. (1984) Drug-induced sexual dysfunction in older men. Geriatrics, 39 (10), 63-70.

Ventura, M.R., Hinshaw, A.S., & Atwood, J.R. (1981) Instrumentation: The next step. Nursing Research, 30 (5), 257.

Ver Steeg, M.A. (1981) Developing a sexuality assessment. In A.C. von Eschenbach & D.B. Rodriquez (Eds.), Sexual rehabilitation of the urologic cancer patient. Boston: G.K. Hall.

Verwoedt, A., Pfeiffer, E., & Wang, H.S. (1969) Sexual behavior in senescence. Geriatrics, 24, 137-154.

Vincent, C.E., Vincent, B., Greiss, F.C., & Linton, E.B. (1975) Some marital-sexual concomitants of carcinoma of the cervix. Southern Medical Journal, 68 (5), 552-555.

Visintainer, M.A. (1986) The nature of knowledge and theory in nursing. Image, 18 (2), 32-38.

von Bertalanffy, L. (1968) General systems theory. New York: George Braziller.

von Eschenbach, A.C. (1981) Sexual dysfunction & rehabilitation: Definition of the problem. In A.C. von Eschenbach & D.B. Rodriquez (Eds.), Sexual rehabilitation of the urologic cancer patient. Boston: G.K. Hall.

Wabrek, A.J., Wabrek, C.J., & Burchell, R.C. (1980) Sexual implications of bowel diversion. American Journal of Proctology, Gastroenterology & Colon & Rectal Surgery, 31 (8), 23-27.

Wagner, G., and Metz, P. (1980) Impotence (erectile dysfunction) due to vascular disorders. An Overview. Journal of Sex & Marital Therapy, 6 (3), 223-233.

Walker, L.D. & Nicholson, R. (1980) Criteria for evaluating nursing process models. Nurse Education.

Walsh, P.C. (1986) Benign prostatic hyperplasia. In P.C. Walsh, R.F. Grittes, A.D. Pearlmutter, & T.A. Stamey (Eds.), Campbell's urology, Vol. 2 (5th Ed.) (pp. 1248-1267). Philadelphia: W.B. Saunders.

Walsh, P.C., & Donker, P.J. (1982) Impotence following radical prostatectomy: Insight into etiology & prevention. Journal of Urology, 128, 492-496.

Walsh, P.C., Lepor, H., & Eggleston, J.C. (1983) Radical prostatectomy with preservation of sexual function: Anatomical & pathological considerations. The Prostate, 4, 473-478.

Walterhouse, J., & Metcalfe, M.C. (1986) Development of the sexual adjustment questionnaire. Oncology Nursing Forum, 13 (3), 53-59.

Wasow, M. (1982) Sexuality assessment as a tool for sexual rehabilitation in cancer patients. Sexuality & Disability, 5 (1), 28-37.

Wasow, M., & Loeb, M.B. (1977) The aged. In H.L. Gochros & J.S. Gochros (Eds.), The sexually oppressed. New York: Associated Press.

Wasserman, M.D., Pollak, C.P., Spielman, A.J., & Weitzman, E.D. (1980) Impaired nocturnal erections and impotence following transurethral prostatectomy. Urology, XV (6), 552-555.

Weg, R.B. (1983a) Introduction: Beyond intercourse and orgasm. In R.B. Weg (Ed.), Sexuality in the later years: Roles and behavior. New York: Academic Press.

Weg, R.B. (1983b) The physiologic perspective. In R.B. Weg (Ed.) Sexuality in the later years: Roles and behavior. New York: Academic Press.

Weinstein, M., & Roberts, M. (1977) Sexual potency following surgery for rectal carcinoma: A followup of 44 patients. Annals of Surgery, 185 (3), 295-300.

Weiss, J.P., Schlecker, B.A., Wein, A.J., & Hanno, P.M. (1985) Preservation of periprostatic autonomic nerves during total perineal prostatectomy by intrafascial dissection. Urology, XXVI (2), 160-163.

Wellisch, D.K., Jamison, K.R., & Pasnau, R.O. (1978) Psychosocial aspects of mastectomy: The man's perspective. American Journal of Psychiatry, 135 (5), 543-546.

White, C.B. (1982) Sexual interest, attitudes, knowledge: A sexual history in relation to sexual behavior in the institutionalized aged. Archives of Sexual Behavior, 11 (1), 11-21.

Williams, J.T., & Slack, W.W. (1980) A prospective study of sexual function after major colorectal surgery. British Journal of Surgery, 67 (10), 772-774.

Williams, M.A., & Schulte, H.D. (1982) The nursing perspective in research: What is it? Reflections, 8, 3.

Williams, W. (1985) Psychogenic erectile impotence: A useful or misleading concept? Australian & New Zealand Journal of Psychiatry, 19 (1), 77-82.

Winderlein, J.M. (1979) Advice on the sexual problems for women treated for cancer. (abstract) Fortschr. Med., 97 (11), 507-512.

Wineberg, J.S. (1982) Sexuality: Human needs and nursing practice. Philadelphia: W.B. Saunders.

Winn, R.L., & Newton, N. (1982) Sexuality in aging: A study of 106 cultures. Archives of Sexual Behavior, 11 (4), 283-299.

Wise, T.N. (1978) Sexual functioning in neoplastic disease. Medical Aspects of Human Sexuality, 16-31.

Witmore, W.F. (1984) Natural history & staging of prostate cancer. Urological Clinics of North America, 11 (2), 205-220.

Wolchik, S.A., Braver, S.L. & Jensen, K. (1985) Volunteer bias in erotica research: Effects of intrusiveness of measure and sexual background. Archives of Sexual Behavior, 14 (2), 93-107.

Wood, J.D., and Tombrink, J. (1983) Impact of cancer on sexuality of self-image: A group program for patients and partners. Social Work in Health Care, 8 (4), 45-54.

Woodard, W.S., & Rollins, S.A. (1981) Sexuality and the elderly: Obstacles and options. Journal of Rehabilitation, 47 (4), 64-68.

Woods, N.F. (1984) Human sexuality in health and illness (3rd ed.). St. Louis: C.V. Mosby.

Woods, N.F. & Earp, J.L. (1978) Women with cured breast cancer. Nursing Research, 27 (5), 279-285.

World Health Organization Technical Report Series (No. 572). (1975) Education and treatment in human sexuality: The training of health professionals. Geneva: World Health Organization.

Wu, R. (1973) Behavior and illness. Englewood Cliffs, NJ: Prentice-Hall.

Yaeger, E.S., & Van Heerden, J.A. (1980) Sexual dysfunction following proctocolectomy and abdominoperineal resection. Annals of Surgery, 191 (2), 169-170.

Zalar, M.K. (1982) Role preparation for nurses in human sexual functioning. Nursing Clinics of North America, 17 (3), 351-363.

Zinman, L., Friedell, G.H., Schwartz, J., & Shipley, W.U. (1978) Carcinoma of the prostate & bladder. In C. Blake (Ed.), Cancer: A manual for practitioners (5th ed.). Boston: American Cancer Society.

Zohar, J., Meiraz, D., Maoz, B., & Durst, N. (1976) Factors influencing sexual activity after prostatectomy: A perspective study. Journal of Urology, 116, 332-334.

APPENDIX A

REQUEST LETTER TO SUBJECTS

Dear

I would like to inform you of a new research study which is being conducted by Patricia Nishimoto. She is an Army Reserve nurse who is interviewing men who have had prostate surgery as part of her doctoral dissertation at the University of California, San Francisco.

Her research study focuses on how sexuality is affected by a diagnosis of prostate disease and/or prostate surgery. This topic is an area which health professionals are only beginning to understand, and yet is a very important area to patients.

Men who have had prostate surgery have frequently been researched as to their physical ability. Seldom has any health professional asked about how they feel, what questions they have, and what can be done to help them "get on" with living. This study seeks to ask men how they feel and cope after the diagnosis and surgery so that better care can be given in the future.

Because much of the most important information in the interview is personal, special care will be taken to protect the confidentiality of everyone who participates. Identifying information will be removed from the questionnaire as soon as the interview is completed, and stored separately in a secure locked file. The data will appear only in the form of group data.

If you desire <u>not</u> to be contacted by phone in regard to this study, please mail the enclosed postcard within 10 days of receipt of this letter. Otherwise Ms. Nishimoto will contact you by phone to give you more information about the study, answer any questions you may have, and ask if you would like to participate in the study. If you decide to participate, she will meet with you for a confidential interview which will last 1 ½ hours. If you find the questions embarrassing, you may refuse to answer them. You also have the right to stop the interview at any time you desire. Your decision of whether or not to participate will not influence your care.

Thank you for your consideration.

Sincerely,

APPENDIX B

CONSENT FORM:

TO BE IN STUDY

University of California, San Francisco
Consent to be a Research Subject

PURPOSE AND BACKGROUND

Men who have had prostate surgery have frequently been researched as to their ability to have intercourse and/or ejaculate following surgery. Seldom has any health professional asked about how they feel, what questions they have, and what can be done to help them "get on" with living. This nursing study seeks to ask men how they feel and cope after their diagnosis and surgery, so that better care can be given in the future.

PROCEDURES

If I agree to be in this study, the following will occur:

1. I will meet with Patricia Nishimoto, RN, for a confidential interview, lasting approximately 1½ hours.

2. Patricia Nishimoto will review my medical records to gather information about the surgery, e.g. location and size of the prostate.

RISKS

There are some possible risks or discomforts from being in this study:

1. I may find the questions embarrassing, but I may refuse to answer any or all of the questions.

2. I may get tired during the interview, but I can stop the interview at any time.

Because much of the most important information in the interview is personal, special care will be taken to protect the confidentiality of everyone who participates. Identifying information will be removed from the questionnaire as soon as the interview is completed, and stored separately in a secure locked file. Interviews will be identified only by number and the link between name and number will be available only to the principal project investigator. All data will be kept in locked files and will remain as confidential as possible under the law. The data will appear only in the form of group data.

If I am injured as a result of being in this study, treatment will be available. The cost of such treatment may be covered by the University of hospital, depending upon a number of factors. For information I may call (415) 666-1814.

BENEFITS

There will be no benefit to me from participation. The information may help future patients. I may request and receive a list of helpful written references about sexuality following prostate surgery if I desire.

QUESTIONS

I have talked with Patricia Nishimoto, RN, and my questions were answered. If I have other questions I may call her at 681-4485.

CONSENT

I have been given a copy of this form and the Experimental Subject's Bill of Rights to keep.

I have the right to refuse or to withdraw at any point in this study without jeopardy to my medical care. If I wish to participate, I should sign this form.

DATE _____ SUBJECT'S SIGNATURE _____

WITNESS _____

APPENDIX C

CONSENT FORM:

RELEASE OF MEDICAL RECORDS

CONSENT TO RELEASE MEDICAL RECORDS

TO WHOM IT MAY CONCERN:

I hereby authorize you, upon receipt of a Xerox copy of this document, to allow Patricia W. Nishimoto of the University of California, San Francisco Medical Center access to information in my medical records from July 1, 1983 to the date of this request.

Patricia W. Nishimoto will use information obtained from my records for her study, "Socio-Sexual Impact of Prostate Surgery", and will report her findings only in the form of statistical comparisons. I authorize use of information from my records only for this research project. All data from my medical records will be held strictly confidential.

I have had an opportunity to discuss the study with Patricia W. Nishimoto and my questions have been answered to my satisfaction.

_____
Signature

_____
Print Name

_____
Birth Date

_____
Date

APPENDIX D

INTERVIEW SCHEDULE

INTERVIEW SCHEDULE

* Clearly establish my professional identity. (My experience as an oncology nurse, Army experience, and interest in sexuality.) This facilitates the establishment of therapeutic rapport.

* Important to pause (8 seconds) to not obstruct the person's flow of thought and feelings. This may be the person's first time to think about this subject in this way.

* Use first five minutes for demographic information. A capsule summary of the initial interaction with a patient will usually contain information about his gender identity and perception of his role.

* Be direct about sexuality; otherwise I give the person the message that I feel uncomfortable discussing it. Allow the person as much control of the interview as I can.

1. At times, it is difficult to share feelings and thoughts that you have possibly considered private. I understand your concern. Yet the questions I'll be asking you are important for me to give better nursing care to future prostate surgery patients. What we discuss will be held in confidence between you and me.

2. How has your life changed since your surgery? (Pause) What are some of the new thoughts and feelings you've been having?

3. Sexuality is an important part of all of our lives. Have you thought about what this illness and surgery means to you - and how it affects your sexuality? (Pause)

4. It would be helpful for me to know if you have ever talked with anyone about your sexuality and sex life. Many people in our society have never talked seriously about their sexuality with another person. This may be a new experience for you, as well as a difficult one.

5. Since each of us has had different growing-up experiences, some of the language you and I use to explain or to ask questions about sexuality may be a bit different. So - if there is anything you don't understand, or if you have a different word for what I'm saying or asking, please let me know. For example, we use all kinds of words for sexual intercourse - coitus, making love, screwing, balling. I'm not concerned about which are the appropriate words, OK? Use the ones you're comfortable with.

6. How has your diagnosis/surgery affected your relationships with your friends, particularly women? Men?

7. Specifically, how do you think and feel your partner has been affected? What changes does your partner perceive?

8. Are your sexual activities and sharing as frequent as you'd like? How would you like it to change?

9. I'm going to ask you to describe your present sexual activities and experiences for me. Before I start, you may be wondering why I'm asking you these questions. It's going to be helpful for me to know what real people actually do after surgery. Most of the research has focused on just ability to have erections, to ejaculate, and to have intercourse. And sexuality is so much more than that.

10. What importance do your sexuality, sexual activities, and sharing have in your life? Where do they fit in the list of priorities? How do you think your partner perceives the importance of sexuality, sexual activities, and sharing in his/her life?

13. When do you become erect? How long can and do you maintain a full (or hard) erection before ejaculation? Has this ever been a concern for you?

14. What did you and/or your partner do about this? Was this helpful in maintaining an erection? Can you arouse yourself to an erection through self-masturbation or by your partner stimulating your genitals? Do you experience erections with nocturnal emissions (wet dreams)? Do you have erections when you wake in the morning?

15. When you ejaculate, what is the consistency? How much? Color? Does it come out in squirts, projectile, dribble, with pressure? Has this ever been a concern or problem for you? What did you and your partner do about it?

16. How do you feel after ejaculation and orgasm? What do you do afterwards?

17. Do you think and feel you are attractive to your partner?

18. How often do you have intercourse presently? How does this compare with your pattern before surgery? Is it satisfying to you? What would make it more enjoyable?

19. What sexual aids do you use for your own sexual pleasure? What sexual aids do you use for your partner's sexual pleasure?

20. What sexual activity gives you the most pleasure? Has that changed since surgery?

Note: Questions 11 and 12 were eliminated as they were not used in the actual interviews.

21. What's the most unpleasant thing about sex for you?

22. Many men stimulate their prostate for sexual enjoyment. Have you noticed a change since surgery? How important is that to you, on a scale of 1-5?

23. Did anyone talk with you about sexuality before surgery? Who? Friends? What did they say? What would you have liked? (e.g. pamphlets, talk with you and your partner)

24. Did anyone talk with you about sex in the hospital? Who? What did they say? What would you have liked?

25. When were you told you could first have sex? Did they specify "sex"? When did you first try? What did you try? Were you concerned about pain?

26. Did anyone talk with you after discharge? Who? What did they say? What would you have liked?

27. Does a diagnosis of cancer make sex more important? Less important? The same?

28. What would you like to tell someone who is going to have your surgery?

29. What did you think when you got the letter? Why did you decide to do this interview? How did you feel during the interview? Why wouldn't people do this interview?

30. Is there anything you want to add regarding your sexuality or life style that would help me to understand you better? I've asked you lots of questions. Is there anything you'd like to ask me?

APPENDIX E

THANK YOU LETTER

Aloha.

Thank you for participating in the "Socio-Sexual Impact of Prostate Surgery Study". I appreciate your openness and honesty about a sensitive subject and your taking time to help with this study.

As you know, I am interviewing men who have had prostate surgery to gain information to improve health care. The response to the study so far has been excellent. Almost everyone I have contacted has been willing to be interviewed. If things continue this way, I anticipate that the information collection phase of the study will be completed by the end of September and I will be able to analyze the data.

Sincerely,

Patricia W. Nishimoto
RN, BSN, MPH
Doctoral Candidate
UCSF School of Nursing

FOR REFERENCE

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