

HEALTH LOCUS OF CONTROL AND SELF-CARE
OF ILEOSTOMY APPLIANCES

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TABLE OF CONTENTS

| | Page |
|--|------|
| ACKNOWLEDGEMENTS | iii |
| TABLE OF CONTENTS | iv |
| Chapter | |
| 1. INTRODUCTION | 1 |
| Problem of the Study | 3 |
| Justification of the Problem | 3 |
| Theoretical Framework | 11 |
| Assumptions. | 15 |
| Hypothesis | 15 |
| Definition of Terms | 16 |
| Limitations. | 17 |
| Summary | 17 |
| 2. REVIEW OF THE LITERATURE | 19 |
| Locus of Control | 19 |
| Learning. | 21 |
| Achievement | 22 |
| Problem-Solving | 23 |
| Disability | 26 |
| Health Locus of Control | 28 |
| Ileostomates | 31 |
| Appliances | 35 |
| Body Image | 36 |
| Self-Care | 40 |
| Summary. | 43 |
| 3. PROCEDURE FOR COLLECTION AND TREATMENT OF DATA | 45 |
| Setting. | 45 |
| Population and Sample | 47 |
| Protection of Human Subjects | 48 |

| Chapter | Page |
|--|------|
| Instruments | 51 |
| Health Locus of Control | 52 |
| Self-Care Checklist | 56 |
| Data Collection | 61 |
| Treatment of Data | 63 |
| | |
| 4. ANALYSIS OF DATA | 65 |
| Description of Sample | 65 |
| Findings | 66 |
| Summary of Findings | 68 |
| | |
| 5. SUMMARY OF THE STUDY | 70 |
| Summary | 70 |
| Discussion of Findings | 72 |
| Conclusions and Implications | 78 |
| Recommendations for Further Study | 79 |
| | |
| APPENDIX A | 81 |
| APPENDIX B | 83 |
| APPENDIX C | 85 |
| APPENDIX D | 87 |
| APPENDIX E | 89 |
| APPENDIX F | 92 |
| APPENDIX G | 101 |
| APPENDIX H | 106 |
| APPENDIX I | 109 |
| APPENDIX J | 111 |

| | Page |
|----------------------------|------|
| APPENDIX K | 116 |
| APPENDIX L | 120 |
| APPENDIX M | 122 |
| APPENDIX N | 124 |
| REFERENCES CITED | 126 |

CHAPTER 1

INTRODUCTION

Individuals with ostomies are faced with a dramatic alteration in their pattern of elimination. Fecal contents once eliminated in privacy now erupt through a surgically created opening on the abdomen with no sphincter control. This alteration in one's pattern of elimination requires relearning of self-care. Mastering self-care is particularly significant for the adult ostomate because it is essential to the restoration of personal control and independence.

Self-care for the ostomate involves a variety of tasks. Of these tasks, one considered essential is the application of skin appliances. These external devices provide a means of collecting waste products. Proper management of these appliances allows the individual to control fecal elimination, thus facilitating a return to activities of daily living.

Successful self-care management involved in selecting and applying these devices lies ultimately within the realm of the individual's own actions. As the ostomate begins to manage his care, he begins to

take responsibility for the type of care achieved. How an individual perceives that responsibility will determine the kind of self-care achieved.

Locus of control is one of many variables influencing the perception of responsibility. From a perception of internal locus of control an ostomate would consider self-care a consequence of his own actions, whereas from a perception of external locus of control an ostomate would consider self-care a consequence of the actions of others. Therefore, an individual who perceives self as responsible for care may achieve a greater degree of self-care than an individual who perceives others as responsible for care.

Health locus of control measures expectancies regarding locus of control. The construct health locus of control provides for a specific measure in the understanding of health behavior. The type of behavior manifested in achievement of self-care may be influenced by the type of health locus of control in the individual.

Problem of the Study

The problem of this study was to determine the relationship between the health locus of control and self-care management in application of skin appliances by ileostomates.

Justification of the Problem

In the ileostomate the routine pattern of elimination has been permanently altered. This demands a change of behavior in the individual as attempts are made to resume self-care.

Many studies have been done on the surgical and mechanical aspects of managing a stoma, but few studies have explored the dynamics of personality as it influenced management of a stoma following ostomy surgery (Druss, 1968). May (1977) discussed personality as it related to an "internalized adjustment," whereby some ostomates assumed self-care management, others refused to meet the demands required in management, insisting others care for the stoma. This "internalized adjustment" can be influenced by how the individual perceives the source of responsibility.

In a long-term follow-up study undertaken at Mayo Clinic of 497 ileostomates, a questionnaire reflected

a majority of ileostomates had no difficulty managing their ileostomy appliances (Roy, Sauer, Beahrs, & Farrow, 1970). However, no indication was made as to achievement of self-care with these individuals.

In McCawley, Mannix, and McCarthy's (1975) discussion of the psychological problems of ostomates, McCawley et al. indicated "the ways in which individuals handle their adjustment to ostomy reflect their personality" (p. 154). In Druss' (1968) study of 41 patients with ileostomies, information was gathered regarding day-to-day functions of these individuals following ostomy surgery. One question raised was that of difficulties following ostomy surgery as a result of the patient's personality. A conclusion of this study was that 46% of the patients described having subjective problems with their ileostomies. Most indicated that "acceptance of the ileostomy by key figures in their life was essential for successful adaptation on their own part" (Druss, 1968, p. 59).

Lenneberg and Rowbotham (1970) studied 1,425 ileostomates and the effects of ostomy surgery in their daily lives. Lenneberg and Rowbotham indicated a dependency on others for care exists initially. Through acquisition

of knowledge, the transition to independence in care occurs. During this transitional period as knowledge is acquired, responsibility is shifted to the individual, to begin self-care. Whether this responsibility is accepted by the individual may be a function of a variety of factors.

Locus of control can be viewed as one predictor of behavior (Cromwell, 1963; Lefcourt, 1966; Rotter, Seeman, & Liverant, 1962). How an individual perceives his ability to control what happens to him may determine the type of behavior displayed and may influence ability to accept responsibility for that behavior. MacDonald (1971) has attempted to relate the construct locus of control to situations requiring behavioral responses to disabilities and has suggested that a person's control orientation might affect his adjustment to a disabling condition. Winkelstein and Lyons (1971), in their article on the emotional aspects of ileostomies and colostomies, explored aspects of rehabilitation of the ostomate and claimed that a description of the individual's personality is helpful in understanding how that individual would respond.

There may be a predictive relationship between type of locus of control and type of self-care an individual achieves. The way in which an ileostomate views his locus of control may be an influencing element upon the way in which self-care is performed. According to Orem (1971),

Self-care is the practice of activities that individuals personally initiate and perform on their own behalf in maintaining life, health, and well-being. (p. 83)

An ileostomate has the psychological and social need to achieve self-care. Given and Simmons (1975) advocated achievement of self-care prior to hospital discharge since "the patient will be caring for himself for many years to come" (p. 247). The International Association of Enterostomal Therapy (cited in Hollister Ostomy Guide, 1975) has set forth guidelines for the rehabilitation of ostomy patients and considers a key issue to be the resumption of all possible prior activities. Mastery of self-care management of ostomy care allows an ostomate freedom to resume prior activities. Self-care for an ostomate is considered necessary for future adjustment and largely a responsibility of the patient (Bolinger, 1978; Grubb & Blake, 1976; Hollister Ostomy Guide, 1975; Mahoney, 1976).

Lenneberg (1977) focused on the patient's self-care capabilities and attempted to identify self-care deficits by use of an assessment protocol utilized in the Stoma Rehabilitation Unit at New England Deaconess Hospital. Here the ileostomate is seen as having an obligation to active self-management. Thus, self-care in an ileostomate is important since it allows independence which can lead to a sense of personal control.

How an ileostomate achieves that self-care depends on a variety of elements. Orem (1971) described one element as the patient's characteristic behavior which may indicate "how the patient perceives and reacts in commonly experienced situations" (p. 83). Another element described by Orem (1971) is "the patient's attitude toward his own health and well-being" (p. 84). In Watson's (1976) discussion of rehabilitation concepts in the care of persons with ostomies, it was noted that a significant variable influencing rehabilitation was the ostomy patient's definition of his situation. How an individual views his situation would depend upon personality. Does he see himself in control of the situation and having the ability to adapt?

Adaptation as it relates to stages of ostomy illness and surgery and as both relate to self-care management is discussed by Watson (1977). Four stages of illness as related to ostomy surgery were connected to four phases of adaptation as identified by Crate (cited in Watson, 1977). Watson (1977) noted that self-care management begins in the postoperative aspect of the acute stage where the phase of developing awareness occurs. Self-care is refined as it continues into the convalescent stage where the phase of reorganization can be recognized. Transfer of hospital stoma management to independent self-care at home is seen during the stage when the patient returns to family and community. During this stage the adaptation phase of resolution and identity change occurs.

Orem (1971) claimed adults are expected to act with responsibility as it affects their own well-being and defines responsibility as "a quality that is dependent on the values which an individual holds with respect to a particular field of action" (p. 84). Winkelstein and Lyons (1971) claimed the primary responsibility for physical care and emotional support rests with the physician. Surely this is true in the

initial plan of treatment where surgical intervention is lifesaving. However, as the individual progresses through the convalescent stage, the responsibility for physical care gradually rests with the individual at which point self-care activities can be planned, initiated, and implemented. How the individual perceives that responsibility would seem to be influential in determining the type of self-care planned, initiated, and implemented.

Of the many tasks involved in self-care of the ileostomate, one of utmost importance is the application of skin appliances. Since an ileostomate is unable to control fecal discharge from the stoma, he is dependent upon an appliance to collect the discharge. An appliance remains on the skin continuously. Care and management of the appliance becomes a major part of the self-care needs of the ileostomate. Lenneberg, Sparberg, Spiro, and John (1977) stated:

One of the most important considerations during hospitalization is the selection and fitting of an appliance suited to the patient and his effluent type and discharge pattern. Understanding why the choice and proper fitting of the appliance are critical will help your patient to accept the training period more easily and to become more expert in judging potential problems related to management. (p. 128)

Use of the right appliance is an individual matter, the handling of which may allow the individual to control his situation (Gross, 1974). Although there are a variety of characteristics which can influence the proper selection and fit of an ostomy appliance, four which are commonly considered are: odor-proof ability, leak-proof fit, comfort, and provision of freedom from skin irritation (Lenneberg & Rowbotham, 1970). The ability to decide the type of appliance to use, frequency of change, and method of application involves self-care management which would necessitate the responsibility to independently plan, implement, and problem-solve.

If this study shows that locus of control is an influencing factor in the type of self-care achieved, then locus of control may prove to be a significant element to include an assessment of the ostomate during the rehabilitative process. Knowledge of the ostomate's type of locus of control would be valuable when planning the type of teaching strategies which would be most effective in facilitating self-care. An internally oriented ostomate may require different types

of teaching strategies when learning self-care than an externally oriented ostomate.

Theoretical Framework

Social learning theory developed by Rotter (1954) is a predictive theory of personality which attempts to account for human behavior and the cognitive processes related to behavior in complex social situations. Rotter (1954) felt the focus of this theory is not explaining why one thing in a complex situation is associated with another but in determining when one thing in a specific situation is chosen over another. Lefcourt (1976) explained that according to this theory "a person's actions are predicted on the basis of his values, his expectations, and the situation in which he finds himself" (p. 26). Rotter, Chance, and Phares (1972) described this theory as attempting to

integrate two diverse but significant trends in American psychology, the stimulus-response or reinforcement theories on the one hand and the cognitive or field theories on the other. (p. 1)

The postulates noted by Rotter (1954) within this predictive theory of personality are:

1. The unit of investigation for the study of personality is the interaction of the individual and his meaningful environment. (p. 85)

2. Personality constructs are not dependent for explanation upon constructs in any other field. (p. 87)

3. Behavior as described by personality constructs takes place in space and time. (p. 90)

4. Not all behavior of an organism may be usefully described with personality constructs. (p. 92)

5. A person's experiences (or his interactions with his meaningful environment) influence each other. Otherwise stated personality has unity. (p. 94)

6. Behavior as described by personality constructs has a directional aspect. (p. 97)

7. The occurrence of a behavior of a person is determined not only by the nature or importance of goals or reinforcements but also by the person's anticipation or expectancy that these goals will occur. (p. 102)

Rotter et al. (1972) claimed a person's actions can be determined by the nature or importance of goals or reinforcements as well as the person's anticipation or expectancy that these goals will occur. Reinforcements are seen as any events which "change the potentialities for occurrence of a given behavior" (Rotter et al., 1972, p. 17). If reinforcements can alter a behavior potentiality, then type of reinforcements may have value when predicting behavior. According to the social learning theory, an internal reinforcement is

any event perceived by an individual which has some value for him. External reinforcements are events valued by the individual's group or culture.

A variable in this theory is that of locus of control. It is this variable which describes people's perception of the relationship between what they do and what actually happens to them. Feelings of internal-external (I-E) control are characteristics within an individual's personality which can influence one's own actions.

The perceived control an individual feels he has over the reinforcements that occur because of his behavior is referred to as internal versus external control of reinforcement (Rotter et al., 1962). Internal-external control of reinforcement described by Rotter et al. (1962) is also referred to as internal-external locus of control (Lefcourt, 1976; MacDonald, 1971). An individual can perceive self as having or lacking power over what happens in his life. Those with an internal perception of control feel they are responsible for determining what reinforcements occur, whereas those with an external perception of control believe that elements outside of themselves are responsible for determining what reinforcements occur.

According to Orem (1971),

Self-care is the practice of activities that individuals personally initiate and perform on their own behalf in maintaining life, health, and well-being. (p. 13)

Concepts basic to self-care are self-care agent, which is composed of the individual's capabilities and limitations and therapeutic self-care demands which are the individual's self-care requirements plus actions needed to meet those requirements. The relationship between these concepts as proposed by Orem (1971) is that if self-care agent is equal to total self-care demands, then there is no need for nursing interventions. However, if self-care agent is not equal to total self-care demands then there is a self-care deficit and a need for nursing intervention exists.

The concept of self-care is viewed within the framework of an action system. The focus of this system is the individual's self-care system. Backscheider (1974) explained that the individual's self-care system can be seen from two aspects, the extent to which the individual is involved in his own care and the capabilities of the individual in relation to the therapeutic plan of care.

Assumptions

The assumptions upon which this study was based include the following:

1. Ostomates experience a threat to their sense of self-image.
2. Body image is altered following ostomy surgery.
3. Individuals following ostomy surgery initially experience a sense of physical and emotional loss of control.
4. An individual's personality type will influence emotional reactions.
5. Responses to external and internal stimuli affect decisions and actions relative to self-care.

Hypothesis

The following null hypothesis was posed in regard to the frequency of self-care performed by the ileostomate:

There is no significant relationship between the belief about health locus of control score and the frequency of self-care management in application of skin appliances by ileostomates.

Definition of Terms

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

1. Health locus of control--the kind and extent of control a person thinks he has over his own state of health as measured by the Health Locus of Control Scale (B. S. Wallston, K. A. Wallston, Kaplan, & Maides, 1976).
2. External locus of control--the perception of positive and/or negative events as being unrelated to one's own behaviors in certain situations and, therefore, beyond personal control as measured on a forced-choice scale ranging in scores from 0 to 23. A score of 23 would indicate a consistent belief that rewards come from external sources.
3. Internal locus of control--the perception of positive and/or negative events as being consequences of one's own actions and thereby under personal control. This perception is measured on a forced-choice scale ranging in scores from 0 to 23. A score of 0 would indicate the belief that all rewards come from internal sources.

4. Ileostomate--an individual with a surgically created opening in the ileum portion of the small intestine. The end portion of the ileum is brought through the abdominal wall to form a stoma.

5. Ileostomy appliance--the pouch or device of a reusable type that is worn to collect discharges from ostomy stomas.

6. Ostomate--an individual having an ostomy.

7. Self-care--the practice of activities that individuals personally initiate and perform on their own behalf in maintaining life, health, and well-being.

Limitations

The uncontrolled factors that may have influenced this study were:

1. Personal values other than health locus of control may affect ability to perform self-care.

2. Specific developmental tasks facing each member may differ and consequently may limit self-care ability and/or perception of responsibility.

Summary

The problem of this study was identified as determining the relationship between health locus of

control and self-care management in application of skin appliances by ileostomates. The justification for this problem was based on the influencing effect that locus of control may have on an individual performing self-care during the rehabilitative process. The rehabilitative process was described as involving skill and problem-solving tasks related to management of ileostomy appliances.

CHAPTER 2

REVIEW OF THE LITERATURE

The review of literature is directed toward an evaluation of locus of control related to self-care management of ileostomy appliances. The constructs of locus of control and health locus of control are examined as well as their relationship to the ileostomate involved in the rehabilitative process. Self-care management of ileostomy appliances as a part of the rehabilitative process is examined and included:

Locus of Control

According to Rotter's (1954) social learning theory,

The potential for any behavior to occur in a given situation is a function of the person's expectancy that the given behavior will secure the available reinforcement, and the value of the available reinforcements for that person. (p. 1)

A reinforcement acts to strengthen the expectancy that a particular behavior or event will be followed by that reinforcement. Consequently, when the reinforcement is seen as not contingent upon one's own behavior

its occurrence will not increase an expectancy as when it is seen as contingent.

The effect of a reinforcement following some behavior depends upon whether or not the person perceives a causal relationship between his own behavior and the reward. If the person perceives that the event is contingent upon his own behavior, this is a belief in internal control. When the person perceives that the event is not entirely contingent upon his own behavior this is a belief in external control.

Internal-external control is an expectancy variable--not a motivational one. Internal control defined by Lefcourt (1966) refers to the

perception of positive and/or negative events as being consequences of one's own actions and, thereby, under personal control. (p. 207)

Lefcourt (1966) defined external control as the

perception of positive and/or negative events as being unrelated to one's own behaviors in certain situations and, therefore, beyond personal control. (p. 207)

This does not indicate two personality types exist, but rather individuals have varying degrees of internality and externality.

In an attempt to measure differences in a belief in external control, Phares (1957) developed a 13-item Likert-type scale which was further developed by James (1957). Validity was still further established by Rotter, Liverant, and Crowne (1961). Many versions of the scale have been developed since 1961.

Internal-external control has been related to a variety of behaviors. Some of these behaviors have involved learning, achievement, problem-solving, and disability.

Learning

Seen within the social learning theory, a person seeks information about a particular health threatening condition if the person both values the outcome and believes his behavior will influence his health. Seeman and Evans (1962) studied alienation and learning in the hospital setting and found tuberculosis patients with greater feelings of internal control asked more questions and found out more about their illness and expressed less satisfaction in feedback and information obtained from hospital personnel than did externals. Phares (1968) studied groups of internals' and externals' abilities to learn information. Results

indicated internals provided significantly more reasons for their decisions than do externals. The study also indicated internals and externals did not differ in the acquisition of material. Among reformatory inmates, Seeman (1963) found internals exhibited greater learning about the attainment of parole than externals. However, differences occurred only when learning meant achieving a valued result.

Achievement

Dabbs and Kirscht (1971) studied expectancies and motivation about control in predicting the taking of influenza inoculations. It was found that internals with high motivation to exert control was associated with taking the shots and internals with a high expectancy of control was associated with not taking the shots. Inoculations were more likely among those motivated to exert control and less likely among those who expected to exert control. MacDonald (1970) claimed externals do not believe their efforts would pay off so they do not try. Externals may wish to change but still have a negative expectancy for success.

O'Leary and Donovan (1976) investigated the alcoholic's perception of their ability to control events. It was hypothesized that external locus of control would be associated with a higher attrition than internal locus of control. However, this hypothesis was not supported since results indicated internals tended to leave the program possibly due to a belief in their own ability to control events. In this particular situation, externality proved to be a more desirable trait when attempting to rehabilitate the alcoholic. Internal alcoholics appeared to use more denial and repression, thus, inhibiting completion in a treatment program.

Problem-Solving

Phares (1968) found internals confronted problems more directly than externals when problem-solving. In Phares' (1962) study of chance controlled versus skill controlled situation, it was concluded that subjects who felt in control of the situation are likely to exhibit behavior which would better enable them to cope with potentially threatening situations than those who feel other noncontrollable forces determine the success of their behavior.

Lefcourt (1967) examined the response to influence by internals and externals in his study which contrasted the level of aspiration performance of internals and externals with instructions. It was found that 91% of the externals performed achievement oriented performances when task directions were given. When task directions were not given, only 18% of externals demonstrated achievement oriented performances. Internals exhibited no difference in achievement performances with or without task directions. It was concluded that externals performed in accordance with directions while internals did not.

In a study of personality by Hersch and Scheibe (1967), 26 internally oriented subjects were compared with 26 externally oriented subjects on the 300 adjectives of the Adjective Check List. Twenty-three adjectives were checked significantly more often by the internal individuals ($p < .05$) which presented a description of how the internal sees himself. These adjectives described an active, striving, achieving, powerful, independent, and effective individual. The adjective checked significantly more often by the external individual was that of self-pitying.

Seeman (1959) related the element of powerlessness to internal-external control orientation. An individual may perceive self as having no control over what happens to him, consequently being unable to meet the challenge of a crisis or disabling condition. The ostomate does experience a loss of personal and social control which leads to a sense of powerlessness (Lippincott, 1977). Internal-external control orientation can be related to this sense of powerlessness. Mahoney (1976) claimed the loss of control and feeling of powerlessness in an ostomate can lead to a fear of dependency. The ileostomate is faced with the dilemma of dependency due to loss of sphincter control along with the responsibility of achieving independently managed self-care.

Internal-external control as a determinant of decision-making was studied by Liverant and Scodel (1960). It was hypothesized that internals would select more high probability bets than externals. A gambling situation was set up whereby 28 internals and 26 externals bet on the outcome of the toss of a pair of dice thrown 30 times. Internals chose significantly fewer probability bets than externals and

also wagered money on safer bets significantly more often than risky bets. Externals chose more "long shots" and tended to select bets on hunches. This data may indicate that the internally oriented individual believes in one's own ability to control events whereas the externally oriented individual takes greater risks because of a belief in chance or luck.

Disability

MacDonald (1971) explained the use of locus of control within the framework of rehabilitation, describing locus of control as an intrapersonal variable which relates to attitudes toward reaction. MacDonald and Hall (1969) found support from their sample testing of nondisabled undergraduate students for their hypothesis that externals view physical disabilities as more debilitating to themselves personally and socially than do internals. MacDonald (1971) considered locus of control a personality variable relevant to adjustment in disability. In a study relating locus of control to five major classes of disabilities: internal, sensory, cosmetic, amputation, and emotional, a significant correlation was found to exist between locus of control and ratings of emotional disorders. Internals perceived

emotional disorders as more debilitating than externals. No significant correlation was found between locus of control and other categories of disabilities. Lipp, Kolstoe, James, & Randall (1968) studied the effects of self-image in adjustment to a disability. A hypothesis formulated was that physically disabled subjects who are externally controlled have a higher threshold for threat stimuli than disabled internally controlled subjects. Of these individuals, 30 disabled and 30 nondisabled individuals were shown threat (disabled) and nonthreat (nondisabled) slides. Results indicated externally controlled disabled individuals were less denying of their disability than internals. It was speculated that physical disability is more threatening to an individual who perceives he has control of events.

Smith (1970) studied situational factors experienced in a life crisis and its effect on an individual's expectancies regarding locus of control. Smith claimed a crisis situation temporarily presented a negative influence causing the affected individual to perceive self as powerless. Smith hypothesized that crisis patients would initially be more externally oriented

than would noncrisis patients. This hypothesis was supported.

Internal-external locus of control related to a variety of behaviors. These behaviors are determined by how a person perceives himself in various situations. The perception of control an individual has about his health is one area which may determine certain types of health-related behaviors.

Health Locus of Control

Locus of control as seen with Rotter's (1954) social learning theory, may be used to understand and explain health behaviors. In an attempt to examine locus of control as it relates to health behavior, K. A. Wallston, Maides, and B. S. Wallston (1976) hypothesized that the internal who values health highly would seek more information than one who did not value health or held external beliefs.

The Health Locus of Control Scale developed by K. A. Wallston, Maides, and B. S. Wallston (1976) measured expectancies regarding locus of control as they were related to prediction of health related behaviors. The Health Locus of Control Scale described by K. A. Wallston and B. S. Wallston (1978) is "a unidimensional

measure of people's beliefs that their health is or is not determined by their behavior" (p. 160). Health locus of control is defined by K. A. Wallston, Maides, and B. S. Wallston (1976) as kind and extent of control a person thinks he has over his own state of health.

In a study of college students who had been given a mildly threatening message about the dangers of hypertension, B. S. Wallston, K. A. Wallston, Kaplan, and Maides (1976) found that internals who had been measured by the Health Locus of Control Scale sought more information than any other group. Using the Health Locus of Control Scale, B. S. Wallston, K. A. Wallston, Kaplan, and Maides (1976) found no significant differences in weight reduction between internals and externals. However, it seems significant to note that health locus of control externals lost more weight in group oriented programs while health locus of control internals lost more weight in self-directed programs. Knowing the individual's locus of control proved significant when determining which type of program would be most effective for the individual. Marston (1970) found no relationship between locus of control and compliance of myocardial infarction patients. In a study observing the

health behavior of participants in a smoking cessation program, Kaplan and Cowles (1978) found support for the hypothesis that individuals who held internally oriented health locus of control beliefs and who valued health highly were most successful in achieving and maintaining changes in their smoking behavior.

Since development of the Health Locus of Control Scale a further refinement has been made. The original 11-item Scale represented the dimension of locus of control indicating whether an individual was health internal or health external. This Scale was devised to give one score. A multidimensional Health Locus of Control Scale was later developed (K. A. Wallston & B. S. Wallston, 1978) which would measure several other aspects of health locus of control. By using the multidimensional approach a better understanding and prediction of health behaviors could be made. The dimensions covered in the multidimensional scale are: internal health locus of control, powerful others health locus of control, and chance health locus of control.

Ileostomates

Ileostomies are usually performed on persons with ulcerative colitis. This disorder is noted most frequently in the younger adults between the ages of 20 and 40 years. Lenneberg and Rowbotham (1970) found in a study of 1,425 ileostomates, 855 were between the ages of 20 and 45 years of age. Following the surgical creation of a stoma, the ileostomate faces a rehabilitative process. Lennebert and Rowbotham (1970) claimed "the care of the rehabilitation process is to overcome passivity with genuine goal-directed activity" (p. 92). According to Lenneberg and Rowbotham, during the first postoperative year of rehabilitation, the ileostomate is faced with the following major tasks: "recovering physical well-being, perfecting self-care, and resumption of his social roles" (p. 114). As the ileostomate attempts these tasks he is confronted with feelings of dependency alternating with demands for independency. How the individual defines his situation would influence his behavior (Watson, 1976).

In the Guidelines for the Rehabilitation of Ostomy Patients (Donovan & Lenneberg, 1975), a philosophy of

comprehensive rehabilitation is advocated as a basis for the nursing process in care of ostomy patients. One rationale offered for this type of rehabilitation is that

The rehabilitative process must be a planned series of steps, leading to progressive understanding. It is an educational process characterized by discussion and active participation. (Donovan & Lenneberg, 1975, p. 2)

The ostomates' ability to adapt to the rehabilitative process is of major concern. In a study of adaptive responses following ostomy surgery, Dyk and Sutherland (1956) studied 38 colostomy patients (22 men and 16 women) 5 to 14 years postoperatively. The study included adaptation of the family members and this effect upon the colostomate. When home following hospital discharge, most of the colostomy patient emphasized a desire to be independent in self-care. It was believed that this was a possible protection against rejection by family members. The study concluded that, "the spouse is often the key to the patient's success or failure in adapting himself to his disability" (Dyk & Sutherland, 1956, p. 138).

Prudden (1971) concluded from a study of ileostomates that those who did best were those whose period

of adjustment had been strongly supported by those persons who were most important to them. Katona (1967) recommended including the patient's spouse in all aspects of patient care while at the same time maintaining the patient's independence. Lenneberg (1962) interviewed 14 men and 13 women who had ileostomies. It was found that of the 14 men, 13 were working full-time. Of these 13 men, at least 10 were using defense mechanisms in relation to their ileostomies. The ileostomy and care were major pre-occupations and sources of resentment. This was interpreted by the researchers as unsatisfactory acceptance of the ileostomy. Of the 13 women, 12 were occupied full-time, functioned at a better level psychologically, and were able to accept help with their personal problems more readily than the men.

Druss (1968) studied ileostomates' responses to adaptation following surgery. Questionnaires were sent to 41 patients; the mean age at the time of surgery was 35 years. Forty-one percent were men and 50% were women. The questionnaire was divided into three parts: the presurgical, intermediate, and long-term period since surgery. Of those responding to the

question as to whether the ileostomy was a problem in their current life, 46% (men and women) answered yes. An assortment of problems was indicated. The problems seemed related to management of stoma care. It was concluded from the study that a majority of respondents were satisfactory at the functional level involving school, work, and social activities but did not reflect a sense of personal well-being. Based upon these results, the researchers proposed that peace of mind is achieved when an individual feels in control of his functions. Knowledge is the best form of control. Druss (1968) described this knowledge as:

Knowledge of what he can expect prior to surgery as well as knowledge of how he can best care for his skin, eliminate odor, and maintain a proper diet once surgery has been performed. (p. 58)

McCawley et al. (1975) indicated, "The personality type, previous experiences, and the psychological situation of the patient before operation influences the subsequent emotional reactions" (p. 151). Along this same line, Mahoney (1976) claimed, "A person's basic personality as well as background may influence his post-operative acceptance of the stoma and his rehabilitation" (p. 90). Postoperatively, the ostomate experiences a state of dependency due to a less of sphincter control.

Appliances

The condition of the skin around the ileostomy and under the appliance disc is directly related to the performance of the appliance. Lenneberg and Rowbotham (1970) claimed the extent of difficulties with the appliance must be due to failure in learning proper use and/or poor appliance design. An ostomate encounters a situation where skill and problem-solving is required. Locus of control may determine how they perceive their control in that situation. Consequently, perception of control would influence motivation, learning, and achievement involved in that situation.

Leichtentritt (1976) explained, "Poor appliance fit or improper use of appliance is one of the most prevalent problems associated with stomas" (p. 34). McCawley et al. (1975) in dealing with the psychological problems of ostomates claimed,

The acquisition of an efficient, acceptable appliance and the ability to use it is very important to an ostomate's sense of assurance and self-esteem. (p. 153).

Initially, responsibility for appliance management rests with the nurse or enterostomal therapist upon whom the ileostomate depends. As the rehabilitation

proceeds, the ileostomate may become more knowledgeable and could assume a greater degree of responsibility for management of ileostomy appliances.

Lenneberg and Rowbotham (1970) questioned 1,325 persons regarding what they saw as limitations. Ninety-eight of 322 persons felt a change in job had been due to their ileostomy. Forty-eight of these 98 indicated the decision to change originated within themselves, "either for physical or psychological reasons" (p. 28), while 28 felt the decision had been imposed by others.

Body Image

Traub and Orbach (1964) referred to body-image as "the picture of our own body which we form in our minds" (p. 53). Rotter (1954) does not use a construct of self-image in the social learning theory. However, this theory does assume personality has unity whereby new experiences are affected by previous experiences. Therefore, the individual's concept of image may influence behavior.

In a follow-up study of colostomates, Orbach and Tallent (1965) identified common feelings 5 to 15 years postoperatively as being depression, altered perception

of own body, and lowered self-esteem. Rubin (1968) discussed self-esteem and body-image and indicated a feeling of mastery and success exists when control had been achieved in a certain function. A contrast is made in the following quote by Rubin (1968):

To lose or be threatened with the loss of a complex, coordinated, and controlled functional activity which has been achieved and integrated into the personal system is to lose or be threatened with the loss of self. (p. 22).

Bille (1977) investigated barriers to learning experienced by an individual life-altering disease or injury. Twenty-four patients with a diagnosis of myocardial infarction were studied. A body-cathexis scale was given to measure body image. A self-report of compliance was obtained via a follow-up phone call 1 month following hospital discharge. Results indicated no significant relationship between body image and amount of information learned in the teaching program. It was speculated that individuals who were satisfied with their body parts and functions may place a higher value on caring for their bodies, whereas patients with a negative body image may place less value on caring for themselves.

Donovan and Lenneberg (1975) indicated one of the guidelines to be that "the nurse understands that ostomy surgery compromises body image" (p. 3). A given rationale explains that "ostomy surgery involves the loss of a valued body part and/or sphincter control" (p. 3). It would seem that the individual once experiencing this loss will react behaviorally.

Sutherland, Orbach, Dyk, and Bard (1952) in an early investigation studied the effects of the loss of rectum and sphincter control on the functioning and emotions of patients in significant areas of living. Fifty-seven patients (29 men and 28 women) were interviewed frequently over a period of time. It was reported that feelings of inacceptability to others and withdrawal from social relationships were experienced by every patient. Sutherland et al. (1952) concluded:

The attainment of anal sphincter control in childhood is so fundamental in human socialization that the surgical destruction of anal sphincter control must result in a severe emotional and social disruption. (p. 861)

One method to alleviate this type of disruption was to help the patient gain control over fecal evacuation.

Continuing with their studies on adaptive responses to a colostomy, Dyk and Sutherland (1956) interviewed

38 patients 5 to 15 years postoperatively. Family attitudes were evaluated from the patients' responses. The sample was selected based upon the fact that marital relationship had been maintained. Data obtained during the post convalescent period indicates shame and a sense of disfigurement were most frequently experienced. Most of the colostomy patients expressed a desire to be independent in self-care.

Druss (1968) studied 41 ileostomates and their reaction to daily physical and emotional functioning. One question investigated the individual's perception in body image following ileostomy surgery. Findings indicated the majority of ileostomates saw their ileostomy in relationship to key figures. Although physical functioning was good, 46% of the 41 ileostomates described themselves as lacking in a "sense of personal well-being" (p. 58). A sense of well-being as well as acceptance of the ileostomy by key figures seems significant in effecting an individual's body-image.

Lee (1970) discussed the "process of adjustment" an individual must master following a perceived change in body. Lee further explained one aspect of mastery may involve facing a new reality now that body-image

had been altered. How ileostomates perceive the effect of a body-image alteration upon their life style may influence how they perceive their control while engaged in their previous life style.

Self-Care

According to Orem (1971) the elements important to self-care are that the individual is able to physically perform care, is intellectually capable of learning, emotionally willing to engage in self-care, and is oriented to time and place. Postoperatively the ileostomate is confronted with self-care tasks involving skill, decision-making, and problem-solving. Seen through locus of control, an individual's orientation may influence learning of self-care techniques such as appliance application. Internally oriented ileostomates may see self as responsible for learning about appliance application with the expectation of achieving self-care. Externally oriented ileostomates would expect self-care to be a responsibility of others, consequently not assuming self-care in appliance application. This may have further implications for nursing when determining teaching strategies

in self-care for internally oriented and externally oriented ileostomates.

In Backscheider's (1974) presentation of a framework for assessing patient self-care capabilities related to diabetes mellitus, a recommendation made is to provide more nursing knowledge structured around the description of self-care capacities and limitations. Determining whether internal or external control limits an ileostomate's capabilities in performing self-care would be helpful when structuring the type of nursing needed.

In the study of colostomates, Dyk and Sutherland (1956) discussed the altered body-image and its effect on self-care and claimed that to some,

assistance of any variety may be intolerable. Such attitudes are prevalent in our culture in which value and esteem are based on maintaining independence and in which dependence creates fears of rejection or abandonment.
(p. 137)

This attitude seems to be of increased significance to ileostomates whose altered body image is permanent.

Lenneberg and Rowbotham (1970) explained that type of self-care may depend on the ileostomate's

former mode of handling problems, the patient will . . . either allow the passivity-inducing forces to dominate, in which case he will not

adjust well to ileostomy, or he will defend himself vigorously against these forces, in which case he will make a favorable adjustment. (p. 93)

Passivity-inducing forces were cited as medical illnesses, general debility, lack of knowledge, grief, shame, and uncontrollable elimination. These forces can cause the individual to experience loss of physical and emotional control which could lead to dependency.

According to Lenneberg and Rowbotham (1970) self-care involves

maintenance of healthy skin by selection of a well-fitting appliance and by hygiene; odor control and successful wearing of an appliance without accidents and freedom from fear of accidents. (p. 115)

These present new responsibilities for the ileostomate with the promise of control and return to former life style.

Methods for mastery of the rehabilitative process is different for the colostomate as compared to the ileostomate. Colostomates rely on a regulative method whereas the ileostomate relies on an external control mechanism. Lenneberg and Rowbotham (1970) felt control for ileostomates came from experience and information.

Orem (1971) considered some self-care behaviors as internally oriented and others as externally oriented. Those behaviors "dependent upon awareness, perception, and decision-making as related to self" (Orem, 1971, p. 167), are internally oriented behaviors. Those "need-fulfilling behaviors with an external environmental orientation" (Orem, 1971, p. 167) are externally oriented. According to Orem, both types of behaviors aid toward developing independent self-care.

Managerial problems may reflect the ileostomate's perception of self and illness. Mahoney (1976) indicated some ostomates experiencing managerial difficulties may view ostomy as a handicap, or a loss of control over their bodies. Mahoney further explained by listing three defense mechanisms commonly experienced by ostomates as (a) repression, (b) displacement, and (c) regression. These mechanisms would seem to have an inhibitory effect on an ileostomate confronted with self-care.

Summary

If an ileostomate feels powerless in adapting to altered body functions, he may remain dependent on

others for care and avoid meeting the responsibilities of self-care. It seems significant to examine within the framework of social learning theory how an ileostomate perceives learning about appliance management and utilization of that information in self-care. If an ileostomate perceives his behavior as dependent upon internal control he may attempt to learn more and to take responsibility for utilizing this information. However, if an ileostomate perceives his behavior as dependent upon external control, he may acquire learning and may utilize that information even though his expectancy for success is low and others are seen as responsible for success. Therefore, an external when faced with self-care tasks may perceive others as responsible for the success of self-care achieved. An internal attributes success or failure to his own ability. If encountering failure he may attempt a greater effort toward learning more and improving skill.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This investigation was a descriptive-comparative study. Abdellah and Levine (1965) defined this type of study as being concerned with obtaining accurate and meaningful descriptions of the phenomena under study. The term "comparative research" used synonymously with "explanatory studies," attempts to discover how the phenomena under study are related to each other.

The variables measured were the construct health locus of control and frequency of self-care in application of ostomy appliances. Demographic data including age, sex, diagnosis, date of surgery, and whether subject lived alone were also collected.

Setting

The settings for this study were in two states located within metropolitan areas of the Southern part of the United States. The first setting described was where the test-retest took place and the second

setting described was where the sample for this study was tested.

Packets containing copies of both instruments were mailed to the enterostomal therapist of a city medical center in a metropolitan area of the Southern part of the United States. The enterostomal therapist then mailed the packets to ileostomates meeting the criteria who had been discharged from the city medical center. Therefore, the actual setting for the test-retest was in the home of the ileostomate.

The second setting for this study was a private hospital located in a metropolitan area of the Southern United States. It had an active enterostomal therapy department and provided ostomates with postoperative instructions and an outpatient follow-up clinic. Following a monthly district ostomy meeting, a conference room was selected as the setting in which ileostomates from the meeting, interested in participating in this study, were asked to meet. Seven out of the sample of 16 met in this setting. The remaining 9 of the sample received mailed packets containing copies of both instruments. Therefore, the setting for the remaining 9 of the sample was the ileostomate's home.

Population and Sample

The sample of 16 was derived from a population of ileostomates who had been discharged from a private hospital. Ileostomates were deliberately selected according to certain criteria considered representative of the target population. A purposive sample was utilized. Kerlinger (1973) described purposive sampling as "characterized by the use of judgment and a deliberate effort to obtain representative samples" (p. 129). However, Polit and Hungler (1978) warned there is a risk of conscious sample biases since, "Sampling in this subjective manner provides no external, objective method for assessing the typicalness of the selected subjects" (p. 457). Use of a purposive sample was an effective way of selecting subjects representative of ileostomates encountering the responsibility of self-care following ileostomy surgery.

Ileostomies are usually performed on persons with ulcerative colitis or Crohn's disease. Both diseases are nonmalignant disorders. These disorders affect both male and female and are noted most frequently in the younger adult between the ages of 20 and 40

years of age. Lenneberg and Rowbotham (1970) found in a study of 1,425 ileostomates, 855 were between the ages of 20 and 40 years of age. Since this seems to be the usual age range for the majority of ileostomates, a representative sampling for this study included persons with ileostomies between the ages of 20 and 40 years. Ileostomy surgery had been done for inflammatory disorders in each person.

Ostomy care instructions had been given post-operatively by an interostomal therapist. Each ileostomate had the ability to perform technical skills involved in care of the ostomy appliance as well as skin care. Significant others were available for assistance for a majority of the ileostomates. Ileostomates 6 to 12 months following ileostomy surgery were included. Although the self-care process begins immediately following surgery, an arbitrary time span of 6 months to 12 months was selected in order to allow for the development of self-care ability during the transition from hospital to home.

Protection of Human Subjects

Prior to initiating the study, permission was obtained from the graduate school of Texas Woman's

University (Appendix A) after approval of the proposal by the Human Subjects Review Committee (Appendix B). After the Texas Woman's University permission was obtained, agency permission from the private hospital (Appendix C) was procured. A packet containing the proposal included both instruments, the human subjects approval, and a blank agency permission form was given to the hospital's enterostomal therapist and the hospital director. After both had reviewed the study, a discussion was held with the therapist concerning the investigator's method of collecting data. Agency permission was then obtained.

Agency permission from the district ostomy association (Appendix D) was then obtained. Prior to the ostomy meeting, a packet containing the proposal with both instruments and a copy of the human subjects approval was given to the president of the ostomy association. A discussion was held and approval was obtained.

Before consent was obtained from the subjects attending the district ostomy meeting, the purpose, risks, and benefits were presented (Appendix E). Each person was advised that a study was being done

to see if a relationship existed between self-care of appliance management and personal belief regarding health behaviors. Two potential risks were indicated on the consent form as length of time needed to complete the checklist and scale and the improper release of data. The potential benefit of participation in the study was also given. This benefit was identified as the knowledge of a personal contribution to research in self-care ability of people with ileostomies. Each ileostomate was given a packet containing both instruments and a consent form. After signing the consent form a copy was given to the individual who had signed. Of the 10 ileostomates, 7 actually met the criteria. The remaining 3 were eliminated because of time length following ostomy surgery.

Consent was also obtained from ileostomates referred by the enterostomal therapist. Each of these ileostomates was mailed a packet containing an introductory page with directions, a second page giving a brief explanation of the study, and a copy of both instruments (Appendix F). A statement written on the introductory page indicated return of the completed

checklist and scale would be construed as informed consent. Assurance that anonymity would be maintained was indicated. Nine packets were mailed and returned.

Anonymity was maintained for all subjects by omitting names from both instruments. Each Health Locus of Control Scale was coded with a different number and was matched with the same coded number on the Self-Care Checklist. Code numbers were then used in compilation and recording of the data.

Instruments

Two instruments were utilized in this research: the Health Locus of Control (Appendix G) and the Self-Care Checklist of Ostomy Appliance Management (Appendix H). Each instrument was administered to ileostomates following an ostomy association meeting and to ileostomates referred by an enterostomal therapist. Additionally, demographic data (Appendix H) were collected which included sex, age, diagnosis, date of surgery, and whether the individual lived alone.

Health Locus of Control

Health locus of control was measured utilizing the Health Locus of Control Scale devised by B. S. Wallston, K. A. Wallston, Kaplan, and Maides (1976). Written permission for use of this instrument was obtained (Appendix I). This Scale was developed to measure internal or external health beliefs and has an advantage over Rotter's Internal-External Scale since the Health Locus of Control Scale specifically relates to health and illness. K. A. Wallston and B. S. Wallston (1978) claimed the more specific the instrument, the better the prediction.

B. S. Wallston, K. A. Wallston, Kaplan, and Maides (1976) described the development of the Health Locus of Control Scale. Using a 6-point Likert-type format, 34 items written as measures of generalized expectancies regarding locus of control related to health was administered to 98 college students in a small Southern university. After all of the items were analyzed, 11 items were then selected based upon specific criteria. Five of the items on the Health Locus of Control Scale were considered as internal belief statements. Those considered internal indicated

beliefs that an individual's health is controlled primarily by his own behavior. Six of the items on the Health Locus of Control Scale were worded externally and presented beliefs that an individual's health is largely contingent upon factors such as fate, chance, luck, and powerful others.

This 11-item Scale has a potential range of 11 to 66 and is scored in the external direction, with each item scored from 1 (strongly disagree) to 6 (strongly agree) for the externally worded items and were reverse scored for the internally worded items. Alpha reliability of the 11-items was .72 and the concurrent validity was a .33 correlation ($p < .01$) with Rotter's Internal-External Scale (B. S. Wallston, K. A. Wallston, Kaplan, & Maides, 1976).

According to Abdellah and Levine (1965), validity of an instrument is determining if data are actually measuring what it is supposed to measure. Two studies were presented by B. S. Wallston, K. A. Wallston, Kaplan, and Maides (1976) as preliminary evidence of the construct validity of the Health Locus of Control Scale.

In one study it was proposed that subjects who held internal locus of control beliefs and also valued health would seek more information about a given health condition than externals. The methodology used for this particular study included exposing 44 male and 44 female college students to literature about hypertension. Subjects were classified as internal or external on the Health Locus of Control Scale and Rotter's Internal-External Scale. A 2 x 2 x 2 analysis of variance was done and three factors were identified. There was a significant interaction between the factor of health value and health locus of control. There was no significant interaction between health value and internal-external value. It was concluded that when health locus of control was used as the basis of classification of high health value, internals chose more pamphlets. B. S. Wallston, K. A. Wallston, Kaplan, and Maides (1976) explained that identifying subjects as internal or external would not have resulted if a general scale had been the basis for classifying subjects as internal or external.

The interaction between health value and health locus of control was replicated with a sample of 97 college students (K. A. Wallston, Maides, & B. S. Wallston, 1976). A significance was found in this interaction ($p < .04$) in that internal-high value subjects chose more total pamphlets than internal-low value. External-high value subjects and external-low value subjects did not differ from each other. It was concluded that internal-high value subjects chose a significantly larger number of pamphlets than subjects in other groups ($p < .05$).

The other study which was offered (B. S. Wallston, K. A. Wallston, Kaplan, & Maides, 1976) as preliminary evidence of the construct validity of the Health Locus of Control Scale hypothesized that subjects in a weight reduction program whose orientation for expectancies would be more successful in a program consistent with their locus of control beliefs than subjects in a program inconsistent with their locus of control beliefs. Subjects included 34 overweight women with a mean age of 21 years who had been identified as internal or external according to the Health Locus of Control Scale and the Internal-External Scale. Internally oriented

subjects were assigned to a self-directed program and externally oriented subjects to a group program. A 2 x 2 x 2 analysis of variance was done and three factors were identified. A significant interaction was found between health locus of control classification and type of program ($p < .03$). No significance was found between internal-external value and type of program.

The results indicated externals lost more weight in the group program ($\underline{M} = 10.86$) than in the self-directed program ($\underline{M} = 9.56$) and internals lost more weight in the self-directed program ($\underline{M} = 8.13$) than in the group program. It was concluded that use of the Health Locus of Control Scale had led to results more congruent with their hypothesis than if the Internal-External Scale had been used (B. S. Wallston, K. A. Wallston, Kaplan, & Maides, 1976).

Self-Care Checklist

Self-care was measured by a 10-item checklist devised by the investigator. The objective for the checklist was to determine the frequency of self-care of ostomy appliance management by the ileostomate. Frequency of appliance management was measured by use

of a quantitative scale. To indicate an increase in self-care management a numerical increase was used with no self-care equal to a numerical value of 0, rarely equal to a numerical value of 1, usually equal to a numerical value of 2, and always equal to a numerical value of 3. The total score indicated frequency of self-care management of ostomy appliance. The total scores on the checklist ranged from 0 to 30.

Items were selected which according to literature review were considered significant for the self-care appliance management. This list of items was completed in the format of a checklist. Seven major categories were given. Under each major category specific behaviors were listed. A total of 38 specific behaviors was listed. Each specific behavior was to be checked by a panel of experts according to its relevancy when assessing self-care.

The panel of experts included one master's prepared registered nurse who was an enterostomal therapist actively involved in ostomy care at a city medical center in the Southern part of the United States; one registered nurse who was an enterostomal therapist actively involved in ostomy care within a

private hospital in the Southern part of the United States; and one master's prepared registered nurse who was a nursing instructor teaching content on ostomy care and actively involved in caring for a limited caseload of ostomy patients in a large city hospital in the Southern part of the United States.

A copy of the 38-item checklist (Appendix J) was sent to each member of the panel of experts. Each member was to indicate the relevancy of each item listed as always, sometimes, or never relevant when assessing self-care in ostomy appliance management. Those items checked by all three panel members as always relevant when assessing self-care were included in the Self-Care Checklist. Items checked as sometimes or never relevant when assessing self-care were not considered for inclusion in the Self-Care Checklist. The responses from each panel member were used in establishing content validity of the Self-Care Checklist.

A copy of the Self-Care Checklist was sent to each panel member along with a list of questions to determine clarity of expression, readability, and appropriateness of the questions on the Self-Care

Checklist (Appendix K). As a result of their review some wording within the questions was changed to facilitate clarity of meaning.

According to Polit and Hungler (1978) establishing construct validity of an instrument is determining if the instrument adequately measures the concept under question. Construct validity for the Self-Care Checklist was determined by factor analysis. Two factors identified from this analysis were appliance management and information-seeking regarding hygiene. The factor of appliance management is a skill initiated by the ileostomate, which is necessary in the achievement of self-care. The factor of information-seeking regarding hygiene is a process, initiated by the ileostomate, which allows obtaining the data necessary in achieving self-care.

The varimax rotated factor matrix facilitated interpretation of the factor analysis (Appendix L). Factor score loadings for each self-care question were presented. Question 3 and Question 10 were eliminated due to the lack of variability. Factor scores less than .30 or -.30 were disregarded. The varimax matrix indicated a Factor 1 loading for

self-care Questions 2, 4, 6, 8, and 9. These questions seemed to reflect the theoretical construct of appliance management. Factor II had high loadings on self-care Items 5, 7, and 8, and the inverse of 1. This was interpreted as reflecting the theoretical construct of information-seeking regarding hygiene. The inversely weighted score for Question 1 was interpreted as indicating the inverse relationship of the variable health locus of control and Factor II (information-seeking regarding hygiene). As health locus of control scores increased indicating externality, Factor II decreased. It was determined that the self-care checklist was composed of Factor I (appliance management) and Factor II (information-seeking regarding hygiene).

Polit and Hungler (1978) defined the reliability of an instrument as, "the degree of consistency with which it measures the attribute it is supposed to be measuring" (p. 424). Stability, as an aspect of reliability, is defined by Polit and Hungler (1978) as "the extent to which the same results are obtained on repeated administrations of the instrument" (p. 426).

Test-retest reliability is a procedure used in assessing stability of an instrument.

External reliability for the Self-Care Checklist was calculated in a test-retest design using a Pearson r coefficient correlation. Reliability coefficients of .70 or higher are acceptable.

The reliability coefficient obtained for the Self-Care Checklist was significant, $r = .77$, $p < .05$. Sixteen subjects were used. Each subject was retested following a 5-week period.

Both the reliability and validity of the instrument have been shown within a limited scope. A continued and varied use of this instrument is needed to further test its reliability and validity.

Data Collection

After obtaining human rights approval from Texas Woman's University as well as from the agency, nine packets were mailed to those ileostomates referred by the agency's enterostomal therapist. Each packet contained an introductory letter; an explanation of the study; the Health Locus of Control Scale which included a section requesting demographic data of sex, age, date of surgery, condition requiring surgery,

and whether the individual lived alone; the Self-Care Checklist; and a self-addressed, stamped envelope. The introductory letter indicated return of the completed checklist and scale would be construed as informed consent. In order to avoid biased responses, counterbalancing was implemented. This strategy included administering to one-half of the ileostomates packets containing a data sheet, Health Locus of Control Scale, and the Self-Care Checklist. The order of the scale and checklist was reversed for the remaining half of the ileostomates. Each test per packet was coded with the same number.

After obtaining agency approval, 10 packets were administered to consenting ileostomates following an ostomy association meeting. At this time the subjects were informed that their names on the consent form would not be correlated with the answers they provided. The packets which were administered contained a written consent form, a Health Locus of Control Scale which included a section requesting demographic data of sex, age, type of surgery, condition requiring surgery, whether the individual lived alone, and a Self-Care Checklist. Counterbalancing was also implemented with

this sample of ileostomates. Ten subjects were then asked to complete both tests and hand them back after completion. Each ileostomate received a copy of the written consent form which he/she had signed. Three completed packets were rejected due to postoperative time interval.

Treatment of Data

The demographic data were summarized according to sex, diagnosis, date of surgery, age, and whether the individual lived alone. The mean and standard deviation was provided for the sex, age, date of surgery, and whether the individual lived alone.

The Pearson product-moment correlation coefficient (r) was calculated to demonstrate the strength of relationship between health locus of control scores and frequency of self-care management of ileostomy appliances. This coefficient (r) ranges between 1.00 for a perfect positive correlation and -1.00 for a perfect negative correlation and 0.0 for no relationship (Polit & Hungler, 1978). Two factors were identified as appliance management and information-seeking regarding hygiene.

According to Polit and Hungler (1978), the purpose of factor analysis was to reduce a large set of variables to a smaller set of measures. This type of analysis allows identification of interrelationship among variables as unified concepts.

Factor analysis was used in this study to facilitate analysis of the theoretical constructs present within the Self-Care Checklist. It was determined that the Self-Care Checklist was composed of two hypothetical constructs. One construct was that of appliance management. High factor score loadings on self-care Questions 2, 4, 6, 8, and 9 reflected this construct. The other construct was identified as information-seeking regarding hygiene. This was reflected by high factor score loadings on self-care Questions 5, 7, 8, and the inverse of 1. The factor analysis facilitated a more accurate determination of the construct validity of the Self-Care Checklist.

CHAPTER 4

ANALYSIS OF DATA

This study was a descriptive-comparative study (Abdellah & Levine, 1965). The main purpose of this study was to determine the relationship between belief about health locus of control and frequency in self-care management of skin appliance application by ileostomates. Demographic variables included age, sex, diagnosis, date of surgery, and whether the subject lived alone. The health locus of control scores and self-care checklist scores were tallied by a computerized scoring machine along with the demographic data.

The demographic data and sums of health locus of control scale and self-care management checklist scores were then analyzed statistically. The raw data obtained from the self-care management checklist were factor analyzed. The computer program used was the Statistical Package for Social Science.

Description of Sample

The sample consisted of 16 people with ileostomies. The frequency distribution of sexes was 3 males and 13

females. The age range within the sample was 22 to 44 years, having a mean of 33.5 years and a standard deviation of 10.9 years. One individual omitted age.

The two diagnoses identified within the sample were ulcerative colitis and Crohn's disease. Two individuals had not indicated diagnosis. Of the diagnoses, 7 of the 14 subjects had surgery performed due to ulcerative colitis; 7 had surgery performed due to Crohn's disease.

Two of the 16 subjects lived alone. The remaining 14 persons indicated they did not live alone. The range in the date of surgery for the 16 subjects was May 1979, to April 1980. The range of time following ostomy surgery was 11 months.

Findings

The null hypothesis of this study was: There is no relationship between the belief about health locus of control and the frequency of self-care management in application of skin appliances by ileostomates.

The scores on the Health Locus of Control Scale ranged from a minimum score of 25 to a maximum score of 54 (Appendix M). This range of scores indicated the degree of internality (minimum score) and degree of

externality (maximum score) in belief about health locus of control. Of the 16 subjects the raw health locus of control reported as group data had a mean of 42.3 and a standard deviation of 9.4 with a range of 29.0.

The Self-Care Checklist scores ranged from 22 to 30 (Appendix N). The raw score for self-care reported as group data had a mean of 38.125 with a standard deviation of 2.06 and a range of 8. The correlation coefficient for frequency of self-care and belief in health locus of control was $r = -0.2150$ indicating the inverse of that relationship. A type 1 error was noted. The probability value $p = .212$ was greater than .05 indicating no correlation. This finding failed to reject the null hypothesis that there is no relationship between the belief about health locus of control and the frequency of self-care management in application of skin appliances by ileostomates.

Additional findings from this study were the identification of two factors which had been isolated from the Self-Care Checklist. The Pearson product-moment correlation coefficient was used to determine the relationship between Factor I (appliance management) and belief in health locus of control. The correlation

coefficient was $\underline{r} = -0.3124$. A type 1 error was noted.⁷ The probability value of $\underline{p} = .119$ was greater than .05 indicating no correlation. This finding indicated there was no correlation between management of ileostomy appliances and belief in health locus of control.

The correlation coefficient between Factor II (information-seeking regarding hygiene) and belief in health locus of control was $\underline{r} = .3295$ with a probability level of $\underline{p} = .106$. This indicated no correlation between information seeking about hygiene and belief in health locus of control.

Summary of Findings

Coding of the demographic data and scores of the Health Locus of Control Scale and Self-Care Checklist were discussed. A description of data showed a majority of the sample was female between the ages of 22 to 41, having had surgery for ulcerative colitis or Crohn's disease, with a majority of the sample not living alone.

The following finding was drawn from an analysis of the data:

There is no significant relationship between belief in health locus of control score and frequency of self-care in management of ostomy appliances.

Based upon the factor analysis of the Self-Care Checklist, additional findings were:

1. There is no significant relationship between management of ileostomy appliances and belief in health locus of control score.

2. There is no significant relationship between information-seeking regarding hygiene and belief in health locus of control score.

CHAPTER 5

SUMMARY OF THE STUDY

This chapter will provide a review of the study in general. Conclusions will be derived from the study. Implications from the results will be discussed. Finally, recommendations for further study will be provided.

Summary

The main purpose of this study was to identify the relationship between belief in health locus of control and frequency in self-care management of appliance application by ileostomates. The justification of this problem was based upon the predictive value of health locus of control on type of behavior displayed during self-care performed by ileostomates. The null hypothesis posed that that there would be no significant relationship between the belief about health locus of control and the frequency of self-care management in application of skin appliances by ileostomates.

Significant writings were reviewed regarding the concepts of health locus of control and self-care and

their relationship to the ileostomate involved in the rehabilitative process. A discussion of the literature concerning locus of control as it related to types of behavior was provided. The categories were discussed as they related to types of behavior influenced by locus of control. These categories included (a) learning, (b) achievement, (c) problem-solving, and (d) disability. Health locus of control was discussed as a measure of a person's expectancies regarding his state of health.

The rehabilitative process involving self-care was discussed as it relates to ileostomates. The application of ileostomy appliances was focused upon as a part of that self-care.

The sample ($\underline{n} = 16$) for the study was taken from a population of ileostomates at one private hospital and at an ostomy association meeting. Packets containing all necessary forms and information were distributed to consenting ileostomates. Written permission from the agencies and Texas Woman's University Human Research Review Committee and graduate school were obtained before distribution of the packets.

Health locus of control was measured by a Likert-type scale of 11 items, the Health Locus of Control Scale. Self-care was measured by a 10-point checklist (Self-Care of Ileostomy Appliances). The Pearson r correlation coefficient revealed no significant correlation between the health locus of control score and the self-care score ($r = -0.2150$, $p = .212$), thus failing to reject the null hypothesis.

The Self-Care Checklist was a composite of two hypothetical concepts. The Pearson r correlation coefficient revealed no significant relationship between Factor I (appliance management) and health locus of control. Nor was a significant correlation found between Factor II (information seeking regarding hygiene) and health locus of control.

Discussion of Findings

According to Rotter's (1954) social learning theory, a person's behavior is determined by the importance of goals or reinforcements. The ileostomates have the important goal of mastering care of their ostomy appliances, since the management of ostomy appliances is the only way ileostomates have to control their fecal elimination. The importance of this goal

rests in the fact that ileostomates can control effluent drainage only through care of the ostomy appliances (Given & Simmons, 1975; Gross, 1974; Lenneberg et al., 1977).

According to Rotter's (1954) social learning theory, individuals who expect that reinforcements are not under their control are labeled externally controlled. Those individuals who expect that they have control over reinforcements are labeled internally controlled.

K. A. Wallston and B. S. Wallston (1978) described health locus of control as the individual belief that health is or is not determined by behavior. If ileostomates believe they are responsible for their health, they may demonstrate a certain behavior when performing frequency of self-care, when managing their ileostomy appliance, and when seeking information regarding hygiene. The present study found no correlation between health locus of control and frequency of self-care.

B. S. Wallston, K. A. Wallston, Kaplan, & Maides (1976) found in their study of college students that internals sought more information about hypertension than externals. The present study found no significant

correlation between information seeking regarding hygiene and health locus of control.

Lenneberg and Rowbotham (1970) felt control for ileostomates came from experience and information. Therefore, it may be expected that as ileostomates experience success in self-care skills in management of ostomy appliances and as they seek information, the health locus of control may change. Dua (1970) theorized externals do not expect to succeed because they have not succeeded in the past. They have not succeeded in the past because they have not learned efficient methods of producing change. Initially, the ileostomate may perceive self as dependent on others and powerless. But as the ileostomate experiences success in self-care the orientation may change toward perceiving self as responsible for their own health.

In Lefcourt's (1967) examination of aspiration performance of internals and externals, it was found that when task directions were given externals performed in accordance with directions while internals did not. Subjects in this study received information immediately postoperatively and following hospital discharge. Directions for care were given regarding management of the ostomy appliance.

Orem's (1971) self-care concept focuses on the extent to which the individual is involved in his care. The Self-Care Checklist reflected two aspects of self-care with which an ileostomate is involved--ileostomy appliance management and information seeking regarding hygiene. Orem considered internally oriented behaviors as well as externally oriented behaviors aimed toward developing independent self-care.

In the present study, health locus of control scales reflected varying degrees of internality and externality. A score ranging within 0-30 for frequency in management of ileostomy appliances indicated degree of self-care. A score of 0 indicated no self-care and a score of 30 indicated maximum self-care. Scores for self-care in this study ranged between 22-30. Studies done by the United Ostomy Association, Inc. (cited in Baird & Corbin, 1967) indicated many ostomates felt they had been sent home from the hospital without full knowledge of self-care. The research concluded the lack of self-care occurred largely because of a lack of rehabilitation programs and resource people. In the present study each subject was exposed to a rehabilitation program and to an enterostomal therapist. This study reflected a high degree of frequency in self-care.

The present study included ileostomates over a 6-month to 12-month time span postoperatively. According to Given and Simmons (1975), the skill of achieving self-care management of appliances is usually accomplished by ileostomates immediately following hospital discharge. The enterostomal therapist is instrumental in teaching the mechanics involved in the skill of managing an ostomy appliance (Gross, 1977; Lenneberg, 1971). This may create a situation whereby the ileostomate perceives self as dependent upon the enterostomal therapist for information and assistance in managing the ostomy appliance. Gross (1977) claimed the goal of the ostomy patient education program is to see that the patient has confidence in his ability upon hospital discharge. Possessing appropriate knowledge would help prevent problems before they arise.

This sample was exposed to the same enterostomal therapist during their hospitalization, postoperatively, and following discharge. Health locus of control may reflect an external perception of control during this dependency state. In Smith's (1970) study of individuals experiencing a life crisis, the hypothesis that crises patients would initially be more externally oriented than noncrises patients was supported.

Gradually, the initial dependency was no longer needed as the ileostomate assumed responsibility for his care. This study reflected a high degree of frequency in self-care of ileostomy appliance management 6 to 12 months postoperatively. However, the health locus of control reflected varying degrees of internality and externality. The decision to assume responsibility in performing self-care could have depended upon factors other than health locus of control.

One influencing factor may have been the presence of significant others. Dyk and Sutherland (1956) concluded that the spouse can influence the ostomate's success or failure in adapting to their disability. Druss (1968) studied difficulties following ostomy surgery as a result of the patient's personality and concluded most ileostomates felt acceptance of the ileostomy by key figures in their lives was essential for successful adaptation. This study indicated 14 out of 16 subjects did not live alone.

Nine of the 16 subjects were tested following attendance at an ostomy meeting. It could be speculated that these subjects have an initiative for performing

self-care. Therefore, the internally oriented individual would predominate at ostomy meetings. However, attendance at ostomy meetings may have also reflected dependency on others for support and an external orientation. Phares (1968) found internals confronted problems more directly than externals when problem-solving. The Self-Care Checklist measured frequency of self-care; not frequency of problem-solving. However, if degree of problem-solving had been reflected in the self-care checklist this may have enhanced the measurement of perception of control in health beliefs.

K. A. Wallston, Maides, and B. S. Wallston (1976) hypothesized that internals who valued health highly would seek more information than one who did not value health or who held external beliefs. Information-seeking as measured in the Self-Care Checklist was found to have no significant correlation with health locus of control.

Conclusions and Implications

The following conclusion was drawn from this study in regard to ileostomates, following their discharge from a hospital:

Variables other than health locus of control can influence the performance of self-care management in application of skin appliances by ileostomates.

An implication drawn from this study is the following:

The rehabilitation process is a complex situation. The complexity results from not only the existence of several factors but also from the interrelationship of those factors as they influence an individual's ability to perform self-care. The focus of nursing must continue to consider all factors which may influence the individual's ability to achieve self-care.

Recommendations for Further Study

Recommendations for further research based upon the conclusions of this study include the following:

1. Replicate the study and measure health locus of control using the Health Locus of Control Multi-dimensional Instrument.
2. In a replication or similar study, modify the Self-Care Checklist to include only the one factor of problem-solving.
3. Replicate this study using a larger sample.

4. Correlate health locus of control with frequency of self-care at varying time intervals, such as preoperatively, postoperatively, and long-term follow-up.

5. Analyze the rehabilitative process of the ileostomate as it relates to health locus of control and self-care.

APPENDIX A

TEXAS WOMAN'S UNIVERSITY

DENTON, TEXAS 76204

THE GRADUATE SCHOOL

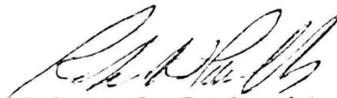
September 10, 1980

Ms. Suzanne Christman Riche
222 London St.
Metairie, LA 70005

Dear Ms. Riche:

I have received and approved the Prospectus for your research project. Best wishes to you in the research and writing of your project.

Sincerely yours,



Robert S. Pawlowski
Provost

RP:d1

cc Dr. Helen Bush
Dr. Anne Gudmundsen
Graduate Office

APPENDIX B

TEXAS WOMAN'S UNIVERSITY
Human Research Committee

Name of Investigator: Suzanne Riche Center: Dallas
Address: 222 London St., Metairie, Louisiana Date: 9/7/79

Dear Ms. Riche:

Your study entitled Health Locus of Control and Self-Care of Ileostomy Appliances has been reviewed by a committee of the Human Research Review Committee and it appears to meet our requirements in regard to protection of the individual's rights.

Please be reminded that both the University and the Department of Health, Education and Welfare regulations require that written consents must be obtained from all human subjects in your studies. These forms must be kept on file by you.

Furthermore, should your project change, another review by the Committee is required, according to DHEW regulations.

Sincerely,

Dissertation/Theses signature page is here.

To protect individuals we have covered their signatures.

APPENDIX C

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE _____

GRANTS TO Mrs. Suzanne C. Riche
a student enrolled in a program of nursing leading to a
Master's Degree at Texas Woman's University, the privilege
of its facilities in order to study the following problem.

Ileostomates and self-care

The conditions mutually agreed upon are as follows:

1. The agency (~~may~~) may not be identified in the final report.
2. The names of ~~consultative or~~ administrative personnel in the agency (~~may~~) may not be identified in the final report.
3. The agency wants (~~does not want~~) a conference with the student when the report is completed.
4. The agency is willing (~~unwilling~~) to allow the completed report to be circulated through interlibrary loan.
5. Other _____

Date: April 1980

Signature of Agency Personnel

Dissertation/Theses signature page is here.

To protect individuals we have covered their signatures.

APPENDIX D

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Greater New Orleans Ostomy Association

GRANTS TO Mrs. Suzanne C. Riche

a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem.

Ileostomates and self-care.

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (unwilling) to allow the completed report to be circulated through interlibrary loan.
5. Other _____

Dissertation/Theses signature page is here.

To protect individuals we have covered their signatures.

APPENDIX E

Consent Form
TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

(Form A--Written presentation to subject)

Consent to Act as a Subject for Research and Investigation:

The following information is to be read to or read by the subject. One copy of this form, signed and witnessed, must be given to each subject. A second copy must be retained by the investigator for filing with the Chairman of the Human Subjects Review Committee. A third copy may be made for the investigator's files.

1. I hereby authorize Mrs. Suzanne C. Riche
(name of person(s) who will perform
procedure(s) or investigation(s))

to perform the following procedure(s) or investigation(s): (Describe in detail)

This is a study of ileostomates and self-care. In order to obtain more information about ileostomates and self-care, you will be asked to complete one scale and one checklist. The scale will provide information about your personal beliefs regarding your health behaviors. There are no right or wrong answers. You will be asked to respond according to your actual beliefs and not according to how you feel you should believe.

The checklist will provide information about the frequency of self-care in management and application of your ostomy appliance. Prior to taking the checklist you will be asked to complete a data sheet requesting the following information: age, sex, diagnosis, date of ostomy surgery, and if you live alone. Your name will in no way be connected to the scale and checklist; anonymity will be maintained.

2. The procedure or investigation listed in Paragraph 1 has been explained to me by Mrs. Suzanne C. Reiche.
(name)

3. (a) I understand that the procedures or investigations described in Paragraph 1 involve the following possible risks or discomforts:
(Describe in detail):
1. It will take a period of time to read and complete each test.
 2. Although measures have been taken to control data, an improper release of data may occur.
- (b) I understand that the procedures and investigations described in Paragraph 1 have the following potential benefits to myself and/or others:
- Knowledge of a personal contribution to research in self-care ability of people with ileostomies may occur.
- (c) I understand that--No medical service or compensation is provided to subjects by the university as a result of injury from participation in research.
4. An offer to answer all of my questions regarding the study has been made. If alternative procedures are more advantageous to me, they have been explained. I understand that I may terminate my participation in the study at any time.

Subject's Signature

Date

APPENDIX F

Directions

In order to help improve nursing care for people with ileostomies, we are asking you to fill out these forms. Please read the following directions before proceeding:

1. The first page is instructions. After reading it, go on to the second page.

2. On the second page is the "Proposed Self-Care Checklist." After reading the directions, please complete each statement.

3. Then go to the page entitled, "Health Locus of Control." After reading the directions here, complete the Scale.

When you have completed the checklist and the scale, put them into the self-addressed, stamped envelope which is enclosed and drop it into the mail.

The few minutes you take to do this will be very important to nurses who are trying to improve care for people with ileostomies.

Thank you for your time and cooperation.

Suzanne C. Riche, R.N.

An Explanation of What To Do!

(Introductory Page)

This is a study of ileostomates and self-care. In order to obtain more information about ileostomies and self-care, you will be asked to complete one scale and one checklist. There are no right or wrong answers. You will be asked to respond according to your actual beliefs and practices.

Prior to taking the checklist you will be asked to complete a demographic data sheet requesting the following information: age, sex, diagnosis, date of ostomy surgery, and if you live alone. Your name will in no way be connected to the scale or the checklist.

It will take a short time to read and complete the scale and checklist, however, remember that your cooperation will help improve self-care ability of people with ileostomies.

The completion and return of the checklist and scale will be construed as informed consent.

Please turn the page and begin.

Self-Care Checklist
of Ileostomy Appliance Management
by the Ileostomate

Demographic Data

Code Number _____

Sex _____

Age _____

Diagnosis _____

Date of Surgery _____

Do you live alone? Yes ___ No ___

Directions: Read each of the following statements carefully. Check which word best completes each statement, as applied to yourself. Thank you for your participation.

1. I am able to recognize whether I need to use a different type of ostomy appliance:

| | |
|---------------|--------------|
| _____ ALWAYS | _____ RARELY |
| _____ USUALLY | _____ NEVER |

2. I change my own ileostomy appliance:

| | |
|---------------|--------------|
| _____ ALWAYS | _____ RARELY |
| _____ USUALLY | _____ NEVER |

3. I clean my own ileostomy appliance:

| | |
|---------------|--------------|
| _____ ALWAYS | _____ RARELY |
| _____ USUALLY | _____ NEVER |

4. I put on my own ileostomy appliance:

| | |
|---------------|--------------|
| _____ ALWAYS | _____ RARELY |
| _____ USUALLY | _____ NEVER |

5. If I have trouble keeping my appliance onto my skin,
I decide who will take care of it:
- | | | | |
|--------------------------|---------|--------------------------|--------|
| <input type="checkbox"/> | ALWAYS | <input type="checkbox"/> | RARELY |
| <input type="checkbox"/> | USUALLY | <input type="checkbox"/> | NEVER |
6. I take care of the skin around my stoma:
- | | | | |
|--------------------------|---------|--------------------------|--------|
| <input type="checkbox"/> | ALWAYS | <input type="checkbox"/> | RARELY |
| <input type="checkbox"/> | USUALLY | <input type="checkbox"/> | NEVER |
7. I can recognize skin irritation around my stoma:
- | | | | |
|--------------------------|---------|--------------------------|--------|
| <input type="checkbox"/> | ALWAYS | <input type="checkbox"/> | RARELY |
| <input type="checkbox"/> | USUALLY | <input type="checkbox"/> | NEVER |
8. I will be able to control the odor from my appliance:
- | | | | |
|--------------------------|---------|--------------------------|--------|
| <input type="checkbox"/> | ALWAYS | <input type="checkbox"/> | RARELY |
| <input type="checkbox"/> | USUALLY | <input type="checkbox"/> | NEVER |
9. I am able to manage my own ileostomy appliance when
I am busy and active during the day:
- | | | | |
|--------------------------|---------|--------------------------|--------|
| <input type="checkbox"/> | ALWAYS | <input type="checkbox"/> | RARELY |
| <input type="checkbox"/> | USUALLY | <input type="checkbox"/> | NEVER |
10. I empty my own ileostomy appliance:
- | | | | |
|--------------------------|---------|--------------------------|--------|
| <input type="checkbox"/> | ALWAYS | <input type="checkbox"/> | RARELY |
| <input type="checkbox"/> | USUALLY | <input type="checkbox"/> | NEVER |

Health Locus of Control Scale (HLC)

This is a questionnaire to determine the way in which different people view certain important health-related issues. Each item is a belief statement with which you may agree or disagree. Beside each statement is a scale which ranges from 1--strongly agree to 6--strongly disagree. For each item you are to circle the number that represents the extent to which you disagree or agree with the statement. The more strongly you agree with a statement, then the higher will be the number you circle. The more strongly you disagree with a statement, the lower will be the number you circle. Please circle only one number. This is a measure of your personal beliefs; obviously there are no right or wrong answers.

Please answer these items carefully, but do not spend too much time on any one item. Be sure to answer every item. Also, try to respond to each item independently when making your choice; do not be influenced by your previous choices. It is important that you respond according to your actual beliefs and not according to how you feel you should believe.

Please answer according to the following key:

- 1--strongly disagree
- 2--moderately disagree
- 3--slightly disagree
- 4--slightly agree
- 5--moderately agree
- 6--strongly agree

- | | | | | | | | |
|----|---|---|---|---|---|---|---|
| 1. | If I take care of myself, I can avoid illness. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. | Whenever I get sick it is because of something I've done or not done. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. | Good health is largely a matter of good fortune. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. | No matter what I do, if I am going to get sick I will get sick. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. | Most people do not realize the extent to which their illnesses are controlled by accidental happenings. | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. | I can only do what my doctor tells me to do. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. | There are so many strange diseases around, that you can never know how or when you might pick one up. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. | When I feel ill, I know it is because I have not been getting the proper exercise or eating right. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. | People who never get sick are just plain lucky. | 1 | 2 | 3 | 4 | 5 | 6 |

Please answer according to the following key:

- 1--strongly disagree
- 2--moderately disagree
- 3--slightly disagree
- 4--slightly agree
- 5--moderately agree
- 6--strongly agree

- | | | | | | | | |
|-----|---|---|---|---|---|---|---|
| 10. | People's ill health results from their own carelessness. | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. | I am directly responsible for my own health. | 1 | 2 | 3 | 4 | 5 | 6 |

Key to Health Locus of Control Scale

Items 3, 4, 5, 6, 7, and 9 are worded in the external direction and are scored from 1-6 as they are circled by the subject.

Items 1, 2, 8, 10, and 11 are worded in the internal direction and are reversed scored (by subtracting the circled response from the Number 7).

Total Health Locus of Control score is the sum of all 11 items after reversing the scores for the internal items. The higher the total score, the more external the beliefs.

APPENDIX G

Health Locus of Control Scale (HLC)

This is a questionnaire to determine the way in which different people view certain important health-related issues. Each item is a belief statement with which you may agree or disagree. Beside each statement is a scale which ranges from 1--strongly agree to 6--strongly disagree. For each item you are to circle the number that represents the extent to which you disagree or agree with the statement. The more strongly you agree with a statement, then the higher will be the number you circle. The more strongly you disagree with a statement, the lower will be the number you circle. Please circle only one number. This is a measure of your personal beliefs; obviously there are no right or wrong answers.

Please answer these items carefully, but do not spend too much time on any one item. Be sure to answer every item. Also, try to respond to each item independently when making your choice; do not be influenced by your previous choices. It is important that you respond according to your actual beliefs and not according to how you feel you should believe.

Please answer according to the following key:

- 1--strongly disagree
- 2--moderately disagree
- 3--slightly disagree
- 4--slightly agree
- 5--moderately agree
- 6--strongly agree

- | | | | | | | |
|--|---|---|---|---|---|---|
| 1. If I take care of myself, I can avoid illness. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Whenever I get sick it is because of something I've done or not done. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Good health is largely a matter of good fortune. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. No matter what I do, if I am going to get sick I will get sick. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Most people do not realize the extent to which their illnesses are controlled by accidental happenings. | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. I can only do what my doctor tells me to do. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. There are so many strange diseases around, that you can never know how or when you might pick one up. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. When I feel ill, I know it is because I have not been getting the proper exercise or eating right. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. People who never get sick are just plain lucky. | 1 | 2 | 3 | 4 | 5 | 6 |

Please answer according to the following key:

- 1--strongly disagree
- 2--moderately disagree
- 3--slightly disagree
- 4--slightly agree
- 5--moderately agree
- 6--strongly agree

- | | | | | | | | |
|-----|---|---|---|---|---|---|---|
| 10. | People's ill health results from their own carelessness. | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. | I am directly responsible for my own health. | 1 | 2 | 3 | 4 | 5 | 6 |

Key to Health Locus of Control Scale

Items 3, 4, 5, 6, 7, and 9 are worded in the external direction and are scored from 1-6 as they are circled by the subject.

Items 1, 2, 8, 10, and 11 are worded in the internal direction and are reversed scored (by subtracting the circled response from the Number 7).

Total Health Locus of Control score is the sum of all 11 items after reversing the scores for the internal items. The higher the total score, the more external the beliefs.

APPENDIX H

Self-Care Checklist
of Ileostomy Appliance Management
by the Ileostomate

Demographic Data

Code Number _____

Sex _____

Age _____

Diagnosis _____

Date of Surgery _____

Do you live alone? Yes ___ No ___

Directions: Read each of the following statements carefully. Check which word best completes each statement, as applied to yourself. Thank you for your participation.

1. I am able to recognize whether I need to use a different type of ostomy appliance:

| | |
|---------------|--------------|
| _____ ALWAYS | _____ RARELY |
| _____ USUALLY | _____ NEVER |

2. I change my own ileostomy appliance:

| | |
|---------------|--------------|
| _____ ALWAYS | _____ RARELY |
| _____ USUALLY | _____ NEVER |

3. I clean my own ileostomy appliance:

| | |
|---------------|--------------|
| _____ ALWAYS | _____ RARELY |
| _____ USUALLY | _____ NEVER |

4. I put on my own ileostomy appliance:

| | |
|---------------|--------------|
| _____ ALWAYS | _____ RARELY |
| _____ USUALLY | _____ NEVER |

5. If I have trouble keeping my appliance onto my skin,
I decide who will take care of it:
- | | |
|-----------------------|----------------------|
| <u> </u> ALWAYS | <u> </u> RARELY |
| <u> </u> USUALLY | <u> </u> NEVER |
6. I take care of the skin around my stoma:
- | | |
|-----------------------|----------------------|
| <u> </u> ALWAYS | <u> </u> RARELY |
| <u> </u> USUALLY | <u> </u> NEVER |
7. I can recognize skin irritation around my stoma:
- | | |
|-----------------------|----------------------|
| <u> </u> ALWAYS | <u> </u> RARELY |
| <u> </u> USUALLY | <u> </u> NEVER |
8. I will be able to control the odor from my appliance:
- | | |
|-----------------------|----------------------|
| <u> </u> ALWAYS | <u> </u> RARELY |
| <u> </u> USUALLY | <u> </u> NEVER |
9. I am able to manage my own ileostomy appliance when
I am busy and active during the day:
- | | |
|-----------------------|----------------------|
| <u> </u> ALWAYS | <u> </u> RARELY |
| <u> </u> USUALLY | <u> </u> NEVER |
10. I empty my own ileostomy appliance:
- | | |
|-----------------------|----------------------|
| <u> </u> ALWAYS | <u> </u> RARELY |
| <u> </u> USUALLY | <u> </u> NEVER |

APPENDIX I

George Peabody College for Teachers

VANDERBILT UNIVERSITY



NASHVILLE, TENNESSEE 37203

TELEPHONE (615) 322-7311

Department of Psychology and Human Development - Direct phone 327-8141

Dear Colleague:

Thank you for your interest in locus of control and health. Please excuse this form response, but we have so many inquiries requiring similar replies that we have found this to be an efficient means of disseminating information.

We have now developed the Multidimensional Health Locus of Control (MHLC) Scales, which we recommend over our earlier unidimensional HLC Scale. We have enclosed a reprint of the article describing the development of this scale (Wallston, Wallston, and DeVellis, 1978), which includes a tabled copy of the scales. You have our permission to utilize the scales in any research. However, we would appreciate your notifying us about the work you are doing.

An additional table of norms for the MHLC Scale is also enclosed. This is from a chapter we have recently completed. Because of the length of the chapter and mailing expenses, we must charge \$4.00 if you wish a copy. Checks should be made out to Peabody Psychology.

If you wish to be added to our mailing list, please complete the enclosed questionnaire. We will periodically send additional material related to use of these scales as it becomes available.

Rotter's Social Learning Theory states that the likelihood of behavior's occurrence is a function of the expectancy that the behavior will lead to an outcome and the reward value of the outcome. Thus, in addition to an expectancy measure (the HLC or MHLC Scales), we have been using a health value measure. A copy of this survey, a modification of Rokeach's value survey is attached. Although we are not totally satisfied with this measure, it is the best we have been able to locate. We do want to stress the importance of including some measure of reinforcement value (unless you can assume uniformly high value).

If you have more specific questions, don't hesitate to contact us. Please remember to send us information on any use you can make of our scales. We look forward to hearing from you.

Sincerely,

Sincerely,

Dissertation/Theses signature page is here.

To protect individuals we have covered their signatures.

APPENDIX J

Directions: Check the column which indicates the relevancy of the following items when assessing self-care management of ileostomy appliances by ileostomates 6 to 12 months postoperatively.

Answer according to following key:

- 1--always relevant when assessing self-care
- 2--sometimes relevant when assessing self-care
- 3--never relevant when assessing self-care

Appliance Selection:

- | | | | |
|--|---|---|---|
| 1. Type of appliance selected | 1 | 2 | 3 |
| 2. Who selects the appliance | 1 | 2 | 3 |
| 3. Consistent use of the appliance | 1 | 2 | 3 |
| 4. Use of different appliances | 1 | 2 | 3 |
| 5. Factors not listed which would be relevant to self-care in appliance selection: | | | |
-
-

Appliance Care:

- | | | | |
|--|---|---|---|
| 6. Frequency of appliance change | 1 | 2 | 3 |
| 7. Who changes the appliance at home | 1 | 2 | 3 |
| 8. How is the appliance cleaned | 1 | 2 | 3 |
| 9. Who cleans the appliance | 1 | 2 | 3 |
| 10. Factors not listed which would be relevant to self-care in appliance care: | | | |
-
-

Answer according to following key:

- 1--always relevant when assessing self-care
- 2--sometimes relevant when assessing self-care
- 3--never relevant when assessing self-care

Appliance Application:

- | | | | |
|---|---|---|---|
| 11. Who positions the appliance over stoma | 1 | 2 | 3 |
| 12. Assessment of abdominal contour | 1 | 2 | 3 |
| 13. Comfort with appliance during rest and activity | 1 | 2 | 3 |
| 14. Problems with adhesion to the skin | 1 | 2 | 3 |
| 15. Factors not listed which would be relevant to self-care in appliance application: _____ | | | |

Peristomal Skin Care:

- | | | | |
|--|---|---|---|
| 16. Type of skin products used | 1 | 2 | 3 |
| 17. Who performs peristomal skin care | 1 | 2 | 3 |
| 18. Frequency of skin care | 1 | 2 | 3 |
| 19. Manner in how skin care is done | 1 | 2 | 3 |
| 20. Patient's/client's ability to recognize skin irritation | 1 | 2 | 3 |
| 21. Factors not listed which would be relevant to self-care in peristomal skin care: _____ | | | |

Answer according to following key:

- 1--always relevant when assessing self-care
 2--sometimes relevant when assessing self-care
 3--never relevant when assessing self-care

Odor Control:

- | | | | |
|---|---|---|---|
| 22. Client's/patient's concern with presence of odor | 1 | 2 | 3 |
| 23. Techniques used in minimizing or eliminating odor | 1 | 2 | 3 |
| 24. Factors not listed which would be relevant to self-care in odor control: _____ | | | |
| <hr/> | | | |
| 25. Medical disorder requiring surgery | 1 | 2 | 3 |
| 26. Presence of significant others in the home | 1 | 2 | 3 |
| 27. If preoperative instructions had been given | 1 | 2 | 3 |
| 28. If postoperative instructions had been given | 1 | 2 | 3 |
| 29. Age | 1 | 2 | 3 |
| 30. Sex | 1 | 2 | 3 |
| 31. Height and weight | 1 | 2 | 3 |
| 32. Daily activity level | 1 | 2 | 3 |
| 33. Factors not listed which would be relevant to self-care in knowledge of personal history: _____ | | | |
| <hr/> | | | |

Answer according to following key:

- 1--always relevant when assessing self-care
- 2--sometimes relevant when assessing self-care
- 3--never relevant when assessing self-care

Psychological Aspects:

- | | | | |
|---|---|---|---|
| 34. Emotional status of patient/client expressed verbally | 1 | 2 | 3 |
| 35. Emotional status of patient/client expressed nonverbally | 1 | 2 | 3 |
| 36. Denial of self-care | 1 | 2 | 3 |
| 37. Disinterest in self-care | 1 | 2 | 3 |
| 38. Factors not listed which would be relevant to self-care in regard to psychological aspects: _____ | | | |
-

APPENDIX K

Explanation:

The objective for the attached self-care checklist is to determine frequency of self-care when managing ileostomy appliances. Those completing the checklist will be persons with ileostomies between the ages of 20 and 40 years, approximately 6 to 12 months postoperatively.

Directions:

Read and examine the attached "proposed self-care checklist of ostomy appliance management by ileostomates." After you have read and examined the attached checklist, you will be asked to comment upon its clarity of expression, readability, and appropriateness.

Directions: Please answer the following questions based upon the self-care checklist you have just read.

1. Does the self-care checklist display clarity of expression in the following area of:

- A. Personal Data Yes ___ No ___
- B. Directions Yes ___ No ___
- C. Question #1 Yes ___ No ___
Question #2 Yes ___ No ___
Question #3 Yes ___ No ___
Question #4 Yes ___ No ___
Question #5 Yes ___ No ___
Question #6 Yes ___ No ___
Question #7 Yes ___ No ___
Question #8 Yes ___ No ___
Question #9 Yes ___ No ___
Question #10 Yes ___ No ___

Comments: _____

2. Does the self-care checklist display readability?

Yes ___ No ___

Comments: _____

3. Are the questions asked in the self-care checklist appropriate when determining expectation of ileostomates, about self-care 6 to 12 months postoperatively?

Yes ____

No ____

Comments: _____

APPENDIX L

Rotated Varimax Factor Matrix
for Self-Care

| Variable | <u>Factor I</u> (Appliance Management) | <u>Factor II</u> (Information- seeking regarding hygiene) |
|-----------|--|--|
| Question: | | |
| 1 | -0.17476 | -0.59235 |
| 2 | 0.98104 | 0.09224 |
| 4 | 0.98104 | 0.09224 |
| 5 | -0.22620 | 0.80469 |
| 6 | 0.98104 | 0.09224 |
| 7 | -0.04088 | 0.32002 |
| 8 | 0.45606 | 0.71371 |
| 9 | 0.93582 | 0.14924 |

APPENDIX M

Health Locus of Control Scores

| Subject | Score |
|---------|-------|
| 1 | 51 |
| 2 | 50 |
| 3 | 46 |
| 4 | 45 |
| 5 | 32 |
| 6 | 45 |
| 7 | 54 |
| 8 | 51 |
| 9 | 42 |
| 10 | 39 |
| 11 | 51 |
| 12 | 51 |
| 13 | 25 |
| 14 | 26 |
| 15 | 34 |
| 16 | 35 |

APPENDIX N

Scores for the Frequency of Self-Care
Management of Ileostomy Appliances
by Ileostomates

| Subject | Score |
|---------|-------|
| 1 | 30 |
| 2 | 28 |
| 3 | 28 |
| 4 | 22 |
| 5 | 30 |
| 6 | 26 |
| 7 | 29 |
| 8 | 30 |
| 9 | 30 |
| 10 | 30 |
| 11 | 25 |
| 12 | 29 |
| 13 | 29 |
| 14 | 27 |
| 15 | 25 |
| 16 | 27 |

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