

1997

The Effect of Post-Prostatectomy Urinary Incontinence on Quality of Life

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**THE EFFECT OF POST-PROSTATECTOMY URINARY
INCONTINENCE ON QUALITY OF LIFE**

By

Martha Ellen Rheault

A THESIS

**Submitted to
Grand Valley State University
in partial fulfillment of the requirements
for the degree of**

MASTER OF SCIENCE IN NURSING

Kirkhof School of Nursing

1997

Thesis Committee Members:

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ABSTRACT

THE EFFECT OF POST-PROSTATECTOMY URINARY INCONTINENCE ON QUALITY OF LIFE

By

Martha Ellen Rheault

The purpose of this study was to evaluate the effect of post-operative urinary incontinence on the quality of life of men after radical retropubic prostatectomy (RRP). A convenience sample consisted of 128 males, aged 40 to 75 years, who underwent RRP between May, 1994 and June, 1996 at a 529 bed acute care hospital in a Midwest city.

Subjects were asked to complete 3 data collection tools: The Ferrans and Powers Quality of Life Index Cancer Version (Q.L.I.-C.V.); The Urinary Function Questionnaire for Men After Radical Prostatectomy (Herr, 1994); and a Demographic/Related Information Questionnaire, developed by the researcher.

A significant difference was found between the average overall and socioeconomic, psychologic/spiritual, and family subscale quality of life scores for subjects with continence/occasional incontinence and those with frequent incontinence. The health and functioning subscale average quality of life score was significantly different between continent subjects and occasionally or frequently incontinent subjects.

This thesis is dedicated to my family, whose unconditional love and support have been instrumental in my personal and professional growth.

Acknowledgements

I would like to acknowledge several individuals who were influential in this research project.

My late grandmother, Kathryn Keefe, and my mother, Carole Keefe Jones, instilled the importance of education through role-modeling. My grandmother, born in 1900, was a college graduate at a time when few women pursued continued education. My mother completed a master's degree as a single parent with four dependent children. Many personal sacrifices were made in order for us to attend college. I would not have continued graduate studies had it not been for their encouragement and support.

My husband, Alan, and sons, Ian and Justin, have also sacrificed greatly in order for me to pursue advanced education. They have shared their wife and mother with Grand Valley State University for the past 6 years. They have made me whole, and I cannot imagine my life without them.

Dr. Richard Kahnoski must be acknowledged for inspiring me through his love of urology and research. He has taught me a great deal over the past ten years.

Joanne Munski and Michelle Troseth have been supportive as fellow classmates, peers and friends. Their listening skills, ability to laugh, and sharing common life situations helped in coping with the stresses of having a family, working full time and attending graduate school.

Linda Scott must be acknowledged for her gift of turning a bunch of numbers into meaningful data, and for keeping me focused. Her warm smile and kindness will not be forgotten.

My thesis committee chairperson, Dr. Katherine Kim, deserves recognition for her expertise in the research process. Never before have I experienced such a dedicated professor. Her efforts were instrumental in the completion of this research project. The time and expertise of my remaining thesis committee members, Dr. Frances McCrae and Dr. Kay Kline, are also appreciated.

Lastly, I would like to acknowledge my peers at Butterworth Hospital. I am very fortunate to work with such caring, professional people. I can only hope that I have taught and supported them as much as they have taught and supported me.

Table of Contents

List of Tables.....	vii
List of Appendices.....	viii
CHAPTER	
1. INTRODUCTION.....	1
Introduction.....	1
Purpose of Study.....	3
2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW.....	4
Theoretical Framework.....	4
Literature Review.....	6
Definition of Terms.....	16
Hypothesis.....	16
3. METHODOLOGY.....	17
Research Design.....	17
Sample and Setting.....	17
Data Collection Tools.....	19
Procedure.....	22
4. RESULTS.....	24
Hypothesis Testing.....	24
Additional Findings of Interest.....	27
5. DISCUSSION AND IMPLICATIONS.....	30
Discussion.....	30
Limitations.....	33

Implications.....	35
Recommendations.....	36
APPENDICES.....	37
REFERENCES.....	55

List of Tables

TABLE

I	Sample Characteristics.....	18
II	Internal Consistency of the Q.L.I.-C.V.....	21
III	Means, Standard Deviations, and Ranges of Quality of Life Scores.....	25
IV	Frequencies and Percentages of Continence/Incontinence.....	25
V	Analysis of Variance for the Variables.....	26
VI	Means of Quality of Life Scores of Three Groups By Urine Control Status.....	27
VII	Impotence Status Before and After Radical Retropubic Prostatectomy (RRP).....	28

List of Appendices

APPENDIX

A.	Ferrans and Powers Quality of Life Index-Cancer Version.....	37
B.	Approval Letter for Use of Q.L.I.-C.V.....	41
C.	Instructions for Scoring Q.L.I.-C.V.....	42
D.	Urinary Function Questionnaire for Men After Radical Prostatectomy.....	43
E.	Approval Letter for Use of Urinary Function Questionnaire.....	46
F.	Demographic and Related Data.....	47
G.	Cover Letter.....	49
H.	Postal Card Reminder.....	50
I.	Funding.....	51
J.	Approval by Hospital Research Committee.....	52
K.	Approval by Human Subjects Committee.....	54

CHAPTER ONE

INTRODUCTION

Radical prostatectomy is a common treatment for localized prostate cancer. While in many instances it is considered to be curative (Presti, Schmidt, Narayan, Carroll, & Tanagho, 1990), radical prostatectomy is not without potential complications. Urinary incontinence, the involuntary loss of urine severe enough to have social and/or hygienic consequences (Ashworth & Hagan, 1993), is one such complication. Urinary incontinence has been reported to have an incidence ranging from as low as 0% to as high as 87% (Ramon, Leandri, Rossignol, & Gautier, 1993).

While often temporary, urinary incontinence can be devastating for a man (Steiner, Morton, & Walsh, 1991). "One of the most feared and disabling complications of radical prostatectomy is total urinary incontinence" (Steiner et al., 1991, p. 512). It may cause related social isolation, as well as present hygienic and economic challenges. Some men, in fact, find the potential post-operative complication of urinary incontinence to be so distressing that they select an alternative prostate cancer treatment—one which may be considered investigational or has a poorer long-term survival rate (Herr, 1994). A man may rather risk prostate cancer than the possible sequela of urinary incontinence. This is significant to nursing as it focuses on the human response to illness. Nurses must not only address the response of these men to their cancer diagnosis, but be attentive to potential complications associated with a cancer cure as well. It is important to remember that many of these men were symptom-free when their cancer was detected by digital rectal examination (D.R.E.), routine prostate

specific antigen (P.S.A.) testing, or incidental finding upon tissue analysis following benign prostate resection. Radical prostatectomy may offer these men a cure, without them ever having experienced symptoms of cancer, yet suddenly leave them without control of a bodily function. This may be difficult for many men to accept.

There has been an increase in research regarding how the loss of bladder control affects the quality of life of men after radical prostatectomy. Several studies were located in the medical literature, however, none were located in nursing literature. Herr (1994) found that 26% of the 50 men he studied were limited in physical activity due to post-prostatectomy urinary incontinence. More than one half of these men reported moderate to severe emotional distress as a result. Herr (1994) recognized the potential negative impact that post-prostatectomy urinary incontinence may have on a man's life, and that related research findings may support non-surgical intervention. Quality of life was not defined for this study, nor were other co-morbidities which may have impacted quality of life measured. The researcher assumed that urinary incontinence lowered the patients' quality of life.

Other researchers studied related morbidity and quality of life of 620 men who underwent radical retropubic prostatectomy during a 7 year period (Leandri, Rossignol, Gautier, & Ramon, 1992). These researchers found that 95% of the men studied experienced complete urinary control by 1 year following surgery. Based upon these data, it was concluded that prostate cancer can be locally controlled without significantly affecting quality of life. The study, however, did

not define quality of life, nor address any related statistics suggesting that the quality of life of these men was even investigated.

The fact that these researchers recognized that quality of life may be affected by radical prostatectomy was commendable. It was the opinion of this investigator, however, that both studies presented opportunities for improvement. Quality of life was not defined in either study. It appeared that the researchers assumed that presence of post-operative urinary incontinence decreased quality of life. Neither study identified a control group to compare the quality of life of men who were incontinent after radical prostatectomy to men who were continent post-operatively. It was apparent to this investigator that further research, addressing some of these limitations, was needed in this area.

Purpose of Study

The purpose of this study, therefore, was to assess the quality of life of men who were incontinent following radical prostatectomy as compared to that of men who were continent following the same procedure. The impact of the degree of incontinence on quality of life was examined as well. It is important that health-care professionals recognize the impact that post-operative urinary incontinence may have on a man when the recommended treatment option(s) for prostate cancer are discussed, and when pre-operative evaluation and education are performed. It is also imperative for post-operative evaluation, education, support, and referral.

CHAPTER TWO

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Theoretical Framework

Levine's theory of conservation fit well with the concept of quality of life. She believes that health is socially determined, rather than solely the absence of disease. The goal of nursing is to promote wellness or health through therapeutic or supportive intervention.

Levine introduced and supports trophicognosis, the utilization of the scientific method in determining appropriate nursing care decisions. "It is the nurse's task to bring a body of scientific principles on which decisions depend into the precise situation which she shares with the patient" (Levine, 1966, p. 2452). Nursing interventions are structured according to four conservation principles: conservation of energy, conservation of structural integrity, conservation of personal integrity and conservation of social integrity (Levine, 1966). According to Levine, nursing interventions must be based on individual patient needs.

According to Conservation Theory, integrity refers to one being in control of his or her own life. It is through adaptation that one retains his/her integrity within the parameters of the environment. It is through conservation, or keeping together, that when faced with challenges, people adapt. Levine believes that conservation is clearly related to an individual's state of health, and that conserving integrity is the hallmark of nursing (Levine, 1996).

Levine (1973) identifies two types of nursing intervention, therapeutic and supportive. Therapeutic intervention refers to nursing intervention which influences adaptation in a positive way, toward renewed social well being (Levine,

1973). Such interventions might include: education, support/counseling, and referral related to psychological, behavioral, pharmacological, absorbant product/collection device, and surgical management options which are designed to promote successful adaptation to the health continuum whenever possible..

Supportive intervention refers to nursing intervention which cannot alter the course of adaptation, but only maintain the status quo (Levine, 1973). Such intervention may include ongoing support through referral to a related support group and counseling. When successful adaptation does not occur, supportive interventions are used to promote wellness in an individualized, holistic manner.

No quality of life studies using Conservation Theory as a theoretical framework were found. This investigator, however, felt that the two topics worked well together. According to Conservation Theory, the goal of nurse/patient interaction is to promote adaptation and maintain wholeness through the conservation of energy, as well as structural, social, and personal integrity. When patients experience disruption in their adaptive capability, then therapeutic intervention is required. One might assume that when a patient/person has positive adaptation within the parameters of his/her environment, there is a positive impact on the quality of his/her life. Researching the quality of life of men who are incontinent after radical prostatectomy provides data that allows the nurse to provide therapeutic or supportive intervention for adaptation.

The conservation principle of structural integrity is associated with urinary incontinence, which is due to a change in the structural integrity of the bladder neck during radical prostatectomy. Levine (1973, p. 17) believes that "individual life has meaning only in the context of social life" and that nurses must take into

consideration how patients' relationships with others may be affected by illness and resultant lifestyle changes. The quality of life data, for the purpose of this study, was evaluated in terms of its effect on the conservation principle of social integrity, an area greatly influenced by loss of bladder control. This study, therefore, evaluated the effect that the structural integrity had on the social integrity, and the relationship of both to quality of life.

Literature Review

The literature review includes a brief overview of the anatomy and physiology of the prostate, prostate cancer, and radical prostatectomy as a treatment option for localized disease. The review of urinary incontinence and impotence literature in relation to radical prostatectomy is presented next, followed by a review of the literature regarding quality of life.

The prostate. The prostate is a male gland located at the base of the bladder. It surrounds the tube (the urethra) through which urine passes to exit the body. Its size approximates that of a chestnut. The function of the prostate gland is to produce an alkaline substance (the fluid portion of semen) which aids in the motility of sperm. The periphery of the prostate is palpable through the rectal wall (American Cancer Society, 1992) with digital rectal examination.

Prostate cancer. Prostate cancer is the most common form of cancer in American men. It is the second most common cause of cancer related deaths for these men (Gray, 1992). Prostate cancer is anticipated to affect approximately 1 out of every 10 American men. In 1993 alone, an estimated 165,000 men were diagnosed as having prostate cancer, and 35,000 men died from the disease (American Cancer Society, 1993). These astounding statistics support the

significance of prostate cancer in the United States, and the importance of research focused on treatments and their respective outcomes.

The risk of developing prostate cancer increases with age. Its incidence peaks in the eighth decade. This cancer is seldom seen in men who are less than 50 years of age. Black American men tend to carry a greater risk with prostate cancer as they tend to develop it at an earlier age, and are diagnosed at a more advanced stage than white American men (American Cancer Society, 1992; & Gray, 1992).

Prostate cancer, once confirmed by transrectal ultrasound guided prostate biopsy, is staged according to a modified Jewitt-Strong-Marshall system. Staging provides the physician guidance with treatment options and prognosis. Four basic stages of prostate cancers have been defined. These stages, A through D, progress in order from localized to metastatic disease (Gray, 1992).

Stage A prostate cancers are localized to within the prostate capsule. These tumors are typically too small to be palpated by D.R.E. They may be discovered coincidentally during analysis of tissue removed during transurethral or open prostate resection for noncancerous prostate enlargement (Gray, 1992). Stage B prostate cancers, also confined to within the prostate capsule, are generally palpable by D.R.E. (Gray, 1992). Stage C prostate tumors have extended beyond the prostatic capsule. Lymph node metastasis may have occurred in as many as 50% of these men upon diagnosis. Stage D prostate tumors have metastasized to distant sites, which may include pelvic lymph nodes, bones, liver, or lungs (Gray, 1992).

Radical prostatectomy. Several options exist for the treatment of prostate cancer, including observation, radiation therapy, androgen ablation, investigational cryosurgery, and radical prostatectomy. Radical prostatectomy is often considered to be curative for localized (Stages A & B) prostate cancer. It involves the surgical removal of the prostate, prostatic capsule, and seminal vesicles through a suprapubic, retropubic, or perineal approach. The remaining urethra is reanastomosed to the bladder neck (Gray, 1992). One potential sequela of radical prostatectomy, related to the alteration of the bladder neck or nerve damage during surgery, is urinary incontinence.

In many cases, the surgeon's primary concern is that all of the cancer is removed and that negative surgical margins are achieved. When all of the cancer is removed, the patient may have a greater chance of being cured. Achieving negative margins, however, may require the disruption of functional integrity (Myers, 1991). The preservation of pelvic nerves were found by O'Donnell and Finan (1989) to play a major part in preserving urine control (Ramon et al., 1993).

Urinary incontinence. Involuntary control of urine is maintained by the internal sphincter, which is generally non-functioning after radical prostatectomy (Foote, Yun, & Leach, 1991; Moul, 1994). Normal urine control involves the bladder neck, prostatic and membranous urethra, and the voluntary pelvic floor musculature (Moul, 1994). Urine control after radical retropubic prostatectomy, therefore, depends upon the distal prostatic urethra, membranous urethra (rhabdosphincter), and external (voluntary) sphincter (Moul, 1994). Post-prostatectomy continence is dependent upon the efficiency of these structures (Presti, Schmidt, Narayan, Carroll, & Tanagho, 1990).

Post-prostatectomy urinary incontinence is usually described as urge, stress, or total in nature. It may be contributed to by a variety of factors such as previous prostate surgery, abnormal bladder function (e.g., decreased compliance, detrusor instability), and sphincter damage which may precede or result from radical prostatectomy surgery (Ramon et al., 1993; Foote et al., 1991). Radiation therapy after radical prostatectomy may enhance the survival rate, yet increase the risk of post-prostatectomy urinary incontinence to over 20% (Moul, 1994). Men with Parkinson's Disease and/or who are elderly in age are also at greater risk (Myers, 1991). Surgical techniques have been modified in recent years to decrease the incidence of post-prostatectomy urinary incontinence (Steiner et al., 1991). Some researchers also feel that the experience of the surgeon directly impacts the result of surgery (Ramon et al., 1993). Freedman, Hahn, & Love (1996) stated that the key factors in determining urinary incontinence after radical retropubic prostatectomy are the patient's anatomy as well as the skill and experience of the surgeon.

The degree of urinary incontinence following radical prostatectomy is often mild, but may be aggravated by physical exertion. Presti et al. (1990) found that severe post-prostatectomy urinary incontinence ranged from 0.5 to 11%. These researchers noted that stress urinary incontinence affected 0 to 35% of the men studied following radical prostatectomy, and that 0 to 17% of the men studied experienced total urinary incontinence. Other researchers have reported 1 year post-operative findings of 2 to 35% stress urinary incontinence, and 0 to 12% total urinary incontinence (Foote, Yun, & Leach, 1991). The ranges of men experiencing post-prostatectomy urinary incontinence vary, nevertheless, it is clear

that a significant proportion of men experience some degree of loss of bladder control following radical prostatectomy.

Urinary incontinence following prostate removal is not always permanent. Ramon et al. (1993) found that men less than 70 years of age had a shorter interval between surgery and the return of continence. Patients aged 70 years and older experienced stress urinary incontinence for several months more than men younger than 70 years of age. Since the incidence of prostate cancer increases with age, there is more chance of men being in the older age group, thus at greater risk for post-operative urinary incontinence. Ramon et al. (1993) found that 97% of patients less than 70 years of age experienced complete return of urinary control 1 year or more after surgery, compared to 94% of patients aged 70 years or older. The younger men averaged 2.5 months between surgery and return of continence. The men aged 70 years and above averaged 4 months (Ramon et al., 1993). This interval has been noted to vary among patients (Myers, 1991). In another study, 90% of the men experienced complete urinary control 6 months after radical prostatectomy. The remaining 10% experienced stress urinary incontinence. In 1 year's time, however, 95% of these men experienced complete urinary control, with 5% still suffering with stress incontinence (Ramon et al., 1993). Jonler, Madsen, Rhodes, Sall, Messing, and Bruskewitz (1996) found that 87% of their subjects were incontinent 1 month after radical retropubic prostatectomy. After 3 months time, 67% were incontinent, and after 6 months time 63% remained incontinent.

Bladder function studies in men post radical prostatectomy have noted a relation between continence and distal urethral sphincter preservation. The

functional urethral length is the main factor determining continence in the remaining sphincter: the longer the functional urethra, the greater the potential for continence (Ramon et al., 1993). Presti et al. (1990) noted that the urethral sphincter is much less efficient in men with post-prostatectomy incontinence. The fact that membranous urethra length differs among individuals may explain variability in time to urinary continence. Normal bladder function and intact outlet anatomy are crucial to the preservation of continence (Foote et al., 1991).

Control of urine is learned in childhood during toilet training. Losing control as an adult may symbolize a threat to maturity (Ashworth & Hogan, 1993). Yu (1987) reported that incontinent patients exhibited both retarded and agitated symptoms of depression as well as feelings of abandonment and somatic concerns related to urinary incontinence. The sample included predominantly female subjects (90%) from four long-term care facilities. Chiverton, Wells, Brink, and Mayer (1996) also found an increased incidence of depression in women with urinary incontinence as compared to the general population. Again, the sample consisted entirely of women. These studies provide tangible evidence that urinary incontinence is stressful to sufferers.

Breakwell and Walker (1988) studied homebound women aged 65 years or older. Forty-two women, 25 who were continent and 17 incontinent, were studied using three selected domains from the Philadelphia Geriatric Center Multi-level Assessment Instrument. Results revealed that the incontinent women had considerably less social interaction than continent women, described as a difference in quality of life between these two groups of women. The convenience sample warrants caution against generalization to other populations, however, the findings

do have implications related to quality of life. Perhaps if incontinent women have less social interaction (impaired social integrity), then incontinent men do as well.

It is often difficult for incontinence sufferers to be open with friends and/or health-care professionals about their inability to control the loss of urine. In an effort to keep the condition from family and friends, men may withdraw from social activities, particularly those requiring physical exertion (e.g., golf, exercise) which may aggravate leakage of urine. Concealing the inability to control the bodily function of urination may prevent men from enjoying activities which previously played an important role in their lives, potentially affecting their quality of life.

Jonler et al. (1996) evaluated quality of life of men who were incontinent post-prostatectomy. The sample consisted of 25 consecutive patients. Objective measure of urine loss was obtained through 24 hour pad tests performed at designated intervals, along with a patient questionnaire. It was found that a greater number of patients were bothered by urinary incontinence, and limited their daily activity post-operatively than did pre-operatively. It was found, however, that as urinary incontinence improved over time, so did quality of life. The questionnaire used was not described, nor were its reliability and validity reported. An additional finding of interest was a discrepancy in the amount of urine loss noted through the 24 hour pad test in comparison to that which the patients reported. The patients reported less urine loss than that reported by the 24 hour pad tests.

Fowler, Barry, Lu-Yao, Wasson, Roman, and Weinberg (1996) found that increased urinary incontinence correlated with decreased General Health Index and

Mental Health Index scores. Of interest, however, is that 89% of the men who had radical retropubic prostatectomy would still have the surgery if they had the choice to make again.

Impotence. Impotence is also identified as a potential sequela of radical retropubic prostatectomy (RRP). It refers to the ability of a man to attain or maintain an erection that is sufficient for sexual intercourse (Walsh, Partin, & Epstein, 1994). Impotence following RRP is a result of injury to the pelvic nerve plexus which provides autonomic innervation to the penile erectile bodies, the corpora cavernosa (Brendler, 1993). While the primary objective of surgery is to remove all tumor, which may involve the pelvic nerve plexus, nerve-sparing technique is used whenever possible (Brendler, 1993).

Lim, Brandon, Fiedler, Brickman, Boyer, Raub and Soloway (1995) evaluated the quality of life of patients treated with RRP. Post-operatively, 96% of the subjects who underwent RRP were impotent. Walsh, Partin, and Epstein (1994) reported a 32% post-operative impotence rate in subjects who underwent nerve sparing RRP. It is important to note, however, that the definition of potency, degree of erectile dysfunction experienced, and extent of prostate cancer may have varied between these studies, possibly accounting for differences in potency percentages. Walsh, Partin, and Epstein (1994) identified 3 factors that correlated with the return of potency post-operatively: age, clinical and pathologic stage, and surgical technique (preservation or excision of the neurovascular bundle). Potency returned sooner in men younger than 70 years of age. Potency was more likely to be affected in men with more advanced cancer due to increased

likelihood of neurovascular bundle involvement, which, if preserved, contributed to a higher potency rate.

Fowler, Barry, Lu-Yao, Wasson, Roman, and Wennberg (1995) evaluated the effect of RRP on quality of life in 1,072 Medicare patients using the Mental Health Index and the General Health Index. They found that sexual function did not have a statistical significant effect on quality of life. Interestingly, however, post-operative urinary incontinence, particularly requiring the use of pads, had a statistically significant impact on quality of life.

Quality of life. Quality of life is a concept which can be traced back to the time of Aristotle. He proposed that a good life could result from happiness and virtue (Kleinpell, 1991). The actual term "quality of life" came to be used after World War II, to point out that material items alone were not enough to create a good life (Ferrans & Powers, 1985).

Quality of life is a broad, multi-dimensional concept, with many definitions and interpretations, and no agreement as to a consistent standard to which it can be measured (Ferrans, 1990). It refers to physical, psychological, spiritual, and cultural characteristics that describe a personal life satisfaction. (Grant, Padilla, Ferrell, & Rhiner, 1990). Padilla and Grant (1985) further define it as "that which makes life worth living" (p. 52).

The inconsistency in definitions and terms equated with quality of life has made comparisons of research findings difficult. Some researchers believe that both subjective and objective measures should be used to assess quality of life (Ferrans & Powers, 1985). Some suggest that it is the instrument itself that gives definition to the concept in a clinical or research situation (Ferrans, 1990). Others

believe that the definition determines the items on the instrument (Grant et al., 1990). Ferrans (1990) stated that quality of life must be defined clearly to be clinically useful.

Health, one dimension of quality of life, has been shown by previous research to play an important role in determining life satisfaction (Frank-Stromberg, 1988). Disease, injuries, and treatments/therapeutic interventions may affect an individual's life (Grant et al., 1990) making quality of life an important concept in health-care. Its measurement will enable us to better evaluate outcomes of treatment in terms of what matters to the patient rather than the health-care provider. Health-care providers may make decisions based upon what they suppose the quality of life of their patients to be. Research has found that physicians' ratings of patients' quality of life are quite different from the patients' own ratings. Such research into quality of life will assist health-care providers in focusing efforts to enhance what patients determine to be quality of life. Ferrans (1990) reported that there is increasing agreement among researchers that the individual is the only judge of quality of life.

Ferrans (1990) stated that quality of life must have a conceptual framework identifying its various elements in order to be viewed as a multidimensional concept. Ferrans' and Powers' (1990) conceptual framework for quality of life specific to cancer includes four major areas: health and functioning, socioeconomic, psychospiritual, and family. Satisfaction with and the importance of each dimension may vary among people, affecting overall quality of life in different ways (Ferrans & Powers, 1990).

In the past, the success or failure of cancer treatment was measured by patients' survival rate in years. Over the past 10 years, however, the impact of cancer treatment on other areas of patients' lives has been recognized and measured in terms of their effect on quality of life (Braslis, Santa-Cruz, Brickman, & Soloway, 1995).

Definition of Terms

The key concepts identified for this study are listed and defined as follow:

1. Urinary incontinence: the involuntary loss of urine
2. Therapeutic nursing intervention: nursing intervention which influences adaptation in a positive way, toward renewed social well being (Levine, 1973).
3. Supportive nursing intervention: nursing intervention which cannot alter the course of adaptation, but only maintain the status quo (Levine, 1973).
4. Quality of life: a person's overall life satisfaction described by health and functioning, socioeconomic, psychosocial, and family characteristics.
5. Radical prostatectomy: the surgical removal of the entire prostate gland, including the seminal vesicles.
6. Degree of incontinence: the frequency of involuntary urine loss (no urine loss, occasional urine loss, frequent urine loss).

Hypothesis

The resultant hypothethis is the degree of post-prostatectomy urinary incontinence affects the expressed quality of life.

CHAPTER THREE

METHODOLOGY

Research Design

The purpose of this study was to examine the effect of post-prostatectomy urinary incontinence on quality of life. A descriptive research design was used. The chosen design avoided asking subjects to complete two sets of questionnaires, involving more of their time, potentially decreasing participation in the study. Subjects were asked to list current illnesses and indicate if they were incontinent prior to or after surgery. Information on other co-existing conditions which might influence quality of life, such as impotence, was obtained from the demographic questionnaire.

Sample and Setting

A listing of 227 subjects meeting established sample criteria was obtained from the Medical Records Department of a 529-bed acute care hospital in a Midwest city. Sample selection criteria included that subjects were 40 years of age or older, and had undergone radical retropubic prostatectomy between May 1993 and May 1996.

The resultant sample consisted of 128 subjects. The demographic characteristics of the sample are presented in Table 1. Subjects ranged between 43 and 77 years of age ($M = 65.54$, $SD = 6.33$). The majority of the sample were married, white males, 40% of whom had at least a college education.

Table 1

Sample Characteristics

	n	%
Age	M = 65.54	SD = 6.33
Race		
White	124	96.9
Black	4	3.1
Marital Status		
Married	117	91.4
Single, living alone	7	5.5
Single, living with someone close	4	3.1
Education Level		
Elementary	14	10.9
High School	61	47.7
College	33	25.8
Graduate School	19	14.8
No response	1	.8

Subjects of the present study appeared to be relatively healthy, with 77 subjects (60.2%) indicating that they had no concurrent illness. Of the remaining 47 subjects (37.9%), cardiovascular (15%) and musculoskeletal (14%) illnesses were most frequently reported. Four subjects (3.1%) did not respond to this item

on the questionnaire. Additionally, 116 subjects (90.6%) indicated that they were able to walk without limitations, while 4 (3.1%) walked with limitation, 1 (.8%) walked with assistance and 1 (.8%) was wheelchair dependent. Six subjects (4.7%) did not respond to this item on the questionnaire.

Data Collection Tools

Measurement tools included the Ferrans and Powers Quality of Life Index - Cancer Version (Appendix A) and a Urinary Function Questionnaire for Men After Radical Prostatectomy (Appendix B). In addition, subjects were asked to list demographic information and current illnesses, as well as indicate if they were impotent prior to and/or after surgery (Appendix C) in order to identify the effect of extraneous variables on quality of life.

Ferrans and Powers Quality of Life Index - Cancer Version (Q.L.I.-C.V.)

This instrument was a modified version of Ferrans and Powers Quality of Life Index (Q.L.I.) for patients with cancer. The Q.L.I.-C.V. was a 68-item Likert-type tool which consisted of two parts, each containing 34 items representing aspects of life. The items in each part represented 4 domains (subscales); health and functioning, socioeconomics, psychological/spiritual, and family. Part 1 measured satisfaction in each domain, whereas Part 2 measured the importance of each domain to the subject (Appendix A) (Ferrans & Ferrell, 1990).

Subjects evaluated each item using six-point Likert-type scales. These scales ranged from 1 (very dissatisfied) to 6 (very satisfied) for items related to personal satisfaction, and from 1 (very unimportant) to 6 (very important) for items related to personal importance (Ferrans & Ferrell, 1990).

In order to calculate scores, the scale was first centered on zero by subtracting 3.5 from the satisfaction response for each item (Appendix C). This resulted in scores that ranged from one end as high importance and high satisfaction, and at the other end as high importance and low satisfaction. High importance and high satisfaction indicate greater quality of life. High importance and low satisfaction indicate lesser quality of life. The recoded satisfaction score was then multiplied by its paired importance score to obtain the adjusted item scores. The sum of the overall, as well as the adjusted item scores for each subscale were obtained, then divided by the number of items answered to prevent bias due to missing scores. The final score was obtained by adding 15 to every score to eliminate negative values. The possible range for the overall quality of life score and the four subscale scores was 0 to 30 (Ferrans, 1990). Ferrans, Cohen and Smith (1992), obtained a mean quality of life score of 21.67 for a healthy group of subjects using the original Q.L.I..

A multitrait-multimethod design determined correlations of .73 and .79 between assessment of life satisfaction and true feelings about life as a whole, providing construct validity for the assessment of life satisfaction. Ratings of pain, depression, and coping with stress were performed on seven-point scales, using items taken from the Functional Living Index-Cancer. Correlation of overall Q.L.I.-C.V scores and the life satisfaction assessment to determine concurrent validity was .80 (Ferrans, 1990). Table 2 shows that Cronbach's alphas for internal consistency revealed similar results for this researcher as compared with those obtained by Ferrans (1990). Cronbach's alphas for internal consistency of the entire instrument was .95 in Ferrans' study (1990). Using data from the present

study, Cronbach's alpha of .94 was obtained. Alpha coefficients for the 4 subscales ranged from .66 to .93 in the Ferrans' study (1990), whereas they ranged from .51 to .89 in the present study. This data re-established the reliability of the instrument, since the scores were consistently greater than .7 (with the exception of the family subscale in both studies).

Table 2

Internal Consistency of the Q.L.I.-C.V.

	Cronbach's Alpha	
	Ferrans & Powers	Rheault
Entire Instrument	.95	.94
Subscales		
Health & Functioning	.90	.88
Socioeconomics	.84	.85
Psychological/Spiritual	.93	.89
Family	.66	.51

Note. Ferrans' and Powers' data from "Development of a Quality of Life Index for Patients with Cancer," by C. Ferrans, 1990, Oncology Nursing Forum, 17, pp. 15-19.

Urinary Function Questionnaire for Men after Radical Prostatectomy. This instrument was a 14-item instrument developed by Herr (1994), and modified

slightly, with his permission, for more consistent coding of responses (Appendix D). Questions 1 and 2 were demographic in nature, while questions 3 through 6 related to the degree of incontinence experienced by the subject. Questions 7 and 8 related to the management of incontinence, while questions 9 through 14 related to life changes as a result of urinary incontinence. Question 11 used a visual analogue scale to measure how upset the subject was by "urination problems". This was not part of Herr's (1994) original tool. The 100 mm scale ranged from "not upset at all" (0) to "extremely upset" (100). Herr (1994) stated that this questionnaire was validated by retesting in 20 patients, however, details regarding the nature of this validity study were not given. The reliability for internal consistency was found to be good to excellent. Alpha coefficients ranged from .77 to .93 (Herr, 1994). No other information related to reliability, criterion related validity, or construct validity was available.

Demographic and Related Information Questionnaire. This 11-item questionnaire was developed by this researcher to solicit information regarding marital status, race, level of education, and date of surgery (Appendix F). Questions regarding pre-operative and post-operative potency, and other co-morbidities were also included, as it was recognized that additional confounding factors may have influenced quality of life.

Procedure

Data collection began after approval from the Institutional Review Board of Grand Valley State University as well as the Nursing Research Committee and Institutional Review Board of the study hospital. This research proposal was presented to the Urology Section of the study hospital. No subjects were asked to

be excluded from the study by the urologists. A listing of 227 patients who had undergone radical prostatectomy between May, 1994 and May, 1996 was obtained from the Medical Records Department of the study hospital. Questionnaires were mailed with a cover letter which acknowledged the sensitivity of the subject matter, and explained how confidentiality would be maintained (Appendix G). An enclosed self-addressed, stamped envelope was addressed so that the questionnaires could be returned in a confidential manner. Subjects were asked to return the surveys in the envelope provided if they did not wish to participate in the study so that this researcher could tell that the initial mailings were received. A postal card was mailed to subjects approximately 10 days after the mailing of the questionnaires, encouraging subjects to complete and return the tools (Appendix H). Subjects were informed in the cover letter that the return of a completed questionnaire indicated consent.

Two hundred twenty-seven questionnaires were mailed to subjects in July, 1996. A total of 150 questionnaires were returned. One questionnaire was returned blank by the wife of one of the subjects who died from a pulmonary embolism 4 weeks post-operatively. Seventeen additional questionnaires were returned blank. Of the 132 completed questionnaires, representing a 58% return rate, 4 were not used due to a significant number of unanswered questions. One hundred twenty-eight subjects, therefore, returned completed questionnaires which were used in the data analysis process.

CHAPTER FOUR

RESULTS

Hypothesis Testing

Returned questionnaires were numbered sequentially, and data entered into a codebook. Codebook data was then entered into the SPSS statistical program for data analysis. Descriptive statistics of the dependent and independent variables are reported first, followed by the report of hypothesis testing results.

The dependent variable, quality of life, was measured item-by-item at the ordinal level, however, the total score was assumed to be at the interval level. Table 3 displays the means and standard deviations of the overall and subscale quality of life scores. The maximum score for overall quality of life and each subscale was 30. The mean scores of the 4 subscales ranged from 24.85 to 27.28. The mean score of the overall quality of life was 25.72. The quality of life scores for the health and functioning and economics subscales ranged from 11.14 to 30 and 10 to 30 respectively. The psychological/spiritual and family subscales scores ranged from 6.71 to 30 and 15.25 to 30 respectively. Overall quality of life scores ranged from 11.13 to 30.

The independent variable, continence/incontinence post-prostatectomy, was measured at the nominal level. Subjects were self-assigned to one of 3 groups, no incontinence, occasional incontinence or frequent incontinence. The results are displayed in Table 4. Post-operative urinary incontinence was experienced by 102 (80%) subjects. The majority (55.4%) of the subjects were continent, whereas 44.6% were incontinent at the time of the study (between 6 and

30 weeks after surgery). Therefore, 71 (35.4%) of the subjects who experienced post-operative urinary incontinence regained bladder control prior to the time of the study.

Table 3

Means, Standard Deviations, and Ranges of Quality of Life Scores

	Range	M	SD
Overall Score	11.13 - 30	25.72	3.36
Subscales			
Health & Functioning	11.14 - 30	24.85	3.95
Socioeconomics	10.00 - 30	26.19	3.72
Psychological/Spiritual	6.71 - 30	26.28	3.81
Family	15.25 - 30	27.28	2.77

Table 4

Frequencies and Percentages of Continence/Incontinence

	n	%
No incontinence	71	55.4
Occasional incontinence	43	33.6
Frequent incontinence	14	11.0

ANOVA was used to determine whether there was a significant difference in quality of life among the 3 groups of subjects. Table 5 displays the ANOVA results, which indicated a significant difference in the overall and subscale quality of life scores

Table 5
Analysis of Variance for the Variables

Variable	<i>MS</i> Between Groups	<i>MS</i> Within Groups	<i>F</i>	<i>p</i>
Overall Quality of Life	69.62	10.34	6.73	.002
Subscales				
Health & Functioning	89.14	14.40	6.19	.003
Socioeconomics	72.34	12.89	5.61	.005
Psychological/Spiritual	70.51	13.64	5.17	.007
Family	24.28	74.15	3.28	.041

Since the overall *F ratio* was significant, a Scheffe' test was used as a post-hoc measure. A significant difference in the overall quality of life scores was found between subjects who had no or occasional incontinence and those with frequent incontinence. Similar results were found with the health and functioning, socioeconomics and psychological/spiritual subscales. A significant difference in

the family subscale quality of life score was found between subjects who had no incontinence and those who had occasional or frequent incontinence. Those with no incontinence had higher quality of life scores than those with occasional or frequent incontinence. Table 6 displays these results.

Table 6

Means of Quality of Life Scores of Three Groups By Urine Control Status

Domain	Groups		
	No Incontinence	Occasional Incontinence	Frequent Incontinence
Overall Quality of Life	26.26 _a	26.45 _a	23.88 _b
Subscales			
Health & Functioning	25.54 _a	25.46 _a	22.77 _b
Socioeconomics	26.67 _a	27.11 _a	24.34 _b
Psychological/Spiritual	26.74 _a	27.20 _a	24.45 _b
Family	27.71 _a	27.39 _{a,b}	26.19 _b

Note: Means in the same row that do not share subscripts differ at the $p < .05$ in Scheffé' test.

Additional Findings of Interest

It was recognized that confounding factors, such as patient age, time interval after surgery, and other potential post-operative sequela (e.g., impotence)

may have impacted the quality of life score. Data was collected regarding impotence status. Table 7 displays the data obtained regarding pre-operative and post-operative impotence status. The majority of the subjects (91.7%) were impotent at the time of the study. Five of the subjects (3.9%) were not impotent at the time of the study. One hundred two of the subjects (79.6%), were not impotent prior to radical retropubic prostatectomy. One subject (0.8%) was impotent prior to, but not after the surgery. Four subjects (3.1%) did not respond to the items on the questionnaire.

Table 7

Impotence Status Before and After Radical Retropubic Prostatectomy (RRP)

	n	%
Not Impotent Before RRP	102	79.6
Not Impotent Before, Impotent After RRP	98	76.5
Not Impotent Before, Not Impotent After RRP	4	3.1
Impotent Before RRP	23	18.7
Impotent Before, Not After RRP	1	0.8
Impotent Before & After RRP	22	17.1
Total Impotent After RRP	120	91.7
No Response	4	3.1

A visual analog scale was used to measure how upset subjects were with urination problems. The results of the visual analog scale ranged from 0 (33.9%), indicating not upset at all, to 96 (1.6%) indicating near extremely upset. The mean score was 12.18 (SD = 21.88), indicating that subjects overall did not appear to be very upset.

One hundred six (85.5%) of the subjects who responded indicated that they believed they were cured of prostate cancer. One hundred one respondents (90.2%) indicated that, given the choice again, and knowing that they would have their degree of incontinence, they would have still have undergone radical retropubic prostatectomy.

CHAPTER FIVE

DISCUSSION AND IMPLICATIONS

Discussion of Findings

The results of the ANOVA presented in Chapter 4 showed a significant difference in the overall and subscale quality of life scores among the 3 groups of subjects (no incontinence, occasional incontinence, and frequent incontinence). The research hypothesis that the quality of life is affected by degree of urinary incontinence, therefore, is supported.

It was surprising to note that only the family subscale of the quality of life score was significantly different between subjects who were continent and those with occasional or frequent incontinence. The life aspects evaluated in terms of satisfaction and importance to the subject for this domain included: family health, children, family happiness, and spouse. This subscale also had the highest mean quality of life score (27.78) ($SD = 2.77$). The mean age of the sample population was 65.54 years ($SD = 6.33$). Children are likely to be no longer dependent. Many subjects indicated that they were retired, which might also have allowed them more time to spend with their spouse/children. The reason for the difference in quality of life score for the continent subjects in relation to this domain, as compared to the incontinent subjects, cannot be surmised by this researcher.

It was also interesting to note that for the overall quality of life score, and those of the remaining subscales, the significant difference occurred between the groups who had no or occasional incontinence and that with frequent incontinence.

This may imply that occasional incontinence was easier to manage than a more frequent problem, which may have been more limiting to activity.

Herr (1994) found that 26% of the 50 men studied were limited in physical activity and activities of daily living as a result of radical retropubic prostatectomy, which he surmised, seriously affected their quality of life. This study found 1 subject (0.8%) who replied that he limited his activity when asked how urine leakage was controlled. When asked what they no longer do because of urine leakage, 118 (92.2%) denied giving up an activity due to incontinence, 6.2% replied that they limited activity due to loss of urine, and 2 (1.6%) did not respond to the item on the questionnaire. Interestingly, items regarding physical independence, control over own life, and leisure activities are components of the health and functioning subscale. This subscale had the lowest quality of life score ($M = 24.85$, $SD = 3.95$), which may imply a decreased satisfaction in these areas because of urine leakage.

The present study found that 11% of the sample had frequent incontinence. This finding was consistent with the 0.5 to 11% incidence of severe post-prostatectomy urinary incontinence found by Presti et al. (1990). It is not known if the subjects in the 2 studies were categorized in the same manner.

The finding that 91.7% of the subjects in the present study were impotent at the time of the study was surprising. This percentage was much higher than most of the findings referenced in the literature review, with the exception of Lim, Brandon, Fiedler, Brickman, Boyer, Raub, and Soloway (1995). Their subjects demonstrated a 96% post-operative impotence rate. Again, many factors may account for the discrepancy between study findings. This study did not evaluate

the extent of the disease, nor whether the surgeon preserved or excised the neurovascular bundles, as most likely only the surgeon, operative report or pathology report would have been sources of this information.

This researcher was not able to evaluate the quality of life scores of men who were impotent after radical retropubic prostatectomy as compared to men who were not impotent after surgery due to the extreme inequality in numbers (120 impotent, 4 not impotent, 4 no response). A two-way ANOVA to examine the effect of impotence, as well as the interaction effect of urinary incontinence and impotence on quality of life could have been done had the groups (impotent, not impotent) been more equal in number. The aspects of life on the QLI-CV related to sexual function, were in the health and functioning subscale. Again, this subscale had the lowest quality of life score ($M = 25.01$, $SD 3.20$). It is quite possible that impotence status may have had an impact on the quality of life score for this subscale. The literature review, however, references a study (Fowler, Barry, Lu-Yao, Wasson, Roman, & Wennberg, 1995) in which post-operative impotence did not significantly impact quality of life.

Structural integrity (urinary continence) was affected in 102 (80%) of the 128 subjects initially following surgery, based on returned questionnaires. Adaptation methods, such as Kegel exercises, absorbent pads, medication, and time may have helped to re-establish structural integrity in 71 subjects. The remaining 57 (44.6%) subjects with urinary incontinence may require further therapeutic and supportive interventions to facilitate adaptation.

In relation to social integrity, the lowest quality of life score for a subscale was that of the health and functioning category, which contained questions

regarding leisure activities and travel. Such activities are often avoided or limited by those with urinary incontinence. Again, the significant difference in this category was found between subjects with no or occasional incontinence and those with frequent loss of urine. More frequent incontinence may have a greater impact on satisfaction with leisure and travel activities, perhaps because it may limit the ability to perform these activities. Individuals may try to hide the embarrassment of urine leakage from friends, using avoidance as a coping mechanism.

The mean quality of life scores were surprising to the researcher. Ferrans, Cohen, and Smith (1992) obtained a mean overall quality of life score of 21.67 (SD = 3.67) for a healthy group of subjects, as compared to a mean overall quality of life score of 25.72 (SD = 3.36) for subjects in the present study. Perhaps this is related to the finding that 85.5% of the subjects in the present study replied that they believed they were cured of prostate cancer. The subjects may feel that incontinence and/or impotence are minor consequences in exchange for being cured of cancer. Another possibility is that the subjects who responded were more satisfied with the outcome of their procedure than those who did not respond. The strong religious faith of the community in which the data was collected may have had an impact on quality of life scores as well. Several responders indicated next to some of the items on the Q.L.I.-C.V. that they were in God's hands.

Limitations

History was not felt to be a threat to the internal validity of this study. A local prostate cancer support group had been in existence for approximately 3 years, and yearly prostate cancer screening/education had occurred locally for 6 years prior to the initiation of this study. The subjects had their surgery within the

past 2 years, at which time both the support group and cancer screening/education were in place. Although it is possible, this researcher is not aware of any simultaneous media event which may have threatened the internal validity of this study.

Subjects were selected from a list of patients who had undergone radical prostatectomy surgery in the past 2 years at a 529-bed acute-care hospital in a Midwest city. Since a convenience sample was used, there was a risk of biased findings that were not reflective of the overall population. One method of determining if the 128 (56%) subjects who completed questionnaires were representative of the target population is to compare the demographic data from of each group (responders versus non-responders). Since 99 (44%) did not complete the questionnaires, the related demographic data was not obtained. The findings of this study may not be generalizable to the target population, therefore, since the sample of the present study may be biased.

The fact that the subjects had surgery at the same hospital may have threatened validity, as the practice at the study hospital may have differed from that of other institutions. The radical prostatectomy surgeries were performed by a diverse group of 8 urologists, however, which may have somewhat lessened the threat to validity. Another threat to validity was the fact that the sample was a convenience rather than random sample.

Maturation was an actual threat to the internal validity of this study, as men who were initially incontinent after surgery may have regained bladder control by the time the questionnaires were received post-operatively. In addition, one subject relocated without an available forwarding address, and one subject expired

four weeks after surgery. Incontinent status was not known for the 77 subjects who did not return questionnaires. This also may have contributed to the threat of mortality.

A pre-test post-test design would have provided a pre-operative quality of life baseline to which post-operative impact may have been compared, however, such a design would have entailed a more lengthy, complex study. The chosen design avoided asking subjects to complete two sets of questionnaires, involving more of their time, and potentially decreasing participation in the study.

Implications

The results of this study are important in terms of awareness of how a medical intervention (radical retropubic prostatectomy) not only impacts a disease process (prostate cancer), but impacts a whole person as measured by quality of life. As the literature review addressed, many men undergoing radical retropubic prostatectomy never felt adverse symptoms prior to an intervention that can leave them dealing with sequela in its aftermath. It is important that we as healthcare providers are sensitive to this issue. Patients need to be informed up front of the potential sequela of surgery. Those patients who select surgery as their treatment of choice, must be presented with strategies for managing or adapting to potential sequela. Such efforts require not only an awareness by practitioners, but systems support from administration (e.g., funding, time). Continued research will provide the foundation for such support, as well as provide benchmarks to which current practice can be compared and adaptation evaluated.

Recommendations

Several recommendations are offered for future related research. A longitudinal study in which questionnaires are completed by subjects prior to surgery and then at designated intervals after surgery would strengthen the study as it would provide a baseline to which post-operative findings could be compared. Replication of this study in other settings would strengthen its external validity. This researcher recommends that the study also be replicated with a focus on the sequela of impotence, using 2-way ANOVA to examine the individual and combined effects of impotence and incontinence status on quality of life. This would provide a better understanding of the actual effect that impotence and incontinence have on quality of life.

Summary

As healthcare professionals are privileged to care for patients, they must be aware that treatments themselves may have residual effects. It is important that the outcomes of interventions on diagnoses and disease processes, as well as on patients as people are evaluated. Only then are healthcare professionals truly treating the patient.

APPENDICES

APPENDIX A

Ferrans and Powers Quality of Life Index: Cancer Version

Part I. For each of the following, please choose the answer that best describes how satisfied you are with that area of your life. Please mark your answer by circling the number. There are no right or wrong answers.

HOW SATISFIED ARE YOU WITH:	Very Dissatisfied	Moderately Dissatisfied	Slightly Dissatisfied	Slightly Satisfied	Moderately Satisfied	Very Satisfied
1. Your health?	1	2	3	4	5	6
2. The health care you are receiving?	1	2	3	4	5	6
3. The amount of pain that you have?	1	2	3	4	5	6
4. The amount of energy you have for everyday activities?	1	2	3	4	5	6
5. Your physical independence?	1	2	3	4	5	6
6. The amount of control you have over your life?	1	2	3	4	5	6
7. Your potential to live a long time?	1	2	3	4	5	6
8. Your family's health?	1	2	3	4	5	6
9. Your children?	1	2	3	4	5	6
10. Your family's happiness?	1	2	3	4	5	6
11. Your relationship with your spouse/significant other?	1	2	3	4	5	6
12. Your sex life?	1	2	3	4	5	6
13. Your friends?	1	2	3	4	5	6
14. The emotional support you get from others?	1	2	3	4	5	6
15. Your ability to meet family responsibilities?	1	2	3	4	5	6
16. Your usefulness to others?	1	2	3	4	5	6

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HOW SATISFIED ARE YOU WITH:	Very Dissatisfied	Moderately Dissatisfied	Slightly Dissatisfied	Slightly Satisfied	Moderately Satisfied	Very Satisfied
17. The amount of stress or worries in your life?	1	2	3	4	5	6
18. Your home?	1	2	3	4	5	6
19. Your neighborhood?	1	2	3	4	5	6
20. Your standard of living?	1	2	3	4	5	6
21. Your job?	1	2	3	4	5	6
22. Not having a job?	1	2	3	4	5	6
23. Your education?	1	2	3	4	5	6
24. Your financial independence?	1	2	3	4	5	6
25. Your leisure time activities?	1	2	3	4	5	6
26. Your ability to travel on vacations?	1	2	3	4	5	6
27. Your potential for a happy old age/retirement?	1	2	3	4	5	6
28. Your peace of mind?	1	2	3	4	5	6
29. Your personal faith in God?	1	2	3	4	5	6
30. Your achievement of personal goals?	1	2	3	4	5	6
31. Your happiness in general?	1	2	3	4	5	6
32. Your life in general?	1	2	3	4	5	6
33. Your personal appearance?	1	2	3	4	5	6
34. Yourself in general?	1	2	3	4	5	6

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Part II. For each of the following, please choose the answer that best describes how important that area of life is to you. Please mark your answer by circling the number. There are no right or wrong answers.

HOW IMPORTANT TO YOU IS:	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Slightly Important	Moderately Important	Very Important
1. Your health?	1	2	3	4	5	6
2. Health care?	1	2	3	4	5	6
3. Being completely free of pain?	1	2	3	4	5	6
4. Having enough energy for everyday activities?	1	2	3	4	5	6
5. Your physical independence?	1	2	3	4	5	6
6. Having control over your life?	1	2	3	4	5	6
7. Living a long time?	1	2	3	4	5	6
8. Your family's health?	1	2	3	4	5	6
9. Your children?	1	2	3	4	5	6
10. Your family's happiness?	1	2	3	4	5	6
11. Your relationship with your spouse/significant other?	1	2	3	4	5	6
12. Your sex life?	1	2	3	4	5	6
13. Your friends?	1	2	3	4	5	6
14. The emotional support you get from others?	1	2	3	4	5	6
15. Meeting family responsibilities?	1	2	3	4	5	6
16. Being useful to others?	1	2	3	4	5	6
17. Having a reasonable amount of stress or worries?	1	2	3	4	5	6
18. Your home?	1	2	3	4	5	6

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HOW IMPORTANT TO YOU IS:	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Slightly Important	Moderately Important	Very Important
19. Your neighborhood?	1	2	3	4	5	6
20. A good standard of living?	1	2	3	4	5	6
21. Your job?	1	2	3	4	5	6
22. To have a job?	1	2	3	4	5	6
23. Your education?	1	2	3	4	5	6
24. Your financial independence?	1	2	3	4	5	6
25. Leisure time activities?	1	2	3	4	5	6
26. The ability to travel on vacations?	1	2	3	4	5	6
27. Having a happy old age/retirement?	1	2	3	4	5	6
28. Peace of mind?	1	2	3	4	5	6
29. Your personal faith in God?	1	2	3	4	5	6
30. Achieving your personal goals?	1	2	3	4	5	6
31. Your happiness in general?	1	2	3	4	5	6
32. Being satisfied with life?	1	2	3	4	5	6
33. Your personal appearance?	1	2	3	4	5	6
34. Are you to yourself?	1	2	3	4	5	6

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APPENDIX B

APPROVAL LETTER FOR USE OF QLI-CV

UIC The University of Illinois
at Chicago

Department of Medical-Surgical Nursing (M/C 802)
College of Nursing
845 South Damen Avenue, 7th Floor
Chicago, Illinois 60612-7350
(312) 996-7900

October 13, 1994

Ms. Marti Rheault
Butterworth Hospital
321 Ballpark NW
Grand Rapids, MI 49504

Dear Ms. Rheault:

Thank you for your interest in the Ferrans and Powers Quality of Life Index (QLI). I have enclosed the cancer version of the QLI and the computer program for calculating scores. I also have included a list of the weighted items that are used for each of four subscales: health and functioning, social and economic, psychological/spiritual, and family, as well as the computer commands used to calculate the subscale scores. The same steps are used to calculate subscale scores and overall scores.

There is no charge for use of the QLI. You have my permission to use the QLI for your study. In return, I ask that you send me any publications of your findings using the QLI. Such reports are extremely important to me.

If I can be of further assistance, please do not hesitate to contact me. I wish you much success with your research.

Sincerely,


Carol Estwing Ferrans, PhD, RN, FAAN
Assistant Professor

APPENDIX C

Instructions for Scoring the Q.L.I.- C.V.

<u>STEPS</u>	<u>CALCULATIONS</u>
1. Recode satisfaction scores	To center the scale on zero, subtract 3.5 from the satisfaction response for each item.
2. Adjust item scores.	To obtain adjusted item scores, multiply the recoded satisfaction score by the importance score, item by item.
3. Obtain sum from overall adjusted score.	Sum all adjusted item scores.
4. Obtain sum for health and functioning subscale.	Sum the adjusted scores for the individual items of the health and functioning subscale [listed on sheet entitled "Subscales of the Quality of Life Index (QLI)].
5. Obtain sum for socioeconomic subscale.	Sum the adjusted scores for the individual items of the socioeconomic subscale.
6. Obtain sum for psychological/spiritual subscale.	Sum the adjusted scores for the individual items of the psychological/spiritual subscale.
7. Obtain sum for family subscale.	Sum the adjusted scores for the individual items of the family subscale.
8. Obtain final overall score and subscale score.	To prevent bias due to missing scores, divide each sum of items obtained in steps 3 through 7 by the number of items answered. To eliminate negative values, add 15 to every score to get the final score. (Range possible for final overall quality of life score and four subscale scores is 0 to 30.)

APPENDIX D

Urinary Function Questionnaire for Men after Radical Prostatectomy

- 1.) What is your age? _____
- 2.) When did you have a radical prostatectomy (removal of the prostate gland)?
_____, 19____
- 3.) Please circle which statement describes your urinary control **during the past week**:
 - (0) Never had a problem with being incontinent (uncontrolled loss of urine)
 - (1) Occasional incontinence, no more than once per week
 - (2) Incontinence occurring several times per week
 - (3) Frequent incontinence, occurring once per day
 - (4) No urinary control, always incontinent
- 4.) **During this past week**, did you use any of the following to either prevent or protect you from leaking urine? (Please circle all that apply)
 - (1) Pad in underwear
 - (2) Clamp
 - (3) Collection device (condom catheter, pouch/bag)
 - (4) Medications
 - (5) Limited activity in order to be near bathroom
 - (6) Other (please describe) _____
- 5.) If you leak urine, when is it likely to happen (circle all that apply):
 - (1) On exertion (like when you get up or stretch)
 - (2) During the night only
 - (3) Only when in upright position
 - (4) Other (please describe) _____

6.) a) If you wear pads, how many do you use during any 24 hour period?

b) When do you wear pads? (Please circle all that apply)

(1) at all times

(2) during the night

(3) when exercising

(4) when leaving the home

(5) other (please describe) _____

c) Are the pads you discard completely soaked?

_____(1) yes _____(2) no

7.) a) Were you taught how do "Kegel" exercises after your surgery
(contracting your pelvic muscles in order to improve urinary control)?

_____(1) yes _____(2) no

b) Did you ever practice "Kegel" exercises after your surgery

_____(1) yes _____(2) no

c) If Yes: How many weeks did you actively practice?

(1) Less than one week

(2) 1-2 weeks

(3) 3-4 weeks

(4) Over 5 weeks

d) Did these exercises help with controlling your urination?

(1) Yes, no longer leak urine

(2) Yes, only occasional urine leakage (no more than once/week)

(3) Yes, but still leak urine every day

(4) No, no noticeable improvement

8.) What other ways to control your urine have you tried? (Please describe):

9.) Is there anything you **physically cannot** do now because of urine leakage that you could do before surgery? (Please describe):

10.) Is there anything you **could physically do** now but **avoid** because of urine leakage (Please describe):

11.) How upset have you been by any of your problems with urination? Please draw an "X" at the point on the line which corresponds with how upset you are.

Not upset _____ Extremely
at all upset

12.) Do you believe you are cured of prostate cancer?

 (1) yes (2) no (3) don't know

13.) If you knew that you would have your degree of urine leakage, would you have had the radical prostatectomy?

 (1) yes (2) no (3) not sure

14.) Do you feel that understanding how urine leakage might occur after surgery will help you cope with your problem?

_____ (1) yes _____ (2) no _____ (3) don't know

APPENDIX E

APPROVAL LETTER FOR USE OF URINARY FUNCTION
QUESTIONNAIRE

October 9, 1994

Dear Mr. Herr,

I am writing to request permission to utilize the *Urinary Function Questionnaire for Men After Radical Prostatectomy* which appeared in your article, *Quality of Life of Incontinent Men After Radical Prostatectomy* from the March 1994 issue of The Journal of Urology. I am in the process of designing a similar study for my Master's of Science in Nursing thesis.

Your reply may be mailed to me at the following address:

Marti Rheault, BSN, CURN
c/o Butterworth Hospital
100 Michigan N.E.
Grand Rapids, MI 49503
(616)774-1346

Sincerely,

Marti Rheault

Marti Rheault, BSN, CURN

WJ
OK
Harvey Herr

APPENDIX F

Demographic and Related Data

Please answer each question as correctly as possible.

1. Marital status:

- (1) ☐ Married
- (2) ☐ Single/divorced/widowed, living alone
- (3) ☐ Single/divorced/widowed, living with someone you are close to

2. Race:

- (1) ☐ White
- (2) ☐ Black
- (3) ☐ Hispanic
- (4) ☐ Asian/Pacific Islander
- (5) ☐ American Indian

3. Highest diploma/degree completed

- (1) ☐ Elementary school
- (2) ☐ High school
- (3) ☐ College
- (4) ☐ Graduate School

5. Did you experience **any** urine leakage prior to your radical prostatectomy (removal of the prostate gland)?

☐ (1) Yes ☐ (2) No

6. a. Did you experience **any** urine leakage after your radical prostatectomy (removal of the prostate gland)?

☐ (1) Yes ☐ (2) No

b. If you were incontinent after your radical prostatectomy (removal of the prostate gland, what was done to regain control of your urine?

7. Have you had long-term or permanent urine leakage since your radical prostatectomy (removal of the prostate gland)?

____(1)Yes ____ (2)No

8. Were you impotent (unable to have or keep an erection) prior to your radical prostatectomy (removal of the prostate gland)?

____(1)Yes ____ (2)No

9. Are you impotent (unable to have or keep an erection) after your radical prostatectomy (removal of the prostate gland)?

____(1)Yes ____ (2)No

10. Please list any illnesses, disabilities and conditions that you currently have:

11. Please place a check next to the item which best describes your ability to move.

- (1) ____ Bedridden
- (2) ____ Confined to wheelchair
- (3) ____ Able to walk with assistance (walker, cane, crutches)
- (4) ____ Able to walk alone with limitation
- (5) ____ Able to walk alone with no limitation

APPENDIX G

Cover Letter

July 12, 1996

Dear Sir,

I am a Certified Urology Registered Nurse at Butterworth Hospital, and in the graduate nursing program at Grand Valley State University. I am conducting a research study to see if the quality of life for men is affected after removal of the prostate gland (radical prostatectomy). This is in follow-up to your surgery performed at Butterworth Hospital. The information gained from this study may help nurses and doctors meet the needs of prostate cancer patients who have had or will have this procedure performed.

The study involves answering questions on the enclosed questionnaires. It will take approximately 30 minutes of your time to answer the questions. There will be over 200 patients participating in this study. Your participation is voluntary. You may decide not to participate. The information that you provide will be kept confidential to the extent permitted by law. The questionnaires do not use any identifiers. A stamped, self-addressed envelope is provided for you to return the questionnaires. **Please do not sign your name or identify yourself in any way on the questionnaires or envelope.**

If you have any questions about this research study, you may phone me at (616) 391-1346. If you have any questions about your rights as a patient, you may phone Linda Pool at (616) 391-1291. You may choose not to participate in this study by returning questionnaires unanswered in the envelope provided. Return of completed questionnaires indicates your consent to participate in my study. **I would appreciate the return of completed questionnaires by August 2, 1996.** Thank you.

Sincerely,



Marti Rheault, BSN, CURN

APPENDIX H

Postal Card Reminder

Dear Sir,

This post card comes as follow-up to the survey that was mailed to you two weeks ago. If you have completed and returned the survey, thank you. I appreciate your support. If you have not returned the survey, please consider doing so by August 2, 1996.

Sincerely,
Marti Rheault, BSN, CURN

APPENDIX I

Funding

The estimated costs for this research are listed as follows. A grant from Sigma Theta Tau - Kappa Epsilon Chapter will provide for funding.

duplication of instruments	\$80.00
postage	\$200.00
data entry/analysis	\$200.00
	<hr/>
	\$480.00

APPENDIX J

APPROVAL BY HOSPITAL RESEARCH COMMITTEE

Butterworth
HOSPITAL

December 28, 1995

Marti Rheault, BSN, RN

Dear Marti,

The Nursing Research Committee has completed review of your research proposal *The Effect of Post-Prostatectomy Urinary Incontinence on Quality of Life: A Descriptive Correlational Study* at the December 19, 1995 meeting. The committee has some recommendations for you to consider for your study. We will leave it up to you whether you want to include them into your study protocol. In addition, there are required changes that must be made in the informed consent form prior to presentation of the proposal to the Hospital Research Committee.

Recommendations:

1. Include a discussion of impotence earlier in the proposal. It seems to "appear" later in the discussion with no previous mention of the topic.
2. Consider a systematic sample.
3. Consider "tightening" up the descriptors of levels of incontinence (Appendix B, page 26).

Requirement:

1. An Informed Consent which meets the requirements of our Human Subjects will need to be formulated. Please contact Linda Pool in the Research Office to work on the design of the form.

Upon completion of the consent form and any other changes that you make in the proposal, please forward a copy of the proposal to me. You are then ready to proceed to the Hospital Research and Human Subjects Committee. Contact Linda Pool for these arrangements.

As per Nursing Research Committee policy, I am assigning to you a sponsor who will serve as a resource to you during your project. Louise O'Donnell, MSN, RN, Neuroscience Clinical Nurse Specialist will serve in this capacity. Please contact Louise when you are ready to begin data collection and keep her informed of your progress during the study.

Upon completion of your research study, forward a copy of your research to our library. Also, we will look forward to an oral presentation in a format appropriate to the topic and in timing with other educational offerings.

Please feel free to call me if you have any questions or need further clarification. I can be reached at 391-1625, or 391-1622 and ask to have me paged.

Sincerely,

A black rectangular box redacting the signature of Linda D. Urden.

Linda D. Urden, DNSc, RN, CNA
Administrative Director, Nursing Services
Quality, Education and Research

Chairperson, Nursing Research Committee

c: Linda Pool, Research Office
Louise O'Donnell, MSN, RN
Katherine Kim, Ph.D., RN- GVSU-KSON

APPENDIX K

APPROVAL BY HUMAN SUBJECTS COMMITTEE



1 CAMPUS DRIVE • ALLENDALE MICHIGAN 49401-9403 • 616/895-6611

February 22, 1996

Martha E. Rheault
321 Ball Park Blvd. NW
Grand Rapids, MI 49504

Dear Martha:

The Human Research Review Committee of Grand Valley State University is charged to examine proposals with respect to protection of human subjects. The Committee has considered your proposal, "*The Effect of Post Prostatectomy Urinary Incontinence on Quality of Life*", and is satisfied that you have complied with the intent of the regulations published in the Federal Register 46 (16): 8386-8392, January 26, 1981.

Sincerely,

A black rectangular box redacting the signature of Paul Huizenga.

Paul Huizenga, Chair
Human Research Review Committee

LIST OF REFERENCES

REFERENCES

- American Cancer Society. (1993). Facts on Prostate Cancer. Author.
- Ashworth, P. & Hagan, M. (1993). The meaning of incontinence: A qualitative study of non-geriatric urinary incontinence sufferers. Journal of Advanced Nursing, 18, 1415-1423.
- Breakwell, S. & Walker, S. (1988). Differences in physical health, social interaction and personal adjustment between continent and incontinent homebound aged women. Journal of Community Health Nursing, 5, 19-31.
- Braslis, K.; Santa-Cruz, C.; Brickman, A.; & Soloway, M. (1995). Quality of life 12 months after radical prostatectomy. British Journal of Urology, 75, 48-53.
- Brendler, C. (1993). Technique of anatomical radical cystoprostatectomy with preservation of sexual function. AUA Update Series, 12, 106-111.
- Chiverton, P.; Wells, T.; Brink, C.; & Mayer, R. (1996). Psychological factors associated with urinary incontinence. Clinical Nurse Specialist, 10, 229-233.
- Ferrans, C. (1990). Quality of life: Conceptual issues. Seminars in Oncology Nursing, 6, 248-254.
- Ferrans, C. (1990). Development of a quality of life index for patients with cancer. Oncology Nursing Forum, 17, 15-19.
- Ferrans, C. & Powers, M. (1985). Quality of life index: Development and psychometric properties. Advances in Nursing Science, 8(1), 15-24.
- Ferrans, C., Cohen, F., & Smith, K. (1992). Loss, Grief, and Care, 5(3/4), 23-32.
- Foote, J., Yun, S., & Leach, G. (1991). Post-prostatectomy incontinence: Pathophysiology, evaluation and management. Urologic Clinics of North America, 18, 229-241.

Fowler, F.; Barry, M.; Lu-Yao, G.; Wasson, J.; Roman, T.; & Wennberg, J. (1995). Effect of radical prostatectomy for prostate cancer on patient quality of life: Results from a medicare survey. Urology, 45, 1007-1015.

Frank-Stromberg, M. (1984). Selecting an instrument to measure quality of life. Oncology Nursing Forum, 11, 88-91.

Frank-Stromberg, M. (1988). Single instruments for measuring quality of life. In Frank-Stromberg (Ed.), Instruments for Clinical Nursing Research (pp. 79-95). Norwalk, CT: Appleton & Lange.

Freedman, A.; Hahn, G.; & Love, N. (1996). Follow-up after therapy for prostate cancer. Treating the problems and caring for the man. Post-Graduate Medicine, 100, 133-134, 136.

Grant, M.; Padilla, G., Ferrell, B., & Rhiner, M. (1990). Assessment of quality of life with a single instrument. Seminars in Oncology Nursing, 6, 260-270.

Gray, M. (1992). Genitourinary Disorders. St. Louis: Mosby Year Book. 233-245.

Haab, F.; Yamaguchi, R.; & Leach, G. (1996). Post-prostatectomy incontinence. Urologic Clinics of North America, 23, 447-457.

Herr, H. (1994). Quality of life of incontinent men after radical prostatectomy. The Journal of Urology, 151, 652-654.

Jonler, M.; Madsen, F.; Rhodes, P.; Sall, M.; Messing, E.; & Bruskewitz, R. (1996). A retrospective study of quantification of urinary incontinence and quality of life in patients undergoing radical retropubic prostatectomy. Urology, 48, 433-440.

Kleinpell, R. (1991). Concept analysis of quality of life. Dimensions of Critical Care Nursing, 10, 223-229.

Leandri, P.; Rossignal, G.; Gautier, J.R.; & Ramon, J. (1992). Radical retropubic prostatectomy: Morbidity and quality of life. The Journal of Urology, 147, 883-887.

Levine, M.E. (1966). Adaptation and assessment: A rationale for nursing intervention. American Journal of Nursing, 66 (), 2450-2453.

Levine, M.E. (1973). Introduction to Clinical Nursing (2nd ed.). Philadelphia: F. A. Davis.

Levine, M.E. (1996). The conservation principles: A retrospective. Nursing Science Quarterly, 9, 38-41.

Lim, A.; Brandon, A.; Fiedler, J.; Brickman, A.; Boyer, C.; Raub, W.; & Soloway, M. (1995). Quality of life: Radical prostatectomy versus radiation therapy for prostate cancer. The Journal of Urology, 154, 1420-1425.

Moul, J. (1994, March). An important goal of prostatectomy: Minimizing incontinence. Contemporary Urology, 15-28.

Myers, R. (1991). Male urethral sphincteric anatomy and radical prostatectomy. Urologic Clinics of North America, 18, 211-225.

Padilla, G. & Grant, M. (1985). Quality of life as a cancer nursing outcome variable. Advances in Nursing Science, 8(1), 45-60.

Presti, J., Schmidt, R., Narayan, P., Carroll, P., & Tanagho, E. (1990). Pathophysiology of urinary incontinence after radical prostatectomy. The Journal of Urology, 143, 975-978.

Ramon, J., Leandri, P., Rossignol, G., & Gautier, J.R. (1993). Urinary continence following radical retropubic prostatectomy. British Journal of Urology, 71(1), 47-51.

Steiner, M., Morton, R., & Walsh, P. (1991). Impact of anatomical radical prostatectomy on urinary continence. The Journal of Urology, 145, 512-515.

Yu, L. (1987). Incontinence stress index: Measuring psychological impact. Journal of Gerontological Nursing, 13(7), 18-25.

Walsh, P.; Partin, A.; & Epstein, J. (1994). Cancer control and quality of life following anatomical radical retropubic prostatectomy: Results at 10 years. The Journal of Urology, 152, 1831-1836.

Wesley, R. & McHugh, M. (1992). Nursing theories and models. Springhouse, PA: Springhouse Corporation, 55-58.