

Factors Associated With Missed Appointments In A
Primary Care Clinic

By

Lisa M. Winterbottom, M.D.

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CERTIFICATE OF APPROVAL

**This is to certify that the MPH thesis of
Lisa M. Winterbottom
Has been approved**

[Redacted Signature]

Professor in charge of thesis

[Redacted Signature]

Member

[Redacted Signature]

Member

Member

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Abstract

Missed appointments reduce the productivity of primary care delivery systems. To improve understanding of why patients miss primary care clinic appointments, appointment-keeping behavior of patients who received primary care from a VA general medicine clinic were studied. Patients who missed one or more revisit appointment with a physician were compared with patients who had perfect attendance over eighteen months. A questionnaire containing sociodemographic items, reasons for missed visits, health status (SF-12), satisfaction with care, health beliefs, and social support was sent to 222 perfect attenders and 437 missed appointment individuals.

Sixty-seven percent of perfect attenders and 43% of the missed appointment group returned questionnaires. Comparisons by appointment group showed that the perfect attenders were more likely to be older ($p = .001$), to have Medicare coverage ($p = .01$), to be married ($p = .03$), to acknowledge having a VA primary care provider ($p = .03$), to identify tangible support ($p = .02$), to have poorer physical health scores and better mental health scores. They were less likely to describe themselves as “never having enough” income ($p = .02$). There were no differences between groups’ access to a telephone, travel distance, education, duration of relationship with physician, type of physician seen (staff, resident or fellow), health beliefs, or satisfaction with care.

Only 52% of patients who missed appointments acknowledged that they had missed an appointment in the previous 18 months. Among 16 possible reasons for missing appointments, the most commonly cited were forgetting (43%), being unaware of the appointment (33%), unexpected problem (30%), clinic changed time (20%), having transportation problems (18%), inconvenience/conflict with work (17%), and being too sick to come (13%).

A multiple regression model including age, acknowledgement of a VA primary care provider, worse physical health and better mental health scores on the SF-12 explain about 20% of the variance of a medical appointment keeping index.

Patients who missed appointments tended to be younger and have poorer psychological functioning. Among patients who missed appointments, a large proportion appeared to be unaware of the missed appointments or forgot their appointments. This suggests that improving systems for patient notification would improve appointment keeping. The large proportion of patients who failed to attend appointments because the time was inconvenient suggests that enhanced opportunities for patient input in scheduling also would be efficacious. Missed appointments may also be a marker for poor psychosocial functioning, and intensive follow-up and increased flexibility of appointment times should be undertaken.

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Chapter 1 Introduction

When medical patients fail to keep scheduled appointments, the efficiency of the health care system is reduced. Most of the research on missed appointments has not led to useful insights on how to improve appointment compliance. The state of the art is to send reminders or to arrange telephone reminders to patients prior to the scheduled visit. This action is designed to improve efficiency of the health care system but does not consider the problem from the patient's perspective. Appointment attendance in adult primary care clinics comprises a small proportion of the literature on missed appointments. Despite this paucity, much money is spent on an annual basis on adult preventive and follow up health care. For these reasons, I chose to study the problem of missed appointments from the patient's perspective. I used a tested and measurable health behavior model, the Health Belief Model, in addition to other validated constructs.

The Health Belief model was chosen because of its prior use in explaining other preventive health behaviors (Figure 1). Patients and providers use appointments to prevent development of new problems or the worsening of existing conditions. Because missed follow-up appointments make it difficult to achieve these objectives, this study was performed in order to understand factors associated with missed appointments in a Veterans Administration primary care clinic.

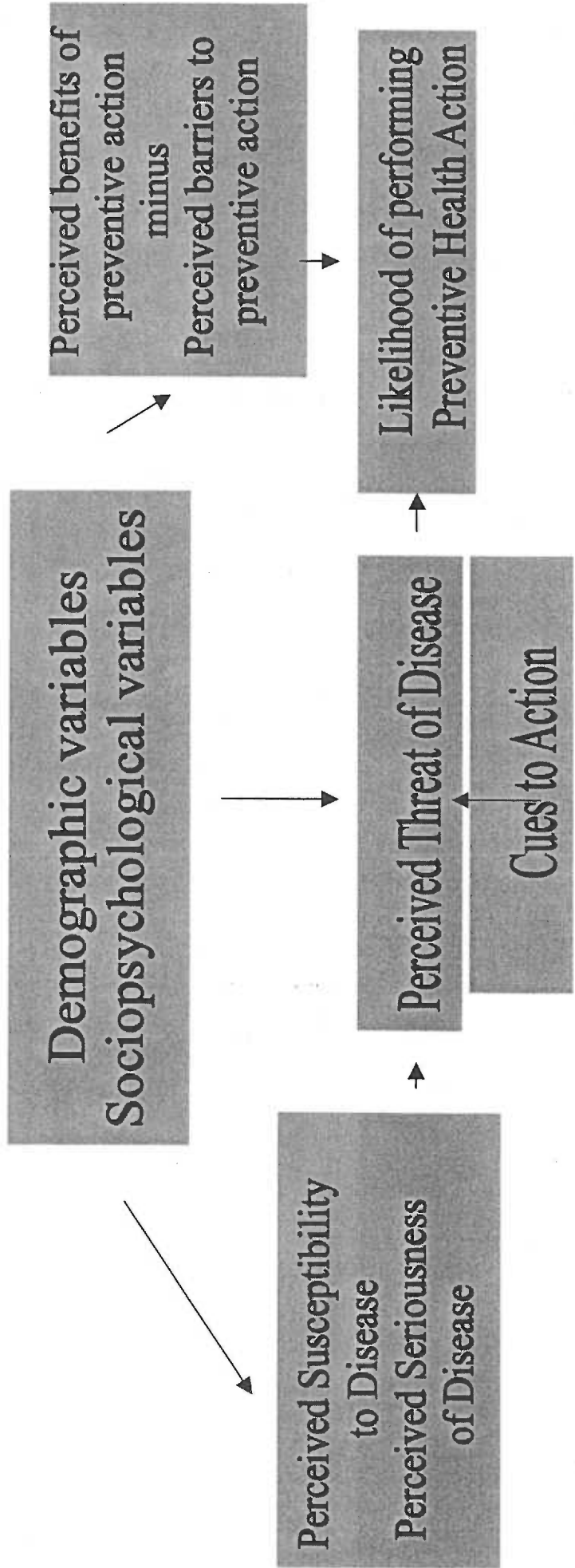
Figure 1 Becker et al

Health Belief Model

Individual Perceptions

Modifying Factors

Likelihood of Action



The VA has become one of the largest managed care organizations in the United States and is the setting for the current study. Ten percent of the national Veteran population is cared for by the VA with increasing enrollment of older men with high medication costs. Missed appointments have been reported at 15-44%, depending on the clinic and type of appointment. The disruption in service interferes with the ongoing care of newly enrolled veterans and prevents other patients from receiving care sooner. The identification of modifiable factors or early recognition of such patients can be focused upon for additional intensive interventions to improve appointment attendance. If found, system issues can also be addressed.

The primary objectives of this study were:

- 1) To identify factors associated with missed appointments in a primary care clinic. More specifically it tests the relationship between missed appointments and the following:
 - a) Sociodemographic variables
 - b) Delivery of health care variables
 - c) Sociopsychological variables
 - d) Physical and psychological functioning
 - e) Perceptions of susceptibility to, seriousness of and threat from health problems
 - f) Perceptions of benefits and barriers to keeping appointments
 - g) Environmental cues to remind and encourage appointment keeping

2) To describe reasons given by patients for missing appointments.

This project is unique in that it applied methods used in prior adult appointment attendance research to a VA primary care clinic and tests a comprehensive model to explain appointment behavior. This information will facilitate changes in systems for scheduling and notification of appointments.

Chapter 2 Background

In order to understand factors contributing to appointment keeping behavior, it is necessary to have a theoretical construct that organizes relevant factors. Most of the literature on missed appointments has not used a conceptual model to understand appointment behavior. The one exception is the Haynes model.¹ Deyo and Inui used the Haynes model as a framework for reviewing the literature on appointment keeping.² This model suggests that various factors interact with the patient and influence the state of compliance with a recommended therapy.

Patient sociodemographic variables in the appointment attendance literature:

The prior research on adult appointment keeping can be framed within the categories of variables proposed in the primary objectives. A number of patient demographic variables have been found to be significantly associated with missing appointments. Younger age,^{3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18} lower socioeconomic status^{19,20,21,22,23} lower educational levels,^{24,25,26,27,28,29} non-married status,^{30,31,32} lack of access to a telephone^{33,34,35,36} and prior missed appointments^{37,38,39,40,41,42,43,44} are consistently associated with missing appointments. Ethnicity has been reported to be associated with missed appointments in some studies^{45,46,47,48,49,50,51}, but not after adjustment for age, socioeconomic status and educational level.^{52,53,54} Distance from the source of appointments^{55,56,57} and gender^{58,59,60,61,62,63,64,65,66,67,68} do not appear to be

associated. Employment and access to transportation have not resulted in consistent findings and have not been studied uniformly.^{69,70,71,72,73,74}

Provider and system characteristics in the appointment attendance literature:

Health care delivery variables have been examined minimally. The type of physician has not been found to be associated with appointment keeping in at least three studies.^{75,76,77} A 'poor' relationship with the MD was associated with missed appointments in one study.⁷⁸ Satisfaction with the first visit was associated with appointment attendance in one study and not associated in another study.^{79,80} Duration of the relationship was not associated in one study.⁸¹ A language barrier was associated with missed appointments in several studies.^{82,83,84,85} Continuity with a provider was associated with appointment attendance in multiple studies.^{86,87,88,89,90} Youth of MD was associated with missed appointments in one study and not associated in two others.^{91,92,93} Change of provider was associated with missed appointments in one study but missed appointments were not associated with changes of resident providers in other studies.^{94,95,96,97} Overall satisfaction with health care,^{98,99,100,101} a clinic waiting room wait, long wait from time of appointment scheduling to appointment visit,^{102,103,104,105,106,107,108,109,110,111,112,113} a high number of visits^{114,115,116,117,118,119} and day and time of visits^{120,121,122,123,124} have been associated with missed visits. Referral appointment attendance has been more successful when it is to a specific physician.^{125,126,127}

Aspects of insurance coverage also have been evaluated. Prepaying,^{128,129,130,131,132} no copay,^{133,134,135} and third party payer^{136,137,138,139} have all been associated with keeping appointments. However, the lack of definition of health care systems in some of these studies impairs generalizability of the data. Patients missing appointment have been found to have more symptoms at their visits.¹⁴⁰

Sociopsychological variables in the appointment attendance literature:

Few sociopsychological variables have been examined. A few studies have found that family size and family instability were associated with missed appointments.^{141,142}

Physical and psychological functioning in the appointment attendance literature:

Some disease states and medical problems are associated with missed appointments. Psychiatric diagnoses are associated with missing visits.^{143,144,145} Acute problems and visits for screening or prevention were associated with missing appointments.^{146,147,148,149,150} Patients missing appointment have been found to have more symptoms at their visits. Chronic problems, specific therapies and knowledge of their problems were associated with keeping visits.^{151,152,153,154,155,156}

Perceptions of susceptibility to, seriousness of, threat from health problems and perceptions of benefits and barriers to appointment keeping in the appointment attendance literature:

Susceptibility to, seriousness of and threat of illness have not been specifically evaluated for their association with appointment attendance. Perceptions of benefits have not been explicitly studied. Perceived barriers have been discussed minimally as outlined in the categories of sociodemographic variable, and health care system delivery issues.

Environmental cues to remind and encourage appointment behavior in the appointment attendance literature:

Environmental cues have been studied mainly related to reminders.^{157,158,159} Reminders of phone and mail type have reduced the no show rates. Other environment cues such as family reminders or social support have not been studied.

The Haynes model suggests the importance of several of the factors outlined above in compliance behavior. The characteristics of the following are hypothesized to influence adherence with a regimen: access, the patient's existing disease or reason for the appointment, the patient (demographics and sociobehavioral), the environment, the provider-patient interaction, the facility and the therapeutic regimen. However, what I now propose is to use the Health Belief Model of Becker et al in addition to a few other validated

instruments to capture the factors of the Haynes model to understand the problem from the perspective of the patient.¹⁶⁰ The value of attempting to determine the usefulness of the constructs of the Health Belief Model in addition to the other selected cognitive constructs is that the conceptual model is enriched and potential modifiable characteristics of patients are characterized.

Becker et al developed a conceptual model, the Health Belief Model, for explaining compliance with preventive health behavior. This model hypothesizes that individual perceptions (perceived susceptibility and seriousness), modifying factors (demographic variables, sociopsychological variables), perceived threat of disease, perceived benefits and perceived barriers as affecting the likelihood of taking a recommended preventive health action (Figure 1). In this model “cues to action” are defined as mass media campaigns, advice from others, reminders, the illness of family or friends or media coverage contributing to perceived threat. All of these factors are relevant to the health behavior of attending appointments to prevent illness or worsening of illness.

Under cognitive theory the Health Belief Model is looked upon as a value-expectance theory.¹⁶¹ The value is the desire to avoid illness or get well and the expectance is that a specific health action will prevent or improve the problem. The threat of the illness is conveyed through the perceived

susceptibility and perceived seriousness of the disease. The outcome expectation is composed of the perceived benefits of a specified action minus the perceived barriers to taking that action. The belief about one's ability to carry out the recommended action is the efficacy expectation. For the proposed usage of the model to look at appointment attendance, the threat is the resulting illness or worsening illness if the appointment regimen is not followed. The outcome expectation would be composed of the benefits of attending the medical visits and perceived barriers to attending the medical visits. Efficacy expectation would apply to the belief of carrying out the behavior of appointment attendance.

Only a few studies use the Health Belief Model to examine adult and adolescent appointments. Irwin et al found no relation of the Health Belief Model with follow up appointments in adolescents.¹⁶² However, while the study did show that factors associated with initial appointments appear to be different from the factors associated with follow-up appointments, the study also demonstrated that the number of perceived potential outcomes resulting from noncompliance was positively associated with appointment keeping. In another test of the Health Belief Model, Jones, Jones and Katz found patients who received education on their health problem were more likely to adhere to emergency room referred follow up appointments.¹⁶³

Use of the Health Belief Model in chronic conditions, which are commonly reasons for appointment of older adults, has not shown significant relationships with appointment attendance. Nelson, Stason et al and Lander, Riccobene et al found the Health Belief Model variables to be unrelated to keeping appointments for hypertension.^{164,165} A single study by Mirotzniak used the Health Belief Model to explain appointment attendance in Lupus patients.¹⁶⁶ General health motivation and perceived benefits were significantly correlated with intent to keep appointments but not percentages of actual appointments kept at six and twelve months. However, perceived costs of doctor visits were significantly inversely correlated with intent and percentage of appointments kept.

The concepts of self-efficacy, general health motivation and cues to action have been added to the Health Belief Model in later years. Self-efficacy is defined by Bandura as “the conviction that one can successfully execute the behavior required to predict the outcomes”.¹⁶⁷ This became useful as the Health Belief Model was used more to look at long-term lifestyle behaviors versus the initial simple preventative actions of a single event or test.¹⁶⁸ This concept is substantiated in the literature to account for initiation and maintenance of behavioral change.^{169,170,171} I considered lack of self-efficacy as a perceived barrier to performing a recommended health behavior. Cues to action have not been systematically studied but have been added to various forms of the Health Belief Model. General health motivation has also been

included in formulations of the Health Belief Model to assess other healthy practices such as eating well, taking vitamins and exercising. This study will attempt to capture these concepts through developed subscales in this study of appointment behavior.

The Health Locus of Control Model is a model initially proposed by Phares, and found in Rotter's social learning theory of personality. It may contribute to the Health Belief Model and will be added to the model tested for appointment behavior.^{172,173} The basic concept reflects a degree of expectancy that a behavior will result in an outcome and a corresponding degree to which a person believes they can achieve the behavior and desired goal. A person with high degrees of belief that they can perform a behavior that results in the outcome is thought to have internal control of their health. When the person believes that others or fate control these things, the perceived control over health is external. The strength of the reinforcement of the behavior and the value of the reinforcement also play a role.^{174,175,176} When this model is applied to appointment behavior, the behavior would be appointment attendance and the outcome would be stabilization of health.

The health locus of control construct has been used with the Health Belief Model in several other studies to evaluate its contribution to explaining preventive behaviors.^{177,178,179,180,181} These studies showed that the constructs were not useful in most studies but were important in a few studies of breast

cancer. In this study I added scales to measure the perceived control over one's health and to see if an individual who misses appointments feels he has less control over his health care. This was done since many traditionally cited reasons for missing appointments are attributed to "others".

Social support was also added to the proposed model for appointment behavior because the literature shows that there is an interaction between external control and social support. People who report external control of health receive benefits from their extensive social support.^{182,183} People who identify external controls over their health are more likely to report poorer health and rely more on social networks.¹⁸⁴ Significant positive correlations have been found between external control, life stressors and depression and anxiety.¹⁸⁵ In response to the association of acute illnesses and psychosocial problems with missed appointments and the association of social support and perceived control, a measure of mental and physical health status was used with permission.¹⁸⁶

The Health Belief Model in combination with social support measures have been used to examine the likelihood of performing healthful behaviors. Social support appears to be important in safe sex behavior^{187,188,189} adherence to diet,¹⁹⁰ barriers to exercise¹⁹¹ and in barriers to control of diabetic college students,¹⁹² and barriers to breast screening.¹⁹³ Compliance has also been looked at in several papers. Social support was associated with frequent clinic

attendance. However, when mental health and family function were controlled for,¹⁹⁴ social support was no longer associated with medication compliance in adults and children.¹⁹⁵

The Health Belief Model has been used to study the use of health services, which can be a form of appointment attendance. Initially, the health belief model was used to examine utilization of specific preventive services. A few articles have tried to determine the model's use in predicting general use of clinics. Susceptibility, severity, benefits and barriers were significantly related to pediatric physician visits in one study.¹⁹⁶ The four constructs were not related to clinic use index or scope of services use. In a study of nonmedical employees' use of HMO services, Leavitt found that susceptibility, severity and benefits were positively associated with prospective and retrospective illness-related services and general services, although susceptibility was not statistically significant in all four situations.¹⁹⁷ He did not measure barriers.

In this study, satisfaction with care was measured using the GHAA subscale as an operationalization of the patient's interaction with the health care system and the provider. The Group Health Association of America developed measures of satisfaction with clinic and health care attributes for the evaluation of HMO performance on a national basis. Satisfaction is often looked at as a measure of quality and is correlated with compliance in the

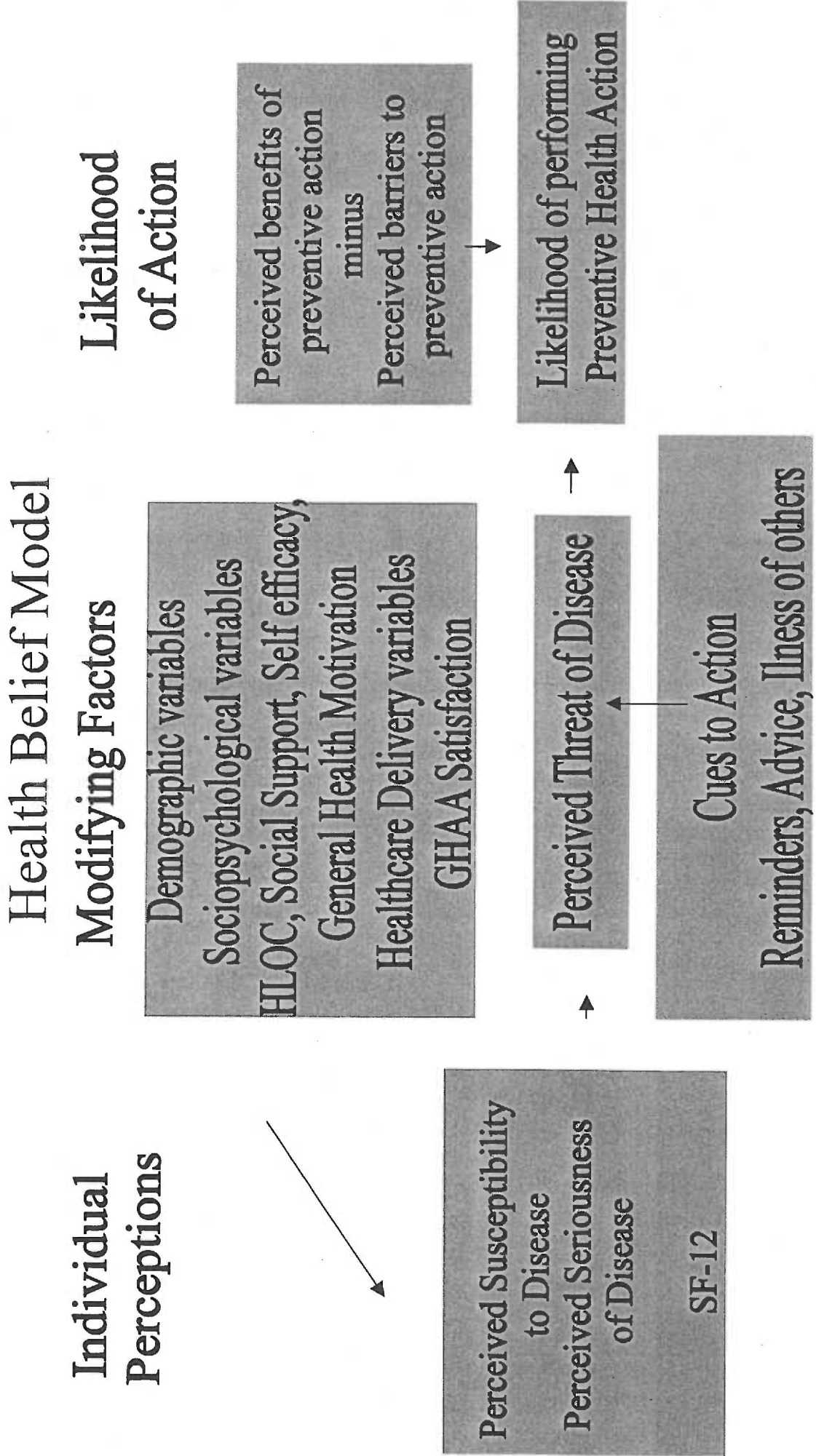
elderly but not in the young.¹⁹⁸ Severity and clinic visits were predictors of compliance in each age group. However, distance from the clinic influenced the young, and the older patients were influenced by the physician's prognosis. When the more impaired elderly were seen frequently without expecting a benefit, their satisfaction with care was poor. Satisfaction was found to be important predictor of compliance in a study by Nagy and Wolfe.¹⁹⁹

The Health Belief Model has been evaluated by itself and in addition to other cognitive constructs. Nagy and Wolfe hoped to examine the relationship of these constructs to symptoms, patient satisfaction, outlook, three measures of locus of control and two measures of social support in a model to explain medication compliance and self-management compliance. While patient satisfaction and lack of symptoms were each associated with one of the compliance outcome measures, there was no relationship between the health locus of control scales and the compliance measures. Decay of compliance was suggested as a reason for the poor relationship of the variables and it was found that indices of different types of compliance (medications, self-management, research measure) were uncorrelated. Although patient satisfaction and lack of symptoms were consistent predictors of medication compliance and self-management compliance, respectively, R^2 statistics were low, i.e., the model explained only a small amount of the variance. They concluded that their evidence suggested, "cognitive variables in general and

health locus of control beliefs specifically play a limited role in determining compliance in chronic disease patients.” However, accounting for the duration of illness and the possibility that the models for every type of medical compliance may not be identical may be important. This study and others like it raise the importance of patient attitudes and beliefs in the models of illness and illness behaviors. This model is similar to the model proposed for appointment attendance.

While intuitively it appears that patient beliefs or knowledge should contribute to the attendance of an appointment, little is known about their contribution in a conceptual model for appointment attendance. In this study I developed Health Belief Model subscales for appointment keeping. These were used in addition to other validated instruments of social support, health locus of control, satisfaction with various aspects of a health care system, demographics and measures of physical and mental health to see how they are associated with appointment attendance (Figure 2).

Figure 2 Modified Becker Model for Appointment Attendance



Chapter 3 Methods

1. Study design

A cross-sectional group of patient was identified to receive the questionnaire by the prior appointment attendance status in the general medical clinic.

a. Study setting

The project was conducted at the Portland VAMC in 1996-1997. The VA has been functioning as an HMO with a budget based on enrolled patients since 1994. Primary care patient enrollment grew from twelve thousand to sixteen thousand at the time of the study. The general medical clinic was located at a clinic facility on Barbur Boulevard at this time. This clinic was 2 miles from the Portland VA. The clinic had labs, x-ray, some mental health, dermatology, mini pharmacy, audiology, and eye care as well as dietician and diabetic care. All other specialty care clinics were located at the main facility.

Clerks coded appointments on the day of the clinic. Patients appointments in the computer database show whether the patient attended the visit, cancelled, did not show or the clinic cancelled the visit. The patients received a letter two weeks before the visit at the address listed in the VA database as the home address. The letter contained a phone number for scheduling purposes. No automated phone reminder system existed. The telephone triage line was accessible to patients but commonly had a thirty-minute wait to speak with an individual. Appointment scheduling could also be attempted with the clerk after the visit for periods within 6 months of the completed visit. Visits

scheduled greater than six months later would be scheduled at a later date without input from patients.

b. Subjects selection criteria and recruitment

The participants were from a random sample of patients who had attended at least one follow up visit with a general medical provider for the period 6/95-12/96. The clinic lists were reviewed to confirm that visits were follow-ups and not new visits. Follow-up visits were analyzed because in initial analysis, patients who missed first visits differed from those who missed follow-ups in several characteristics. Patients who did not have mailing addresses, were too ill to respond, had neurological problems or were in nursing homes were excluded.

2. Measures

a. Objective 1A, Sociodemographic variables:

Sociodemographic items included access to telephone, travel distance, age, education level, marital status, financial status, and gender.

b. Objective 1B, Delivery of health care variables:

Health care variables included whether the patient paid for medications, paid for visits, identified a primary care provider at the VA, the duration of this patient-physician relationship, continuity, frequency of visits and other sources of insurance.

c. Objective 1C, Sociopsychological variables:

Health locus of control:

The instrument used was that of Wallston, Wallston and De Vellis.²⁰⁰ The A form of the instrument was used. There are three subscales: internal locus of control, powerful others and chance health locus of control.

d. Objective 1C, Sociopsychological variables:

Social support:

Sherbourne and Stewart developed this instrument.²⁰¹ It is comprised of 18 items and includes four separate subscales. The 18 items can be combined in an overall support index. The four scales are emotional/information support, tangible support, positive interaction and affection. Emotional support is the expression of positive affect, empathetic understanding and encouragement of expressions of feelings. Informational support is defined as the offering of advice, information, guidance or feedback. Tangible support is the provision of material aid or behavioral assistance. Positive social interaction is the availability of other persons to do fun things with the individual. Affectionate support involves expressions of love and affection.

e. Objective 1C, Sociopsychological variables: Group Health Association of America patient satisfaction questionnaire:²⁰²

This instrument has been used to evaluate consumer satisfaction for HMOs. Scales that were appropriate for the VA were: accessibility of services and providers; financial arrangements; technical quality of care; communication by the doctor; choice and continuity; interpersonal aspects of care; outcomes of care; and general satisfaction with care. The single items for time spent, outcomes, and overall quality were also included. The scales, which did not seem appropriate for a VA consumer, were: services covered, information, paperwork and costs of care. Several demographic questions from the GHAA were used because of the prior testing and use of the wording.

**f. Objective 1D, Physical and psychological functioning:
SF-12:**

The SF-12 is the valid shortened version of the SF-36.²⁰³ The twelve items can give a physical health score and a mental health score similar to the Physical and Mental Component Summaries of the SF-36.

g. Objective 1E and 1F, Perceptions of susceptibility to, seriousness of and threat from health problems; benefits and barriers to keeping appointments: Questionnaire development

Instruments and individual questions from instruments were used whenever possible because of prior testing and known reliability. Unfortunately, there were no adequate measures of the Health Belief Model for appointment keeping, so that the criterion-related validity could not be checked against an external criterion. Content validity and construct validity were tested for the scales of the Health Belief Model that I developed. These subscales included benefits of appointment keeping, seriousness of condition, general health motivation, cues to action for appointment keeping, susceptibility to illness as related to appointment keeping, barriers to appointment keeping and self-efficacy for appointment keeping. A Likert summative score technique was used. An expert panel reviewed the items based on the concepts in past research. The following definitions were used in constructing items for scales:

1. Perceived susceptibility- Persons' views of the likelihood of becoming ill from their medical problems
2. Perceived seriousness- Persons' views of the dangerousness of their medical problems

3. Perceived barriers- Persons' views of the factors that make it difficult to attend their medical visit
4. Perceived benefits- Persons's views of the effectiveness of medical visits for their medical problems
5. Cues to action- Reminders to perform health behavior
6. General health motivation- Persons's overall efforts and interest in preserving health
7. Perceived self-efficacy- Persons' belief that attending their appointment will improve their health status and that they can attend their clinic visits

Ten judges familiar with the definitions of the Health Belief Model reviewed the items. Items were included after discussion by judges if consensus was reached. Scales were developed. All items were measured on a Likert scale of 1 (strongly disagree) to 5 (strongly agree). Demographics questions and validated instruments to collect information on health locus of control, social support, satisfaction with the health care system, and health status were added. The instrument was given in pilot form to several patients to identify poorly worded or unclear items, which were corrected.

Construct validity of the Health Belief Model scales that I developed was explored with factor analysis. A principal component factor analysis was performed. The KMO, a test of variable sampling adequacy was 0.8, which is fair.²⁰⁴ The Bartlett's test of sphericity, a test showing that the correlation matrix differs from the identity matrix, was significant $p = .0001$.²⁰⁵ Both tests suggest factor analysis should not be discouraged for inadequate variability or no difference from the identity matrix.

The correlation matrix for the items was examined to identify correlations above 0.3. The scales of benefits, susceptibility, preventive/motivation, cues, barriers, and self-efficacy appeared to cluster together with a few exceptions. Due to the 5-item Likert scale, the distribution of most items was not normal and was negatively or positively skewed. Transformation of the items did not improve the normality of the scores, thus the initial principal component analysis without transformation was used for exploratory purposes. The number of items extracted, the distribution of the variance and correlations were similar using both methods.

Principal component analysis was performed on items correlating with the proposed subscale or another at 0.3 or above and revealed sixteen factors with eigenvalues above one. Four items were eliminated from the factor analysis. The resulting sixteen factors from the principal component analysis explain

69% of the total cumulative variance. When the unrotated principal component analysis factor loadings were analyzed, many of the items loaded on more than one factor. When the items were attributed to the factor to which it loaded most highly, most items load on factors 1,2 and 6. Two items loaded on factors 3 and 4. Factors 7, 8, 9, 10, 11, 12, 13, 14 and 16 were discounted because the items loading on them loaded on other factors more strongly. The scree plot's slope (a plot of the eigenvalue by the component number used to separate the more important factors from the less important factors) appeared to change most at 2,3 and 4 factors.

The rotations of the principal component analysis results resulted in orthogonal solutions, which were similar, but could not provide an oblique solution with fewer than 53 iterations. This is because the items are intercorrelated. The varimax provided as much and similar information on the factors as equamax, and quartimax rotation

Because the varimax rotation did not reduce the number of factors or support simple factor loading, the initial unrotated factors were used (Table 1). Factor 1 included the benefits items, the general health motivation items, most of the cues to action items and two susceptibility items. Factor 2 included most of the susceptibility and barrier items. Factor 6 included 2 barrier items and the self-efficacy scale items. Factor 3 included 2 items from the barrier scale dealing with expense and distance. Factor 4 contained items included

two items dealing with health status impact of appointment attendance. Alphas of Factor 1,2,3,4 and 6 were: 0.89, 0.88, 0.77, 0.49 and 0.62. Forcing the unrotated PCA into 2-7 factors did not match these scales.

Table 1 Principal Component Analysis

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 6
20 Coming to my visits prevents discomfort for me.				.462	
21 I have a lot to gain by coming to visits.	.519				
22 If I keep my visits, my health will be better.	.526				
23 I am not so anxious about becoming sick if I keep my visits.	.548				
24 Missing a visit might result in worsening of my health status.	.580				
25 I come to clinic to get medicines to improve or stabilize my health.	.587				
26 I come to clinic to get reassurance from MD about my health status.	.653				
27 I come to clinic to have my questions answered about my health status.	.666				
28 Keeping my appointments has an effect on my health status.				.380	
29 Overall, how much benefit have you had from visits to the Gen. Med. Clinic since 7/1/95?	.504				
30 I am concerned about my health.	.535				
31 I try to take care of my health.	.489				
32 I try to eat well to improve my health.	.463				
33 I try to exercise three times week to improve my health.	.490				
34 Item deleted.					
35 I search for information to about my medical problems to improve my health.	.423				
36 Following my doctor's recommendations improve my health.	.666				
37 I frequently do things to improve my health.	.558				
38 Maintaining my health is important to me.	.635				
39 I think about my health often.	.651				
40 I try to get adequate sleep.	.486				

Table 1 Principal Component Analysis

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 6
41 Item deleted.					
42 Item deleted.					
43 Illness of friends and family influences me to keep my appointments.	.498				
44 My General Medical physician has discussed the importance of keeping apts.	.472				
45 My Gen. Med. physician has discussed how attending appt. is important to my health.	.527				
46 My chances of becoming sick enough to require an earlier visit are great.	.477				
47 I worry a lot about becoming sick from my health problems.		.475			
48 The health problems of my father, mother, and siblings increase my chances of getting sick.		.394			
49 Within the next year my health status will get worse.		.505			
50 The thought of becoming sick from my health problems scares me.		.563			
51 If I become sick from my health problems I will need to go to the hospital.	.531				
52 If I become sick from my health problems I will require admission to the emergency room.	.513				
53 If I become sick from my health problems I am afraid I would die.		.601			
54 Becoming sick would endanger my relationships with family and friends.		.498			
55 My health problems are a hopeless situation.		.653			
56 I would feel bad about myself if I became sick from my health problems.		.532			
57 Prob. I would experience from becoming sick from my health prob. would last a long time.		.600			
58 If I became sick because of my health problems my whole life would change.		.551			

Table 1 Principal Component Analysis

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 6
59 If I became sick from my health problems my daily activities would be limited.		.441			
60 Item deleted					
61 If I become sick because of my medical problems my independence would be threatened.		.521			
62 Since July 1, 1995, how serious have your health problems been?		.424			
63 Attending clinic appointments can be painful.		.543			
64 Attending clinic appointments is time consuming.		.419			
65 Attending clinic appointments interferes with my activities.		.562			.502
66 Attending my clinic appointments is too difficult.					
67 It is inconvenient to my job to attend clinic visits.					.430
68 It is inconvenient because of the distance I must travel to attend my clinic visits.			.443		
69 Attending my clinic visits is expensive.			.492		
70 I don't like to go to my clinic visits because the MD might make recommendations. I don't want to follow.		.550			
71 I don't like to go to my clinic visits because the doctor might tell me bad news.		.541			
72 I don't like to go to my clinic visits because the doctor might give me more meds. to take.		.531			
73 In order to attend my clinic visits I have to give up quite a bit.		.527			
74 I don't like to go to my clinic visit because the MD might give me meds. that could make me feel worse.		.529			
75 Attending clinic is inconvenient because of the limited parking.		.350			
76 How sure are you that you can recognize when you're becoming sick enough to need to see your MD?					.449
77 If you were to need help with transportation to a clinic visit how sure are you that it could be arranged?					.458
78 How certain are you that you can keep your next scheduled appt. with the MD?					.504
79 How certain are you that you can attend Gen. Med. Appt. at the frequency the MD recommends?					.375

The test-retest correlations were performed for retest within thirty days of the initial test. Kendall's Tau was used because of the skewed distributions. Factor 1 correlated with the retest item at 0.462, Factor 2 correlated with the retest item at 0.635, Factor 3 correlated with the retest item at .645, Factor 4 correlated with the retest item at 0.590, Factor 6 correlated with the retest item at 0.362 (Table 20). These correlations were significant at the $p = .05$ level for a two-tailed test.

Deltas between the initial factor scores and the retest scores were calculated and there appeared to be several outliers in the positive and negative delta scores for Factors 1, 2, 4 and 6. Factor 3 had only negative outliers. Scatter plots of initial factor scores were plotted against retest scores. These plots revealed outliers. The outliers above and below 7 and -7 were analyzed and were not found to be the same individuals. This indicated that retest scores were not significantly directional (higher or lower) as a form of bias and that the same group of patients could not be identified as the outliers. Thus, the measures seemed to change over a 30-day period and did not identify stable characteristics.

i. Objective 2, Reasons for missed appointments:

A collection of reasons for missing appointments was assembled from the literature. The patient was given an opportunity to add reasons at the bottom of the list. Question 11 asked about the number of missed appointments in

general medical clinic. Question 17 was a branch point question for people missing appointments to proceed to the reasons for missing appointments. Interestingly, there was discrepancy between question number 11 and question number 17. Both questions asked about missing appointments in primary care clinic during the eighteen-month period. Forty-eight percent of patients identified as having missed a follow up appointment from the VA database did not acknowledge this in questions 17 or the following question 18, which identified reasons for missed visits.

3. Data collection procedures

The study was submitted to the local IRB and was approved. Due to the content of the questionnaire, exemption from consent was obtained. Information regarding the study was sent in a cover letter with the questionnaire. If the postcard refusal was not received, phone contact was attempted to see if the questionnaire was received and clarify the potential respondent's preference for participation.

Approximately 657 questionnaires were initially distributed to patients who had follow up appointments during the study period. In each case, a postage-paid envelope, a cover letter and a postage-paid postcard for nonparticipation were included with the questionnaire. Participants who responded to the questionnaire were asked if they would complete a shortened version of the Health Belief Scales for retest reliability. The response rate was 65%. Of

219 people willing to perform a retest questionnaire, 89 completed and returned the retest questionnaire for a return rate of 41%. The final questionnaire contained 198 items and the retest form contained 60 items.

4. Data Analysis

a. Missing data:

All variables were analyzed for percent missing. Several variables have six percent missing, but no more than this. There were no significant differences in missing data by appointment group. The two questions which had a fair number of missing were question 17 and 18 where 48% of responders known to have missed appointments did not acknowledge this, perhaps unaware that they had missed a visit. It was assumed that all other missing data was randomly distributed.

b. Nonresponders:

Information available on the nonresponders included sex, marital status, service connected status, age, and provider level (staff versus resident or fellow). Responders and nonresponders were compared on these variables.

c. Inconsistent responders:

Initially, there were to be two groups of patients: those missing a follow up appointment versus those not missing a follow up appointment for the given time period, and some who had not missed appointments said they had.

However, upon review of the data, it was apparent that a fair number of patients did not acknowledge missing an appointment during the given period. This led to four groups of patients: the two groups for whom the patient and the VA database agreed (perfect attender by both or missed attender by both), the group of patients who thought they had missed a visit but the VA database did not show this, and the group of patients who claimed they had not missed a visit but the database showed they had. Upon discovering that patients responded inconsistently to question 11 regarding the number of appointments missed, and question 17 which branched for missing appointments, inconsistently, it was decided to use the VA database definition of patients who missed appointments and kept appointments.

d. Statistics

Descriptive statistics and chi-squares were used to compare the two appointment groups on categorical and nominal data. Nonparametric tests were used for comparisons of numerical data and correlations based on analysis of frequencies with skewness on most items and subscales. Multiple linear regression and logistic regression were conducted with the variables significant in the univariate analysis.

e. Power analysis

Based on parametric tables, since nonparametric tables were not available, the range for the t test with $\alpha = 0.10$ (split between two tails), the power ranged from 0.88 for $n=100$, effect size $=0.4$ to 1.0 for $n=140$, effect

size=0.9.²⁰⁶ The effect sizes for GHAA subscales ranged from 0.42 to 0.6 for power of 0.88 to 0.99. The effect sizes for the three Health Locus of Control subscales were 0.9 for power of 1.0. The effect sizes for the social support scales ranged from 0.25 for total social support to 0.3 for power of 0.41 to 0.80. The effect size of SF-12 scores was thought to be 0.41-0.47 for power 0.88 to 0.99. The effect sizes for the health belief model constructs ranged from 0.45 to 0.67 for power 0.68 to 0.99.

Chapter 4 Results

1. Response rates

Of the original mailing to 222 Perfect Attenders and 437 Missed Appointment individuals, 117 people were ineligible due to incorrect mailing information, death, cognitive problems or responded they were “too ill” to complete the survey (Table 2). When these were removed, the response rate was 67% (126/189) for the Perfect Attenders and 43% (151/353) for the Missed Appointment group.

2. Comparison of nonresponders versus responders

The nonresponders comprised 33% (63/189) of the Perfect Attenders and 57% (202/353) of the Missed Appointment group. The available variables for comparison of responders and nonresponders included marital status, age, gender, percent service connection (any versus none and 40% or less versus 50% or greater), type of physician (attending versus resident or fellow), presence of phone number and zip code. Appointment keeping indices were calculated for medical visits. This formula was calculated dividing the number of the visits kept by the number of kept appointments plus no show appointments.

Chi-squares were used to look at responders versus nonresponders (Table 3). Comparing responders to nonresponders revealed no differences in the

distribution of gender, married status, any service connection, percent service connection or type of physician. From the administrative database, 76% percent of nonresponders missed appointments versus 54% of responders, $p < .0001$.

Presence of a telephone number in the VA database occurred for 93% of nonresponders and responders. The responders were older, mean age 61 versus 56 in the nonresponder group, Mann Whitney $Z = -4.30$, $p < .001$. The medical appointment keeping index was higher in the responders, mean 0.84 for responders and 0.71 for the nonresponders, Mann Whitney $Z = -7.59$, $p < .0001$ (Table 4).

3. Objective 1a, Sociodemographics

The individuals in the Missed Appointment group were younger (mean 58 versus 62, Mann Whitney $z = -3.29$, $p < .001$) (Table 6) and less likely to be of “married” status versus “all other” marital statuses (46% vs. 59%, $p < .03$) (Table 5). Both groups were male, had at least completed high school and some college education and had telephones. Perceived adequacy of income was different between groups. Forty percent of perfect attenders vs. 54% missed appointment group reported “never enough finances”, $p < .025$. The mean one-way distance to the clinic did not differ by appointment groups (42 miles versus 43, Mann Whitney $Z = -.951$, $p < .342$) (Table 6). For all further age analyses, age was dichotomized to age less than 65 or 65 and greater

because it was close to the median and because of the implications of retirement and Medicare on interaction with the VA health care system.

Reported insurance (question 16) was reviewed by appointment group (Table 7); and by age ≥ 65 , finances (“never enough” versus “sometimes enough” or “greater”), education (“less than high school” versus “high school or greater”), and marital status.

Perfect Attenders reported more Medicare use than the Missed Appointment group (51% vs. 34%, $p < .006$). This fit with the older age of the perfect attenders. Reported Medicaid for non-Oregon residents did not differ by appointment or any other analyses. Private insurance did not differ by appointment status but additional level of analysis by age 65 or greater was statistically significant (22% Perfect Attenders vs. 7% Missed Appointment group, $p < .02$). Older patients in the “enough or more” financial group, and the married group reported higher proportions of any non-VA insurance.

4. Objective 1B, Delivery of health care variables

Health care variables included whether the patient paid for medications, paid for visits, acknowledged a primary care provider at the VA, the duration of this patient-physician relationship, continuity, and frequency of visits (Table 8). The majority of both groups were assigned attending staff doctors, had relationships with their doctors for more than 12 months, “mostly to always”

saw the same physician and stated the frequency of visits was at least adequate. Very few people in either group paid for visits or medications. Eighty-one percent of patients missing appointments did not acknowledge a primary care physician at the VA versus 90 percent of patients who had not missed appointments during the eighteen month period, chi square 4.69, $p < .03$.

5. Objective 1C, Sociopsychological variables

b. Social support

The scores on the social support subscales did not differ between appointment groups except for tangible support (14.8 versus 13.5 for missed appointment group, Mann Whitney $Z = -2.23$, $p < .02$) (Table 9). The scales were highly intercorrelated (Table 10). Reliabilities of the 5 subscales ranged from 0.91 to 0.97 (Table 11).

c. Health locus of control

The scores on the health locus of control subscales did not differ between appointment groups (Table 12). The scales were minimally intercorrelated (Table 13). Reliabilities ranged from 0.64 to 0.79 (Table 14).

d. GHAA patient satisfaction questionnaire

The scores on the GHAA Customer Satisfaction scales did not differ between appointment groups (Table 15). The scales were intercorrelated. Reliabilities for the multi-item scales ranged from 0.86 to 0.93 (Table 16)

6. Objective 1D, Physical and psychological functioning:

SF-12

Both the physical and mental health scores differed statistically using the Mann Whitney test for nonparametric distributions (Table 17). Higher scores on both scales represent better health in that area. The physical scores were 32.6 for perfect attenders versus 34.9 for missed appointments, Mann Whitney $Z=-1.93$, $p<.05$. The mental health scores were 46.9 for perfect attenders versus 43.3 for patients missing appointments, Mann Whitney $Z=-2.52$, $p<.01$.

7. Objective 1E and 1F, Perceived susceptibility to, seriousness of and threat from health problems; perceived benefits and barriers to appointment keeping; Health belief subscales

The scores on the developed health belief model subscales did not differ between appointment groups (Table 18).

8. Objective 2, Reasons for missed appointments:

When looked at by appointment status the reasons endorsed in descending order for Perfect Attenders were: “Forgot” 53%,” Other” 38%, “Clinic changed time” 37%, “Didn’t know” 38%, “Unexpected problem” 33%. The Missed Appointment group endorsed the top 5 reasons in descending order: “Forgot” 43%,”Didn’t know 33%, “Unexpected problem” 30%, “Clinic changed time” 20% “Out of town” 19% (Table 22). Although the “other” category was selected, very few responses were recorded.

9. Multiple linear regression model and logistic regression

The final step in the analysis was to use multiple linear regression and logistic regression using the variables that were significant by appointment attendance: acknowledgement of a primary care physician, less than enough income, total physical score, total mental score, marital status, tangible social support subscale and age. The dependent variable in the logistic regression was missed appointments=1 versus perfect attendance=0. The dependent variable for the multiple linear regression was the medical appointment index, the number of appointments attended divided by those attended plus the “no shows” (range from 0-1). Tangible social support, total social support, total physical score from the SF-12 and the medical index were transformed. The reflected inverse transformation was used for the medical index and tangible social support. The square root transformation was used for the total social support and the physical score.

In the multiple linear regression, the dichotomous variable marital status (married versus other) was correlated with tangible social support at 0.37. When either tangible support or marital status was included in the model, they were not significant contributors and were dropped from the final model. The model with identification of primary care physician (dichotomous, 1=trait present), “less than enough” income (dichotomous, 1=trait present), mental and physical scores (transformed, and continuous) was examined and seemed to be the best model. Age (continuous) was added to this model and correlated highest with “less than enough income” at -0.25 and the mental score at 0.24 . When age was added to the model, the income variable and mental health score were no longer significant $< .05$ and the other variables remained in the model. The R square was raised slightly from 0.14 to 0.19 and the beta coefficients were all slightly reduced when age was added to the model.

In the logistic regression model, the same variables were included both with and without age. Without age in the model: identify primary care provider, “less than enough” financial status, total physical and mental scores on the SF-12, all variables were significant in the model. With age in the model all coefficients but financial status and SF-12 mental health score were significant (Table 24). Age slightly lowered the odds ratio of all of the other variables, except the total mental score, which increased slightly. The odds

ratios of the acknowledgement of a VA primary care provider and age were less than one, while the odds ratios of poor financial status, and the total mental score crossed one. The odds ratio of the physical score was above one, although minimally. Without age in the model, the confidence interval of the odds ratio of poor financial status is above one.

Chapter 5 Discussion

The response rate of a 19-page questionnaire was 67% for patients keeping appointments and 43% for patients missing appointments. The responders had better appointment attendance, better medical appointment keeping indices and were older when compared to the nonresponders. Similar to other reports of questionnaire responses, older patients were more likely to respond. Both of these features could be associated with retirement of older patients and perhaps fewer demanding activities to interfere with medical appointments and questionnaire participation.

The questionnaire administered to a sample of patients with follow up medical appointments revealed that there were a few discriminating characteristics between patients keeping appointments and patients missing appointments. The patients who kept all appointments were older, had better financial status, were more likely to be married, and acknowledged having a VA primary care physician, a higher degree of tangible support, and had poorer physical health but better mental health scores on the SF-12. One interpretation of these findings is that the patients who are able to attend their visits have more stable lives with support from friends, spouses and physicians. Although acknowledging a primary care physician differed between the groups, the continuity with an primary care provider and visit frequency did not differ between groups. Patients missing appointments may not have been as likely

to understand the concept of a “primary care provider” as well as patients attending all of their visits.

An alternate interpretation could be that the younger patients who use the VA, which is based on entitlement and poverty, may be too ill or have lives that are too chaotic to perform the basic functions of canceling or rescheduling visits. These younger patients had worse mental health scores and yet better physical scores. Younger people are more likely to work, which could make our current system hours of 8-5 Monday through Friday inconvenient for some. With this convenience hypothesis in mind, the individual access items of the GHAA were examined by age. The younger patients’ scores on these items were significantly lower than the patients 65 and over (Table 25) but did not seem clinically relevant. It is also possible that the older people are at a different phase of illness and have diagnosed conditions for which regular health care and medications are necessary, while the younger people have not yet developed such problems, or they may be in the beginning phases of diagnosis.

While there were some differences in sociodemographic characteristics between the two groups, there were no differences in attitudes and beliefs measured using the Health Belief Model subscales or the Health Locus of Control and the GHAA Customer Satisfaction instrument. Only the tangible social support subscale was higher in the patients keeping their appointments,

which fits with the model that older patients may have more stable social networks, especially if they are married.

The fact that the Health Belief Model subscales did not discriminate between groups may be due in part to validity issues. The factor analysis revealed that many of the items were highly intercorrelated and did not form separate subscales. The test-retest analysis showed that the subscales did not capture stable characteristics, but perhaps traits that may vary in a short period of time. The retest scores varied in both extremes and there was no identifiable outlier group. At this time, I cannot conclude that the Health Belief Model is not important to appointment attendance without improvement in the content, construct and criterion validity of the proposed subscales.

In order to improve the measure of the health belief model several things could be tried. I could try to locate the questionnaires of prior studies of appointments to use for criterion validity. Clearer and more specific definitions of the constructs would need to be created so that the intercorrelation was eliminated. It is not clear whether the constructs can identify stable characteristics of appointment behavior or whether these constructs can vary over time. It might be determined that the “characteristics” would apply to patients with stable life factors and medical problems, whereas, these constructs would be varying “traits” for patients who

are physically healthy, but whose lives are chaotic and vary in their ability to arrange transportation, or to have adequate finances.

The multiple regression models substantiated that age, acknowledgment of a VA primary care provider, worse physical health and better mental health scores on the SF-12 explain about 20% of the variance of the medical appointment keeping index. The significance of age in the model might be attributed to convenience issues.

The potentially modifiable characteristics detected include the patient's awareness of a primary care physician, possible improvement of mental health through screening and treatment and improved tangible support through services such as rides to clinic and more user-friendly ways to check and reschedule appointments. People who missed appointments appeared to have lifestyle problems as evidenced by the high proportion of patients with bad addresses, disconnected phones, 'other than married' status, poorer mental health, higher psychological distress and lower tangible social support.

This study focused on revisits in a continuity clinic at the Portland VAMC. Similar to prior studies, younger age, reported lower financial resources, non-married status and lack of identification of a primary provider relationship

were associated with missing appointments. Education level, telephone, distance to travel, type of physician, satisfaction with health care, duration of MD relationship and continuity were not associated with appointment status.

Most responders uniformly endorsed not knowing about visits, the clinic changing the time, forgetting about the visit and having an unexpected problem as reasons for missing appointments. It appears that this might be improved with a three prong approach: to constantly update the patient information with each visit and contact, to consult with patients whenever appointments are changed and to offer more flexibility in the hours appointments might be scheduled.

The VA population has several unique characteristics based on the system of entitlement. Essentially the very poor or patients with service connected problems qualify for care. It is possible that these individuals might have access to other entitlement programs if poor enough or other sources of insurance if wealthy enough but service connected. Although travel distance did not differ between groups, convenience could be improved with the addition of community based clinics. The phone system now has a scheduling line and a line to check on appointments, but the use of such systems is dependent on knowledge of them.

While negative outcomes clearly would necessitate improvement in missed appointments, this study has shown that patients missing appointments have higher physical scores but lower mental health scores. The identification of poor mental health suggests the need to improve detection and correction of missed appointments but also a need to make the system as user friendly as possible for individuals who may not have the capability to wait on hold or to make multiple phone calls in order to check on appointment, to reschedule or to cancel a visit.

Limitations:

The limitations of this study are the bias issues associated with questionnaires²⁰⁷ as well as inconsistent responders. The response rate for the missed appointment group was 43%. While the responders and non-responders did not differ on the available demographic variables except for age, it is therefore likely that the nonresponders are physically healthier. Another limitation was the confusion or recall problems that occur when retrospective time periods are used. Forty-eight percent of patients known to have missed appointments did not complete the questions pertaining to missing appointments and there was inconsistency in reporting of missed visits between two items on consecutive pages. Follow up closer to the time of an individual missed visit might improve this information. There were no significant differences between the responder and nonresponders of either the

patients missing appointments or patients keeping all of their medical appointments.

The design of the study substantiates associations but does not clarify the temporal relationship of the independent and dependent variables. The number of tests performed could also contribute to the significant differences found, however, most variables used were suspected to be associated with missed appointments based on previous literature.

Additionally, at the VA there is always the concern that patient fear of retribution might influence participation and responses, although a cover letter explained that this can not occur based on participation in studies. The length of the questionnaire was no doubt a deterrent and elimination of items without variability would now be possible. Additionally, the developed Health Belief Model might be improved through more precise construct definitions and possible use of criterion groups to improve the variability of items and the distinctness of subscales

Chapter 6 Summary and Conclusions

This study has provided information in the field of missed appointments. It provided statistical information on instruments used for future power estimates. It has shown that items developed for a health belief model for missed appointments requires further item development before it can be concluded that the model does not apply.

The problem of recall of reasons for missed appointments should be addressed with a study closer to the time of the missed appointment. In the future, the patient's phone and address should be checked at each interaction with the system, there should be a simple way for patient's to notify the clinic of cancellations and scheduling should not occur without input from patients. Additionally, younger patients who are working would benefit from more flexible hours of appointments. Establishing temporal relationship of the associations would require study over time or at different points in time.

Table 2 Chi Square of Results of Questionnaire Mailing

	Perfect (%) Attendees	Missed (%) Attendees	Chi Square	P values
Non-responders ¹	33	57	27.17	0.0001
Responded ²	67	43		
Total ineligible ³	15	19		0.2
Incorrect address	1	15	29.35	00.0001
Deceased	11	3	13.10	0.0001
Cognitively Impaired	1	0.4		0.61 ⁴
Too sick	2	0.7		0.17
Total Mailing	222	437		

¹ Denominators of 189 eligible perfect attendees and 353 missed appointment patients used

² Denominator of 222 perfect attendees and 437 missed appointment patients used.

³ Denominator of 222 perfect attendees and 437 missed appointment patients used.

⁴ Fisher's exact test, two tailed

Table 3 Chi Square of Responders Versus Non-Responders

	Responder ¹	Non-Responder ²	Chi Square	P
Male	96	98	2.67	0.10
Married	46	52	2.11	0.15
SC >50%	48	45	0.406	0.52
Attending MD	40	42	2.65	0.61
Missed appt.	54	76	28.17	0.001
Phone	93	93	0.010	0.92

¹ Denominator of responders was 277.

² Denominator of non-responders was 265.

Table 4 Mann Whitney of Age and Medical Appointment Index by Response

	Responders			Non-Responders			Z	P
	N	Mean	Med	N	Mean	Med		
Age	267	61	3	265	56	54	-4.30	0.001
Med Index	276	0.84	.87	265	0.71	0.72	-7.59	0.001

Table 5 Chi Square of Demographics and Social Characteristics

	Perfect (%) ⁵ Attendees	Missed (%) ⁶ Attendees	Chi Square	P values
Telephone	95	92		0.28
Male	95	97		0.38
Married	59	46	4.94	0.03
Completed education high school or greater	76	79		0.59
Never enough income	40	54	5.04	0.02

⁵ Denominator of perfect attendees ranged from 121 to 128

⁶ Denominator of missed attendees ranged from 138-151

Table 6 Mann Whitney of Age and Travel by Appointment Group

	Perfect Attenders			Missed Appointment Group			Z score	P value
	N	Mean	Median	N	Mean	Median		
Age	126	62	66	151	58	60	-3.29	0.001
One way Travel distance in miles	116	42	28	139	43	20	-0.95	0.34

Table 7 Chi Square of Insurance Status by Appointment Status

	Perfect (%) ⁷ Attendees	Missed (%) ⁸ Attendees	Chi Square	P values
Medicare	51	34	7.60	0.006
Medicaid	4	5		0.64
Oregon Health Plan	5	7		0.54
Private Insurance	15	18		0.86
Other Insurance	9	6		0.35
Any non-VA	63	53		0.08

⁷ Denominators of perfect attendees was 128

⁸ Denominators of missed attendees was 151

Table 8 Chi Square of Delivery of and Health Care Characteristics

	Perfect (%) ⁹ Attenders	Missed (%) ¹⁰ Attenders	Chi Square	P values
Pay for Visit	9	11		0.58
Pay for Medication	37	34		0.61
Identify Primary care Provider at VA	90	81	4.69	0.03
Attending Physician	65	56		0.15
Duration of MD Relationship >12 months	63	72		0.18
Mostly-always seeing the same physician	82	73		0.08
Visit frequency ok	83	74		0.11

⁹ Denominator of perfect attenders ranged from 121 to 128

¹⁰ Denominator of missed attenders ranged from 138-151

Table 9 Mann Whitney of Social Support Subscales

	Perfect Attenders			Missed Appointment Group			Z score	P value
	N	Mean	Median	N	Mean	Median		
Emotional/info Support	125	28.7	31	147	27.2	29	-1.45	0.15
Tangible Support	125	14.8	16	149	13.5	15	-2.23	0.02
Positive Support	126	11.1	12	149	10.5	11	-1.53	0.13
Affection	125	11.7	13	146	11.1	12	-1.14	0.25
Overall Support Index	127	71.9	78	151	67.3	71	-1.85	0.06

Table 10 Kendall's Tau Correlation of Social Support Subscales

	Emotional Support	Positive Support	Tangible Support	Affection Support	Overall Support Index
Emotional Support	-	.73 [*]	.66 [*]	.66 [*]	.84 [*]
Positive Support	-	-	.66 [*]	.75 [*]	.79 [*]
Tangible Support	-	-	-	.64 [*]	.72 [*]
Affection Support	-	-	-	-	.74 [*]
Overall Support Index	-	-	-	-	-

* Correlation significant at the .05 level, two tailed

Table 11 Descriptive Statistics of Social Support Subscales

	k	Mean	Standard Deviation	Range	Alpha
Emotional/Info Support	8	27.9	9.5	8-40	0.96
Tangible Support	4	14.1	5.0	4-20	0.91
Positive Support	3	10.8	3.6	3-15	0.94
Affection Support	3	11.4	4.0	3-15	0.94
Overall Support Index	18	70.3	22.3	18-90	0.97

k= number of items

alpha= Cronbach's internal consistency reliability coefficient

+ = high score indicates support of item

1999

Q 171 Q 594

Table 12 Mann Whitney of Health Locus of Control Subscales

	Perfect Attenders			Missed Appointment Group			Z score	P value
	N	Mean	Median	N	Mean	Median		
Internal Health Locus of Control	123	24.5	25	140	24.8	25	-0.83	0.41
Powerful Others Health Locus of Control	123	22.9	23	143	22.1	23	-1.22	0.22
Chance Health Locus of Control	122	17.4	18	141	17.7	17	-0.17	0.86

Table 13 Kendall's Tau Correlation of Health Locus of Control Subscales

	Internal Health Locus of Control	Powerful Others Health Locus of Control	Chance Health Locus of Control
Internal Health Locus of Control	-	.14*	-.01
Powerful Others Health Locus of Control	-	-	.16*
Chance Health Locus of Control	-	-	-

* Correlation significant at the .05 level, two tailed

Table 14 Descriptive Statistics Health Locus of Control Subscales

	k	Mean	Standard Deviation	Range	alpha
Internal Health Locus of Control	6	24.6	5.7	8-36	0.79
Powerful Others Health Locus of Control	6	22.5	5.6	8-36	0.66
Chance Health Locus of Control	6	17.6	5.5	6-33	0.64

k= number of items

alpha= Cronbach's internal consistency reliability coefficient

+ = high score indicates support of item

Table 15 Mann Whitney of GHAA Subscales

	Perfect Attenders			Missed Appointment Group			Z score	P value
	N	Mean	Median	N	Mean	Median		
Access	127	3.18	3.09	150	3.18	3.18	-0.30	0.77
Finances	124	3.08	3.00	147	3.07	3.00	-.035	0.97
Technical Quality	127	3.75	4.00	150	3.70	4.00	-0.18	0.86
Communication	127	3.61	3.67	150	3.63	4.00	-0.17	0.86
Choice	124	3.30	3.00	146	3.33	3.00	-0.42	0.67
Interpersonal Skills	127	3.97	4.00	150	3.89	4.00	-0.69	0.49
General Satisfaction	127	3.50	3.5	150	3.44	3.5	-0.36	0.72
Time Spent	127	3.59	4.0	150	3.47	3.00	-0.82	0.41
Outcomes	126	3.69	4.0	148	3.60	4.00	-0.38	0.65
Quality	127	3.97	4.0	150	3.88	4.00	-0.46	0.65
Health Status	127	2.32	2.00	149	2.5	2.00	-1.41	0.16

Table 16 Descriptive Statistics of GHAA Subscales

	k	Mean	Standard Deviation	Range	alpha
Access	11	3.18	0.8	1-5	0.91
Finances	2	3.07	1.2	1-5	0.86
Technical Quality	3	3.72	1.0	1-5	0.92
Communication	3	3.62	1.1	1-5	0.92
Choice	1	3.32	1.2	1-5	
Interpersonal Skills	5	3.93	0.9	1-5	0.93
General Satisfaction	4	3.47	0.9	1-5	0.86
Time Spent	1	3.53	1.1	1-5	
Outcomes	1	3.64	1.1	1-5	
Quality	1	3.92	1.0	1-5	
Health Status	1	2.40	1.0	1-5	

k= number of items

alpha= Cronbach's internal consistency reliability coefficient

+ = high score indicates support of item

Table 17 Mann Whitney of SF12

	Perfect Attenders			Missed Appointment Group			Z score	P value
	N	Mean	Median	N	Mean	Median		
Physical Health	120	32.6	30.4	144	34.8	34.6	-1.93	0.05
Mental Health	120	46.9	49.4	144	43.3	42.1	-2.52	0.01

Table 18 Mann Whitney of Health Belief Model Factors

	Perfect Attenders			Missed Appointment Group			Z score	P value
	N	Mean	Median	N	Mean	Median		
Factor 1	111	92.2	92	124	92.4	92	-0.86	0.93
Factor 2	121	55.3	55	138	57.2	58	-1.74	0.08
Factor 3	126	4.9	4	149	5.1	4	-0.34	0.73
Factor 4	126	7.6	8	146	7.3	8	-1.19	0.23
Factor 6	121	17.5	18	146	17.7	18	-0.31	0.75

Factor 1-Benefits of healthcare, general health motivation, cues to action and two health susceptibility items

Factor 2-Health susceptibility items and barriers to appointment keeping

Factor 3-Expense and distance barriers

Factor 4-Health status impacting appointment attendance

Factor 6-Two barriers to appointment keeping items and the self-efficacy for appointment keeping

Table 19 Kendall's Tau Correlation of Health Belief Model Factors

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 6
Factor 1	-	.06	-.12*	.30*	-.04
Factor 2	-	-	.23*	-.06	-.12*
Factor 3	-	-	-	.005	.004
Factor 4	-	-	-	-	-.03
Factor 6	-	-	-	-	-

Factor 1-Benefit of healthcare, general health motivation, cues to action and two health susceptibility items

Factor 2-Health susceptibility items and barriers to appointment keeping

Factor 3-Expense and distance barriers

Factor 4-Health status impacting appointment attendance

Factor 6-Two barriers to appointment keeping items and the self-efficacy for appointment keeping

* Correlation significant at the .05 level, two tailed

Table 20 Kendall's Tau Correlation of Health Belief Model Test and Re-test

	Re-test Factor 1	Re-test Factor 2	Re-test Factor 3	Re-test Factor 4	Re-test Factor 6
Factor 1	.43*				
Factor 2		.63*			
Factor 3			.64*		
Factor 4				.59*	
Factor 6					.36*

Factor 1-Benefits of healthcare, general health motivation, cues to action and two health susceptibility items

Factor 2-Health susceptibility items and barriers to appointment keeping

Factor 3-Expense and distance barriers

Factor 4-Health status impacting appointment attendance

Factor 6-Two barriers to appointment keeping items and the self-efficacy for appointment keeping

* Correlation significant at the .05 level, two tailed

Table 21 Descriptive Statistics Developed Health Belief Model Factors

	k	Mean	Standard Deviation	Range	Alpha
Factor 1	25	94.5	11.0	48-119	0.87
Factor 2	22	56.4	11.6	25-87	0.88
Factor 3	2	5.0	2.1	2-10	0.77
Factor 4	2	7.5	1.8	2-10	0.50
Factor 6	6	17.6	3.0	6-24	0.59

k= number of items

alpha= Cronbach's internal consistency reliability coefficient

+ = high score indicates support of item

Factor 1-Benefits of healthcare, general health motivation, cues to action and two health susceptibility items

Factor 2-Health susceptibility items and barriers to appointment keeping

Factor 3-Expense and distance barriers

Factor 4-Health status impacting appointment attendance

Factor 6-Two barriers to appointment keeping items and the self efficacy for appointment keeping

Table 22 Question 18, Reason for Missed Appointments by Appointment Status

		Perfect (%) ¹¹ Attenders	Missed (%) ¹² Attenders	Chi-square P value
A	Forgot	53	43	0.45
B	Didn't know	35	33	0.89
C	Other Plans	17	10	0.42 ¹³
D	Felt Well	11	7	0.63 ¹⁴
E	No ride	28	18	0.34
F	Unexpected problem	33	30	0.81
G	Clinic changed time	37	20	0.14
H	Inconvenient	6	17	0.45 ¹⁵
I	Too sick	23	13	0.27 ¹⁶
J	Out of town	12	19	0.72 ¹⁷
K	Conflict with work	0	17	0.11 ¹⁸
L	Went to wrong place	0	7	0.58 ¹⁹
M	Didn't need so soon	0	1	1.0 ²⁰
N	Don't remember	12	7	1.0 ²¹
O	Saw local MD	6	3	0.50 ²²
P	Overslept	12	1	1.0 ²³
Q	Other	38	16	0.12

¹¹ Denominator of perfect attenders ranged from 17-19

¹² Denominator of missed appointment group was 70

¹³ Fisher exact test, two tailed

¹⁴ Fisher exact test, two tailed

¹⁵ Fisher exact test, two tailed

¹⁶ Fisher exact test, two tailed

¹⁷ Fisher exact test, two tailed

¹⁸ Fisher exact test, two tailed

¹⁹ Fisher exact test, two tailed

²⁰ Fisher exact test, two tailed

²¹ Fisher exact test, two tailed

²² Fisher exact test, two tailed

²³ Fisher exact test, two tailed

Table 23 Multiple Linear Regression Model of Medical Appointment Attendance Index with Five Explanatory Variables

Variable	Coefficient Beta	Standard Error	95% CI	t	P
Intercept	0.79	0.066	0.66 to 0.92	11.996	0.0001
Identify PCP	0.09	0.020	0.05 to 0.13	4.587	0.0001
Not enough money	-0.029	0.015	-0.06 to 0.001	-1.908	0.058
Physical Score	-0.022	0.008	-0.04 to -0.01	-2.896	0.004
Mental Health Score	0.001	0.001	0.000 to 0.002	1.782	0.076
Age	0.001	0.000	0.001 to 0.003	3.860	0.0001

$$1/(2\text{-Medical appointment index}) = 0.79 + 0.09 (\text{Identify VA PCP}) - 0.029 (\text{Not enough money}) - 0.022 (\text{Square root of SF12 Physical Score}) + 0.001(\text{SF12 Mental Health Score}) + 0.001(\text{Age})$$

Table 24 Logistic Regression Model of Medical Appointment Failure (attendance=0) with Five Explanatory Variables

Variable	Coefficient Beta	Standard Error	Odds Ratio	95% CI	Wald Chi Square	P
Intercept	0.97	1.273	2.65		0.585	0.44
Identify PCP	-1.00	0.406	0.37	0.17 to 0.82	6.052	0.014
Not enough money	0.490	0.291	1.63	0.92 to 2.89	2.832	0.092
Physical Score	0.336	0.153	1.40	1.04 to 1.89	4.828	0.028
Mental Health Score	-0.018	0.012	0.98	0.96 to 1.005	2.325	0.127
Age	-0.021	0.010	0.98	0.96 to 0.998	4.631	0.031

Table 25 Mann Whitney of GHAA Access Subscales by Age

	Age less than 65			Age 65 and greater			Z score	P value
	N	Mean	Median	N	Mean	Median		
Clinic Convenience	148	3.10	3.00	124	3.13	3.00	-0.37	0.71
Scheduling hours	148	3.19	3.00	124	3.38	3.00	-1.35	0.18
Specialty access	147	3.30	3.00	124	3.52	3.50	-1.37	0.18
Hospital access	147	3.46	3.00	123	3.63	4.00	-1.47	0.14
Emergency medical access	144	3.35	4.00	123	3.41	4.00	-0.34	0.73
Appointment access by phone	148	3.20	3.00	123	3.57	4.00	-2.64	0.008
Wait between appointment and visit	148	2.79	3.00	122	3.16	3.00	-2.63	0.008
Waiting at the clinic to see MD	148	2.86	3.00	123	3.24	3.00	-2.90	0.004
Availability of phone advice	147	2.86	3.00	120	3.15	3.00	-2.01	0.044
Medical access whenever needed	148	3.03	3.00	121	3.45	4.00	-2.82	0.005
Prescription services	148	2.60	2.50	123	2.99	3.00	-2.39	0.017
Access subscale	148	3.07	3.04	123	3.33	3.27	-2.35	0.019

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Appendix A

Survey of Patient Factors in Appointment Attendance:

1. Since July 1, 1995 have you had easy access to a telephone to call the VA clinics? No Yes

2. Since July 1, 1995, how many miles do you travel to clinic (one way)?

3. What is your age?

4. What is the highest grade you completed in school?
(Mark the one box that includes the highest grade you completed)

8th grade or less	Some high school	High school graduate	Some college	College graduate	Degree after college
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Since July 1, 1995, have you had to pay for your General Medical appointments? No Yes

6. Since July 1, 1995, have you had to pay for your medicines? No Yes

7. Do you have a primary care provider at the VA? No Yes

8. If yes, what is the name of your primary care provider?

	Less than 6 months	6 to 12 months	13 months to 24 months	More than 24 months
9. How long have you been seeing this physician?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. When you go for medical care at the General Medicine Clinic, how often do you see the same doctor?

Always	Most of the time	Sometimes	Rarely or never
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Since July 1, 1995, how many General Medicine appointments have you missed?
(Select one best answer)

- | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| None | One | Two | Three | Four | Five or More |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

12. How would you describe the current frequency at which you see your General Medicine Doctor
(Select one best answer)

- | | | |
|--------------------------|--------------------------|----------------------------|
| Too Frequent | Just Right | Not Frequent Enough |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

13. Which of the following statements best describes your ability to get along on your income?
(Choose one best answer)

- I can't ever make ends meet.
- Some months I can't make ends meet.
- I have just enough no more.
- Some months I have money left over.
- I always have money left over.

14. Which of the following best describes your current marital status? (Choose one best answer)

- | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Never Married | Married | Separated | Divorced | Widowed |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

15. Are you male or female? **Male** **Female**

16. Do you have any non-Va coverage for health care?

Yes ⇒ Please mark the box next to all types of non-VA health care coverage you have:

No ⇒ Go to question 17 on next page

- | | |
|---|--|
| <input type="checkbox"/> Medicare | <input type="checkbox"/> Private Health Insurance, i.e., Kaiser, Blue Cross, e |
| <input type="checkbox"/> Medicaid | <input type="checkbox"/> Other (describe) |
| <input type="checkbox"/> Oregon Health Plan | <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |

17. Have you missed any general medical appointments since July 1, 1995? Missed appointments are visits you missed when you were not admitted to the hospital and did not call to cancel or reschedule.

Yes ⇒ Go to question 18 on this page No ⇒ Go to question 19 on page 4

18. Since July 1, 1995, have you missed General Medicine appointments without canceling or rescheduling for any of the following reasons? Please mark no or yes for each item.

- | | | | | |
|---|----|--------------------------|-----|--------------------------|
| a. I forgot my appointment..... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| b. I didn't know about my appointment..... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| c. I had other plans..... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| d. I felt well and didn't need to go to my appointment..... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| e. I did not have transportation to my appointment... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| f. I had an unexpected problem..... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| g. The clinic changed the time of my appointment.... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| h. My appointment was inconvenient for me..... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| i. I was too sick to go to my appointment..... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| j. I was out of town..... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| k. I had a conflict with work..... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| l. I went to the wrong place..... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| m. I didn't need an appointment so soon..... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| n. I don't remember | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| o. I saw a local doctor for the same problem instead.. | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| p. I overslept..... | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |
| q. Other: _____ | No | <input type="checkbox"/> | Yes | <input type="checkbox"/> |

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19. Below is a list of services people may want help with. We would like to know if you wanted any of the following kinds of help at your visits since July 1, 1995. Please mark no or yes for each item.

	No	Yes
a. I had some tests done and I wanted to find out my test results.....	<input type="checkbox"/>	<input type="checkbox"/>
b. I wanted the doctor to prescribe medications or refills for me.....	<input type="checkbox"/>	<input type="checkbox"/>
c. I wanted to know more about my medications.....	<input type="checkbox"/>	<input type="checkbox"/>
d. I wanted to tell the doctor about problems I had taking my medications on time.....	<input type="checkbox"/>	<input type="checkbox"/>
e. I wanted to tell the doctor about side effects caused by my medication.....	<input type="checkbox"/>	<input type="checkbox"/>
f. I wanted the doctor to make some changes in my medications.....	<input type="checkbox"/>	<input type="checkbox"/>
g. I wanted the doctor to write a letter or fill out some forms for me.....	<input type="checkbox"/>	<input type="checkbox"/>
h. I wanted something to be done to relieve my physical discomfort or symptoms.....	<input type="checkbox"/>	<input type="checkbox"/>
i. I wanted to be referred to another doctor for treatment of my medical problem.....	<input type="checkbox"/>	<input type="checkbox"/>
j. I wanted the doctor to do something or have some tests done to find out what's wrong.....	<input type="checkbox"/>	<input type="checkbox"/>
k. I wanted to know more about my problem (what was the name of my problem, what caused it, what I could and couldn't do while I had the problem, and whether it would get better or worse).....	<input type="checkbox"/>	<input type="checkbox"/>
l. I wanted to tell the doctor my ideas and concerns about my problem (what I thought my problem might be, what I thought caused it, or how it is affected my life and family).....	<input type="checkbox"/>	<input type="checkbox"/>
m. I wanted some advice about how to stay healthy (diet, exercise) or about some personal health habits (how to stop smoking, control my drinking).....	<input type="checkbox"/>	<input type="checkbox"/>
n. I wanted something done to relieve my emotional discomfort (nerves, stress, worry).....	<input type="checkbox"/>	<input type="checkbox"/>
o. I wanted help for some family, marriage, or emotional problems I was having.....	<input type="checkbox"/>	<input type="checkbox"/>
p. I wanted to talk with the doctor about how often I came to the clinic.....	<input type="checkbox"/>	<input type="checkbox"/>
q. Is there anything else you wanted to get done or get help with during your visits since July 1, 1995? (Please list these below).....	<input type="checkbox"/>	<input type="checkbox"/>

The following questions have to do with possible benefits of your General Medicine appointments.

For each item below, choose the one answer that best describes how you feel.

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
20. Coming to my medical appointments prevents future discomfort for me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I have a lot to gain by coming to my medical appointments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. If I keep my medical appointments, my health will be better.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I am not so anxious about becoming sick if I keep my General Medical appointments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following questions have to do with possible benefits of your General Medicine appointments.

For each item below, choose the one answer that best describes how you feel.

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
24. Missing an appointment might result in worsening of my health status.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. I come to clinic to get medicines to improve or stabilize my health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. I come to clinic to get reassurance from my doctor about my health status	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. I come to clinic to have my questions answered about my health status	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Keeping my appointments has no effect on my health status	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29. Overall, how much benefit have you had from your visits to the General Medicine Clinic since July 1, 1995?
 (Select one best answer)

No benefit	Slight benefit	Moderate benefit	Much Benefit
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following questions are about general health practices.
 For each item below, choose the one answer that best describes how you feel.

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
30. I am concerned about my health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. I try to take care of my health..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. I try to eat well to improve my health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. I try to exercise three times a week to improve my health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. I take vitamins to improve my health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. I search for information about my medical problems to improve my health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Following my doctors recommendations improves my health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. I frequently do things to improve my health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. Maintaining my health is important to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. I think about my health often.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. I try to get adequate sleep.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following questions are about ways you might be reminded of your visits.

For each item below, choose the one answer that best describes how you feel.

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
41. Reminders help me to keep my appointments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. My family and friend remind me to keep my appointments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Illness of friends and family influences me to keep my appointments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. My General Medical physician has discussed the importance of keeping my appointments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. My General Medical physician has discussed how attending appointments is important to prevent worsening of my health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following questions are about how serious you consider your health problems to be.

For each item below, choose the one answer that best describes how you feel.

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
46. My chances of becoming sick enough to require an earlier visit from my health problems are great.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. I worry a lot about becoming sick from my health problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. The health problems of my father, mother and siblings increase my chances of becoming sick.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For each item below, choose the one answer that best describes how you feel.

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
49. Within the next year my health status will get worse.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. The thought of becoming sick from my health problems scares me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. If I become sick from my health problems, I will need to go to the hospital.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. If I become sick from my health problems, I will require admission to the emergency room..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. If I became sick from my health problems I am afraid I would die.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. Becoming sick would endanger my relationships with family and friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. My health problems are a hopeless situation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56. I would feel bad about myself if I became sick from my health problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57. Problems I would experience from becoming sick from my health problems would last a long time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58. If I became sick from my health problems my whole life would change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. If I became sick from my health problems my daily activities would be limited.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For each item below, choose the one answer that best describes how you feel.

- | | Strongly
Disagree | Disagree | Not Sure | Agree | Strongly
Agree |
|--|------------------------------|--------------------------|--------------------------|--------------------------|---------------------------|
| 60. If I became sick from my health problems, I would be afraid of being placed in a nursing home. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 61. If I became sick from my medical problems, my independence would be threatened. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

62. Since July 1, 1995, how serious have your health problems been? (Select one best answer)

- | Not Serious | Somewhat Serious | Very Serious | Life Threatening |
|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

The following questions are about reasons that might make it more difficult to attend General Medical Visits.

For each item below, choose the one answer that best describes how you feel.

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
63. Attending clinic appointments can be painful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64. Attending clinic appointments is time consuming.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65. Attending clinic appointments interferes with my activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
66. Attending my clinic appointments is too difficult.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
67. It is inconvenient to my job to attend clinic visits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
68. It is inconvenient because of the distance I must travel to attend my clinic visits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
69. Attending my clinic visits is expensive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
70. I don't like to go to my clinic visit because the doctor might make recommendations that I do not want to follow.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
71. I don't like to go to my clinic visit because the doctor might tell me bad news.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
72. I don't like to go to my clinic visit because the doctor might give me more medications to take.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
73. In order to attend my clinic visits I have to give up quite a bit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For each item below, choose the one answer that best describes how you feel.

- | | Strongly
Disagree | Disagree | Not Sure | Agree | Strongly
Agree |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 74. I don't like to go to my clinic visit because the doctor might give me medicines that could make me feel worse. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 75. Attending clinic is inconvenient because of the limited parking. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

The following questions are about your certainty that you can make arrangements to attend your General Medicine appointments if your current situation changes.

For each item below, choose the one answer that best describes how you feel.

- | | Very
Uncertain | Somewhat
Uncertain | Somewhat
Certain | Very
Certain |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 76. How certain are you that you can recognize when you are becoming sick enough to need to see your physician? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 77. If you were to need help with transportation to your clinic visit, how certain are you that it could be arranged? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 78. How certain are you that you can keep your next scheduled appointment with the doctor? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 79. How certain are you that you can attend General Medicine appointments at the frequency doctor recommends? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

The following questions have to do with your role and the role of others in your health.

For each item below, choose the answer that best describes how you feel.

	Strongly Disagree	Moderately Disagree	Mildly Disagree	Mildly Agree	Moderately Agree	Strongly Agree
80. If I get sick, it is my own behavior which determines how soon I get well again.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
81. No matter what I do, if I am going to get sick, I will get sick.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
82. Having regular contact with my physician is the best way for me to avoid illness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
83. Most things that affect my health happen to me by accident.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
84. Whenever I don't feel well, I should consult a medically trained professional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
85. I am in control of my health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
86. My family has a lot to do with my becoming sick or staying healthy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
87. When I get sick I am to blame.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
88. Luck plays a big part in determining how soon I will recover from an illness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
89. Health professionals control my health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
90. My good health is largely a matter of good fortune.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For each item below, choose the answer that best describes how you feel.

	Strongly Disagree	Moderately Disagree	Mildly Disagree	Mildly Agree	Moderately Agree	Strongly Agree
91. The main thing which affects my health is what I myself do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
92. If I take care of myself, I can avoid illness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
93. When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
94. No matter what I do, I'm likely to get sick.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
95. If it's meant to be, I will stay healthy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
96. If I take the right actions, I can stay healthy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
97. Regarding my health, I can only do what my doctor tells me to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following questions have to do with support you receive from family and friends.

98. About how many close friends and close relatives do you have (people you feel at ease with and can talk to about what is on your mind)?

- | | | | | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| None | One | Two | Three | Four | Five | Six | Seven | Eight | Nine | Ten or more |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**People sometimes look to others for companionship, assistance, or other types of support.
How often is each of the following kinds of support available to you if you need it?**

- | | None of the Time | A Little of the Time | Some of the Time | Most of the Time | All of the time |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 99. Someone to help you if you were confined to bed... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 100. Someone you can count on to listen to you when you need to talk... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 101. Someone to give you good advice about a crisis... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 102. Someone to take you to the doctor if you needed it... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 103. Someone who shows you love and affection... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 104. Someone to have a good time with... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 105. Someone to give you information to help you understand a situation... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 106. Someone to confide in or talk to about yourself or your problems... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 107. Someone who hugs you... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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**People sometimes look to others for companionship, assistance, or other types of support.
How often is each of the following kinds of support available to you if you need it?**

	None of the Time	A Little of the Time	Some of the Time	Most of the Time	All of the time
108. Someone to get together with for relaxation...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
109. Someone to prepare you meals if you were unable to do it yourself...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
110. Someone whose advice you really want...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
111. Someone to do things with to help you get your mind off things...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
112. Someone to help with daily chores if you were sick...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
113. Someone to share your most private worries and fears with...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
114. Someone to turn to for suggestions about how to deal with a personal problem...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
115. Someone to do something enjoyable with...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
116. Someone who understands your problems...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
117. Someone to love and make you feel wanted...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Evaluation of care in the Portland VA General Medicine Clinic

The following questions have to do with your medical care at the General Medicine Clinic since July 1, 1995

Please mark one box in each line to indicate how much you agree or disagree with each statement.

Thinking about your own medical care at the General Medicine Clinic since July 1, 1995, how would you rate the following?

	Poor	Fair	Good	Very Good	Excellent
118. Convenience of the location of the clinic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
119. Hours when clinic visits can be scheduled.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
120. Access to specialty care if you need it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
121. Access to hospital care if you need it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
122. Access to medical care in an emergency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
123. Arrangements for making appointments for medical care by phone.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
124. Length of time you wait between making an appointment for routine care and the day of your visit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
125. Length of time spent waiting at the clinic to see the doctor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
126. Availability of medical information or advice by phone.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
127. Access to medical care whenever you need it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thinking about your own medical care at the General Medicine Clinic since July 1, 1995, how would you rate the following?

	Poor	Fair	Good	Very Good	Excellent
128. Services available for getting prescriptions filled.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
129. Protection you have against hardship due to medical expenses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
130. Arrangements for you to get the medical care you need without financial problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
131. Thoroughness of examinations and accuracy of diagnoses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
132. Skill, experience, and training of doctors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
133. Thoroughness of treatment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
134. Explanations of medical procedures and tests.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
135. Attention given to what you have to say.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
136. Advice you get about ways to avoid illness and stay healthy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
137. Ease of seeing the doctor of your choice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
138. Friendliness and courtesy shown to you by doctors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
139. Personal interest in you and your medical problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
140. Respect shown to you, attention to your privacy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thinking about your own medical care at the General Medicine Clinic since July 1, 1995, how would you rate the following?

	Poor	Fair	Good	Very Good	Excellent
141. Reassurance and support offered to you by doctors and staff.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
142. Friendliness and courtesy shown to you by staff.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
143. Amount of time you have with doctors and staff during a visit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
144. The outcomes of your medical care, how much you are helped.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
145. Overall quality of care and services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thinking about your medical care at the General Medicine Clinic since July 1, 1995, please mark one box in each line to indicate how much you agree or disagree with each statement.

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
146. The medical care I have been receiving is just about perfect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
147. I am dissatisfied with some things about the medical care I receive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
148. I am very satisfied with the medical care I receive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
149. There are some things about the medical care I receive that could be better.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Instructions: This survey asks for your views about your health. This information will help keep track of how you feel and how you are able to do your usual activities.

Please answer every question by marking one box. If you are unsure about how to answer, please give the best answer you can.

150. In general, would you say your health is:

Excellent	Very Good	Good	Fair	Poor
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following items are about activities you might do during a typical day. Does your health no limit you in these activities? If so, how much?

	Yes, Limited A Lot	Yes, Limited A Little	No, Not Limited At All
151. Moderate activities , such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
152. Climbing several flights of stairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

During the past four weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

	Yes	No
153. Accomplished less than you would like	<input type="checkbox"/>	<input type="checkbox"/>
154. Were limited in the kind of work or other activities	<input type="checkbox"/>	<input type="checkbox"/>

During the past four weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

	Yes	No
155. Accomplished less than you would like	<input type="checkbox"/>	<input type="checkbox"/>
156. Didn't do work or other activities as carefully as usual	<input type="checkbox"/>	<input type="checkbox"/>

157. During the past four weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

Not at all	A little bit	Moderately	Quite a bit	Extremely
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

These questions are about how you feel and how things have been with you during the past four weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past four weeks -

	All of the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little of the Time	None of the Time
158. Have you felt calm and peaceful?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
159. Did you have a lot of energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
160. Have you felt downhearted and blue?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

161. During the past four weeks how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.) ?

All of the time	Most of the time	Some of the time	A little of the time	None of the time
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

162. How does your health in the last four weeks compare to your overall health since July 1, 1995 ?
(Select one best answer)

Health in last four weeks is better than my overall health since July 1, 1995	Health in last four weeks is about equal to my overall health since July 1, 1995	Health in last four weeks is worse than my overall health since July 1, 1995
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

163. Would you be willing to complete a shorter survey of 75 of the prior questions in several weeks?

Yes No

Appendix B



DEPARTMENT OF VETERANS AFFAIRS
Medical Center
3710 Southwest U.S. Veterans Hospital Road
Portland OR 97207

Dear Veteran,

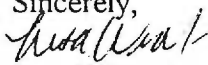
In Reply Refer To:

I am asking you to take part in a study of factors important to patients in the VA General Medical Clinic with regard to appointment attendance. This study is designed to test the importance to patients of some factors that could influence appointment attendance. Your participation in this study will involve answering some questions about your health status, health beliefs and care in the General Medical Clinic since July 1, 1995. The questions will take about 25 minutes of your time and can be completed at your convenience. Some patients may experience minor emotional distress when answering the questions.

Your answers will remain strictly confidential. All forms will be assigned a code number, and information obtained will be available only to study personnel. No individual patient or physician will be identified in any report of this project. Your individual answers will not be shared with any VA staff and will not be recorded in your hospital chart. Your identity as a participant will not be revealed in any report of the results of this study.

Your participation in this study is voluntary, and you may withdraw from it at anytime without prejudice to yourself or to any future medical care with this institution or with the Department of Veterans Affairs (VA). Though you will not receive any direct benefits, your participation will assist the VA in its effort to improve the quality of patient care.

I hope to collect all surveys by January 1, 1997. If you have any questions, or if any problems arise, you may address them to Dr. Lisa Winterbottom at (503) 220-8262 extension 7665 if in Portland, or 1-800-949-1004 extension 7665 if long distance. We are also looking for 50 volunteers who complete the survey to answer 75 items once more to test some of the questions. If you are willing to do so, please indicate this on the last page of the survey. Thank you for your time!

Sincerely,

Lisa Winterbottom, MD
Researcher

If you would like to participate, please send the completed survey back in the enclosed postage-paid envelope.

If you are willing to complete a second short survey to help test the questions, select 'yes' on item 163 on the last page of the survey.

If you do not wish to participate, please return the enclosed postage-paid postcard.

If I do not hear from you in 10 working days, I will call to see if you received the materials.

Appendix C

Postcard:

Doctor,

I am sorry but I do not wish to participate in your study

Other comments:
