

A STUDY OF THE EFFECT OF STRESS INCONTINENCE AND BLADDER  
RETRAINING ON OLDER WOMEN'S PERCEIVED SELF-ESTEEM

By

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### Abstract

The purpose of this descriptive study was to determine the existence of a relationship between perceptions of global self-esteem and stress incontinence episodes in a group of older women participating in a bladder retraining protocol.

A convenience sample of fifteen older women was obtained. The participants constituted a group of well older women who ranged in age from 63 years to 82 years. All participants were living in the community and experiencing urinary incontinence.

The University of British Columbia Model for Nursing was the conceptual framework which guided the focus of the study. The model views the individual as a behavioural system composed of nine interrelated and interdependent subsystems. This study focused on the interrelationship of the excretory and ego-valuative subsystems. The theory of self-efficacy, as outlined by Bandura provided the method by which this study was operationalized. Self-efficacy is the product of personal efficacy--an individual's judgement of the effectiveness of an executed course of action in achieving a desired outcome. The enactive, persuasive, and emotive modes of influence were utilized to provide efficacy information.

Data were collected on three occasions using four instruments. The first instrument involved collection of selected demographic variables and was completed during the initial interview. A continence assessment and the Rosenberg self-esteem scale were completed during the initial and final interviews. An interview guide was used during a telephone

contact. The telephone contact occurred four days following the first interview; the final interview occurred fourteen days after the first.

The data were summarized, compared and described using measures of central tendency and frequency distributions. Paired t-tests were performed on selected variables to determine if there was a difference between pre and post intervention interview score. These tests demonstrated no significant differences in scores.

Study findings indicated that at the end of the two week trial 53% of the women were able to identify a change in their voiding habits. Four of the participants (26.7%) stated that they were completely continent at the completion of the two week trial and four other participants (26.7%) indicated that some type of positive change had occurred. Three women (20%) identified a negative change in their continence status.

Global self-esteem scores, as measured by the Rosenberg self-esteem scale, remained relatively stable during the two week trial period. Scores appeared to be unaffected by a change in continence status. This may be due to the many successful normalizing strategies subjects had developed to hide the evidence of the symptom of urinary incontinence.

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## CHAPTER ONE

### Introduction

#### Context of the Problem

Adults 65 years of age and older form the fastest growing age group within Canadian society. During the last half century, the total Canadian population doubled in size whereas the size of the older population tripled. Population growth projections for the next 15 years suggest that this older population will increase at a rate twice that of the general population (Stone & Fletcher, 1986). By the year 2001, older Canadians are expected to comprise 11% of the total Canadian population, compared to 9% in 1976 (Vancouver Health Department, 1982, p. 1).

Women comprise approximately 57% of the older population cohort and extrapolation of present growth parameters identifies a trend toward increased female longevity. This trend will have major implications for health care professionals as older adults use the health care system more frequently than any other adult group, and women use more health care services than men (Chappell, 1982; Fletcher & Stone, 1982; Scalzo & Mitchell, 1984; Vancouver Health Department, 1982). One of the health problems which may bring older adults into contact with the health care system is urinary incontinence.

Urinary incontinence is identified as a primary health concern of older adults, involving all aspects of an individual's biopsychosocial functioning (Green, 1986; Ouslander, 1981; Resnick, 1984). Feelings of shame and embarrassment related to urinary incontinence are described as leading to a sense of helplessness and hopelessness. Further consequences of urinary incontinence are identified as social withdrawal and isolation (Butts, 1979; Glew, 1986; Green, 1986; Hadley, 1986; Wells, 1987; Yu & Kaltreider, 1987).

The actual prevalence of urinary incontinence is unknown as the problem is often not reported. This may be due to a belief that incontinence is inevitable--part of the normal aging process (Glew, 1986; Morishita, 1988; Simons, 1985; Jakovac Smith, 1988); or, the lack of reporting may be due to misinterpretation of the medical term "incontinence", as used by health care professionals during assessments (Jakovac Smith, 1988). Still, other authors have suggested that feelings of shame and hopelessness are responsible for this insufficient reporting (Butts, 1979; Glew, 1986; Jakovac Smith, 1988; Wells, 1987).

It is estimated that 10% to 20% of older adults living in the community have a continence problem. The cost of urinary incontinence (both human and material) on family resources may necessitate or prolong institutional care (Green, 1986; Hadley, 1986; Long, 1985; Morishita, 1988; Sier, Ouslander & Orzeck, 1987; Simons, 1985). Within institutions, it is estimated that more than 50% of the older population may

suffer with some type of incontinence (McCormick & Burgio, 1984; Sier et al., 1987; Simons, 1985; Yu et al., 1987).

Several types of urinary incontinence may afflict older adults. These include stress, urge, overflow and total incontinence. Of these, stress incontinence--the involuntary loss of urine during periods of increased intra-abdominal pressure--is a common symptom among older women. This may be attributable to the anatomical structure of the female pelvis as well as to the woman's obstetrical history (Butts, 1979; Long, 1985; Simons, 1985; Wells, 1987). Effective behavioural approaches for the management of stress incontinence are documented in the literature (Burgio et al., 1985; Long, 1985), but the conclusions drawn regarding the psychosocial effects of stress incontinence on older women appear to be based in common sense, rather than validated empirical evidence. Brink, Wells, and Diokno (1987) identified five of the few published studies which discuss the effects of urinary incontinence on psychosocial functioning. The five studies focused on men and women of all ages. The lack of a discernible relationship between the severity of incontinence and the restriction of daily activities, led Brink and colleagues to the conclusion that reactions to urinary incontinence are "individual and unpredictable" (p. 115).

Simons (1985) investigated the relationship between urinary incontinence and self-concept. Study results indicated that older women perceived incontinence as an inevitable result of aging. Analysis demonstrated no significant

correlation between perceived health and self-esteem. These results differ significantly from the picture described in the literature. Consequently, there is a need to examine the psychosocial issues of stress incontinence in greater depth. No published study has been located which describes the effect on clients' self-esteem of implementing a bladder retraining protocol to decrease the frequency of stress incontinence episodes. This study investigated the relationship between self-esteem and stress incontinence in a group of older women involved in a bladder retraining program.

### Conceptual Framework

The conceptual framework for this study is based on the University of British Columbia Model for Nursing (Campbell, 1987) and Bandura's theory of self-efficacy (1978).

#### The University of British Columbia Model for Nursing

The University of British Columbia Model for Nursing is based on systems theory and views the individual as a behavioural system composed of nine interrelated and interdependent subsystems. Each of the nine subsystems--achieving, affective, ego-valuative, excretory, ingestive, protective, reparative, respiratory and satiative--is responsible for the satisfaction of one basic human need.

Structurally, a subsystem is divided into an inner personal region and a psychological environment. The inner personal region represents a basic human need and the cognitive and executive abilities necessary for need satisfaction. The psychological environment includes a need-

related goal and the positive and negative forces influencing goal achievement. The individual seeks to attain subsystem goal achievement, need satisfaction, behavioural system balance and stability through the use of coping behaviours. Coping behaviours are composed of cognitive and executive abilities and represent the usual way an individual achieves and maintains subsystem goal achievement and need satisfaction (Campbell, 1987).

The reciprocal interaction and interdependency of the subsystems indicate that a change related to goal achievement and need satisfaction in any subsystem will produce a change in the need-related tensions of the remaining subsystems. This study focuses primarily on the inter-relationship between two subsystems--the excretory, and the ego-valuative subsystems. The goal of the excretory subsystem is the "absence of accumulated wastes" (Campbell, 1987, p. 47). In the situation presented by this study, stress incontinence is an unsuitable coping behaviour in the excretory subsystem. Though the goal of the subsystem is achieved as wastes are excreted, a limited executive ability permits the excretory action to occur at an inappropriate time. Introduction of a bladder retraining protocol, which involves teaching the client new cognitive and executive abilities, is an attempt to foster the development of a suitable coping behaviour in the excretory subsystem.

The goal of the ego-valuative subsystem is "self-esteem" (Campbell, 1987, p. 46). Stress incontinence is identified as a negative force on a client's self-esteem (Butts, 1979;

Feneley & Blannin, 1984; Long, 1985; McCormick et al., 1984; Spiro, 1978; Yu et al., 1987). Therefore, stress incontinence is a negative force in the ego-valuative subsystem. If the effect of the bladder retraining protocol produces a suitable coping behaviour in the excretory subsystem, then this new coping behaviour may become a positive force in the ego-valuative subsystem.

The study will describe the results of implementing a bladder retraining protocol with a group of older women experiencing stress incontinence. The bladder retraining protocol (Appendix G) consisted of maintaining an adequate fluid intake and performing exercises to strengthen the pelvic floor musculature.

### Self-efficacy

The theory of self-efficacy, as outlined by Bandura (1978) provided the method by which this study was operationalized. Self-efficacy is an individual's belief that the performance of specific behaviours in specific circumstances will produce a desired outcome. The individual believes he has the capability to perform the necessary behaviours. Self-efficacy is the product of personal efficacy--an individual's judgement of how effective an executed course of action was toward achieving a desired outcome. When an individual perceives herself as lacking the necessary capability to produce a desired outcome, the situation becomes an efficacy-based futility. The result of this futility may be depression (Bandura, 1978). In order to change an efficacy-

based futility, expectations of personal efficacy require strengthening. Information which may create or strengthen personal efficacy is conveyed by four modes of influence, or sources of information--enactive, vicarious, persuasive, and emotive.

The enactive mode involves teaching an individual the behaviour and convincing her that the behaviour will be successful. This mode is considered the strongest of the four sources of information as actual performance and evaluation of the behaviour is required.

The vicarious mode involves observing others, in similar circumstances, performing the desired behaviour. The persuasive mode is used to convince an individual that she possesses the necessary capabilities to perform the behaviour and master the efficacy-based futility.

The individual's beliefs about self and personal capabilities are maintained and promoted in the emotive mode. An efficacy-based futility is changed by utilizing the modes of influence to provide the client with the necessary behavior and a sense of personal effectiveness or competence over a specific situation (Bandura, 1978).

Stress incontinence with its resultant feelings of helplessness and hopelessness (Butts, 1979; Glew, 1986) is an example of an efficacy-based futility. Utilizing the enactive, persuasive, and emotive modes of influence, the bladder retraining protocol provided the client with the opportunity to develop a new coping behaviour or competency as delineated



by Bandura. The enactive mode involved teaching the client the components of the bladder retraining protocol. The persuasive mode involved the investigator actively persuading the client to realize her personal capability in this situation. The emotive mode was used to provide support, reassurance and encouragement. The effective use of these three modes of influence may provide the client with a new competency by which she may be able to produce a desired outcome. In this situation the desired outcome was a reduction of incontinent episodes.

#### Statement of Purpose

The purpose of this study was to determine if a relationship existed between the level of self-esteem as measured by the Rosenberg self-esteem scale (1965), and the presence of stress incontinence in a group of older women participating in a bladder retraining program.

#### Research Questions

1. What are the perceptions of global self-esteem, of older women experiencing stress incontinence, as measured by the Rosenberg self-esteem scale?
2. If the number of stress incontinence episodes are decreased through bladder retraining do older women experience a change in their perceptions of global self-esteem as measured by the Rosenberg self-esteem scale?

### Variables

The independent variable in this study was the bladder retraining program.

The dependent variables in this study were: stress incontinence, and the feeling of self-esteem as measured by the Rosenberg self-esteem scale.

### Definition of Terms

The following definitions were used throughout the study:

Cognitive ability: "the capacity to know the subsystem's psychological environment" (Campbell, 1987, p. 35).

Executive ability: "the capacity to manipulate the subsystem's psychological environment" (Campbell, 1987, p. 35).

Coping behaviour: "a response that indicates the way in which a subsystem is attempting to satisfy a basic human need for the system" (Campbell, 1987, p. 35).

Suitable coping behaviour: "a response that satisfies a basic human need; the response is appropriate to societal expectations and congruent with the degree of and potential for maturation" (Campbell, 1987, p. 35). In the situation presented by this study, the release of urine at socially appropriate times is an example of a suitable coping behaviour.

Force: "a determinant of movement toward or away from a goal; forces may arise from the needs and abilities of the subsystems (personal); from other behavioural systems (sociocultural); or from the impersonal aspects of a situation

(impersonal)" (Campbell, 1987, p. 36). Forces may be perceived as positive or negative by the subsystems. The personal forces of aging and stress incontinence were considered in this study.

Adequate hydration: a minimum fluid intake of 2500 ml. in 24 hours (Maney, 1976; Spiro, 1978; Wells, 1975).

Bladder retraining protocol: a protocol involving pelvic floor exercises and adequate hydration.

Well older women: female participants 60 years of age and older, living in the community and independently managing their activities of daily living.

Pelvic exercises: tightening of the ring of muscle around the vagina and rectum without tensing muscles of the lower extremities; and repeatedly stopping the flow of urine when voiding (McCormick & Burgio, 1984).

Self-esteem: "... a positive or negative attitude toward a particular object, namely, the self" (Rosenberg, 1965, p. 30). In this study, self-esteem was measured using the Rosenberg self-esteem scale (1965).

Stress incontinence: Any involuntary loss of urine occurring when coughing, sneezing, laughing or lifting an object.

Urinary incontinence: any involuntary loss of urine (McConnell & Zimmerman, 1983, p. 47).

#### Limitations

Study participants had a variety of medical diagnoses which may have influenced the type and degree of urinary incontinence they experienced. It was not possible to control

for this, except to exclude individuals with neurogenic bladders due to neuromuscular disorders.

As women were responding to an advertisement regarding the study, it is possible that an unique subset of the general aging population was selected. There is a possibility that a group of women did not respond due to fear of exposure.

The small sample size and the brief two week trial period limited the generalizability of the study results.

#### Organization of the Following Chapters

This study report is organized into five chapters. Chapter one outlines the context of the problem and the purpose of the study. Chapter two presents a review of selected literature related to the need and goal of the excretory and ego-valuative subsystems. Chapter three describes the research methodology, including data regarding the sample, data collection and analysis. Chapter four is a report and discussion of the study results. Conclusions are presented in chapter five with implications for nursing education, practice and research.

## CHAPTER TWO

### Review of Related Literature

#### Introduction

The University of British Columbia Model for Nursing conceptualizes the individual as a behavioural system composed of nine interdependent and interacting subsystems. The Model directs the nurse to determine the presence of behavioural system balance and stability through the assessment of subsystem goal achievement and need satisfaction. Subsystem goal achievement and need satisfaction are determined through the collection and analysis of relevant data related to coping behaviours and manipulable variables.

Stress incontinence is cited as a predominant problem of older women. This chapter will review the current literature regarding the experience of older women with stress incontinence and is organized according to the structure and function of the involved subsystems.

#### The Excretory Subsystem

The basic human need represented by the excretory subsystem is the collection and removal of accumulated wastes. The need-related goal is the absence of accumulated wastes. Need satisfaction occurs through a process directed toward goal achievement. Goal achievement can be assessed via the mechanisms of continence.

#### Mechanisms of Urinary Continence

Urinary continence requires an intact and functional bladder, urethra, urethral sphincters, and perineal

musculature. The urinary bladder is a hollow muscular organ positioned anteriorly to the vagina and uterus. The bladder wall consists of a layer of connective tissue overlying an interlacing network of smooth muscle known as the detrusor muscle, and an interior mucous lining (Gosling, 1985).

Extending approximately four centimeters from the base of the bladder to the external meatus the urethra is continuous with the interior mucous lining of the bladder. Contiguous with the bladder and urethra, the urethral sphincters are poorly defined anatomically. Functionally, the internal urethral sphincter is identified as the bladder neck, and the external sphincter is defined as the proximal urethra (Blaivas, 1985; Gosling, 1985; Resnick, 1984). Composed of smooth muscle and elastic fibres, closure of the sphincters is maintained by compression of the urethral mucosa over an adequate length of muscular and connective tissue. The internal urethral sphincter, predominantly constituted of smooth muscle, is under autonomic control. The external urethral sphincter, situated at the level of the urogenital diaphragm and composed of striated muscle, is somatically enervated and under voluntary control (Resnick, 1984).

The pubococcygeus muscle originates in the pubic arch with the insertion site located at the tip of the coccyx. Passing through the medial portions of the five pelvic musculofascial diaphragms, the pubococcygeus muscle plays a supportive and sphincteric role in the continence mechanism (Kegel & Powell, 1950).

Continence is achieved by the maintenance of urethral pressure at a level greater than detrusor pressure. The adequately supported, enervated, and estrogenized urethra produces an occlusive force sufficient to maintain urethral pressure at rest and during sudden increases in intra-abdominal or intravesical pressures (Stanton, 1986; Staskin, Zimmern, Hadley, Raz, 1985). The pubococcygeus muscle and the urogenital diaphragm provide additional support during coughing, sneezing, and moments of physical effort (Stanton, 1986; Staskin et al, 1985).

The continence mechanism demonstrates the function of cognitive and executive abilities of the excretory subsystem. The abilities permit the subsystem to perceive bladder distension, and inhibit bladder relaxation until a socially appropriate time. The abilities give rise to personal forces which affect subsystem goal achievement. In this instance, the personal force related to subsystem goal achievement is the mechanism of voiding.

#### The Mechanism of Voiding

The voiding mechanism involves perception of a distended bladder and cortical modulation of the sacral spinal cord reflex arc to inhibit bladder contraction until a socially appropriate place and time (Whitehead, Burgio & Engel, 1984). At an appropriate time and place the intraurethral pressure falls due to relaxation of the urethral sphincter and pelvic floor. The bladder neck and base descend and the urethral lumen opens. The detrusor muscle contracts expelling urine.

The voiding contraction is sustained until the bladder is empty. At the completion of voiding, the detrusor relaxes, and the bladder neck and urethra close. The bladder neck and base then return to their original intra-abdominal position (Stanton, 1986).

The combined effective functioning of the continence and voiding mechanisms fosters suitable coping behaviours in the excretory subsystem facilitating movement toward goal achievement and need satisfaction. Alteration in the effective functioning of the continence and voiding mechanisms may be attributed to a variety of forces. Forces which will be examined include the effect of the biological process of aging and stress incontinence.

### Forces

#### Aging

The consequences of the physiological effects of aging on the female genitourinary tract predispose many older women to continence problems. Aging of the female genitourinary tract involves a decreased bladder capacity and may involve the condition of detrusor instability (Green, 1986). As well, the bladder becomes increasingly sensitive with age so that concentrated urine may precipitate incontinence (McConnell et al., 1983). An adequate fluid intake encourages the bladder to expand to capacity and decreases the irritation caused by concentrated urine (Maney, 1976; Spiro, 1978).

There is a loss of muscular elasticity in the genitourinary tract and the pelvic musculature including the



vagina. This loss of muscular elasticity is often associated with lower post-menopausal estrogen levels (Green, 1986; Wilcox, Gray, & Pritchard, 1982; Witty, 1977). The combination of a smaller bladder capacity, detrusor instability, concentrated urine, and loss of muscular elasticity predisposes older women to the development of stress incontinence.

### Stress incontinence

Stress incontinence "occurs when the intravesical pressure, as a result of an increase in intra-abdominal pressure, exceeds the resistance produced by the urethral closure mechanisms, in the absence of bladder activity" (Staskin et al., 1985, p. 271). The symptom of stress incontinence, as reported by women, may have multiple causes including deterioration of the perineal floor muscles, unstable bladder contractions, poorly estrogenized mucosa, or may be the result of previous bladder neck surgery. Regardless of the cause, the consequences are similar as an involuntary loss of urine occurs with coughing, sneezing, laughing, lifting objects or position changes (Witty, 1977).

Studies have been completed which investigated the mechanisms of continence and voiding in older women through the use of urodynamic testing. The place of urodynamic testing in the investigation and treatment of incontinence is a contentious issue among authorities. While the sophisticated measures of urodynamic evaluation provide accurate diagnosis of the type and degree of incontinence being experienced, the

feasibility of performing this type of invasive investigation on older clients is questionable (Eastwood & Warrell, 1984; Hilton & Statton, 1981; Resnick & Valla, 1985). The medical alternative to urodynamic testing is an algorithmic approach to treatment. The purpose of this approach is to identify treatment options. Using the results of a study involving one hundred older women Hilton and Stanton (1981) developed an algorithmic approach to the treatment of incontinence. Reported study findings indicated that approximately 60% of the women could be accurately separated into appropriate treatment groups, based on subjective report and the use of simple diagnostic tests (Hilton et al, 1981).

Treatment alternatives for urethral sphincter incompetence include surgery, estrogens, and exercises. Surgery is often the recommended choice. Popular surgical interventions include the anterior and posterior colporrhaphy, and the Burch colposuspension. The American College of Obstetricians and Gynecologists suggest that the long term cure rate related to surgical intervention for stress incontinence is 50% to 60% (Witty, 1977, p. 141).

Inherent in all surgical procedures is risk to the client. Besides the usual risks, procedures for the correction of incontinence may lead to operative complications including injury to the vagina, bladder, urethra, and major veins of the pelvic structures. Post-operative complications may involve urgency, frequency or difficulty with spontaneous voiding (Stanton, 1985).

Other modes of treatment for incontinence involve behavioural approaches. Kegel and Powell (1950) suggested that the causes of stress incontinence are related to poor function of the pubococcygeus muscle rather than physical defect of the sphincter mechanisms. In this study of over 300 women with stress incontinence, 70% responded to physiologic therapy with a perineometer.

The perineometer consisted of a cylindrical diaphragm connected to a manometer which enabled the client to see the results when she contracted her perivaginal muscles. All 300 clients with stress incontinence were symptom free following 2 to 6 weeks use of the perineometer resistive exercise. Kegel et al., identified satisfactory muscle recovery even in the presence of urethrocele or moderate cystocele (p. 810). Satisfactory return of muscle function was also apparent in women who had undergone previous bladder neck surgery, provided the muscular relation of the urethra and bladder neck was not significantly disturbed, and fibrosis was not excessive (p. 810).

Kegel's exercises continue to be implemented as an intervention for older women with stress incontinence. Henderson and Taylor (1987) investigated age as a variable in the performance of Kegel's exercises for the treatment of stress incontinence. The eight week study involved older (over age 55) and younger (under age 55) women who identified themselves as suffering with stress incontinence. Subjects were ambulatory, non-institutionalized, English-speaking, and

not experiencing any neuromuscular or neurogenic bladder difficulties. Each woman completed a weekly continence assessment designed to assess her perception of incontinence severity. During weekly clinic appointments, the women used the "Personal Perineometer" as a bio-feedback mechanism. Upon completion of the study, measurement with the "Personal Perineometer" indicated no difference in pubococcygeal strength between the younger and the older women. At the end of the study, six of the nine older women, and four of the five younger women reported themselves to be continent (Henderson et al., 1987).

Other forms of behaviour management involve habit retraining. The suggestion is that the bladder can be reeducated to empty at scheduled times if an adequate fluid intake is maintained, and facilities are accessible. This approach also involves increasing the time interval between voidings (Greengold & Ouslander, 1986; Hadley, 1986; Spiro, 1978).

Stress incontinence in older women is a well-documented problem and types of treatment are outlined in the literature. There are few studies which discuss implementation of the various approaches.

#### The Ego-valuative Subsystem

The inner personal region of the ego-valuative subsystem represents the basic human need for respect of self by self and others, as well as the cognitive and executive abilities necessary to satisfy that need.

The cognitive abilities of the ego-valuative subsystem perceive the need. The executive abilities alter the need related sensation of tension, as forces and variables are manipulated to move the subsystem toward or away from goal achievement. The psychological environment represents the need-related goal of self-esteem and the personal, impersonal and sociocultural forces influencing goal achievement. Assessment of the goal of self-esteem and the forces influencing goal achievement will be discussed.

### Self-esteem

Self-esteem is the relatively stable sense of self produced by the amalgamation of self-respect and respect of self by others. This stable, internal sense of self can be considered an individual's global sense of self-esteem. Global self-esteem may be described as all the positive and negative attitudes one holds about one's self, and indicates an individual's sense of self-worth (Rosenberg, 1965; Stanwyck, 1983). Rosenberg determined self-worth to be a personal belief in an individual's value, her acknowledgement of personal strengths and her acceptance of personal weakness (Rosenberg, 1965). Crouch and Straub expanded Rosenberg's and Stanwyck's theories by envisioning global self-esteem as a paired arrangement between basic and functional self-esteem. Basic self-esteem is a stable core achieved during childhood, and functional self-esteem is a fluid element, allowing for feeling changes due to situational or maturational events (Crouch & Straub, 1983). As with Crouch and Straub's model,

Rosenberg's framework allows an individual to experience a change in personal esteem based on situational and interpersonal perceptions.

The qualitative measurement of self-esteem is frequently based on criteria involving perceptions of the physical self, the intellectual self and the social self. Indices related to the physical self include individual attitudes and feelings regarding the mental image held of the structure, capabilities and limitations of the physical body. Indices related to the intellectual self involve efficacy behaviours and feelings of competence as demonstrated by successful performance in achieving personal goals and objectives (Bandura, 1978). Indices related to the social self involve a sense of self-worth demonstrated by acceptance of self by self and others. Behaviours congruent with societal norms and the psychosocial and maturational development of the individual are also components of the social self.

Coping behaviours indicate the usual manner a subsystem attempts to satisfy the need of the subsystem. Coping behaviours in the ego-valuative subsystem are highly individualized and are demonstrated through an individual's observable behaviour and verbal expression. They may be conscious or unconscious and the individual may or may not be aware of the implication of the behaviour. Coping behaviours are influenced by forces, and in this instance the forces for consideration are aging and stress incontinence.

## Forces

### Aging

The eighth psychosocial stage of Erickson's developmental theory specifically identifies the task of this life phase as the achievement of integrity versus despair. This is a time when individuals draw on coping behaviours developed during earlier life phases to evaluate their lives and meet the tasks of this last developmental stage. According to Crouch and Straub's premise, functional self-esteem may be altered as an individual's personal perceptions change with aging. Global self-esteem, as identified by Rosenberg may also be affected by individuals perceptions of personal change during the aging process.

### Stress incontinence

Stress incontinence is identified as a negative personal force for older women. Feelings of low self-worth, low self-esteem, dependency and social isolation are attributed to the experience of urinary incontinence (Hadley, 1986; Henderson et al., 1987; Long, 1985; Morishita, 1988). At present, little research has been published which empirically validates the emotional impact of incontinence, specifically stress incontinence, on older women.

Simons (1985) studied the effect of urinary incontinence on self-concept. The sample consisted of 43 women, 60 years of age and older, who completed detailed questionnaires. Data were collected on demographic variables, and the incidence of urinary incontinence in the sample population. Study

participants also completed the Rosenberg self-esteem scale. Research questions posed by the study attempted to determine the following: the incidence of urinary incontinence in a selected population; the proportion of the respondents who had reported urinary incontinence to a health care provider; and whether or not older women with urinary incontinence had a lower self-esteem than similar women with no incontinence. Study results indicated that there was no difference in the self-esteem scores between continent and incontinent older women. The concept of hidden incontinence was supported when the 11 subjects (50%) who identified themselves as incontinent, indicated that they had not revealed the symptom to a health care professional (Simons, 1985, p. 39).

Foster (1987) completed a phenomenological study which described the impact living with untreated urinary incontinence had on the lives of nine older women. Four common components were described by the women: "1) recognizing the problem; 2) avoiding exposure; 3) needing information; and 4) redefining normal" (Foster, 1987, p. 38). By redefining their lifestyles, and developing regimes to hide the evidence of the symptom of urinary incontinence, these women redefined normal in a manner similar to those individuals who adjust to the sequela of chronic illness (Strauss, Corbin, Fagerhaugh, Glaser, Mainers, Suczek, Wiener, 1984).

Stress incontinence may be viewed as an efficacy-based futility (Bandura, 1978). Older women are unable to control a desired outcome, the socially appropriate time to pass urine.



The loss of urinary control leads to feelings of helplessness, hopelessness, social isolation, and low self-esteem (Burgio et al., 1985; Butt, 1979; Field, 1979; Hadley, 1986). In order to decrease older womens' negative feelings and low self-esteem, it is necessary to foster personal efficacy among these women. Accomplishment of this task may be possible with the use of a bladder retraining protocol.

### Summary

A review of the literature revealed a substantial amount of medical literature identifying the causes and surgical interventions for the treatment of stress incontinence. The nursing literature provided detailed summaries of the types of incontinence and common causes. Outlines of treatment interventions were often included, but few studies discussed the psychosocial effects of implementing the interventions. There are few published studies which have investigated the effect stress incontinence has on the self-esteem of older women, though common sense statements are provided regarding the effect of incontinence on self-esteem.

This study will complement some of the work which has been completed by describing the effect of stress incontinence on the self-esteem of older women involved in a bladder retraining protocol.

## CHAPTER THREE

### Methodology

#### Introduction

This descriptive study was designed to identify the relationships between the variables of stress incontinence, bladder retraining, and self-esteem. The research questions guiding the study methodology included: 1) what are the perceptions of global self-esteem, of older women experiencing stress incontinent episodes, as measured by the Rosenberg self-esteem scale? and 2) if stress incontinent episodes are decreased through bladder retraining do older women experience a change in their perception of global self-esteem as measured by the Rosenberg self-esteem scale? This chapter will discuss the process employed to collect and analyze data regarding these questions, beginning with the process of obtaining study participants and the criteria for participant selection. The data collection instruments are also discussed. Ethical considerations and the protection of human rights will be presented.

#### Process of Obtaining Study Participants

Initially, convenience sampling was employed to select ten older women to participate in this study. Towards the end of the period for data collection, response to the advertisement of the study increased prompting the decision to enlarge the sample size to fifteen older women.

Recruitment of these fifteen older women was accomplished by posting an advertisement (Appendix A) at senior's health

drop-in centers, community service agencies, and in a senior's network publication. The advertisement also appeared in two community publications. Response to the advertisements in the community centres, and the community papers was slow. The investigator attended two seniors health watch programs to outline the study for the women in attendance. Many women were anxious to discuss urinary incontinence and seemed interested in the protocol, but few volunteered to participate in the study. A significant number of women did volunteer to participate following the publication of a short article by columnist Nadin Asante in a senior's paper, the Elder Statesman.

Individuals who wished to participate in the study contacted the investigator by telephone. At that time participant selection criteria were clarified, and further information regarding the study was provided. Women who expressed interest in the study at the time of the telephone contact were mailed a detailed written description of the study (Appendix B). Following receipt of the information letter, those still wishing to participate called the investigator and an appointment was made for an interview. At the time of the first telephone contact some women expressed a preference for the investigator to bring the information letter to the first interview.

In all, 28 women responded to the advertisement or the article by Asante. Sixteen women agreed to participate in the study. One women dropped out of the study after 4 days because

she found the exercises painful; the remaining 15 women completed the two week protocol. Those women not accepted into the study were sent a copy of the protocol to do independently. These women had the option of calling the investigator at any time with problems or questions. The actual recruitment period spanned six months.

### Criteria for Participant Selection

The criteria for participant selection included women who were:

- 1) 60 years of age and over;
- 2) experiencing the involuntary leakage of urine when coughing, laughing, sneezing, or lifting an object;
- 3) experiencing stress incontinence not caused by a neurogenic bladder;
- 4) presently not being treated for a urinary infection or urinary incontinence;
- 5) able to read and speak English.

### Data Collection

Data were collected on two occasions in participant's homes. This setting provided a comfortable and confidential location for the interviews. The methods of data collection involved face-to-face semi-structured interviews and completion of the self-esteem scale. The total time required of participants was approximately one and a half hours. Prior to the commencement of the first interview the participant signed a consent form (Appendix C).

The initial interview required about 45 minutes to collect selected demographic variables (Appendix D), to complete the continence assessment (Appendix E), and the Rosenberg self-esteem scale (Appendix F). During the first contact, the enactive mode as outlined in Bandura's theory of self-efficacy, was utilized to provide instruction to the participants regarding the pelvic floor exercises and the importance of adequate hydration. Participants were taught how to perform the pelvic floor exercises and practiced an initial set of the exercises with the investigator. Participants were cautioned to avoid using their gluteal and abdominal muscles, as well as their hamstring and quadricep muscles when performing the exercises. Use of accessory muscles, such as the gluteal or thigh muscles, lessens the physiological effectiveness of the pelvic floor exercises (Kegel, 1949). To avoid bladder irritation, the importance of adequate hydration to distend the bladder and dilute the urine was explained to all participants (Maney, 1976; Spiro, 1978; Wells, 1975). As none of the subjects indicated that they were maintaining a restricted fluid intake for health reasons, particular attention was focused on ensuring that those women with an identified low fluid intake understood the rationale for adequate hydration. Participants were given a written description of the protocol as a reminder to practice the exercises and maintain hydration (Appendix G). At this time the investigator also employed the persuasive mode by discussing with the participant her ability to perform the

exercises. The emotive mode was used to offer support, encouragement, and reassurance. Participants had the option of calling the investigator at any time with questions or problems.

A telephone contact occurred 3 to 4 days following the initial meeting and required approximately 15 minutes. The persuasive and emotive modes were utilized at this time to provide support and encouragement to participants. Data were collected on the consistency and difficulty of exercise performance, and the maintenance of adequate hydration.

The final interview occurred 14 days later and required about 30 minutes of the participants time. This interview involved completion of a second continence assessment and self-esteem scale.

#### Data Collection Instruments

Data were collected using four tools. The first tool involved collection of selected demographic variables and was completed during the first interview. A continence assessment and the Rosenberg self-esteem scale were completed during both interviews. A telephone interview guide (Appendix H) was used during the telephone call to elicit information regarding the consistency of exercise performance, and the maintenance of adequate hydration.

#### Demographic Information

The demographic questionnaire utilized both closed and open-ended questions to elicit selected general health information from each participant. Data were collected

regarding participant's present health status, including hydration. Information about previous treatment for incontinence was collected. Participants were asked about past urinary tract infections, as these infections may predispose individuals to the development of urinary incontinence (Green, 1986). Further data were collected related to participant's bowel elimination patterns, as constipation may be a contributing factor to urinary urgency and lack of control (Jakovac Smith, 1988). Information about the participant's obstetrical history was also collected as the trauma of childbirth may predispose women to the development of urinary incontinence (Henderson et al, 1987; Kegel, 1949).

#### Continence Assessment

The continence assessment used open and closed-ended questions to acquire information regarding each participant's continence status. Initial questions dealt with subjects usual day and nocturnal voiding patterns and provided baseline information regarding voiding habits. Specific attention was focused on nocturia, in an effort to identify the women who experienced this condition, and also to differentiate the condition from primary sleep disturbances. Nocturia is common in older adults as the older adult's kidneys often continue to produce urine at the same rate during both the day and night. As well, once the older individual is recumbent, circulation to the kidney is increased and consequently urine production may increase (Wells, 1975). Nocturia may be confused with primary sleep disturbances and participants were asked whether

they woke because of the urge to void (nocturia), or went to the bathroom because they were awake.

Study participants were then asked questions regarding total loss of urine, stress incontinence and urgency, as well as urinary retention. Urinary overflow was determined with a question directed toward the problem of dribbling. The study participants associated dribbling of urine with urgency or urine lost during episodes of stress incontinence. One participant who primarily experienced urinary retention probably did also suffer from urinary overflow. The final six questions elicited responses specifically related to the presence or absence of a bladder infection.

Open ended questions were utilized to gather information regarding the self-management strategies used by the participants when experiencing incontinence symptoms. Queries involving self-management strategies primarily concerned the use of undergarment protection.

#### The Rosenberg Self-esteem Scale

The self-esteem scale used in this study is a brief, ten item questionnaire intended to provide a unidimensional measure of global self-esteem. This scale was first administered to 5,077 New York state high school students in an attempt to understand how adolescents view themselves (Rosenberg, 1965). Since publication of the scale, it has been used extensively with individuals of all ages and may be considered a "classic measure of global self-esteem" (George et al., 1985, p. 79). George and Bearon (1985) cited five



studies involving older adults and the use of the Rosenberg self-esteem scale. Simons (1985) used this scale with older women during an investigation of the effect of incontinence on self-concept.

### Reliability

George and Bearon (1985) evaluated the Rosenberg self-esteem scale according to internal reliability and test-retest reliability. Adequate internal reliability of the tool is demonstrated by a "Guttman scale reproducibility coefficient of .92 and a scalability coefficient of .72" (George et al., 1985, p. 83). Evidence of test-retest reliability is provided by a "correlation of .85 between measures administered to college students at two week intervals" (George et al., 1985, p. 83).

### Validity

To provide evidence of the scale's validity, Rosenberg utilized a criterion-referenced design involving nursing and volunteer personnel at the National Institutes of Health. A significant relationship was identified between individual self-esteem scores and the identification of depression in the subjects (Rosenberg, 1965).

Further evidence of convergent validity was provided by "Silber and Tippet (1965) who reported correlations ranging from .56 to .83 between the Rosenberg self-esteem scale and other measures of self-esteem" (George, et al., 1985, p. 83).

### The Telephone Interview Guide

This tool provided a guide to the telephone contact with participants. The purpose was to obtain data regarding the frequency of the performance of the pelvic floor exercises, and to determine if there was any difficulty practicing the exercises. Information was also sought regarding the maintenance of adequate hydration.

### Data Analysis

The purpose of a descriptive study is to describe the variables and any significant relationship between the variables without inferring causation (Brink & Wood, 1978). Therefore, data are organized and presented using measures of central tendency and frequency distribution. Cross-tabulations and paired t-tests were also completed for selected variables. Analysis was accomplished using the Statistical Package for Social Sciences version X (Lai, 1986).

### Ethical Considerations

Approval was gained from the University of British Columbia Behavioural Sciences Screening Committee For Research and Other Studies Involving Human Subjects prior to the commencement of the study.

Participants' rights were further safeguarded in a variety of ways. As women responded to the advertisement, the investigator determined the suitability of respondents for inclusion in the study. Participants were given a detailed information letter outlining the purpose and procedures of the study. Prior to commencement of the initial interview

participants were asked to sign a consent form. All interviews were conducted with the written consent of the participants. Both the information letter and the consent form clearly stated that participation was voluntary and that participants could withdraw at any time without jeopardizing any present or future health care.

Confidentiality of participants was maintained by assigning each participant a numerical code and placing that code on all documents concerning that individual. The identity of the participants was known only to the investigator. Coded data were reviewed only by the investigator and members of her thesis committee. At the conclusion of the study, all original data collected from participants were destroyed.

#### Summary

The methodology used in this descriptive study involved four data collection instruments. Each tool added information to the data base which was then analyzed according to established statistical methods. Ethical considerations and the protection of the participant's human rights were also discussed.

## CHAPTER FOUR

### Presentation and Discussion of Findings

#### Introduction

Beginning with the characteristics of the participants, this chapter is a presentation and discussion of the study results. Data are organized and presented according to the results obtained from the data collection instruments. Results are discussed according to the excretory and ego-valuative subsystems within the framework of the University of British Columbia Model for Nursing.

#### Characteristics of the Participants

Using the demographic information instrument, data were gathered relating to the characteristics of the participants. The fifteen study participants ranged in age from 63 years to 82 years ( $M=70.8$  years). All subjects were living in the community, alone or with their spouse, and indicated that they were independently managing their activities of daily living. Many of the women were actively involved in community projects or personal endeavors. All of the participants identified themselves as being in good health although eight were receiving medical treatment for health concerns. These concerns included at least one of the following health problems: angina (2), arthritis (4), asthma (1), back pain (1), cardiac arrhythmias (1), coronary artery disease (2), depression (3), gastric hyperacidity (1), hypertension (3), hypothyroidism (1), osteoporosis (3), and sciatica (1).

Treatment for these health concerns primarily involved the use of prescription medications. Not all subjects were able to identify the medications they were taking, nor the reasons for which the medications had been prescribed. The investigator asked to see all medications being used in order to obtain accurate data. Three women were taking an estrogen supplement. Two women were taking diuretics and three other women were using medications which improved kidney excretion function as a side effect. Antidepressants were being used by two women. A side effect of both antidepressant medications was urinary retention. A variety of other medications were being used to treat specific health problems. Subjects did not identify any changes in medication usage during the trial period.

The obstetrical history of the women varied. Three women were nulligravida. The remaining twelve women had experienced one to eight pregnancies. All but two of the women had experienced uncomplicated pregnancies. All the women had delivered vaginally and only one woman stated that forceps had been used during the birthing process. Many of the women were unsure whether episiotomies had been performed during the delivery process. Two women were sure episiotomies had not been performed and seven women believed that an episiotomy had been performed during at least one birth.

Ten subjects were able to identify the length of time they had experienced the symptom of incontinence. That period ranged from one year to forty-one years ( $\bar{n}=10$ ,  $\bar{M}=16.9$  years).

Six women stated that their problem with incontinence began suddenly, while eight women identified a gradual beginning to the problem. Fourteen women associated the beginning of incontinence with a specific event: six women identified childbirth as the precipitating factor, and two women stated that the incontinence began following surgical procedures (bladder surgery, hysterectomy). Other identified causes included colds (1), cystitis (1), a weak bladder (1), catheterization (1), aging (1), and emotional stress (1). One women stated that she had noticed a worsening of the incontinent episodes since menopause.

Subjects were questioned regarding previous treatment for incontinence and urinary tract infections. Five women (33.3%) indicated that they had undergone some type of treatment for urinary incontinence. The only treatment option these women had been offered was surgery. Two of these women were able to identify the surgical procedure that had been performed. Two of the five women had experienced three or more surgeries for the correction of incontinence. Surgery had been suggested to two other subjects. These women had refused this option and no other suggestions regarding treatment for incontinence had been offered.

Seven women (46.7%) indicated they had received treatment for bladder infections, and two of these women (13.3%) had also experienced bladder stones. Data were collected from participants at the first and final interviews regarding the signs and symptoms of urinary tract infections. None of the

participants were experiencing any signs or symptoms of a urinary tract infection at the commencement of the study or upon retesting two weeks later.

In relation to bowel elimination habits, two women identified themselves as being prone to constipation. The remainder of the subjects stated their bowel movements were regular, every 24 to 36 hours.

Data were also collected regarding participants' fluid intake. Eleven of the women (73.3%) indicated a fluid intake of eight or more cups per day while the remaining four women (26.7%) indicated a fluid intake of less than 4 cups.

During the initial telephone contact all participants responded affirmatively to questions regarding loss of urine during periods of stress. At the time of the first interview it became evident that one participant suffered primarily from urinary overflow related to retention. This women expressed a desire to remain in the study and she executed the bladder retraining protocol in the same manner as other participants. The data from this participant has been included in the data analysis.

In conclusion, the study participants constituted a group of well older women, living in the community, who were experiencing urinary incontinence.

#### Continence Assessment

The assessment of continence occurred at both the first and second interview times, and involved collecting data on all aspects of participants' continence status. The bladder

retraining protocol was implemented at the time of the first interview. Therefore, the data are arranged and presented to demonstrate the changes participants perceived in their voiding habits, and the frequency of incontinent episodes following implementation of the bladder retraining protocol.

The initial assessment of continence in these women involved questions about usual voiding habits. These questions concerned day and nocturnal voiding frequency and determined the subjects' baseline voiding frequency.

Table I

Perceived Changes in Daily Voiding Frequency at Pre and Post Intervention Interview Times

Voiding Frequency	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
<3x/day	1	(6.7%)	0	
3-6x/day	4	(26.7%)	8	(53.3%)
>6x/day	10	(66.7%)	6	(40.0%)
Total	15	(100.0%)	14	(93.3%)

At the time of the second interview women reported feeling that their "bladder was emptying more completely", that they were voiding "with greater force", and that they had "better control over the bladder".



Women were asked about nocturia and waking patterns. Some subjects experienced nocturia as frequently as four or five times a night. Nine subjects (60%) indicated that they woke with the urge to void at the time of the first interview. Seven women (46.7%) identified that they woke with the urge to void at the time of the second interview. Three women (20%) were unsure about their waking patterns, whereas other subjects knew they woke for other reasons. One woman with arthritis stated "I think the pain in my hips wakes me". Another participant stated that she would get up because of feeling "restless" and a third woman stated she "wakes up and then goes".

Table II

Perceptions of Nocturia at Pre and Post Intervention Interview Times

Nocturia	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
Yes	11	(73.3%)	10	(66.7%)
Sometimes	1	(6.7%)	1	(6.7%)
No	3	(20.0%)	4	(26.7%)
Total	15	(100.0%)	15	(100.0%)

The participants' perceptions of nocturia and waking because of the urge to void remained relatively unchanged

during the two week trial period. The patterns of urinary frequency and nocturia were consistent with the symptom of urinary stress incontinence and the age of this group of women.

Subjects were questioned about complete loss of urinary control. One women identified that she lost control of urine "all the time". Two other women associated total loss of urinary control with an overdistended bladder and a strong urge. Three women associated total loss of urine with movements such as walking or running, or a change in position such as rising from a chair. The remainder of the women who responded affirmatively to this question indicated that the loss of urine was directly connected to episodes of stress, such as coughing, sneezing, laughing, or lifting an object.

Table III

Perceived Changes in Frequency of Episodes of Total Loss of Urinary Control at Pre and Post Intervention Interview Times

Total Loss of Urinary Control	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
Yes	5	(33.3%)	3	(20.0%)
Sometimes	4	(26.7%)	5	(33.3%)
No	6	(40.0%)	7	(46.7%)
Total	15	(100.0%)	15	(100.0%)

The initial assessment of subjects' continence status included specific questions related to the involuntary loss of urine during periods of increased intra-abdominal pressure. Table IV presents a summary of the perceived changes in the frequency of involuntary urine loss when coughing, sneezing, laughing, or lifting an object. A detailed examination of the perceived change in the frequency of the involuntary loss of urine for each variable is presented in Appendix I.

Table IV

Perceived Changes in Frequency of Stress Incontinence Episodes at Pre and Post Intervention Interview Times

Stress Incontinence	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
Cough	12	(80.0%)	7	(46.7%)
Sneeze	12	(80.0%)	8	(53.3%)
Laugh	8	(53.3%)	2	(13.3%)
Lift an Object	2	(13.3%)	1	(6.7%)

Note. Subjects responded affirmatively to more than one variable.

The problem of urgency was also discussed with the participants. Six women (40%) indicated that the urge to void was strong and that they would often lose urine on the way to the bathroom.

Table V

Perceived Changes in Urgency at Pre and Post Intervention

Interview Times

Urgency	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
Urgent	6	(40.0%)	3	(20.0%)
Wait Minutes	6	(40.0%)	11	(73.3%)
Wait Hours	3	(20.0%)	1	(6.7%)
Total	15	(100.0%)	15	(100.0%)

Two questions regarding the problem of urinary retention were asked of subjects. The first question concerned feelings of emptying the bladder incompletely when voiding. The second question dealt with feelings of fullness in the bladder after voiding.

Table VI

Perceived Changes in Frequency of Incomplete Bladder Emptying  
at Pre and Post Intervention Interview Times

Incomplete Bladder Emptying	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
Yes	8	(53.3%)	5	(33.3%)
Sometimes	0		1	(6.7%)
No	7	(46.7%)	9	(60.0%)
Total	15	(100.0%)	15	(100.0%)

Table VII

Perceived Changes in Frequency of Feeling of Fullness Post  
Void at Pre and Post Intervention Interview Times

Fullness post void	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
Yes	1	(6.7%)	0	
Sometimes	1	(6.7%)	1	(6.7%)
No	13	(86.7%)	14	(93.3%)
Total	15	(100.0%)	15	(100.0%)

The information collected during the first interview provided the baseline data which were used during analysis to develop the urinary incontinence scale.

Initially, all women were categorized simply as continent or incontinent and the change in frequency was examined between the two measurement times. Initial cross-tabulation of incontinence by interview time indicated that 4 women (26.7%) perceived themselves completely relieved of the symptom of incontinence after executing the bladder retraining protocol for two weeks.

In order to determine which of the participants had experienced a change, and to what degree, a urinary incontinence scale was developed. Women were placed into categories according to the responses they had provided during the interviews. The categories developed from the participant's responses included:

- 1 Continent, (C);
- 2 Stress incontinence, (S);
- 3 Stress incontinence plus urgency, (S+U);
- 4 Stress incontinence plus retention, (S+R);
- 5 Stress incontinence plus urgency plus retention,  
(S+U+R);
- 6 Retention, (R).

Table VIII

Perceived Changes in Frequency of Incontinent Episodes by  
Category of Incontinence at Pre and Post Intervention  
Interview Times

Category	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
1 (C)	0		4	(26.7%)
2 (S)	5	(33.3%)	4	(26.7%)
3 (S+U)	1	(6.7%)	1	(6.7%)
4 (S+R)	3	(20.0%)	3	(20.0%)
5 (S+U+R)	5	(33.3%)	2	(13.3%)
6 (R)	1	(6.7%)	1	(6.7%)
Total	15	(100.0%)	15	(100.0%)

This table indicates that the greatest benefit from the bladder retraining protocol was experienced by those women with stress incontinence plus urgency plus retention. Aside from one woman with stress incontinence, the bladder retraining protocol had little effect for the other women. Examination of these data in detail allowed identification of the women who actually experienced relief of the symptom of urinary incontinence.

Table IX

Cross-tabulation of Frequency of Incontinent Episodes by Participant according to Category of Incontinence at Pre and Post Intervention Interview Times

Time	Category					
	1 (C)	2 (S)	3 (S+U)	4 (S+R)	5 (S+U+R)	6 (R)
1		1	10	8	3	2
		4		12	5	
		7		15	6	
		9			13	
		11			14	
2	3 +	4	9 -	1 -	10 -	2
	6 +	8 +		5 +	13	
	7 +	12 +		15		
	11 +	14 +				

Note. The numbers under each category are the numerical code for the participant. Positive and negative symbols beside second interview numbers indicate the type of change that occurred.

The women who benefited from the protocol were two women with stress incontinence and two women with stress incontinence plus urgency plus retention. As well one woman (14) with stress incontinence plus urgency plus retention reported only stress incontinence at the end of the two week trial period. The other subject (5) in this category moved to the stress incontinence plus retention category indicating that some benefit may have occurred. Two other participants (8, 12) who seemed to have benefited are from the stress incontinence plus retention category. These women both



perceived themselves to have only stress incontinence at the completion of the two week trial. Of these women, one women (8) indicated during the telephone contact that she was not performing the exercises consistently, but still thought that "things [were] better".

This sense of positive change is also present in the participants' sense of the amount of urine released during incontinent episodes.

Table X

Perceived Changes in the Amount of Urine Released during Incontinent Episodes at Pre and Post Intervention Interview Times

Amount of Urine Released	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
Large (>tsp)	6	(40.0%)	3	(20.0%)
Small (<tsp)	7	(53.3%)	7	(53.3%)
Total	13	(93.3%)	10	(73.3%)

Only three of the women (20%) considered themselves to be losing an amount of urine greater than a teaspoon at the second interview. These figures attest to stronger pelvic musculature which the participants could identify through a reduction in the amount of urine lost during incontinent episodes.

Of particular interest were the women whose symptoms appeared to worsen over the two week trial period. One participant (1) moved from stress incontinence alone to stress incontinence plus retention. Another woman (9) moved from stress incontinence to stress incontinence plus urgency and one woman (10) with stress incontinence plus urgency moved to stress incontinence plus urgency plus retention. Two of these subjects (9, 10) indicated during the telephone contact that they were not performing the exercises as frequently as suggested.

Changes in continence status may also be discussed in relation to some of the collected baseline data. Two subjects (5, 6) indicated that they were taking antidepressant medication. A side effect of both medications being used was urinary retention. Both subjects experienced a positive change in their continence status. One subject (5) moved from stress incontinence plus urgency plus retention to stress incontinence plus retention. The other subject (6) indicated that the symptom of urinary incontinence was completely alleviated at the end of the two week trial.

Among the women taking estrogen supplements, various changes in continence status occurred. One subject (11) indicated that she was continent at the completion of the two week trial, while another subject (15) experienced no change in continence status. The third subject (9) using an estrogen supplement experienced a negative change moving from stress incontinence to stress incontinence plus urgency.

Of the two women taking diuretics, one subject (4) experienced no change in continence, while the other subject (1) moved from stress incontinence to stress incontinence plus retention.

Two women identified themselves as being prone to constipation. One subject (8) experienced a positive change in continence status moving from stress incontinence plus retention to stress incontinence, while the other subject (15) experienced no change in continence status.

Four subjects had identified themselves as having a low fluid intake. These women had indicated at the time of the telephone contact, and at the time of the second interview, that they were attempting to maintain an intake of a least 8 cups of fluid a day. Two of these subjects (7, 14) experienced a positive change in continence. One women (7) identified herself as continent at the end of the two week trial, while the other women (14) moved from stress incontinence plus urgency plus retention, to stress incontinence. One participant (4) experienced no change in continence while the other subject (9) moved from stress incontinence to stress incontinence plus urgency.

Five women indicated that they had undergone surgery for the treatment of stress incontinence. Three of these subjects experienced a positive change in continence status. Two women (3, 6) indicated that they were continent at the completion the two week trial. A third subject (5) moved from stress incontinence plus urgency plus retention to stress

incontinence plus retention. One subject (13) experienced no change in continence and another women (9) experienced a negative change moving from stress incontinence to stress incontinence plus urgency.

Assessment of the excretory subsystem of the fifteen participants included data collection regarding the self-management strategies, or the coping behaviours, utilized by these women to manage urinary incontinence.

Many of the women used some type of protective undergarment product on a regular basis. One women used an incontinent product "Depends (R)" and another made her own aids from sheets. One women washed and reused the commercial protection product as often as three times. Those women who did not use aids, or attempted to extend the wear of protective products did so because they found the cost of the products prohibitive.

Table XI

Use of Protective Undergarment Products at Pre and Post  
Intervention Interview Times

Use of Protective Product	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
Yes	6	(40.0%)	6	(40.0%)
Sometimes	8	(53.3%)	3	(20.0%)
No	1	(6.7%)	6	(40.0%)
Total	15	(100.0%)	15	(100.0%)

The majority of the subjects stated that the undergarment protection product used was effective. Other strategies used by these women to manage urinary incontinence included limiting their fluid intake, especially coffee and tea. Some women attempted to maintain an empty bladder by emptying the bladder frequently, but none of the study participants identified that urinary incontinence in any way curbed their daily activities.

The continence assessment yielded detailed data related to urinary tract function. Initial data were compared with data obtained two weeks later, following implementation of the bladder retraining protocol.

### The Rosenberg Self-esteem Scale

The Rosenberg self-esteem scale is a ten item questionnaire which scores items on a four point scale. Answer options include: 1) strongly agree, 2) agree, 3) disagree, and 4) strongly disagree. Each option was scored according to its numerical placement on the scale. Scores were first summed and then means were compared.

Table XII

#### Sums of Participants' Scores on the Rosenberg Self-esteem Scale at Pre and Post Intervention Interview Times

Sums of Scores			
Participant	Interview 1	Interview 2	Change
1	23	18	-5
2	28	27	-1
3	27	26	-1
4	24	25	+1
5	25	24	-1
6	24	27	+3
7	25	25	N/Ca
8	24	23	-1
9	25	24	-1
10	25	25	N/C
11	20	25	+5
12	26	25	-1
13	24	25	+1
14	25	22	-3
15	25	25	N/C

Note. T-value = -0.68, df = 14, p = 0.5 two-tailed.  
aN/C = no change.

Scores on the self-esteem scale ranged from 20 to 27 ( $\bar{M}$ =24.66) at the time of the first interview and from 18 to 25 ( $\bar{M}$ =24.40) at the time of the second interview. Eight women

experienced a negative change in their scores, four women experienced a positive change and the scores of three women remained the same. There is no significant difference between the means of the scores at the first and second interview times. Though some women experienced a negative change in their score, the measurement of global self-esteem for this group of older women remained relatively unchanged.

Detailed tables are presented in Appendix J depicting the changes in response frequencies of each score, for each question on the Rosenberg self-esteem scale, at both pre and post intervention interview times.

Question number eight in the self-esteem scale specifically concerned self-respect. Self-respect is a component of the basic human need of the ego-valuative subsystem, and a summary of the responses to this question are presented.

Table XIII

Frequency of Responses to Question 8 "I wish I could have more respect for myself" on the Rosenberg Self-esteem Scale at Pre and Post Intervention Interview Times

Response	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
1				
2	3	(20.0%)		
3	12	(80.0%)	14	(93.3%)
4			1	(6.7%)
Total	15	(100.0%)	15	(100.0%)

Note. At interview time 1,  $\bar{M}$ =2.8; at interview time 2,  $\bar{M}$ =3.0.

A positive shift in the responses of the women at the time of the second interview was evident. This cannot be attributed to the effect of the bladder retraining protocol without further questioning and validation of the participants thoughts and feelings.

The perceptions of self-esteem in this group of older women experiencing stress incontinence remained relatively stable during the two week trial period. In an attempt to determine if the bladder retraining protocol had any effect on the self-esteem scores of the participants, self-esteem scores and changes in continence status were examined. Comparisons of



the changes in self-esteem scores and changes in continence status are summarized for each participant.

Table XIV

Comparisons of Changes in Self-esteem Scores to Changes in Continence Status at Pre and Post Intervention Interview Times

Interview 1		Interview 2	
Self-esteem Score	Incontinence Category	Changes in Self-esteem Scores	Changes in Incontinence Category
1	23	2	18 -
2	28	6	4 -
3	27	5	6 N/Ca
4	24	2	1 +
5	25	5	2 N/C
6	24	5	3 +
7	25	2	1 +
8	24	4	1 +
9	25	2	2 +
10	25	3	3 -
11	20	2	5 -
12	26	4	1 +
13	24	5	2 +
14	25	5	5 N/C
15	25	4	2 +
			4 N/C

Note. The positive and negative signs indicate the type of change that occurred.  
aN/C = no change.

Evidence of a pattern between self-esteem scores and change in continence status was not evident. Participants' perceptions of global self-esteem remained essentially stable despite any positive or negative change in continence status.

## Discussion

### The Excretory Subsystem

Assessment of the excretory subsystem involved collecting data about an individual's usual elimination patterns.

Assessment of subjects involved collecting data on past and present lower gastrointestinal and urinary tract functioning. Data were also collected on some of the self-management strategies, or coping behaviours, utilized by the participants to manage urinary incontinence.

Subjects identified urinary symptoms congruent with their age and the symptom of stress incontinence. Eleven of the women indicated that they experienced mixed incontinence. Mixed incontinence is not an uncommon occurrence among older women as insufficient sphincter closure plus detrusor instability may lead to mixed incontinence types (Hadley, 1986).

A trend toward positive change in continence status was evident following implementation of the bladder retraining protocol. At the two week point, eight women (53.3%) indicated that they could identify some type of change in their voiding habits. At this time, some subjects commented on improved control over their bladder, and that they were losing control of their urine less frequently. The trend toward positive change in these women, especially the women suffering with mixed incontinence types, demonstrates the effect of correctly performed Kegel's exercises to improve "the muscle tone in all

muscles of the pelvic sling and elevate the urethra and bladder neck" (Witty, 1977, p. 137).

The positive trend towards the development of continence is congruent with findings in the literature. Long (1985) reported a 79% success rate following a habit training program, and McCormick et al. (1984) identified a 75% improvement using biofeedback techniques with older clients to treat stress and urge incontinence. Henderson et al. (1987) eliminated stress incontinence in 67% of a sample of older woman ( $n=9$ ) utilizing a biofeedback mechanism during an eight week program. Figures obtained from the present study are not as significant. This may be a function of the two week trial period. Extending the study period six weeks or longer as suggested by Hurd (1980), and Henderson et al. (1987) may lead to greater changes in continence status. Biofeedback instrumentation was not used with the implementation of the pelvic exercises in the present study. Biofeedback training, used in conjunction with the pelvic exercises, as suggested by Henderson et al. (1987) may have facilitated subjects' progress.

The curious response of the subjects who reported a worsening of incontinence symptoms following implementation of the bladder retraining protocol, raises questions concerning the participants' understanding of the questions during the interview times. The investigator may not have correctly interpreted or coded these womens' responses to the interview questions. The first interview may have sensitized these women

to consider their urinary habits resulting in them presenting more detailed information during the the second interview.

When the data obtained prior to implementing the bladder retraining protocol are compared to data obtained two weeks following implementation of the protocol, results indicate that some of the subjects may have an improved executive ability related to bladder emptying. The consequence of this improved ability is a personal force in the excretory subsystem which fostered the development of a suitable coping behaviour and facilitated movement toward goal achievement. The result is goal achievement and need satisfaction in the excretory subsystem as evidenced by an increased ability to control a desired outcome--the release of urine at socially appropriate times.

#### The Ego-valuative Subsystem

Assessment of the ego-valuative subsystem involved collecting data on an individual's observable behaviours which lead to evidence of goal achievement and need satisfaction, or lack of goal achievement and need satisfaction. The primary data collection instrument for the goal of the ego-valuative subsystem in this study was the Rosenberg self-esteem scale. This scale provided a measure of global self-esteem and self-worth.

Detailed examination of the self-esteem scores for study participants indicated that eight subjects experienced a negative change in their score at the end of the two week trial. There are several possible reasons for the lower self-

esteem scores during the second interview. Other events occurring in the lives of the participants during the two week trial period may have influenced their responses to questionnaire items. As well, the two week trial period may have been an influencing factor. Women were sensitized to the questions during the initial interview and had two weeks to further reflect on their thoughts and feelings. This period of reflection may have influenced responses to the questionnaire items during the second interview. For example, the first participant whose self-esteem score decreased by five points, was unable to respond to three of the scale items during the second interview resulting in a lower total score. She stated that serious reflection and consideration had occurred regarding those items she was unable to answer.

Also, the effect of the bladder retraining protocol, though showing a positive trend for most participants, was not completely effective for all women at the completion of the study. This may have affected some of the subjects' sense of personal efficacy which was manifested by a negative change in their score at the time of the second interview.

Generally, the self-esteem scores were relatively stable, and there is no discernible relationship between these scores and any change in continence status. At a superficial level, this result may indicate that stress incontinence is not a threat to individual feelings of self-esteem or self-worth, so that study participants were able to accept themselves positively despite any change in continence status.

It would appear that in this group of women, the positive evaluation of self was unaffected by the negative force of stress incontinence. This finding is similar to the results documented by Simons (1985) who reported that self-concept was not adversely affected by incontinence. However, the relatively stable self-esteem scores, and the lack of relationship to the negative force of stress incontinence may indicate that the Rosenberg scale lacks the sensitivity to quantify the personal indices individuals utilize to qualitatively determine their sense of self-esteem.

These study results, which indicated no relationship between self-esteem and stress incontinence, differ from the picture of depression and isolation presented in the literature (Burgio et al., 1985; Butt, 1979; Field, 1979; Hadley, 1986). The possibility exists that women who would respond to an advertisement seeking study participants with incontinence form a unique subset of the older female population with urinary incontinence. These women may have a strong sense of self-esteem and self-respect.

At the same time, these women did express concern and anxiety regarding incontinent episodes. One participant stated, "even one drop of urine in your panties can make you unhappy" and another subject stated, "even losing a little bit of urine makes you uneasy".

The primary concern of many women was odour. Some of the women questioned the investigator during the interviews as to whether an odour was noticeable.

For other women, the concern was the location of the nearest bathroom facility. As one participant identified "[I'm] afraid I won't make it to the bathroom in time". Another subject stated, "I feel like I'm always looking for a bathroom", and another women stated she knew the placement of the bathroom facilities in all the stores where she shopped. Most women wore some type of undergarment protection when away from home, for a "feeling of protection" or "safety".

The participants denied that urinary incontinence in any way affected their daily activities. This may be due to the successful ability of these women to develop strategies to normalize the symptom of urinary incontinence through the evolvment of techniques to hide the evidence of the symptom (Strauss et al., 1984). The use of undergarment protection, the attempt to maintain an empty bladder, and the use of fluid restrictions are strategies used by these women to normalize the symptom of urinary incontinence. The ability to successfully normalize the symptom may have assisted these women in maintaining their sense of self-esteem and self-respect.

The techniques these women developed to normalize incontinence are also indicative of personal efficacy behaviours. Though unable to control the efficacy-based futility of stress incontinence, subjects developed behaviours which they judged to be effective in controlling the evidence of the symptom. These behaviours may have provided the subjects with a sense of personal efficacy, and may have

contributed to maintaining the subjects' sense of personal sense of esteem.

### Summary

Study results in this chapter were reported according to the data collection instruments and results were discussed in relation to the excretory and ego-valuative subsystems. Eleven of the study participants experienced some type of change in their continence status. Eight of these women experienced a positive change. The new cognitive and executive abilities fostered by the bladder retraining protocol may have led to the development of a positive personal force for some of the subjects. This positive force influenced the development of a suitable coping behaviour which facilitated goal achievement, and ultimately, need satisfaction in the excretory subsystem.

The increased urinary control allowed some of the participants to overcome the efficacy-based futility of loss of urinary control at socially inappropriate times. The lack of a relationship between the self-esteem scores and the change in continence status does not lead to the conclusion that personal efficacy was increased by the ability to control a desired outcome. The study results provide no evidence that a suitable coping behaviour in the excretory subsystem became a positive force in the ego-valuative subsystem.

In response to the research questions guiding this study the following conclusions can be drawn: Self-esteem, as measured by the Rosenberg self-esteem scale, is essentially stable in this group of older women; there is no significant



relation between self-esteem scores, as measured by the Rosenberg self-esteem scale, and a change in continence status, in this group of older women.

## CHAPTER FIVE

### Summary, Conclusions, and Implications for Nursing

#### Summary

The purpose of this study was to determine the existence of a relationship between the level of self-esteem, as measured by the Rosenberg self-esteem scale, and the presence of stress incontinence in a group of older women participating in a bladder retraining protocol. A review of the literature regarding urinary incontinence and treatment options for women directed the formation of the research questions.

Urinary incontinence is identified as a significant health concern for older women, causing physical and emotional discomfort. Estimates of the actual prevalence of urinary incontinence among women are considered inaccurate due to a lack of reporting of the problem. This lack of incontinence symptom reporting may be due to feelings of embarrassment, hopelessness, and shame. It is also suggested that the lack of reporting is due to a belief by some women, that urinary incontinence is a normal part of the aging process. Lack of symptom reporting may also be due to misinterpretation of the term incontinence, used by health care professionals, during health assessments.

The literature review identified several treatment options for women including medications, surgery and behavioural interventions. Studies involving the use of behavioural interventions focused on the utilization of bio-feedback techniques with Kegel's exercises. Study results

indicated a significant rate of symptom alleviation among older incontinent women. Other studies indicated that the use of bladder retraining programs, primarily habit training programs, without the use of the bio-feedback techniques were also effective.

The literature review revealed many common sense statements regarding the effect urinary incontinence has on the self-esteem of older women. However, few published research studies empirically validated the emotional impact of any type of urinary incontinence on older women. Therefore, a descriptive study was designed to compliment existing research by describing the effect of stress incontinence on the self-esteem of older women involved in a bladder retraining protocol.

A convenience sample of fifteen women was obtained by posting an advertisement in seniors' health drop-in centres, community service agencies, and a seniors' network publication. The advertisement also appeared in two community papers. The participants constituted a group of well older women who ranged in age from 63 years to 82 years. All participants were living in the community and experiencing urinary incontinence.

The conceptual framework which guided the study was the University of British Columbia Model for Nursing. The model views the individual as a behavioural system composed of nine interrelated and interdependent subsystems. This study focused on the interrelationship between the excretory and ego-

valuative subsystems. The theory of self-efficacy provided the method by which this study was operationalized. Self-efficacy is an individual's belief that the performance of specific behaviours in specific circumstances will produce a desired outcome. Self-efficacy is the product of personal efficacy--an individual's judgement of the effectiveness of an executed course of action in achieving a desired outcome. Efficacy information which may create or strengthen personal efficacy is conveyed by four modes of influence. Three of the four modes--enactive, persuasive, and emotive--were used to provide efficacy information in this study.

Data were collected from fourteen older women experiencing stress incontinence, and one older woman who experienced retention with overflow. Data collected were primarily quantitative in nature. Four instruments were used to collect data on three different occasions. During the initial interview data were collected with regard to selected demographic variables. A continence assessment was completed followed by the Rosenberg self-esteem scale. During this initial interview, the necessity of adequate hydration, and the pelvic floor exercises were explained. A written description of the pelvic floor exercises was left with the participants as a reminder to practice the exercises. The second contact by telephone, approximately three days later, ascertained whether the subjects were able to perform the exercises and increase or maintain their fluid intake. The final contact was another face-to-face interview involving

completion of the same continence assessment and the Rosenberg self-esteem scale.

The data were summarized, compared, and described using measures of central tendency and frequency distributions. Data from the continence assessments revealed that women suffered from more than one type of incontinence. Data were separated into categories developed from the subjects' responses to the questionnaire items.

The t-test statistic was used to determine if a difference existed between pre and post intervention self-esteem scores. The results of the t-test indicated that there was no significant change in subjects' self-esteem scores following implementation of the bladder retraining protocol.

Study findings indicated that at the end of the two week trial, 53% of the women were able to identify a change in their voiding habits. A small number of the participants (26.7%) stated that they were completely continent at the completion of the two week trial and four other participants (26.7%) indicated that some type of positive change had occurred. Three women (20%) identified a negative change in their continence status.

Global self-esteem scores as measured by the Rosenberg self-esteem scale remained relatively stable during the two week trial period. Scores appeared to be unaffected by a change in continence status.

### Conclusions

The finding of the study suggest the following conclusions:

1. Older women who correctly learned and consistently performed Kegel's exercises demonstrated a positive trend toward continence at the end of two weeks.

2. The bladder retraining protocol improved the executive ability of the excretory action of the bladder, and gave rise to the development of a positive personal force and need satisfaction. The positive personal force influenced the development of a suitable coping behaviour in the excretory subsystem and facilitated movement toward goal achievement.

3. Global self-esteem as measured by the Rosenberg self-esteem scale, did not significantly change when the number of stress incontinent episodes decreased. There is no evidence that the effect of the bladder retraining protocol became a positive force in the ego-valuative subsystem.

4. Three modes of influence--enactive, persuasive, and emotive--were utilized to assist study participants to strengthen their sense of personal efficacy through activities related to the bladder retraining protocol. Though some women were able to overcome the efficacy-based futility of stress incontinence, there was no evidence that personal efficacy was changed.

## Implications for Nursing

### Implications for Nursing Education

As the age of the Canadian population increases, nursing curricula need to devote attention to the unique needs and issues surrounding the care of the older individual.

Continence is one critical issue.

It is within the scope of present nursing curricula to impart to students an understanding of the continence and voiding mechanisms in the older individual, and the forces which influence those mechanisms. The accurate assessment of continence, and the knowledge of strategies for treating differing types of incontinence also needs to be communicated to potential practitioners.

Implementation of Kegel's exercises lie within the realm of independent nursing action, and nurses should be aware of the proper method to implement these exercises with clients. Kegel's exercises, properly taught and consistently performed, are effective in improving and/or eliminating stress incontinence and mixed incontinence in some older women.

### Implications of Nursing Practice

Nurses involved in the care of older clients, especially older women, should anticipate the presence of some type of urinary incontinence. In order to effectively respond to this client concern, nurses must be able to accurately assess client needs, and then develop and implement a plan designed to assist the client in achieving or maintaining optimal health. Kegel's exercises can assist many older women in

achieving a higher level of stability and increased movement towards optimal health. Kegel's exercises, although not the only treatment for stress incontinence, do fall within the realm of independent nursing practice. Bladder retraining programs, including implementation of Kegel's exercises are inexpensive, non-invasive, and promote self-care. They are an effective tool for the practicing nurse to use with incontinent clients.

The investigator has continued to receive telephone calls from women wishing to participate in the study. These women have been sent a copy of the protocol to do on their own, and may call the investigator if they have any concerns. Calls have also been received from participants who are continuing to experience incontinent episodes, and who wish further assistance. These women have been referred to a urogynecological clinic. The continued contact and response of older women experiencing incontinent episodes speaks to the need for a clinical nurse specialist. A community-based continence nurse specialist could assist with the assessment of older women's continence status, and institute appropriate treatment or referral. A clinical nurse specialist focusing on continence problems could also assist institutions in developing programs to aid clients and staff in the management of urinary incontinence.

#### Implications for Research

This study demonstrated a positive trend toward continence in older women experiencing stress incontinence.



The trial period was two weeks in length. Extending the time of the study may have allowed for a greater degree of change in continence status. Follow-up of the participants over time would also provide useful information regarding the effectiveness of the bladder retraining protocol.

This study demonstrated no relation between global self-esteem as measured by the Rosenberg self-esteem scale and a change in continence status. This result is different from the picture presented in the literature regarding the emotional impact of stress incontinence on older women. Further studies need to be completed which involve the use of more sensitive self-esteem measurement tools so that an understanding of the emotional impact of stress incontinence on older women can be reached.

There is the possibility that the sample in this study formed a unique subset of older incontinent women because of their desire to participate. Further studies employing random sampling methods with larger samples need to be completed in order for there to be generalizability to the older population.

Studies need to be completed which demonstrate the effect of different techniques for managing different types of incontinence in order to increase the strategies available for nurses to implement with clients.

Continence studies also need to be completed on both older men and women. The use of Kegel's exercises with older men is sparsely documented.

Continence is a critical issue for older adults. Urinary incontinence causes physical and emotional difficulties for those who experience the problem. The physical discomfort of the involuntary loss of urinary control is coupled with feelings of low self-esteem and self-worth. Social isolation or institutionalization may result from the physical and emotional cost of urinary incontinence.

The effects of urinary incontinence can be alleviated or minimized through effective nursing management. This involves independent nursing actions, including complete and accurate assessment of clients' continence status, plus the implementation of appropriate protocols. Nurses are then able to nurture the client in the development of suitable coping behaviours. The resultant need satisfaction and goal achievement in clients' subsystems assists the client to achieve balance, stability, and optimal health.

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## Appendix B

### A study of the effects of stress incontinence and bladder retraining on older women's perceived self-esteem Information Letter

My name is Wanda Pierson and I am a Registered Nurse in the Master's in Nursing program at the University of British Columbia. I am conducting a study to determine if stress incontinence (the involuntary leakage of urine when coughing, sneezing, laughing or lifting an object) can be reduced or stopped by performing exercises to strengthen the pelvic muscles.

I am also interested in your feelings regarding the experience of stress incontinence and, if those feelings change, if your experience with stress incontinence changes. If you are interested in participating it will require about one and a half hours of your time. The following list outlines the events of the study:

-At a time convenient for you, I will visit your home and ask you a few questions about your voiding habits and you will complete a 10 item questionnaire. I will explain the pelvic exercises at this time. Time required for this interview is about 45 minutes.

-I will phone you 2 to 3 days later to see how you managing.

-The last interview will occur 2 weeks later, in your home, at a time convenient for you. I will again ask you a few questions about your voiding habits and have you complete the same 10 item questionnaire.

Appendix D

No. \_\_\_\_\_

A study of the effects of stress incontinence and bladder retraining on older women's perceived self-esteem

I would like to ask you some general questions about your past and present health?

Demographic Information

Age \_\_\_\_\_

Are you presently taking any medication? \_\_\_\_\_

If yes, please identify the medication(s). \_\_\_\_\_

Please identify any health problems you are presently being treated for, by any health professional. \_\_\_\_\_

What would you estimate the amount of your daily fluid intake to be? \_\_\_\_\_

What types of fluids do you usually drink? \_\_\_\_\_

Past History

Have you ever been treated for incontinence before? \_\_\_\_\_

If yes, please describe the treatment. \_\_\_\_\_

Have you ever been treated for bladder infections before? \_\_\_\_\_

If yes, when? \_\_\_\_\_

What was the treatment? \_\_\_\_\_

How old were you when you had your first baby? \_\_\_\_\_

How many children have you had? \_\_\_\_\_

As far as you know, were the pregnancies normal? (Did you carry the child to full term without complications?) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

As far as you know, were the deliveries uneventful? (Cesarean section or episiotomy) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Bowel Pattern

How often do your bowels move? \_\_\_\_\_

Is this a regular pattern for you? \_\_\_\_\_

Do you follow a specific routine to keep your bowels regular? \_\_\_\_\_

If yes, please describe. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Appendix E

No. \_\_\_\_\_

Interview No. \_\_\_\_\_

A study of the effect of stress incontinence and bladder retraining on older women's perceived self-esteem

I would like to ask you a few questions about your usual voiding patterns?

Continence AssessmentFrequency of voiding

How often do you void during the day? \_\_\_\_\_

How often do you void during the night? \_\_\_\_\_

Do you wake up because of the urge to go to the bathroom? \_\_\_\_\_

Have you noticed any recent change in voiding? \_\_\_\_\_

If yes, please describe the change. \_\_\_\_\_

Continence

Do you ever loose control of your urine? \_\_\_\_\_

If yes when? \_\_\_\_\_

Is your urine released when you cough\_\_\_\_\_, sneeze\_\_\_\_\_, laugh\_\_\_\_\_, or lift an object?\_\_\_\_\_

If yes, is it a small amount?\_\_\_\_\_ or a large amount?\_\_\_\_\_

Do you ever experience dribbling of urine?\_\_\_\_\_

If yes, please describe this. \_\_\_\_\_

How soon do you have to go the bathroom after you experience the urge? \_\_\_\_\_ minutes? \_\_\_\_\_ or hours? \_\_\_\_\_

How many times a day are you incontinent x1 \_\_\_\_\_  
 x2 \_\_\_\_\_  
 x3 \_\_\_\_\_  
 >3 \_\_\_\_\_

How long have you had the symptom of incontinence? \_\_\_\_\_ days? \_\_\_\_\_  
 months? \_\_\_\_\_ years? \_\_\_\_\_

Did it start suddenly? \_\_\_\_\_  
 or gradually? \_\_\_\_\_

Was it associated with any particular event? \_\_\_\_\_

If yes, please describe. \_\_\_\_\_  
 \_\_\_\_\_

Do you use aids or pads? \_\_\_\_\_ Type? \_\_\_\_\_

Number used per day? \_\_\_\_\_

Are they effective? \_\_\_\_\_  
 If not effective, please describe problem. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

### Retention

Do you ever feel that you have not emptied your bladder fully when you void? \_\_\_\_\_  
 \_\_\_\_\_

Do you have a sense of fullness in your bladder after voiding? \_\_\_\_\_  
 What do you do about this? \_\_\_\_\_

### Pain

Do you ever experience any pain when you void? \_\_\_\_\_  
 If yes, please describe it. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Do you ever experience any burning when you void? \_\_\_\_\_  
 If yes, please describe it. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Urine

Have you ever seen crystals or particles in your urine?\_\_\_\_\_If yes, when\_\_\_\_\_

---

Is your urine clear as tap water or is it cloudy?\_\_\_\_\_

If cloudy, when does this occur?\_\_\_\_\_

---

Does your urine every have a strong odour?\_\_\_\_\_

Please describe the odour.\_\_\_\_\_

---

Is your urine ever discolored?\_\_\_\_\_

Please describe the color.\_\_\_\_\_

---



Appendix FA study of the effect of stress incontinence and bladder retraining on older women's perceived self-esteemSelf-Esteem ScaleNo. \_\_\_\_\_  
Interview No. \_\_\_\_\_

Incontinence may affect the way people feel about themselves. I would like to ask you a few questions about how you feel about yourself.

1. I feel that I'm a person of worth, at least on an equal plane with others.

- 1. \_\_\_\_\_ Strongly agree
- 2. \_\_\_\_\_ Agree
- 3. \_\_\_\_\_ Disagree
- 4. \_\_\_\_\_ Strongly disagree

2. I feel that I have a number of good qualities.

- 1. \_\_\_\_\_ Strongly agree
- 2. \_\_\_\_\_ Agree
- 3. \_\_\_\_\_ Disagree
- 4. \_\_\_\_\_ Strongly disagree

3. All in all, I am inclined to feel that I am a failure.

- 1. \_\_\_\_\_ Strongly agree
- 2. \_\_\_\_\_ Agree
- 3. \_\_\_\_\_ Disagree
- 4. \_\_\_\_\_ Strongly disagree

4. I am able to do things as well as most other people.

- 1. \_\_\_\_\_ Strongly agree
- 2. \_\_\_\_\_ Agree
- 3. \_\_\_\_\_ Disagree
- 4. \_\_\_\_\_ Strongly disagree

5. I feel I do not have much to be proud of.

- 1. \_\_\_\_\_ Strongly agree
- 2. \_\_\_\_\_ Agree
- 3. \_\_\_\_\_ Disagree
- 4. \_\_\_\_\_ Strongly disagree

6. I take a positive attitude towards myself.

1. \_\_\_\_\_ Strongly agree
2. \_\_\_\_\_ Agree
3. \_\_\_\_\_ Disagree
4. \_\_\_\_\_ Strongly disagree

7. On the whole, I am satisfied with myself.

1. \_\_\_\_\_ Strongly agree
2. \_\_\_\_\_ Agree
3. \_\_\_\_\_ Disagree
4. \_\_\_\_\_ Strongly disagree

8. I wish I could have more respect for myself.

1. \_\_\_\_\_ Strongly agree
2. \_\_\_\_\_ Agree
3. \_\_\_\_\_ Disagree
4. \_\_\_\_\_ Strongly disagree

9. I certainly feel useless at times.

1. \_\_\_\_\_ Strongly agree
2. \_\_\_\_\_ Agree
3. \_\_\_\_\_ Disagree
4. \_\_\_\_\_ Strongly disagree

10. At times I think I am no good at all.

1. \_\_\_\_\_ Strongly agree
2. \_\_\_\_\_ Agree
3. \_\_\_\_\_ Disagree
4. \_\_\_\_\_ Strongly disagree

Rosenberg, M. (1965). Society and the adolescent self-image. Princeton: Princeton University Press. Self-esteem scale, Appendix D, pp. 305-319 reprinted by permission of Princeton University Press.

Appendix HInterview Guide for Telephone Contact

1. Have you been able to do the exercises as we discussed? \_\_\_\_\_

2. Are you having any difficulty performing the exercises? \_\_\_\_\_ If yes, please describe. \_\_\_\_\_

3. How much fluid have you been able to take in daily? \_\_\_\_\_

4. Do you have any questions, at this time? \_\_\_\_\_

Appendix I

Tables of Perceived Changes in Frequency of Incontinent Episodes During Periods of Increased Intra-abdominal Pressure at Pre and Post Intervention Interview Times

Table XV

Perceived Changes in Frequency of Incontinent Episodes when Coughing at Pre and Post Intervention Interview Times

Cough	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
Yes	12	(80.0%)	7	(46.7%)
Sometimes	1	(6.7%)	1	(6.7%)
No	1	(6.7%)	7	(46.7%)
N/A	1	(6.7%)	0	
Total	15	(100.0%)	15	(100.0%)

Table XVI

Perceived Changes in Frequency of Incontinent Episodes when  
Sneezing at Pre and Post Intervention Interview Times

Sneeze	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
Yes	12	(80.0%)	8	(53.3%)
Sometimes	0		2	(13.3%)
No	2	(13.3%)	5	(33.3%)
N/A	1	(6.7%)	0	
Total	15	(100.0%)	15	(100.0%)

Table XVII

Perceived Changes in Frequency of Incontinent Episodes when  
Laughing at Pre and Post Intervention Interview Times

Laugh	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
Yes	8	(53.3%)	2	(13.3%)
Sometimes	1	(6.7%)	0	
No	5	(33.3%)	13	(86.7%)
N/A	1	(6.7%)	0	
Total	15	(100.0%)	15	(100.0%)

Table XVIII

Perceived Changes in Frequency of Incontinent Episodes when  
Lifting an Object at Pre and Post Intervention Interview Times

Lifting an Object	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
Yes	2	(13.3%)	1	(6.7%)
Sometimes	0		0	
No	12	(80.0%)	14	(93.0%)
N/A	1	(6.7%)	0	
Total	15	(100.0%)	15	(100.0%)

# Appendix J

## Tables of Frequency of Responses to Rosenberg Self-esteem Questionnaire Items at Pre and Post Intervention Interview Times

When completing the self-esteem scale women would often stop and seriously reflect on their life circumstances. Although the information is not relevant to the discussion of urinary incontinence, many of the comments are note-worthy. Some of these comments have been included here, under the specific questions to which the comments related.

Note: Responses are identified according to the scale used in the questionnaire; 1 strongly agree, 2 agree, 3 disagree, 4 strongly disagree.

Table XVIX

I feel that I'm a person of worth, at least on an equal plane with others.

Response	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
1	5	(33.3%)	2	(13.3%)
2	10	(66.7%)	13	(86.7%)
3				
4				
Total	15	(100.0%)	15	(100.0%)



Table XX

I feel that I have a number of good qualities.

Response	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
1	4	(26.7%)	2	(13.3%)
2	11	(73.3%)	13	(86.7%)
3				
4				
Total	15	(100.0%)	15	(100.0%)

Table XXI

All in all, I am inclined to feel that I am a failure.

Response	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
1				
2				
3	13	(86.7%)	14	(93.3%)
4	2	(13.3%)	1	(6.7%)
Total	15	(100.0%)	15	(100.0%)

Three women felt inadequate because they had not pursued their education at a university level. These women also stated they felt inadequate because they did not have a professional career.

Table XXII

I am able to do things as well as most other people.

Response	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
1	2	(13.3%)	1	(6.7%)
2	10	(66.7%)	10	(66.7%)
3	3	(20.0%)	3	(20.0%)
4				
Total	15	(100.0%)	14	(93.4%)

Table XXIII

I feel I do not have much to be proud of.

Response	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
1				
2	2	(13.3%)	2	(13.3%)
3	11	(73.3%)	10	(66.7%)
4	2	(13.3%)	2	(13.3%)
Total	15	(100.0%)	14	(93.3%)

Satisfaction with their ability to nurture their families was identified by three subjects as being a source of pride.

Table XXIV

I take a positive attitude towards myself.

Response	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
1	1	(6.7%)	1	(6.7%)
2	12	(80.0%)	13	(86.7%)
3	2	(13.3%)	1	(6.7%)
4				
Total	15	(100.0%)	15	(100.0%)

Table XXV

On the whole, I am satisfied with myself.

Response	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
1	0		1	(6.7%)
2	12	(80.0%)	9	(60.0%)
3	3	(20.0%)	4	(26.7%)
4				
Total	15	(100.0%)	14	(93.4%)

Two participants identified that they did not feel satisfied with themselves because they were always "striving" and "reaching for something better".

Table XXVI

I wish I could have more respect for myself.

Response	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
1	0		0	
2	3	(20.0%)	0	
3	12	(80.0%)	14	(93.3%)
4	0		1	(6.7%)
Total	15	(100.0%)	15	(100.0%)

Table XXVII

I certainly feel useless at times.

Response	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
1	0		0	
2	5	(33.3%)	5	(33.3%)
3	6	(40.0%)	8	(53.3%)
4	3	(20.0%)	1	(6.7%)
Total	14	(93.3%)	14	(93.3%)

This question caused thoughtful reflection on the part of most participants. One woman stated that she didn't feel useless but that she felt "meaningless". Three other women indicated that they felt useless "occasionally".



Table XXVIII

At times I think I am no good at all.


---

Response	First Interview		Second Interview	
	Frequency	Percent	Frequency	Percent
<hr/>				
1	0		0	
2	1	(6.7%)	1	(6.7%)
3	8	(53.3%)	11	(73.3%)
4	6	(40.0%)	3	(20.0%)
<hr/>				
Total	15	(100.0%)	15	(100.0%)
<hr/>				

Appendix KLetter of Permission to Use the Rosenberg Self-esteem Scale