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Perceived Control of Chronic Obstructive Pulmonary Disease and Adherence to a Therapeutic Regimen

Lori A. Booms
Grand Valley State University

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Perceived Control Of Chronic Obstructive Pulmonary Disease

and Adherence to a Therapeutic Regimen

by

Lori A. Booms

A THESIS

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Thesis Committee Members:

Linda Bond, Ph. D., R.N.- Thesis Chair
Agnes Britton, M.S.N., R.N.
David Payne, M.D.

<u>Abstract</u>

Perceived Control of Chronic Obstructive Pulmonary Disease and Adherence to a

Therapeutic Regimen

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The purpose of this research study was to examine if a difference existed between the

concept of perceived control of the effects and course of the COPD and the adherence to

the prescribed therapeutic regimen. The conceptual framework for the study was the

Multidimensional Health Locus of Control. The study design was a comparative

descriptive survey. Data collection was completed by using the three instruments:

Multidimensional Health Locus of Control (Form C), Health Value Measurement, and

Measurement of Compliance with a Comprehensive COPD Treatment Program. The study

consisted of 20 participants. The findings of the study showed no significant difference

existed in the levels of health values between COPD patients with internal and external

locus of control and in the levels of adherence. No variability existed in levels of adherence

between COPD patients with varied health values and internal and external locus of

control. Implications for nursing research and further research are presented.

Dedication

This thesis is dedicated to my husband, Russell, my children, Jeff, Jill, Jordan and Bridgette, and my parents, Mike and Pat. Without their help, support, and love this project would have much more difficult. For my husband, Russell, who would have thought three years ago, you would have become knowledgeable about locus of control and literature searches.

Acknowledgments

I would like to acknowledge Dr. Linda Bond, Agnes Britton, M.S.N., R.N., and Dr. David Payne for their assistance with the process of developing and defending my thesis.

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Chapter 1

Introduction

Introduction

Chronic Obstructive Pulmonary Disease (COPD) is a major cause of disability, second only to coronary artery disease (Goroll, May, & Mulley, 1995). According to Goroll, May & Mulley, it is predicted that 3% of Americans will develop COPD. COPD is a disease that is incurable, with minimal reversal of effects. The prime treatment goals are limiting complications and maximizing functional ability. In many cases, complex and multiple treatment regimes are required to assist the person in maintaining adequate functioning levels. Ferguson and Cherniack (1993) estimate that at least 15 million Americans are affected with COPD. McCance and Huether (1994) noted more than one-third of all patients admitted to Veteran's Administration facilities have evidence of COPD. In addition, the death rate has risen by 22 percent in the last decade, with the mortality rate at greater than 50 percent at 10 years after diagnosis.

COPD is primarily caused by long term tobacco use, but exposure to noxious dusts and gases may contribute to the development of COPD. Obstructive diseases are commonly noted as adult asthma, chronic bronchitis, emphysema. Obstructive diseases cause insidious pathologic changes in the lung tissue, which leads to a chronic condition. Obstructive diseases are characterized by airway obstruction, air trapping, dyspnea, and frequent infections. Physiological changes manifest as abnormal ventilation-perfusion ratios, hypoxemia, hypoventilation, and a late manifestation of right-sided heart failure. The physiological changes then lead to psychosocial changes due to decrease activity tolerance as a result of chronic hypoxemia. The psychosocial manifestations most experienced by COPD patients are isolation, loneliness, depression, frustration, anger, and

anxiety. Management of people experiencing COPD should be designed to educate patients and families, slow the progression of airflow limitations, and correct secondary physiological manifestations (Phipps, Long, & Cassmeyer, 1994).

Regardless of which chronic illness a person may experience, lifestyle is forever altered. Patients with COPD must endure complex medical treatments of medication, respiratory therapy, exercise and modified diets. Complex regimes may not be consistent with the person's perception of an acceptable lifestyle. Cameron and Gregor (1987) noted " a patient with chronic disease assesses recommended treatments on how well they can be integrated into his life....an individual's perception's of his situation will determine whether or not he will comply with a medical regime"(p.671). Cameron and Gregor report that there is a consistently high rate of non-compliance among COPD patients. There are many factors which contribute to non-compliance among people with chronic illness. One of the most significant factors that may affect compliance is a person's perceived ability to control the effects and course of the disease. Given and Given defined compliance as a "human response to promote, maintain, or restore health" (1989, p.97).

Perceived ability to control health or disease has been examined in many theories. The definition of perceived control has its roots in the social learning theory of Rotter's (1966) Generalized Expectancies for Internal versus External Control of Reinforcement, commonly referred to as Locus of Control. A relationship has been shown to exist between perceived ability of personal control of health behaviors and compliance as supported in studies by Williams(1972) on seat belt use and Brown, Muhlenkamp, Fox, and Osborn (1983) on the relationship between locus of control, health values, and positive health practices. As described in a study by Wallston, Wallston, Kaplan and Maides (1976), by structuring a weight loss program on each persons' locus of control (internal or external), an increased weight loss will result. "Perceived control of health appears to influence the effectiveness of differing strategies for inducing or facilitating continued practice of health-promoting behaviors" (Pender, 1987, 61). Pender discussed

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having a strong desire for control of health should result in health promoting behaviors. Conversely, having a strong desire for control but having little perceived probability of control may result in frustration, helplessness, and behavioral inhibition.

Health enhancement and maintenance is the desirable outcome of the nurse-patient relationship. As the nurse provides interventions to enhance and maintain the patient's health, there must be an awareness of the patient's locus of control and perceived ability to control the COPD. The cost of measuring lack of adherence to a therapeutic regimen is difficult to fully assess. The costs can be sometimes seen in hospital admissions, primary care providers visits, and emergency department interventions. The cost of lack of adherence is not limited to health care dollars but also the cost to families and society in general due to lost of productivity and role fulfillment. Therefore, exploring the patient's perception of the ability to control his or her COPD when designing a therapeutic regimen, will enhance health maintenance and maximize physical and social functioning.

The purpose of this research study was to examine if a difference existed between the concept of perceived control of the effects and course of the COPD and the adherence to the prescribed therapeutic regimen.

Chapter 2

Conceptual Framework and Literature Review

Conceptual Framework

The theory of Health Locus of Control will serve as a framework for this research

study. Rotter (1966) first described the personality dimension of locus of control. Within

Rotter's Social Learning Theory, a person's actions are predicted based on his values, his

expectations, and the situation in which he finds himself. Lefcourt (1976) described this

theory as the potential occurrence of a set of behaviors that lead to the satisfaction of a

need (need potential) which is a function of both expectancies that these behaviors will

lead to reinforcements (freedom of movement) and the strength or values of these

reinforcements (need value). Lefcourt (1976) noted Rotter's theory defined reinforcements

(freedom of movement) as the generalized expectancy of success resulting from one's

ability to remember and reflect upon a lifetime of specific expectancy behavior-outcome

sequences.

From Rotter's Theory the concept of perceived control has been defined as a

generalized expectancy for internal as opposed to control of reinforcements.(Lefcourt,

1976). The concept of the internal locus of control can therefore be conceptually defined

as perceived control. Jensen, Turner, Romano, & Karoly (1991) identified three aspects of

perceived control: (1) beliefs about controllability, (2) beliefs about ability to cope, and (3)

expectations about outcomes.

Individuals with external locus of control believe their outcomes are governed by

external forces such as fate, chance, or other people. Individuals with internal locus of

control believe their outcomes are determined by their own actions and abilities. Rotter's

Theory (1966) stated that the generalized expectancy of internal control (internal locus of

control), refers to perception of events, as being a consequence of one's own action and

being under personal control. Conversely, the generalized expectancy of external control

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(external locus of control) refers to the perception of events being unrelated to one's own behavior and being out of one's own control. Weitin (1992) identified that locus of control is not an either-or proposition. Locus of control being a personality trait occurs on a continuum.

Wells (1994) argued that an internal belief in control increases perseverance towards a goal if success is attributed to one's skill or ability. Individuals with an internal locus of control were hypothesized by Jensen et al.(1991) to adjust better to chronic symptoms than those with an external locus of control. Beck, Rawlins, and Williams (1988) related that those with an internal locus of control perceive that they have control over events that affect them. Wells (1994) noted that the greater control one perceives, including the ability to alter the outcome, as well as cope effectively, the better the adjustment to chronic symptoms.

Definitions

1). Locus of Control is the belief an individual has about health/illness events in life which may or may not be controlled by the individual.

> (a) internal locus of control (perceived control)- the perception that health
>
> or illness can be controlled by the individuals skills and abilities.
>
> (b) external locus of control-the perception that health or illness
>
> cannot be controlled by the individual and is contingent on
>
> outside forces such as powerful other (Physician or Creator), fate,
>
> chance, or luck

The term multidimensional health locus of control is used to encompass all the components: internality, chance, powerful others, doctors, and other people, of locus of control (Wallston, Stein & Smith, 1994).

2).Compliance is the outcome or reinforcements of behaviors and activities which promote, maintain or restore health functioning. Rotter (1975) in reviewing research studies already completed noted the lack of measuring the value of the reinforcer.

The value of the reinforcer is defined as the outcome of compliance, which is health.

3). Health has been defined by many authors, but the most appropriate definition would be the one that the patient believes is most appropriate. Therefore, health is the perception of physical, mental and social well being as defined by the person experiencing that phenomenon despite the presence or absence of disease.

Review of Literature

The review of the literature will examine two areas, studies examining Locus of Control and Compliance among COPD and other chronic illnesses, and literature examining the issues related to compliance.

Literature on Locus of Control

Johnson's (1989) Disease-Related Knowledge, Multidimensional Health Locus of Control, and Compliance with Treatment of the Patient with COPD study investigated 30 patients at University of Tennessee Medical Center, Knoxville. Each subject had a medical diagnosis of chronic obstructive pulmonary disease and was hospitalized at time of the study. The design of the study was nonexperimental.

Johnson (1989) addressed three questions. The questions were: 1) What was the significant relationship between the COPD related knowledge and the multidimensional health locus of control (MHLC) scale? 2) What was the association between the COPD related knowledge and the level of treatment compliance? 3) What was the significant relationship between the MHLC and the level of treatment compliance?. Measurements were made by using the MHLC Scale Form A (Wallston ,1978), Disease Related Knowledge Test (Johnson, 1989), and Compliance with Treatment Form (Johnson,1989), both specifically constructed for this study.

Johnson's (1989) findings indicated that no significant relationship existed between the MHLC dimension and COPD related knowledge. In addition, no significant relationship existed between external or internal MHLC dimension and compliance with treatment.

Johnson (1989) did find that the amount of knowledge held by patients had a significant positive affect on the level of treatment compliance.

Limitations noted by Johnson (1989) included the use of a convenience sample of patients, and the potential that the incidental sampling technique might have influenced the study. Johnson (1989) suggested the study should be replicated in a different geographic setting with further investigation into reasons for failure to comply with treatment regimens.

Wightman (1993) examined health value and health locus of control impact upon compliance in cardiac patients. Wightman's study consisted of 40 post myocardial infarction and post cardiac surgery cardiac rehabilitation clients. The study design was ex post facto. The study used the MHLC scale, the health value survey, and the health behavior scale.

The hypothesis stated that persons with internal locus of control and high value of health had increased compliance . No statistical significance was found to support the hypothesis. Limitations noted included small sample size, a homogeneous population which limited application to the general population, using only one collection site limiting cultural and demographic diversity, and not enough variability in MHLC scale and health value data to explain the research. Recommendations for further study included by increasing numbers of clients with a internal locus of control and high health value and those with external locus of control and a low health value that a significant relationship may have been produced.

One study that appeared to support the concept of incorporating MHLC in treatment regimen development was conducted by Kerr (1986) looking at adherence and lowered diastolic blood pressure. The sample consisted of 115 volunteer persons with hypertension who were employed at a large newspaper publishing firm and two telephone companies. The study design was descriptive correlational. Dependent variables were adherence to prescribed medication as measured by percentage of actual medications and diastolic

blood pressure readings taken at the beginning and end of the study. The three independent variables were MHLC scale scores, profiles of health locus of control characteristics, and health value scale.

Kerr's (1986) basic assumption that health locus of control beliefs contribute to the prediction of health behaviors was supported. No limitations were noted. Although, recommendations for further study in MHLC profile characteristics of hypertensives as predictors of lowered diastolic blood pressure were suggested.

Schneider (1992) administered the MHLC Scale to 137 chronic hemodialysis outpatients to examine the relationship between the scores and serum phosphorus as an indicator of dietary compliance. Schneider found that older clients tended to have higher scores on powerful others scale and tended to be more compliant with phosphorus restrictions than younger clients. Schneider postulated the possibility that expectancies of patients may vary with diagnosis and experience with a given disease.
Therefore, age, disease severity and chronicity, and other psychosocial factors such as marital support, or socioeconomic status can have a great influence on compliance, as well as perception of internal versus external locus of control.

Wells (1994) examined Perceived Control over Pain: Relation to Distress and Disability. Wells' findings supported the relationship of control beliefs to distress and disability in patients with chronic pain. Wells stated that knowledge of the specific control beliefs that a patient holds can guide the types of interventions that are used. Thus supporting the concept, that individualizing a therapeutic regime using a client's locus of control can enhance adherence.

Literature on Compliance

Cameron and Gregor (1987) described the impact of chronic illness on compliance. They noted a consistently high incidence of non-compliance among chronic disease patients which suggested there is something about chronic disease which may contribute to non-compliance. It was also noted that the time and energy required to complete

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complex treatment regimen may not be worthwhile. As the complexity of the treatment increased, compliance decreased. Clients with chronic illness know that no matter how efficacious they are with treatment, they will not be cured. Cameron and Gregor related that health professionals judge regimens on their medical worth, but clients judge regimen on a social basis. The clients perception of the value of the treatment on health is the basis for adherence and nonadherence in many cases.

Schiaffino and Revenson (1992) described the concept of perceived control, an issue supported by several studies, as having a positive influence on adherence. Schiaffino and Revenson noted the belief in ability to control outcomes, an illusion of control, may be more important than the reality of the ability to control an outcome. The perceptions of control were important for adaptation, this perception provides information about future outcomes (Schiaffino and Revenson, 1992). In addition, it was noted that those clients with less controllable diseases experienced less perceived control and were less accepting of the disease and those with a more controllable disease.

In summary, the relationship between MHLC and compliance has been not supported in some studies and supported in others. The general recommendations produced a recurrent theme, which suggested that further investigation needs to continue with the incorporation of other variables such as social support, education, self-efficacy, cost/benefit, client/physician relationship and severity of disease.

Absent from many of the studies was the concept of value of the reinforcer from Rotter's (1966) theory of locus of control. Oberle (1991) noted that any future research efforts should include the measures of the value of the reinforcer. She also noted that, further research should be consist of quasi-experimental or experimental studies and more attention needs to be paid to reliability and validity of instruments.

The mixed outcomes maybe a result of some of the limitations noted in the various studies. The lack of the value of the reinforcer as a variable may also have had an impact on the outcomes. Although the findings from multiple studies on locus of control have

been equivocal, there are studies that support the demonstration of a relationship between an internal locus of control and adherence to health promoting behaviors, with resultant decreased disability among various population types. This study utilized the recommendation of Oberle (1991) to include the concept of the value of the reinforcer. In addition, this study was conducted on a different population, in a different setting, and in the healthcare environment under going drastic changes.

Research has not always been able to support or refute the presence of a relationship between locus of control and adherence. Because of that, this research study examined if a difference exists between those with an internal and external locus of control and adherence to a therapeutic relationship. Research on locus of control and adherence to a therapeutic regimen was important in determining if a significant difference existed between the variables. If a significant difference existed, this will serve as an impetus to develop specific interventions that will utilize this concept. Understanding the factors that may affect adherence will serve to develop more efficient interventions, which will in turn maximize functional ability and limit the complications experienced by those patients with chronic obstructive pulmonary disease.

This study built on a study conducted by Johnson (1989) examining disease-related knowledge, multidimensional health locus of control (MHLC), and compliance with treatment of the patient with chronic obstructive pulmonary disease. Replication of the study was done to determine if the conclusions drawn by Johnson are applicable to other populations with COPD and built on the limitations noted in that study. Another variable added into this study was the concept of the value of the reinforcer (i.e., health) as noted by Rotter (1975) and Oberle (1991). Many studies looking at locus of control have not addressed this concept, thus creating criticism by Rotter and Oberle, who noted the need to have this concept addressed in future research. Therefore, the purpose of this study was to expand on the generalizability from the various studies that supported the concept of having an internal locus of control and maintaining adherence to a therapeutic regimen.

The focus was: Does a difference exist between perceived control of chronic obstructive pulmonary disease patients, and health value? What is the difference between perceived control of chronic obstructive pulmonary disease and adherence to a therapeutic regimen? What is the difference between perceived control of chronic obstructive, health value, and adherence to a therapeutic regimen? What specific demographic variables (i.e.,; age, sex, length of illness, presence of health insurance) describe perceived control of chronic obstructive disease (internal locus of control or external); health value; and adherence to a therapeutic regimen?

Operational Definitions of Variables

Internal and External Locus of Control

Internal and external locus of control was measured using the Multidimensional Health Locus of Control (MHLC) tool (Wallston, Wallston & DeVillis, 1978). Internal locus of control is reported as internality because the majority of responses are noted within that specific subscale. External locus of control is reported as chance and powerful others with the majority of responses noted in those particular subscales.

Health Values

Health Values was measured using the Health Value Scale (Lewis, Morisky, & Flynn, 1978). The overall rating obtained will provide measurement of the importance of health to the patient.

Adherence

Adherence was measured using the Measurement of Compliance with a Comprehensive COPD Treatment Program (Johnson, 1989). This produced three potential outcomes of measurement of compliance: high, moderate, and low.

The hypotheses tested were:

1.) There is a difference in levels of health values between COPD patients with internal and external locus of control.

2.) There is a difference in levels of adherence between COPD patients with internal and external locus of control.

3.) Variability exists in levels of adherence between COPD patients with varied health values and internal and external locus of control.

Chapter 3

Methodology

Research Design

The research design used for this study is comparative descriptive survey. Talbot

(1995) described comparative descriptive survey as a comparison between two or more

groups. It attempts to identify what difference exists between the groups.

The advantages of the comparative descriptive survey study as noted by Talbot (1995)

is it can provide descriptive information about groups. It can determine if the groups are

the same or different on specific variables which may lead to further research on a topic.

The disadvantage of this type of study is the relative weakness of design and inability to

determine the degree of association between the variables.

Threats to internal validity to this type of design are fairly limited. The potential threat

that may exist is instrumentation. The instruments utilized may not be as effective in

measuring what they claim. Another threat that may exist is in selection because the

sample to be utilized is a convenience sample. The people in this sample all have attended

a pulmonary education class which demonstrated their commitment to learning more about

their disease process which may indicate they have a internal locus of control. This may

serve to explain if those people who seek out further education about their disease process

are internally controlled versus externally controlled individuals.

Another potential threat to external validity is the idea of the "Hawthorne Effect".

Talbot (1995) described the Hawthorne Effect as subjects being aware they are being

studied which results in behavior modification. To avoid this from becoming a threat,

clients will be informed that all information is confidential so as not to fear any potential

repercussions from their healthcare providers for any perceived lack of adherence to their

therapeutic regimen.

Another potential threat to external validity is sample size and self-selection. The sample size is limited due to the amount of participants in the class, as well as, the participants choice to complete the questionnaires. One final potential threat is the homogeneity that exists in the sample. Because this is a convenience sample this will be hard to control. The difference in the sample selection for this study was the geographical difference from Johnson's (1989) study, as well as a different time, and different setting.

Sample and Setting ·

This study was modified from Johnson's (1989) by using a population that has already attended a 5 week (2 classes/week) community pulmonary education program at a small rural northern Michigan nonprofit hospital. The pulmonary education program is usually conducted three times a year with approximately 10-12 participants per program. Approximately seven sessions of the program have been conducted since its inception. It is a free program to the client and does not require a referral by a healthcare provider. Johnson's (1989) population consisted of inpatients with COPD from The University of Tennessee Medical Center, who had been provided with a teaching intervention during their hospitalization.

Sample selection criteria are based on many factors and include: diagnosis of chronic obstructive pulmonary disease (emphysema, chronic bronchitis and asthma); the ability to read and write in English; no concurrent terminal illness; and willingness to participate. Any patients not meeting the criteria had questionnaires disregarded.

The sampling plan is a convenience sample. Talbot (1995) described the convenience sample as using participants that are easily accessible to the researcher and meet the criteria. The convenience sample advantages include, according to Talbot, ease of completion, and inexpensiveness. Talbot noted disadvantages to be sampling bias, the use of a sample that does not represent the population, and limited generalizability of results. To prevent sample bias, all results were confidential to the researcher other than demographics.

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Sample size for this study was expected to be thirty respondents. Forty-eight questionnaires were sent, with twenty questionnaires (42%) being completed and returned. Talbot (1995) noted that studies that attempt to clarify concepts or examine relationships need a larger sample. Johnson's (1989) study consisted of thirty subjects.

Instruments

To determine if a difference existed between an internal and external locus of control and adherence to a therapeutic regimen, three instruments were utilized.

The three variables are locus of control (internal versus external), degree of adherence to a therapeutic regimen, and value of health (value of the reinforcer). The instruments used to measure the three variables are Multidimensional Health Locus of Control Scales Form C (Wallston, Stein, & Smith, 1994) (See Appendix A), Measurement of Compliance with a Comprehensive COPD Treatment Program (Johnson, 1989) (See Appendix B), and Health Value Scale (See Appendix C). In addition demographic data was collected to describe specific variables (See Appendix D). Written permission was obtained from: Wallston to use the MHLC Form C (See Appendix E), Johnson to use the Measurement of Compliance with a Comprehensive COPD Treatment Program (See Appendix F) and Morisky to use the Health Value Scale (See Appendix G).

Locus of Control

To determine if a person is generally considered to be internally controlled or externally controlled the Multidimensional Health Locus of Control Scale, Form C, was used. MHLC Form C was specifically designed to be used with people with chronic conditions. This instrument was developed by Wallston, Stein and Smith (1994). The format is a Likert-type questionnaire with 1=strongly disagree to 6=strongly agree. Form C (Wallston, personal correspondence, May, 1995) is similar to Form A/B, which has 18 items. Form C is designed to be condition specific. Form C has four subscales: Internality; Chance; Doctors: and Other (powerful) People. The range of possible scores for each subscale is: internal, 6-36; chance, 6-36; powerful others, 6-36; doctors, 3-18; and other

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people, 3-18. Items 1, 6, 8, 12, 13, and 17 identified an internality orientation. Items 2, 4, 9, 11, 15, and 16 identified a chance orientation. Items 3, 5, 7, 10, 14, and 18 identified a powerful others orientation. Items 3, 5, and 14 identified a doctors orientation. Lastly, items 7, 10, and 18 identified an other people orientation. A total score is obtained for each domain and the domain with the most points is labeled as the dominant domain. This instrument produced at least three possible outcomes: internality orientation, chance orientation and powerful others. This resulted in interval level of measurement.

Form C reliability has been established using two methods, internal consistency and test-retest reliability (Wallston et al., 1994). Internal consistency was found to be .85-.87 for internality subscale, .79-.82 for chance subscale, .71 for doctors subscale, and .70-.71 for other people subscale. The test-retest correlations for the subscales were .64-.66 for internality, .39-.61 for chance, .58-.66 for doctors, and .40-.54 for other people. Wallston et al. reported that one would not necessarily expect a very high test-retest reliability for the Form C subscales, especially over extended periods of time because individuals are exposed to experiences that alter their beliefs.

Construct validity for Form C was established by demonstrating increased mean Internality scores and decreased mean Externality scores after an intervention for those who experience chronic pain (Wallston et al., 1994). Concurrent validity was established by demonstrating a high correlation with the appropriate counterparts on MHLC Form B. In addition, a significant relationship existed between Levenson's Internal, Powerful Others, and Chance and Form C appropriate counterparts Internality, Chance and Other People scales. Data were collected from 588 patients with four conditions-rheumatoid arthritis, chronic pain, diabetes, and cancer. Data from arthritis and chronic pain established that Form C subscales were moderately stable and possessed considerable concurrent and construct validity (Wallston et al., 1994).

Adherence to a Therapeutic Regimen

Measurement of adherence to a therapeutic regimen was done with the Measurement of Compliance with a Comprehensive COPD Treatment Program instrument developed by Johnson (1989). This instrument is a survey type questionnaire. It was developed to ascertain an individual's degree of compliance with a treatment plan. The instrument consists of 23 questions. The maximum number of points possible is 100. Behaviors most conducive to disease control are scored at 10 points for a correct answer. Other questions reflecting compliance were scored at 5 points. Behaviors not conducive to disease control were scored on a descending order (3, 2, 1, 0, -1) in relation to the impact on the disease process. Total points received were summed as a total score. The instrument produced three outcomes: high compliance (scores 85% to 100%), moderate compliance (scores 70% to 84%), and low compliance (scores 0 to 69%). These rankings resulted in interval levels of measurement.

No reliability or validity has been reported for this tool. Johnson (1989) did report that a panel of experts consisting of an RN Administrator of Tri-County Respiratory Clinic, a Nursing Professor with experience developing instruments, a Pulmonary Physician, and an Associate Professor of Education with experience in statistics, reviewed the instrument and deemed it appropriate for use. The instrument was pilot tested during June and July 1988. The instrument was administered to 16 COPD patients on 9 East Respiratory Unit at the University of Tennessee Medical Center during pilot testing.

Value of Health

The Health Value Scale was used to measure the patient's perception of the value of health (value of the reinforcer). The health value scale measured how subjects valued health in comparison to work, family and money (Lewis, Morisky, & Flynn, 1978). The instrument consists of a three items. Kerr (1986) reported using the sum and the average of this scale. Kerr obtained average scores of 2, with a mean of 1.806, standard deviations of .25, and alpha of 0.44.

The data obtained from the Health Value Measurement resulted in an interval level of measurement. The measurement offered the respondent five possible choices to three questions regarding which choice was most important to them. Each choice is coded with health being (3), money, family, work (2), not sure (1), and no answer or N/A (0). The total score is obtained and averaged. Morisky (personal communication, Oct. 22,1996) reported having obtained the following frequencies for the times an individual values health over money, family, or jobs: (0) 12%, (1) 17.4%, (2) 39%, (3) 31.5%.

Reliability (Cronbach's Alpha) of all instruments was examined using data from this study. Talbot (1995) noted that of score of 0.70 or higher is desirable. The reliability for the MHLC (Form C) subscales were: Internal = .334, Chance = .6713, and Powerful Others = .4831. The reliabilities are lower than those reported by Wallston et al.(1994). This may be due to small sample size, number of items and missing data.

The reliability for the Health Value Scale was .298. This reliability was lower than that reported by Kerr (1986). This may be due to small sample size, number of items and missing data. Instrument developer, D. Morisky (1996) did not report reliabilities.

The reliability for the Compliance with a Comprehensive COPD Treatment Program was .2099. There is no reported reliability for this instrument by developer Johnson (1989). The low reliability may be due to small sample size, number of items and missing data.

Demographics

Demographic data was collected to include: age, gender, martial status, presence of health insurance, race, education, rating of health status, length of illness, type of healthcare provider. This data described those patients within the dominant domains of locus of control (internal, external, or chance); value of health; and adherence to a therapeutic regimen. A form was developed to collect demographic data. Given and Given (1989) noted that demographic data has not seemed to consistently influence

adherence, but it may modify the patient response and influence the therapeutic relationship.

Procedure

Subjects were recruited from the Pulmonary Education Program using current and past class rosters. Written permission to use the class rosters was obtained from C. Schepers, RRT, current program director of the Pulmonary Education Program of Mercy Health Services North. (See Appendix H) .This study was submitted to Grand Valley State University's Human Research Review Committee for approval with approval granted (See Appendix I).

All eligible subjects were sent questionnaires to complete with an attached cover letter (See Appendix J) that explained the purpose and a description of the minimal risks associated with completion of the questionnaire. The cover letter included mention that they were contacted because of participation in the Pulmonary Education Program. A disclaimer about confidentiality and lack of adverse impact on the quality of care received by participating in the study was included in the cover letter. A statement was included to say that completing the questionnaires indicate informed consent. In addition, the letter included that a request for a copy of the study's results will be sent to the participants. Postcards were sent approximately 2-3 weeks after initial letter to initiate follow-up.

Subjects were contacted by mail only. Receipt of the cover letter constituted informed consent even though there is no intervention or manipulation done. Return of the questionnaire constituted informed consent to participate.

Questionnaires consisting of : Form C MHLC Scale, Measurement of Compliance with a Comprehensive COPD Treatment Program, and the Health Value Scale, were be mailed to all participants with prestamped return envelope. Each questionnaire included an instructional note informing participants to answer each question to the best of their ability with no answer being wrong or right. Questionnaires were prepared with larger type to ensure ease of reading for the participants. Completion of all instruments took

approximately one-half hour. Upon receipt of completed questionnaires, data collection
and analysis began.

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Chapter 4

Data Analysis Results

The purpose of this research study was to examine if a difference existed between the concept of perceived control of the effects and course of the COPD and the adherence to the prescribed therapeutic regimen. Data was collected by questionnaire format. Data analysis was done using the Statistical Package for the Social Sciences (SPSS).

Descriptive statistics are presented to describe sample characteristics, internal and external locus of control, levels of health values, and levels of compliance. The sample consisted of 20 participants (n=20) with one participant having missing data therefore all statistics are for 19. The mean age of participants was 66.6 years (S.D.=7.0) with a range of 55-78 years. The participants reported living with COPD for a mean of 10.1 years (S.D.= 8) with a range of 1-35 years. The mean educational level was 12 years (S.D.=2) with a range of 8-18 years. The characteristics of patients with COPD who participated in this study are presented in Table 1.

Table 1

Characteristics of Patients with COPD (n=19)

characteristic	frequency (n)	percentage (%)
gender:		
male	8	42
female	11	58
martial status:		
married	17	90
divorced	1	5
widowed	1	5

Table 1 cont.

Characteristics of Patients with COPD (cont).

characteristic	frequency (n)	percentage (%)
Concurrent Illness:		
yes	11	55
no	8	40
Insurance Coverage:		
one source only	8	42
two sources	11	58
Healthcare Provider for Lung Disease:		
pulmonary specialist	15	75
internal medicine	4	20
general practice	4	20
two providers	4	20

Multidimensional Health Locus of Control

The instrument Multidimensional Health Locus of Control (Form C) (Wallston et al., 1995) produced three categories (internal, external, combined) in which the participants were identified based on obtaining the highest total scores in a specific subscale. The subscale, externality, was determined by combining the subscales of chance, powerful others, and doctor. Those participants that scored equally on the internal subscale and external subscale were identified as combination. The total scores and determination of locus of control results are presented in Table 2.

Table 2

MHLC Total Scores and Determination of Locus of Control (n=20)

	score range	frequency(n)	percentage(%)
internal	16-34	4	20
external	3-31	10	55
combination	n/a	3	15
missing data	n/a	3	15

Health Value Scale

The Health Value Scale provided a measurement of the participant's value of health by ranking health in comparison to other variables on a 0 to 3 scale (0=lowest, 3=highest). Participants scored a mean of 2.77 (SD= .36) on the Health Value Scale.

The Health Value Scale rankings from the individuals that were identified as internal, external, and combination locus of control are presented in table 3.

Table 3

Health Value Rankings of Internal, External, and Combination Locus of Control

Locus of Control	Score Range	mean	S.D.
Internal (n=4)	2.33-3.0	2.66	.272
External (n=10)	1.66-3.0	2.8	.45
Combination (n=3)	2.66-3.0	2.77	.192

Measurement of Compliance with a Comprehensive COPD Treatment Program

The Measurement of Compliance with a Comprehensive COPD Treatment Program is a measurement of the participant's compliance by ranking health behaviors. A participant

can score 100 possible points. Participants are then identified as high compliance, moderate compliance, and low compliance based on the total score obtained. Levels of compliance among internal, external and combination locus of control individuals are presented in Table 4.

Table 4

Level of Compliance and Internal, External and Combination MHLC

MHLC	Score Range	Mean (S.D.)	Level of Compliance		
			High	Moderate	Low
			85-100	70-84	0-69
Internal (n=4)	49-73	59.2(10.9)	0	1	3
External (n=10)	53-77	67.1(8.67)	0	5	3
Combination (n=3)	42-79	61.66(18.6)	0	1	2

Characteristics of Internal, External and Combination Locus of Control Participants

Participants identified as internally controlled individuals (n=3) were 50% (n=2) male, 25% (n=1) female, and with 25% (n=1) with missing data. Those participants identified as externally controlled individuals (n=10) were 30% (n=3) male and 70% (n=7) female. Combination controlled individuals (n=3) were 33.3% (n=1) male and 66.7% (n=2) female. Fifty percent (n=2) of internally controlled individuals reported a concurrent illness, while 60% (n=6) of externally controlled individuals and 66.7% (n=2) of combination controlled individuals reported a concurrent illness. Selected characteristics of internally, externally and combination individuals are presented in Table 5.

Table 5

Characteristics Mean and Standard Deviation of Internally, Externally, and Combination Controlled Individuals

Locus of Control	Mean Age (S.D.)	Mean Yrs COPD (S.D.)	Mean Ed.(S.D.)
Internal	62(8.8)	9.66(2.5)	12.33(2.88)
External	67.4(6.2)	10.4(9.6)	12.3 (2.2)
Combination	66.6(9.0)	6.66(4.72)	12.3(.5)

Key: Yrs-years Ed.-education

Hypothesis 1: There is a difference in the levels of health values between COPD patients with internal and external locus of control was not supported. The t-test results obtained were: t= -55; df 12; and p=.595.

Hypothesis 2: There is a difference in the levels of adherence between COPD patients with internal and external locus of control was not supported. The t-test results obtained were: t= -1.36; df 10; p=.202.

Hypothesis 3: Variability exists in levels of adherence between COPD patients with varied health values and internal and external locus of control was not supported. Multiple regression produced: F=.54; p=.59.

To determine if a difference existed between the two levels of control and certain demographic variables analysis of variance (ANOVA) was performed. The levels, internal locus of control and external locus of control and the variables, length of education, years of COPD, and age were used. No significance differences were found.

Chapter 5

Discussion

Conceptual Framework

The framework of Multidimensional Health Locus of Control used for this study does

not appear to provide the explanation for why some people are more adherent to a

therapeutic regimen and than others. Rotter (1966) stated individuals with internal locus

of control perceived that the consequences of one's own actions(adherence) determined

events (health) and individuals with external locus of control perceived events (health) as

being out of their control. The concept of patients with internal locus of control and high

value of health (value of the reinforcer) tended to be more compliant was not supported.

This study did not provide any support to the concept of internal health locus of control

versus external health locus of control being a determinant of adherence.

Anderson, DeVellis, Sharpe and Marcoux (1994) raised concern over measuring the

desire (hope) for control versus the expectancy (belief) for control when we employ the

Multidimensional Health Locus of Control Scales. Anderson et al. concluded that

reexamining the construct validity of the measures may give a better measurement of

health locus of control by determining the desire versus the expectancy for control. This

revision of the widely used MHLC Scale may provide better support of the internal versus

external locus of control and adherence concept.

Previous Research Findings

The lack of support for the hypotheses is consistent with Johnson's (1989) Disease-

Related Knowledge, Multidimensional Health Locus of Control, and Compliance with

Treatment of the Patient with COPD and Wightman's (1993) Health Value and Health

Locus of Control Impact upon Compliance in Cardiac Patients. Johnson (1989) found

that no significant relationship existed between internal and external MHLC and

compliance with treatment. Wightman (1993) also found no significant difference existed

with health value, and health locus of control impact upon compliance in cardiac patients.

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This study produced three participants that scored equally in both domains, internal and external. A reference to individuals that scored equally in both internal and external locus of control was not found in the literature. No reference was made by Wallston (1995) on how to score or label these individuals. As noted by Weitin (1992), locus of control is not an either-or proposition. The finding of combination individuals is consistent with Weitin's concept. No statistically significant variance of demographic factors seemed to explain individuals with a combination locus of control as determined by using ANOVA. Although, the combined individuals had a mean years (6.66) of COPD less than those with internal (9.66 years) and external (10.4 years) locus of control.

Schneider (1992) noted that older clients tended to be more externally controlled. A t-test between locus of control and age produced no statistical significant. This study did note that internally controlled individuals were a mean of 62 years (SD=8.8) and externally controlled individuals were a mean of 67.4 years (SD=6.2). This is consistent with Schneider's findings.

Cameron and Gregor (1987) noted a consistently high rate of non-compliance among COPD patients. The results of this study are consistent with those findings. This study found 44% (n=8) scored in the low compliance range, 55% (n=10) scored in the moderate compliance range and 0% (n=0) scored in the high compliance range.

Limitations

Limitations of this study were a small sample size, sampling technique, low alpha instrument scores and missing data. The small sample size, a homogenous population and replication of the Pulmonary Education Program limited the study's generalizability. Possibly with a larger sample size and a different sampling technique, differences may have been found. The instruments had low reliabilities which could have an impact on the statistics obtained, therefore creating another limitation by greatly affecting the power of the statistics obtained.

Application to Clinical Practice

The application of these findings to clinical practice is that health locus of control is not a conclusive predictor of health behavior, but can lend insight into decision for the most efficacious nursing intervention with varied levels of locus of control (Schillinger, 1983). Multiple factors (social support, self-efficacy, severity of disease, health beliefs, etc.) influence compliance and those factors need to be assessed to design efficient nursing interventions. In addition, the nurse must remember that health locus of control changes over time and is affected by current personal and social stressors.

As shown by responses that participants included with their surveys, there are several factors which influence compliance. One participant noted, "I and my husband were both unaware of how harmful smoking was until it was to late and the damage was done." This is consistent with the concept of perceived threat to one's health in the Health Belief Model (Kison, 1992). Assessing the perceived threat and benefit to one's health is an intervention the nurse can perform when assisting the patient with healthy lifestyle modifications.

One participant stated," No matter what you do, never quit trying to stop smoking." Many lifestyle modification inherent with adherence are very difficult and not without frequent relapses. Nurses need to realize the enormity of certain lifestyle modifications and realize relapses are normal. The nurse also needs to reassure the patient that relapses are normal and not a sign of weakness. Continuous encouragement of smoking cessation is a must but acceptance of failure is necessary so as not to alienate the patient and damage the nurse-patient alliance.

An important factor which surfaced many times was related to exercise. Many noted, living in a cold weather climate severely limited their ability to walk for exercise. Some stated they only walked in the summer months while others stated they only walked while in Florida. This brings about the need to address indoor walking programs in the winter

months. Nurses need to encourage schools, malls, etc. to allow for indoor walking programs not only for patients with COPD but for everyone with exercise needs.

Participants were eager to be included in the survey as demonstrated by several responses being sent from winter residences in Florida and Arizona. They were eager for more information about the disease process. One participant asked about lung reduction surgery as a treatment for COPD and another wondered about the results of this study. Most freely jotted ideas and comments in the margins signifying that patients truly want to express their ideas and to have well informed input into their care.

Although the findings are not statistically significant, they are clinically significant. Since COPD is usually associated with an older population group, as demonstrated by the mean age of 66.6 years, the considerations associated with age (i.e., mobility, income, social support) must be included in developing treatment plans. In addition, an older population is prone to concurrent illness, as demonstrated by 55% of the participants reporting a concurrent illness. Presence of a concurrent illness complicates an already complex treatment plan that requires multiple lifestyle modifications. The treatment plan must consider the energy expenditures required to execute it. The COPD patients use most of their energy purely in the act of respiration. Therefore, treatment plans must be a low energy expenditure with the appropriate support services (i.e., chore services, hygienic assistance) in place to assist the patient in successful plan adherence.

Initially at the inception of the Pulmonary Education Program classes, most members of the multidisciplinary team development committee felt that participants who would attend would be highly motivated and wanted personal control of the disease process. This proved unfounded with 55% of questionnaire respondents being identified as externally controlled. Most members attended with spouses/ significant others, adult children, or friends. Some class participants were spouses of patients with COPD that desired further information about the disease process and how to care for the spouse with COPD. Many stated, "He won't come but I want to know what he can eat, what he can do, and how can

I help him". For individuals identified as externally controlled by powerful others, this is an opportunity for family involvement in assisting with adherence to a therapeutic regimen. As the classes were completed participants voiced, " We'll miss you" and "It's like leaving family". A sense of camaraderie existed which demonstrated the need for ongoing social support.

Suggestions for Further Research

The recommendations of other studies are supported in this study which recognize multiple factors influence compliance in addition to health value and health locus of control. Suggestions for further study include expanding the sample size by surveying upcoming Pulmonary Education Program participants and extending the data base and compare findings of original study. In addition, adding a disease severity rating may also provide insight into locus of control. This severity rating could compare the patient's perception of disease status and the medical provider's perception of health status based on pulmonary function studies, for example. This may explain the current locus of control perception which can be affected by an exacerbation of the COPD. To assess the efficacy of the intervention, the pulmonary education class, administering a Pretest/Posttest to the group participants may also produce a significant difference by helping to clarify their perception of COPD and its treatment. Many participants and their spouses offered various comments ranging from "I guess I am not as bad as I thought" to "I never realized how sick my wife really was".

In addition, using different instruments with improved reliabilities may increase the power of the statistics, allowing for subtle difference to be detected. As noted by Anderson et al.(1994), reexamining the construct validity of MHLC scales for desire versus expectancy may also improve the findings of further research studies. This would provide for a more defined measurement of MHLC.

Further investigation into the factors and reasons why some participants produced a combination locus of control may help determine the reason for adherence versus

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nonadherence. Controlling for social stressors may also give insight to changing locus of control. A test-retest of MHLC may provide for a more global measurement of locus of control because it would evaluate if the locus of control was fixed or affected by some other concurrent variable.

In conclusion, although the hypotheses of this study were not supported, the findings were consistent with Johnson's (1989) and Wightman's (1993) findings. Further study needs to occur with additional concepts to examine the interrelationship of multiple variables and their effect on compliance. Ultimately, the researcher needs to keep in mind the concept of the patient/family-healthcare provider, mutually agreeable treatment approach to ensure optimal functional health status with limited complications for the patient with COPD, or any chronic debilitating disease process.

Appendix A

Appendix A

Multidimensional Health Locus of Control Scale Form C

Please circle only one answer per question. Beside each question you will find a scale that ranges from (1) strongly disagree with the statement to (6) strongly agree with the statement. Pick the answer that best describes your feelings.

1=stongly disagree	4=slightly agree
2=moderately disagree	5=moderately agree
3=slightly disagree	6=strongly agree

	SD	MD	D	A	MA	SA
1.If my lung disease worsens, it is my own behavior which determines how soon I feel better again.	1	2	3	4	5	6
2.As to my lung disease, what will be will be.	1	2	3	4	5	6
3.If I see my doctor regularly, I am less likely to have problems with my lung disease.	1	2	3	4	5	6
4.Most things that affect my lung disease happens to me by chance.	1	2	3	4	5	6
5.Whenever my lung disease worsens, I should immediately consult a medically trained professional.	1	2	3	4	5	6
6. I am directly responsible for my lung disease getting better or worse.	1	2	3	4	5	6
7. Other people play a big role in whether my lung disease improves, stays the same, or gets worse.	1	2	3	4	5	6
8. Whatever goes wrong with my lung disease is my own fault.	1	2	3	4	5	6
9.Luck plays a big part in determining how my lung disease improves.	1	2	3	4	5	6

Appendix B

Appendix B

Measurement of Compliance with a Comprehensive COPD Treatment Program

1. Do you smoke cigarettes?   a. yes   b. no (If no, skip to question 5)

2. How much do you smoke per day?   a. less than 1/2 pack   b. 1/2 pack
   c. 1/2 pack but less than 1 pack   d. 1 pack   e. more than 1 pack

3. Have you cut down on the amount you smoke since your lung disease was
diagnosed?   a. yes   b. no

4. If yes, by how much per day have you cut down?
            a. less than 1/2 pack   b. 1/2 pack to 1 pack   c. over 1 pack

5. Do you use aerosol spray products?   a. yes   b. no

6. Do you take the prescription medications prescribed by your doctor?
                  a. yes   b. no

7. Do you ever miss or skip a dose of your medication?
                  a. yes   b. no (If no skip to question 9)

8. If yes, about how often do you skip a dose?
            a. more than once a day   b. once a day   c. once a week
            d. once a month   e. once every 2 months or longer

9. Are you ever more than 1 hour late taking your medication?
            a. yes   b. no (If no, skip to question 11)

10. If yes, about how often are you late?
            a. every day   b. once a weekc. once a month
            d. once every 2 months or longer

11. Do you ever take less of the medication that you are supposed to take?
      For example take 1 pill instead of 2 pills.
            a. yes   b. no

12. Do you ever take more of the medication than you are supposed to take?
      For example take 2 pills instead of 1pill.
            a. yes   b. no (If no to question 11 & 12, skip to question 14)

13. If yes to question 11 and/or 12, about how often?
            a. every day   b. once a weekc. once a month
            d. every 2 months or longer

14. Do you visit with people who have colds or flu?
    a. yes   b. no

15. Do you get a flu shot every year?
    a. yes   b. no

16. How much fluid or liquid do you usually drink in a days time?
    a. 1-3 8 ounce glasses   b. 4-7 8 ounce glasses
    c. 8 or more 8 ounce glasses

17. How many meals do you usually eat in a days time?
    a. 1   b. 2   c. 3   d. 4   e. 5-6

18. Approximately how much food do you eat at each meal?
    a. average amount   b. small amount   c. large amount

19. Do you eat protein foods every day such as meat, nuts, peanut butter?
    a. yes   b. no

20. Do you take rest breaks during the day?   a. yes   b. no

21. Do you pursed lip breathing?   a. yes   b. no

22. Do you walk for exercise?   a. yes   b. no

23. If yes, about how much do you walk every day?
    a. just around the house only when necessary
    b. around the house more than needed
    c. walk at least 1/2 mile per day
    d. walk 1/2 to 1 mile every day
    e. walk more that 1 mile every day.

Appendix C

Appendix C

Health Value Measurement

1. Which is more important to you?
   a. health   b. money   c. not sure   d.no answer   e. not applicable

2.Which is more important to you?
   a. health   b. family   c. not sure   d. no answer   e. not applicable

3. Which is more important to you?
   a. working   b. health   c. not sure   d. no answer   e. not applicable

Appendix D

Appendix D

Demographic Data

Please tell me a little information about yourself.

1. Are you: male or female

2. Your age is:_____

3. How many years have you had lung disease?_____

4. Are you: single   married   separated   divorced   widowed

5. What type of insurance do you have: Medicare   Private Insurance (BC/BS etc.)
                                         Medicaid   VA   Champus
                                         None   Other:_____

6. Which type of Doctor treats your lung disease: Internal Medicine   General Practice
                                                    Pulmonary Specialist
                                                    Other:_____

7. Your highest level of education:_____

8. Besides your lung disease, do you have any other health problems: yes or no
   If yes, what type of health problems do you have:_____

   _____

9. Is there any other information that you think may be important to share:

   _____
   _____

Thank You!

Lori Booms RN BSN

Appendix E

VANDERBILT UNIVERSITY SCHOOL OF NURSING
HEALTH CARE RESEARCH PROJECT

Station 17
Vanderbilt University Medical Center
Nashville, Tennessee 37232-8300

Telephone (615) 322-2520
Fax (615) 343-7711

To: Fellow Health Researcher

From: Kenneth A. Wallston, Ph.D.

Re: The Multidimensional Health Locus of Control (MHLC) Scales

Thank you for your recent inquiry about our MHLC scales. Enclosed you will find copies of all three forms of the MHLC (Forms A, B, & C) along with scoring instructions for the forms.

Forms A & B are the "general" health locus of control scales that have been in use since the mid-late 1970's (and were first described in Wallston, Wallston, & DeVellis, 1978, Health Education Monographs, 6, 160-170.) Each of these two "equivalent" forms contain three 6 item subscales: internality; powerful others externality; and chance externality. In the past 15+ years, forms A/B have been used in nearly a thousand studies and have been cited in the literature hundreds of times.

Form C is a relatively new version of the scale that we first started to develop in 1987. Form C is designed to be "condition-specific" and can be used in place of Form A/B when studying people with an existing health/medical condition. [The way you make this happen is to replace the word "condition" in each item with whatever condition (e.g., arthritis, diabetes, pain, etc.) your subjects have.] Like Forms A/B, Form C also has 18 items, but, instead of a single 6 item powerful others subscale, Form C has two, independent 3 item subscales: doctor, and other people.

We consider all three forms of the MHLC to be "in public domain." That means that you are free to use the scales in your research (and to alter them for your research in any way you choose) without obtaining our explicit permission. We do ask, however, that you cite the scales correctly if/when you use them[1]. If you profit monetarily from the use of our scales, we expect that a suitable contribution would be made to "The Vanderbilt Health Care Research Project." If you are a student, you have our permission to include a copy of our scale(s) in the appendix to your thesis or dissertation; otherwise, it would be unethical to publish these scales without obtaining our explicit written permission to do so.

I have recently written and copyrighted a manual for the use of the MHLC scales. It is not necessary for you to purchase a copy of this manual in order to use the scales, but, if you would like to purchase a copy, please send a check for $10.00 (US) made out to "Vanderbilt University" to: Health Care Research Project; School of Nursing; Vanderbilt University Medical Center; Nashville, TN 37240.

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[1] If you need/want to cite Form C, you may use the following citation:

Wallston, K.A., Stein, M.J., & Smith, C.A. (1993). Form C of the MHLC Scales: A condition-specific health locus of control scale. Journal of Personality Assessment, 63, 534-553.

Appendix F

Date: 7-12-96

To: Lori Booms
From: Ann P. Johnson, EdD, RN, CS

███████████████████████

You have my permission to use my tool 'Measurement of Compliance with a Comprehensive COPD Treatment Program' for development and completion of your master's thesis in nursing. I would appreciate a copy of the results you obtain. Best of luck to you in your academic endeavors. If I can be of further assistance, please let me know.

Dr. Ann P. Johnson
Associate Dean
College of Applied Sciences
203 Belk Building
Western Carolina University
Cullowhee, NC 28723

Appendix G

STANDARD RELEASE FORM

I, ___Donald   Morisky_____, hereby give permission
to the Grand Valley State University, Kirkhof School of Nursing,

_____ 1. To utilize photographs, films, video or audio taped segments of
self for educational purposes.

__✓__ 2. To copy or reproduce the following material(s) for educational
purposes by faculty and/or students within said institution:

_____Health Value Measurement Scale_____

_____for purpose of reproduction for a Master's

_____Thesis. for Lori Booms RN BSN_____

_____ 3. _____

Date: ___10-21-96___ Signature: ████████████████████

Name Printed: ___Donald E. Morisky_____

Institution/Agency: ___University of California, Los Angeles___

Address: _____Donald E. Morisky, Sc.D., M.S.P.H._____ _____
UCLA, School of Public Health
City: _____26-070 CHS_____ _____
10833 Le Conte Ave.
State: _____Los Angeles. CA 90095 - 1772___ _____

Witness: ██████████████   ___Nicole Watson_____

Date: ___10/22/96___   ___Administrative Assistant, III__

Appendix H

I, Cathy Schepers, RRT, give Lori Booms RN, MSN student GVSU, permission to use

class rosters from the Pulmonary Education Program to be used as a mailing list for

potential participants in a research study looking at Locus of Control, Health Value, and

Adherence to a therapeutic regimen in patients with Chronic Obstructive Pulmonary

Disease. I understand that I am entitled to request a copy of the results of the study

when complete, and minimal risks are associated with completion of the questionnaires.

All information will be kept confidential and in no way impact the care delivered to the

patients.

C. SCHEPERS RRT   date   9-18-96

Appendix I

GRAND
VALLEY
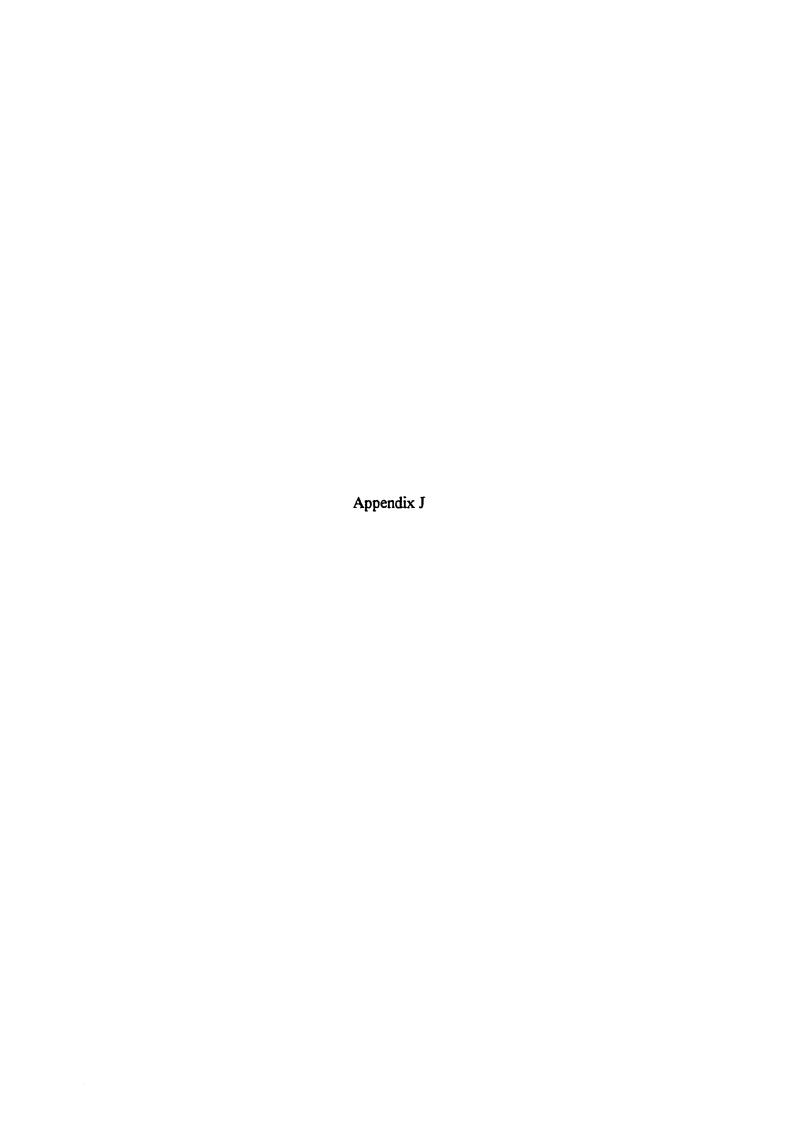# STATE
UNIVERSITY

January 7, 1997

Lori Booms
100 E. Morrestown Rd.
Lake City, MI *49651*

Dear Lori:

Your proposed project entitled *"Preceived Control of Chronic Obstructive Pulmonary Disease and Adherence to a Therapeutic Regimen"* has been reviewed. It has been approved as a study which is exempt from the regulations by section 46.101 of the Federal Register 46(16):8336, January26, 1981.

Sincerely,

Paul Huizenga, Chair
Human Research Review Commiffee

Appendix J

Dear Breathing My Best Class Member,

My name is Lori Booms and I am a graduate nursing student at Grand Valley State University. I am doing a study that asks people with lung disease about their feelings about their disease. Please enjoy the cup of coffee I have sent while doing this study. I want to know your ideas about your medicine, exercise, and your diet.

Filling out the survey should take about 30 minutes. It is your choice to do the survey and by filling out the survey you agree to be part of this study. All your answers are confidential and will only be seen by me. The only risk to you is becoming tired. Please return the survey in the envelope included. If you have any questions you can call me at 1-616-229-4820 or Grand Valley State University Human Subjects Review Chairman, Dr. Paul Huizenga, 1-616-895-2472.

Thank You,
Lori Booms RN BSN

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