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Determinants of Nutrition Appointment Non-Attendance among Male Veterans

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Determinants of Nutrition Appointment Non-Attendance among Male Veterans

by

Claire Fontenot Bell

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science in Public Health
Department of Community and Family Health
College of Public Health
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Dedication

This research is dedicated to our nation's Veterans. To the World War II Veteran, who at 81 wanted to work on weight management, despite having starved as a POW sixty years before. To the 40 something OEF/OIF Veteran who worked full time, went to school full time, and still found the time to attend nutrition appointments, make time for exercise and eating right and improve his health. To the 76 year old who lost 16 lbs and prevented diabetes. To the 60 something Vietnam Veteran, who struggles with poor sleep and night eating, and attended nutrition appointments for weight management. This is a glimpse at the people who have touched my work and inspired my research endeavors. But there are a greater number of people this thesis is also dedicated to, the Veterans who did not attend nutrition appointments, who dietitians do not have the chance to help. You are among the many individuals who inspired me to do complete this research.

Acknowledgments

I would like to thank the Department of Nutrition and Food Service of the James A. Haley Veterans Hospital for supporting this endeavor. Many faculty members have also been invaluable, but I would like to especially thank Carol Bryant who advised me through this process. Finally, I'd like to thank my family, friends, and co-workers who listened, counseled, and cheered me on as I proposed, researched, and wrote this thesis. Your shoulders held me up and pushed me along when I needed it, and I thank you!

With the support of many, I was able to learn that “character consists of what you do on the third and fourth tries” (James A. Michener).

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Determinants of Nutrition Appointment Non-Attendance among Male Veterans

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ABSTRACT

During fiscal years 2006 and 2007, nearly 1 in 4 Veterans failed to keep their individual nutrition appointments, impeding clinic workflow, productivity, and management of weight and nutrition related health conditions. The purpose of this study was to identify determinants of nutrition appointment attendance in the Veteran population. This study examined the cognitive and structural factors that influence nutrition appointment attendance. Specifically, the study sought to determine: Veteran reported reasons for non-attendance and factors associated with appointment attendance. The research design entailed sequential use of qualitative and quantitative methods. Individual, semi-structured interviews and a mail survey were used to identify factors associated with outpatient nutrition appointment attendance. Seventeen individuals were purposively selected to represent appointment attenders (8 individuals) and non-attenders (9 individuals) in the following age groups: 18-44, 45-64, and 65 and older. Individual interviews were analyzed using constant comparative analysis. For the survey portion of the study, 349 surveys were collected. Descriptive statistics were used to summarize demographic characteristics of the survey sample. Bivariate comparisons of attenders and non-attenders revealed significant relationships between appointment keeping and the following variables: past nutrition appointment attendance, non-VA insurance, health status, income, BMI, forgetting, satisfaction, perceived importance, understanding of

scheduling system, RD knowledge, family support, how referred, reminders, input to appointment time, travel, weather, difficulty with transportation, family care, feeling well, cost, parking time, and preferred day. Regression analyses suggest that only perceived family support, past attendance history, health status, and BMI remained correlated with appointment keeping when controlling for other factors. The results of this study will be used to identify ways to reduce no-shows thus increasing clinic efficiency of ambulatory care nutrition programs. The impact of increasing nutrition appointment attendance includes: improved access to nutrition appointments, more efficient use of resources, improved management of nutrition related conditions, and improved patient satisfaction.

CHAPTER 1 STATEMENT OF THE PROBLEM

Introduction

The Veterans Administration (VA) is the largest integrated single payer system in the United States, providing medical care to over 5.5 million Veterans nationwide (Department of Veterans Affairs, 2007). The busiest VA healthcare facility in the nation, the James A. Haley Veterans Hospital (JAHVAH), provides approximately 1.5 million individual outpatient visits each year.

Nutrition services are an important component of the JAHVAH ambulatory care system, with three full time registered dietitians providing approximately 3000 nutrition counseling sessions each year. Despite this accomplishment, the efficiency of the JAHVAH nutrition services could be improved if the proportion of patients who fail to keep their nutrition appointments is reduced. During fiscal years 2006 and 2007, almost one in four Veterans failed to keep their nutrition appointments, impeding clinic workflow and productivity.

This study is designed to identify the factors that influence nutrition appointment attendance and provide insights needed to reduce the no-show rate. The rest of this chapter will discuss the need and purpose of the study. Chapter Two will review the literature on non-attendance of medical appointments. Chapter Three will present an overview of the proposed design and methods of the study. Chapter Four will present results and Chapter Five will provide discussion and conclusions.

Statement of the Problem

JAHVAH provides nutrition counseling to patients referred from seven primary care or ambulatory clinics and specialty clinics. The most common medical problems referred for nutrition counseling are overweight and obesity related disorders- hyperlipidemia, hypertension, and diabetes. As seen in Tables 1 and 2, obesity and diabetes prevalence among Veterans is slightly higher than the national average. Diabetes, vascular diseases, and other co-morbid conditions are also higher among VA users than the general population (Agha, Lofgren, VanRuiswek, & Layde, 2000; Nowicki et al., 2003; Reiber, Koepsell, Maynard, Haas, & Boyko, 2004).

Table 1

Obesity Prevalence in Veterans vs. General Population

	<u>Veterans</u>		<u>National Average 2003-04</u>	
	Men	Women	Men	Women
Overweight	73%	68.4%	70.8%	61.8%
Obese	32.9%	37.4%	31.1%	33.2%

Note. Adapted from "Obesity Prevalence Among Veterans at Veterans Affairs Medical Facilities" by S.R. Das, L.S. Kinsinger, W.S. Yancy, A. Wang, W. Ciesco, M. Burdick, and S.J. Yevich, 2005, *American Journal of Preventative Medicine*, 28(3), p.292 and "Prevalence of Overweight and Obesity in the United States, 1999-2004" by C.L. Ogden, M.D. Carroll, L.R. Curtin, M.A. McDowell, C.J. Tabak, and K.M. Flegal, 2006, *Journal of the American Medical Association*, 295(13), p.1551.

Table 2

Diabetes Prevalence in Veterans vs. Non-Veterans

	All male Veterans	Male Veterans using VA services	General Population
Diabetes prevalence	12%	16%	7.9%

Note. From “Prevalence of Obesity, Diabetes, and Obesity Related Health Risk Factors” by A.I. Mokdad, E.S. Ford, B.A. Bowman, 2003, *Journal of the American Medical Association*, 289, p. 77 and from “Diabetes in NonVeterans, Veterans, and Veterans receiving Department of Veterans Affairs Health Care” by G.E. Reiber, T.D. Koepsell, C. Maynard, L.B. Haas, E.J. Boyko, 2004, *Diabetes Care*, 27, Suppl 2: p.B5.

The health and financial implications of obesity and its co-morbidities are well-known (USDHHS, 2001). Poor nutrition is correlated with several of the leading causes of death including: heart disease, stroke, cancer, diabetes, and chronic obstructive pulmonary disease (Pavlovich, Waters, Weller, & Bass, 2004). The direct and indirect consequences of overweight and obesity accounted for 9.1 percent of medical expenses in 1998 and may have reached as high 92.6 billion (in 2002 dollars) (Finkelstein, Fiebelkorn, & Wang, 2003). Diabetes costs totaled \$132 billion in 2002 (American Diabetes Association) while the cost of cardiovascular disease and stroke was estimated to be \$403.1 billion in 2006 (American Heart Association, 2007).

Medical nutrition therapy (MNT) provided by registered dietitians plays an important role in cost-savings and improved outcomes in diseases such as malnutrition, cancer, cardiovascular disease, and obesity (American Dietetic Association, 1995).

Treatment of other nutrition-related medical problems referred for nutrition counseling –

gastrointestinal disorders, swallowing difficulty, and weight loss resulting from HIV, cancer, and other diseases – also have important financial implications for the VA. For example, in HIV positive patients, nutrition intervention can assist with weight maintenance, improve nutritional status, and may support enhanced outcomes (McKinley, Goodman-Block, Lesser, & Salbe, 1994). As outlined in Table 3, MNT is associated with the reduced utilization of hospital and physician services (Sheils, Rubin, & Stapleton, 1999). Adequate nutrition is essential to the treatment of both acute and chronic diseases (American Dietetic Association, 1995).

Table 3

Reduced Utilization of Services Associated with MNT

	Reduction in Hospital Services	Reduction in Physician Services
Patients with diabetes	9.5%	23.5%
Patients with cardiovascular disease	8.6%	16.9%

Note. From “The Estimated Costs and Savings of Medical Nutrition Therapy: the Medicare Population.” by J.F. Sheils, R. Rubin, D.C. Stapleton, 1999, *Journal of the American Dietetic Association*, 99(4), p. 434.

Regular attendance of nutrition and lifestyle related programs is associated with improved outcomes. Among Veterans, studies have shown that those who attended cardiac rehabilitation programs regularly experienced greater improvements in exercise capacity than those who did not attend regularly (Hershberger, Robertson, & Markert, 1999). Among non-Veterans participating in diabetes clinics, patients who attend 6 to 7 appointments had better blood glucose control as measured by A1c than those who did not show up (Rhee et al., 2003). Conversely, Rohland (2004) reported that diabetes

control was poorer in patients who missed appointments compared to those who attended regularly. These findings suggest that JAHVAH's nutrition service has not been able to realize its full potential to manage costly dietary problems because of high rates of non-attendance at outpatient appointments.

Studies of outpatient appointment non-attendance also have shown that no-shows impede clinic workflow (Lacy, Paulman, Reuter, & Lovejoy, 2004) and may increase appointment waiting times (Hardy, O'Brien, & Furlong, 2001; Martin, Perfect, & Mantle, 2005). Increased waiting times most often refers to delays in scheduling, such as increased number of days between when the appointment is made and when the appointment occurs. Increased waiting times may also refer to the length of time a patient sits in the waiting area of a doctor's office. Short-notice cancellations of medical or educator appointments are expensive because they cannot be easily filled, causing income loss without matching reduction in labor and facilities costs (Weigner, McMurrich, Yi, Lin, & Rodriguez, 2005). According to Sharp and Hamilton (2001), "reducing non-attendance reduces waiting times, which further reduces non-attendance, creating a virtuous cycle" (p. 1082). Finally, frequent non-attendance may foster negative provider attitudes towards patients, which weakens provider-patient rapport. As Weigner et al. (2005) report:

Failure to attend scheduled medical appointments increases the cost of medical care and may impact successful diabetes management...Short notice cancellations also impact the quality of overall patient care. Such cancellations reduce the number of appointments available to all patients, thus some patients needing more prompt medical attention may be placed

on a waitlist. Furthermore, less frequent attendance at a diabetes clinic has been associated with poorer glycemic control (p. 1791).

Need for Study

To improve dietary management practices and the overall efficiency of nutrition services at the JAHVAH, it is important to understand the factors that affect nutrition appointment attendance. Whereas scholars have identified a variety of demographic correlates and other factors associated with outpatient appointment attendance, limited studies could be located that examined reasons patients fail to attend nutrition counseling appointments.

Research Questions

This study will examine the cognitive and structural factors that influence appointment attendance. Individual, in-depth interviews and a mail survey will be used to identify factors that influence Veterans' nutrition appointment attendance. Specific objectives are to determine:

Research Question 1: What reasons do Veterans report for non-attendance for individual nutrition appointments?

Research Question 2: Which factors are correlated with appointment non-attendance?

Results of this study will be used to identify strategies for reducing the no-show rate for nutrition appointments and improve the ability of the JAHVAH to provide nutrition services to Veterans.

CHAPTER 2 LITERATURE REVIEW

Introduction

The Department of Veterans Affairs (VA) operates national programs for health care, financial assistance, and burial benefits. Veterans Health Administration (VHA) is the largest integrated single payer health care system in the United States, providing health care to a population that suffers from poorer health and lower socio-economic status compared to those who rely on private sector insurance. Those who utilize VA healthcare services tend to be older, poorer, less educated and have significantly worse health status than private sector outpatients. Prevalence of mental health problems and physical disability is higher in the Veteran population than the general public (Nowicki et al., 2003). This literature review will focus on an important aspect of providing health care - appointment attendance. There is abundant literature on non-attendance, missed appointments, and no-shows in a variety of settings. However, literature on “no-shows” for nutrition appointments is limited. The following chapter will describe the Veterans Administrative Health Care System and the nutrition services offered by the JAHVAH in Tampa, Florida, and discuss the impact of no-shows on the provision of healthcare, demographic correlates, and determinants of non-attendance.

Veterans Administration Health Care System

The Veterans Administration “is the second largest of the 15 Cabinet departments and operates nationwide programs for health care, financial assistance, and burial benefits” for Veterans (Department of Veterans Affairs, 2007, p. 1). Healthcare is likely

the most recognized benefit of the VA with more than 1400 sites of care including 155 medical centers, 872 ambulatory care and community based clinics, 135 nursing homes, 45 residential rehabilitation programs, 209 Veterans Centers, and 108 comprehensive home-care programs. Through these centers, the VA is able to provide an extensive range of medical, surgical, and rehabilitative care. Nearly 5.5 million people received care in 2006 with more than 60 million outpatient visits. VA's fiscal year 2007 spending was projected to be \$34.9 billion for health care (Department of Veterans Affairs, 2007).

As defined by eligibility criteria of the VA, a Veteran is defined as anybody who has had "active military service in the Army, Navy, Air Force, Marines, or Coast Guard (or Merchant Marines during WWII), and discharged under other than dishonorable conditions" (Department of Veterans Affairs, 2008). It should be noted that Reservists and National Guard members that were called to active duty for combat operations have special eligibility and that VA health care is not limited to those who served in combat or have service-connected injuries or health conditions (Department of Veterans Affairs, 2008).

VA medical centers are likely the most prominent sources of healthcare provision within the VA system. The JAHVAH is a VA medical center located in Tampa, Florida, with services that include: primary care, specialty clinics, testing, inpatient services including hospital admissions and surgery, outpatient education, physical therapy, occupational rehabilitation, vision care, and long term care facilities. Within close proximity to the main campus, the JAHVAH also provides mental health service, substance abuse recovery programs, and social rehabilitation programs. In addition to the

main campus, there are also Community Based Outpatient Clinics (CBOC), which have been established to provide primary care in outlying areas.

Nutrition services fit into this vast framework within the primary care setting, also known as ambulatory care. At the JAHVAH, ambulatory care clinics are arranged in teams of 4-10 providers (doctors, physician assistants, or nurse practitioners), 4-6 nurses, a pharmacist, a social worker, and scheduling staff. Ambulatory care teams are assigned names such as Alpha, Bravo, Charlie, Delta, and Foxtrot. Three fulltime registered dietitians are assigned to primary care outpatient nutrition. These three staff receive referrals from a total of seven outpatient clinics.

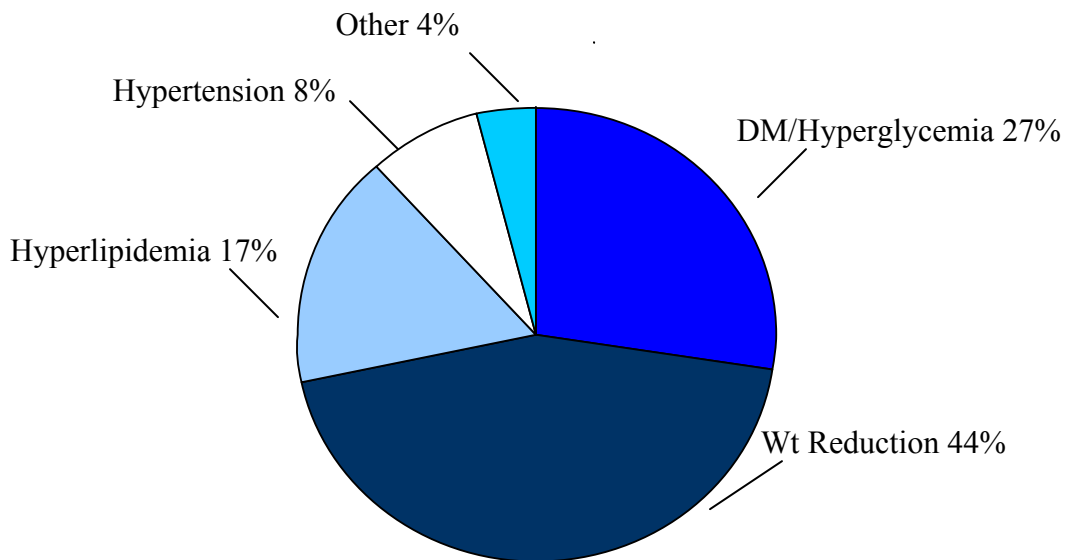
Over 3000 outpatient nutrition appointments are conducted annually in JAHVAH's ambulatory care clinics. A chart review conducted by ambulatory care JAHVAH dietitians in 2006 revealed the majority of patients were referred for weight management and related conditions including diabetes or impaired fasting glucose, hyperlipidemia, and hypertension. See Figure 1 for a more detailed description of reasons for referral. The literature confirms the prevalence of obesity and related conditions in the Veteran population which is reflected in reasons for referral. Seventy-three percent of male Veterans are overweight while 33% are obese (Das et al., 2005) and 16% of the Veteran population has diabetes (Rieber et al., 2004). In comparison to normal weight Veterans, obese Veterans more often suffer from hypertension, diabetes, arthritis, chronic heartburn, kidney disease, and post-traumatic stress disorder (Arterburn, McDonnell, Hedrick, Diehr, & Fihn, 2004). In another study of the Veteran population, Nowicki et al., (2003) found the proportion of co-morbidities such as diabetes, heart disease, hypertension, and joint problems was lowest in normal weight patients and

highest in overweight patients. It is evident that although patients are referred to nutrition for reasons beyond weight management, the majority of patients are seen for conditions related to overweight and obesity.

Patients also attend nutrition appointments for concerns including: underweight status related to HIV, cancer treatment or aging; as well as assistance with management of gastrointestinal conditions such as Celiac’s disease, diverticulosis, gastroesophageal reflux disease (GERD); and altered digestive function after gastrointestinal surgeries. These referrals are reflected in the 4% of ambulatory care nutrition appointments that were grouped into the “other” category of the 2006 chart review. It is notable that the majority of patients with head and neck cancer, which often require aggressive nutrition intervention, are followed by a non-ambulatory care oncology dietitian, who manages the home tube feeding program.

Figure 1

Referring Diagnosis to Ambulatory Care Nutrition Clinics



Appointment Non-Attendance

Non-attendance to nutrition appointments is costly, not only to the health of patients, but also to the efficiency of the dietitian, ambulatory care clinics, and the VA. A review of appointment data for fiscal years 2006 and 2007 (FY2006 and FY2007) reveals ambulatory care nutrition is subject to these inefficiencies. For the purposes of this discussion, “no-shows, missed appointments, and non-attendance” refer to patients who miss appointments without calling to cancel or reschedule. “Cancellations” describe patients who call in advance or on the day of the appointment to cancel and/or reschedule. A review of appointment data for FY2006 and FY2007 is summarized in Table 4.

Table 4

Appointment attendance FY2006 and 2007

Fiscal Year	No-shows	Cancellations	Total Seen
2006	768	2754	3115
2007	748	1600	2953

Note. Increased number of cancellations in 2006 was related to a restructuring and reorganization of the appointment systems. Cancellations include patient and administrative cancellations. Fiscal Year 2006: October 1, 2005 until September 30, 2006; Fiscal Year 2007: October 1, 2006 until September 30, 2007. Table information includes all scheduled patients for the above time period.

The information included in Table 4 indicates no-show rates of 24.7% and 25.3% in fiscal years 2006 and 2007 respectively. A month-by-month summary of this data can be found in Figures 2 and 3 in the appendix. Monthly data reveals an annual peak in appointment attendance in the spring months and an annual spike in missed appointments during the summer, particularly July and August. By looking at annual trends, it is

apparent that some factors of attendance are unique to the JAHVAH Veteran population; within the population of those using JAHVAH, there is a large proportion of transient patients who spend the summer months outside of Florida.

High rates of no-shows and cancellations prevent JAHVAH ambulatory care nutrition from realizing its full potential to manage costly nutrition related health conditions. When appointments are missed, valuable opportunities for education are lost. This is unfortunate given that lifestyle intervention is an important aspect of disease management. Studies of cardiac rehabilitation and diabetes clinic patients have shown a correlation between increased appointment attendance and improved disease management (Hershberger et al., 1999; Rhee et al., 2003). The association of attrition from diabetes related appointments and adverse clinical outcomes is consistent across the literature (Gucciardi, DeMelo, Offenheim, Grace, & Stewart, 2007). Specifically, nutrition intervention is associated with decreased costs and improved disease outcomes. Medical Nutrition Therapy (MNT) is associated with the reduced utilization of hospital and physician services. In those with diabetes, MNT is associated with a 9.5% reduction in use of hospital services and a 23.5% reduction in use of physician services. In those with cardiovascular disease, MNT is associated with an 8.6% reduction in use of hospital services and a 16.9% reduction in use of physician services (Sheils et al., 1999).

In addition to cost savings, regular appointment attendance and involvement in health care decisions is also associated with improved management of many chronic diseases. An open provider-patient relationship is particularly important in the management of chronic conditions, such as diabetes, hypertension, coronary artery disease, and congestive heart failure (Beck, Daughtridge, & Sloane, 2002). “When

patients are informed and involved in decision making, they are more adherent to medical recommendations and carry out more health-related behavior change (e.g., exercise, smoking cessation, and dietary modification)” (Beck et al., 2002, p. 25). Unfortunately, frequent non-attendance may foster negative provider attitudes towards patients, which weakens provider-patient rapport, and may ultimately impede the development of provider-patient rapport (Hussain-Gambles, Neal, Dempsey, Lawlor, & Hodgson, 2004). As summarized by the American Dietetic Association (2001), the negative impact of failed appointments has been well documented:

Low ‘kept appointment’ rates contribute to under-treatment of clients, reduced potential to improve health/clinical outcomes by inhibiting further individualization of therapy, loss of reinforcement to maintain health behaviors, and adversely affected continuity of care. In addition, low kept-appointment rates result in a disruption of client/care-professional relationship and decreased or lost opportunities for other clients to obtain appointments in a timely manner. Finally, missed appointments cause clinic inefficiency due to preparations for clients that do not arrive, disrupts work in clinics, and they lead to inefficient clinic scheduling processes, decreases in educational opportunities for teaching practices, lost revenue, and indirectly increases in the cost of healthcare (p.935).

Other studies of outpatient appointment attendance elaborate on this point. The negative impact of no-show on clinic workflow was noted by Lacy, Paulman, Reuter, and Lovejoy (2004). A prominent negative impact of no-shows is increased waiting times (Hardy, O'Brien, & Furlong, 2001; Martin, Perfect, & Mantle, 2005). These increased wait times refer not only to time spent sitting in the lobby, but also to the number of days

it may take to find an available appointment slot. No-shows increase waiting times because they occupy appointment bookings; when an individual no-shows that slot goes unused, creating longer wait times. Failed appointments are also associated with financial costs related to misused time, difficulty filling appointment slots, and income loss without matching reduction in labor and facilities costs (Martin et al, 2004; Weinger, McMurrich, Yi, Lin, & Rodriguez, 2005). Reducing missed appointments would contribute to reduced waiting times and more efficient use of resources (Hardy et al, 2001). The impact of reduced waiting times is illustrated by Sharp and Hamilton (2001), “reducing non-attendance reduces waiting times, which further reduces non-attendance, creating a virtuous cycle” (p. 1082).

The importance of appointment attendance to nutrition related appointments is described by Weinger et al (2005):

Failure to attend scheduled medical appointments increases the cost of medical care and may impact successful diabetes management.... Short notice cancellations also impact the quality of overall patient care. Such cancellations reduce the number of appointments available to all patients, thus some patients needing more prompt medical attention may be placed on a waitlist. Furthermore, less frequent attendance at a diabetes clinic has been associated with poorer glycemic control (p. 1791).

Across the healthcare literature, studies have examined: patient characteristics associated with missed appointments, common reasons for missed appointments, and interventions to improve appointment attendance. Factors that influence appointment attendance will be discussed in this chapter; a discussion of suggested interventions will

be addressed in later chapters. More specifically, this chapter will review non-attendance in a variety of settings, including primary care and specialty areas, such as internal medicine, genetics clinics, and oral facial surgery. Some studies also looked at missed appointments in diabetes care, diabetes self-management, and cardiac rehabilitation programs. Studies examining factors that influence nutrition appointment attendance will be addressed separately at the end of the chapter.

Demographic Correlates

Much of the literature regarding appointment non-attendance focuses on demographic correlates, as summarized in table 5.

Table 5

Correlates of Appointment Attendance

Correlate	References
Social-economic status	Cooper, Weinman, & Horne, 2002; George & Rubin, 2003; Neal et al., 2001; Evenson, Rosamond, & Luepker, 1998; Humphreys, Hunter, Zimak, O'Brien, Korneluk, Cappelli, 2000; Little, Cannon, Whitson, & Jarolim, 1991; Ramm, Robinson & Sharpe, 2001; Waller & Hodgkin, 2000
Education level	Cooper et al., 2002; Evenson et al., 1998; Humphreys et al., 2000; Ramm et al., 2001
Employment status	Brown, Shetty, Delrahim, Belin, & Leathers, 1999; Evenson et al., 1998; Gucciardi et al., 2007; Hagan, Botti, & Watts, 2007; Ramm et al., 2001
Insurance status	Brown et al., 1999; George & Rubin, 2003; Mugavero et al., 2007, Rose and Chung, 2003
Age	Cooper et al., 2002; Evenson et al., 1998; Humphreys et al., 2000; George & Rubin, 2003, Gucciardi et al., 2007; Neal et al., 2001; Weinger et al., 2005; Waller & Hodgkin, 2000
Gender	Evenson et al., 1998; Mugavero et al., 2007; Neal et al., 2001; Sharp & Hamilton, 2001; Waller & Hodgkin, 2000
Race	Brown et al., 1999; George and Rubin, 2003; Humphreys et al., 2000; Mugavero et al., 2007

Family size and composition	Evenson et al.,1998; Hagan et al., 2007; Humphreys et al., 2000; Ramm et al., 2001
History of mental illness	George and Rubin, 2003; Gucciardi et al., 2007; Ziemer, Ferguson, Kieltyka, & Slocum, 1998; Hussain-Gambles et al., 2004; Killaspy, Banerjee, King, & Lloyd, 2000; Weinger et al., 2005

Socioeconomic Status and Education Level

Across all disciplines reviewed, socioeconomic status and education levels were correlated with appointment attendance. Studies of attendance in primary care and general practice found that patients who miss appointments tend to come from lower-socioeconomic class and live in deprived areas (George & Rubin, 2003; Neal et al., 2001; Waller & Hodgkin, 2000). Similarly, those who failed to attend cardiac rehabilitation were likely to have fewer years of education and come from lower socioeconomic backgrounds (Ramm et al., 2001; Cooper et al., 2002); while those with more years of education were more likely to attend (Evenson et al.,1998). In a study of internal medicine appointment attendance, Little and associates (1991) found that clinics serving lower income populations had higher no-show rates than clinics serving higher income populations. In contrast, Humphreys et al. (2000) found that non-attendees at a genetics clinic had lower education levels but did not find a significant relationship between income and attendance.

Education level may have some bearing on the patient's understanding of the reason for the appointment and understanding of the doctor's explanation. Humphreys et

al. (2000), reported that attendees with higher education levels had a better understanding of their reasons for referral. In comparison to non-attendees, attendees also reported their physician explained the referral better. Limited finances impact access to transportation or a telephone, no-shows may arise from an individual's inability to cancel or get to the appointment (Sharp & Hamilton, 2001).

Employment Status

Studies that looked at employment status and appointment attendance showed mixed results. In a study of attendance at a diabetes self-management program, those who were employed were more likely to be non-attenders. Unemployed individuals were more likely to attend group education than individual education. The authors speculated that services offered during standard work hours were inaccessible to some participants who do not want to take time off of work, especially if they are not compensated for that time (Gucciardi et al., 2007). In studies of cardiac rehabilitation program attendance, patients who were self-employed felt they could take as much time off as they needed to participate, while those who were employed by someone else stated employment issues and difficulty taking time off of work were barriers to attendance (Hagan et al., 2007). In a separate study, going back to work after a cardiac event was also reported as a barrier to attendance (Ramm et al., 2001).

In contrast to these findings, Evenson and associates (1998) found that being employed was associated with greater utilization of cardiac rehabilitation. Similarly, in a study of attendance for appointments related to orofacial surgery, employed patients missed fewer appointments than unemployed patients (Brown et al., 1999). The authors of this study conjectured that employed individuals were more likely to have insurance,

which would contribute to improved attendance (Brown et al., 1999). The varied findings regarding the association of employment status and appointment keeping may reflect the continuity of care that is expected in these settings. Diabetes and cardiac rehabilitation programs are more likely to meet regularly, often in sequences of classes or programs. The repeating appointment sequence may be an issue for employed individuals.

Insurance

Another correlate of attendance is insurance status and type of insurance. Rose and Chung (2003) stated that the strongest predictor of no-show rate was type of insurance, and that those with Medicaid were greater than three times more likely to miss appointments than people in other insurance classes. In studies of primary care, individuals who received state funded insurance, were self-paying, or had less comprehensive coverage were more likely to miss appointments than those who were covered by comprehensive private insurance (George & Rubin, 2003). Among HIV patients, those with public health insurance were more likely to miss appointments than those with private health insurance (Mugavero et al., 2007). There is likely a triangular relationship between employment status, insurance status, and appointment attendance. Brown and colleagues (1999) reasoned that the unemployed might have more limited access to insurance, which in turn impacts attendance. Insurance status appears closely related to employment status, as those with more comprehensive health care are more likely to be employed. It is notable that the Veteran possesses a unique combination of receiving comprehensive, federally funded healthcare.

Age

Age is a frequently studied correlate of attendance, with varied findings. In the primary care/general practice settings, youth is generally associated with non-attendance. In general practice, younger age was associated with missed appointments in several studies. George and Rubin (2003) found high rates of no-shows in 17-40 year olds, Waller and Hodgkin (2000) also reported the highest rate of no-shows for doctors was among 20-24 year olds and for practice nurses 0-34 year olds. Neal and associates (2001) also reported higher rates of missed appointment in young adults. In contrast, in a study of attendance at a genetics clinic there was not a significant age difference in attendees and non-attendees (Humphreys et al., 2000).

In primary care studies, a core population of people who frequently defaulted (defined as more than five no-shows in a year) has been identified. This group was disproportionately female and aged 20-34 (Waller & Hodgkin, 2000). However, this study and another by Neal and colleagues (2001) found that the majority of patients who missed an appointment only missed one appointment.

In studies of diabetes related appointments, the results are more mixed. Weinger et al. (2005) found demographic characteristics were similar among cancellers and non-cancellers for both doctor and nurse practitioner appointments. According to Gucciardi et al. (2007), individuals aged 45 years or younger and 65 years of age or older had greater odds of being non-users than those who were middle aged. These authors reported older age may be associated with less mobility, smaller social networks, and the preference to take a more passive role in health care treatment. In addition, older patients may be “incapable or unmotivated to use health resources” (Gucciardi et al, 2007, p.

917). There was a more consistent relationship between age and attendance in cardiac rehabilitation. Evenson and associates (1998) reported those between the ages of 25-49 were most likely to attend while those being 80 or older least likely to attend. The association of lower attendance with increasing age was confirmed in a systematic review of literature related to cardiac rehabilitation attendance (Cooper et al., 2002).

Gender

Results regarding the impact of gender on appointment attendance also are mixed. Sharp and Hamilton (2001) reported non-attendance at primary care appointments was higher among males than females. In their study of missed appointments in general practice, Waller and Hodgkin (2000) reported that 60.7% of no-shows were by women. However, once the higher consultation rate for women was controlled for, little gender difference was observed in no-show rates. In another study, the likelihood of missing an appointment was associated with being female (Neal et al., 2001). These authors surmised that women may have more appointments and as a result miss more than men. In cardiac rehabilitation, men were more likely to attend than women, with married men more likely to attend than married women (Evenson et al., 1998). In a separate study of appointment attendance in HIV patients, females were more likely to no-show (Mugavero et al., 2007).

Race

Findings are also mixed in studies of the relationship between appointment keeping and ethnicity. In their systematic review of non-attendance in general practice, George and Rubin (2003) reported race was identified as a predictor in some, but not all, studies. They also noted that studies differ in their categorization of ethnicity. Ethnicity

is a predictor of non-attendance in some studies; but, these studies differ in their categorization of ethnicity. In appointments at a genetics clinic, ethnicity was not associated with compliance (Humphreys et al., 2000). However, in a study of HIV patients, no shows were more common among racial minorities than Whites (Mugavero et al., 2007). In addition, Brown et al. (1999) found an association between race and missed appointments related to orofacial surgery, “Specifically, patients who are unemployed and African American and perceive themselves as having little social support are at greatest risk for missing recall [follow-up] clinic appointments” (Brown et al., 1999, p.408).

Family Size and Composition

Family size and composition also may influence attendance rates, although the results are mixed. Family structure was mentioned most often in the cardiac rehabilitation literature. Those who lived alone were less likely to attend rehabilitation than people who lived with family members who encouraged them to attend (Hagan et al., 2007; Ramm et al., 2001). In a different study, Evenson et al. (1998) reported that married men were more likely to attend than married women. The relationships between attendance and marital status and number of children were not statistically significant in a study of appointments at a genetics clinic (Humphreys et al., 2000). However, patients who were planning to have children were more likely to keep their appointments.

One explanation for the mixed results centers on the type of appointment being attended. Cardiac rehabilitation involves significant lifestyle changes relating to diet and exercise patterns that affect other family members, making social support an important feature in the decision to participate and adhere to health provider advice. It also is

possible that some patients, like a person described in a study conducted by Hagan et al. (2007), seek social support by attending group activities, such as a cardiac rehabilitation support group, pointing to the complex nature of the causal direction of the correlation between family structure and attendance rates. In contrast, genetics clinic appointments may be less involved in terms of time and lifestyle changes, thus family structure plays less of a role in attendance.

History of Mental Illness

The last correlate of attendance is a history of mental illness. In their systematic review of attendance in primary care, George and Rubin (2003) reported that those who missed appointments tended to have more psychological problems than those who kept appointments. Weinger et al. (2005) reported those who frequently cancelled doctor or nurse practitioner appointments were more likely to have a “lower pragmatic/stoic coping style, more anxiety, lower self esteem, more diabetes related distress, more depressive symptoms, and lower self-care adherence” (p. 1792). Clinicians and staff of general practice also shared the perception that those who missed more appointments also suffered from mental illness (Hussain-Gambles et al., 2004). “This was attributed to anxiety and poor concentration leading to forgetting, confusion, an inability to wait at the surgery, and delusional problems” (Hussain-Gambles et al., 2004, p. 111). Depression was also cited as a barrier to attending diabetes appointments (Gucciardi et al., 2007; Ziemer et al., 1998). The relationship of mental illness and appointment attendance may be best illustrated by reports that rates of missed appointments at psychiatric outpatient clinics are believed to be double those seen in other medical fields (Killaspy et al, 2000).

Determinants of Non-Attendance

Numerous studies have looked at the determinants of appointment attendance, factors reported by patients or providers and clinic staff. In the literature reviewed, four major categories of determinants emerged: cognitive, social, emotional, and structural factors.

Cognitive Factors

Cognitive factors include barriers such as, forgetting, perceived importance of the appointment, perceived severity of the condition, and lack of understanding of the scheduling system.

Forgetting

Forgetting was the most frequently reported cognitive determinant for missing appointments across several disciplines. Both patients and staff felt that forgetfulness was a common reason for missing appointments in primary care (Hussain-Gambles et al., 2004; Martin et al., 2005). Forgetting was perceived by staff to be related to age, anxiety, and having "a lot on the mind" (Hussain-Gambles et al., 2004). Almost a third of patients who missed appointments in a gastroenterology outpatient clinic said they forgot (Murdock et al, 2002). Similar results were found in studies of no shows in an internal medicine clinic (Little et al., 1991), a genetics clinic (Humphreys et al., 2000), and psychiatric service (Killaspy et al., 2000).

Perceived Importance

Perceived importance of the appointment is another frequently discussed determinant of attendance. Findings from a study of cardiac rehabilitation illustrate this point well, "...the participant's perception of the program's relevance was found to be

central to whether or not they even entertained the idea of attending” (Hagan et al., 2007, p. 111). This theme was common to other areas. Humphrey et al. (2000) described the relationship of appointment attendance at a genetics clinic, where patients were less likely to show up because they did not see the appointment as pressing or useful. Specifically, no-shows were significantly related to perceived benefits and costs of the genetics appointment (Humphreys et al., 2000).

Perceived Severity

Although results were mixed, another cognitive determinant that may influence appointment attendance is the perceived severity of the condition. In a systematic literature review of cardiac rehabilitation attendance, it was reported that non-attenders were more likely to downplay the severity of their illness (Cooper et al., 2002). In contrast, Humphreys et al. (2000) found that perceived severity of the health condition was not related to attendance at a genetics clinic. Perhaps another component of perceived severity of the condition is first accepting the diagnosis and eventually facing the health condition. In a study of appointment keeping behavior at a diabetes clinic, nearly all respondents acknowledged the seriousness of diabetes, the risk for complications, and the importance of continued follow-up. However, a commonly reported barrier to attendance was denial of having the diagnosis (Ziemer et al., 1998).

Lack of Understanding

The last category of cognitive factors that influence appointment attendance is patients’ lack of understanding of the scheduling system. It is reported that patients often do not understand the scheduling system, the impact of canceling or showing up late, nor the time management or financial implications of failed appointments (Lacy et al., 2004;

Martin et al., 2005). In fact, many patients perceived non-attendance in a positive light, figuring that these events give providers free time or that “ ‘maybe they just go to the next patient’ ” (Lacy et al., 2004, p.543). Patients believed appointment cancellations happen regularly. In turn, the scheduling system was perceived as flexible and subject to negotiation. Consequently, patients called on short notice to request appointments with the hope that they could be worked into a recently cancelled appointment slot (Lacy et al., 2004). Although some patients felt guilty about non-attendance, others felt that missed appointments were occasionally to be expected and therefore tolerable. Patients may have also felt justified in arriving late to appointments because they often had to wait past their appointment time to see the provider (Martin et al., 2005).

Social Factors

Social factors include social support, relationship with the provider, and perceived respect between patient and provider. All of these issues have been shown to relate to the results of long waiting times: waiting to be given an appointment and waiting at the medical clinic to see the provider.

Respect

From the patient’s viewpoint in the Lacy et al. study (2004), "Waiting was one way disrespect was communicated: the patients’ wait to get an appointment time, the patients’ wait in the waiting room, and the patients’ wait in the examination room” (p.543). As waiting time increased, so did the feelings of disrespect. Other issues related to respect that contributed to missed appointments were perceived lack of respect for patients’ medical history, opinions, and feelings (Lacy et al., 2004). Perceived disrespect may explain why some patients failed to telephone and cancel. The norm of reciprocity

infers that a person who feels disrespected does not feel obligated to return respect by calling to cancel (Lacy et al., 2004).

Social Support

Social support offers another way to examine the reciprocal relationships between providers and patients. Family influence is a major aspect of social support. Patients who reported that family members encouraged them to attend appointments were more likely to do so, while lack of family support has been reported as a barrier to diabetes appointment attendance (Ziemer et al., 1998). For cardiac rehabilitation participants, family support provided meaning to an individuals' life, increased their motivation to recover and make lifestyle changes, and positively influenced attendance. Family support increased the likelihood of cardiac rehabilitation being an achievable goal. In contrast, those with limited social support did not want to be a burden to others and were more likely to miss scheduled appointments (Hagan et al., 2007). Ramm et al. (2001) confirmed this concept, with the finding that social isolation was associated with non-attendance in cardiac rehabilitation. Further support to the importance of social support was found by Killaspy et al. (2000) who reported that patients who miss psychiatric appointments were more socially impaired and had poorer social functioning. In their study of orofacial injury patients. Brown et al. (1999) found that strong social support was inversely related to missed appointments. Patients who perceived more social support were less likely to miss appointments while those who perceived less social support were more likely to miss appointments.

Provider Recommendation and Support

Provider recommendation may also influence attendance. Humphrey et al. (2000) reported that a strong recommendation by the referring physician has related to improved appointment compliance. These findings were reiterated by Cooper and associates (2002) who also found non-attenders of cardiac rehabilitation were less likely to perceive that their physician recommended the program. A communicative patient-provider relationship is vital to their understanding of recommended treatment and interventions. As stated by Beck and colleagues (2002):

A communicative provider-patient relationship is especially important in the management of chronic diseases, such as diabetes, hypertension, coronary artery disease, and congestive heart failure. When patients are informed and involved in decision making, they are more adherent to medical recommendations and carry out more health-related behavior change (e.g., exercising, smoking cessation, and dietary modification). Such joint decision making requires patients to be fully informed about alternatives and potential risks of treatment, and to have trust in their physician (p.25).

Martin and associates' (2005) findings further reiterate this point. In their study of primary care, patients reported that a lack of empathy and understanding from providers was seen as a barrier to attendance. Patients felt that rapport with their provider was essential. In the same study, medical staff also believed that patients were less likely to attend if a relationship had not been established, although it was clear that they did not fully appreciate the importance patients placed on the doctor-patient relationship (Martin et al., 2005). The relationship with the provider is not the only important relationship.

Diabetes clinic patients also reported that perceived negative attitude of clinic staff was also a barrier to attendance (Ziemer et al, 1998).

Frequent no-shows are likely to have an impact on staff perceptions and attitudes towards those who miss appointments. A qualitative study by Hussain-Gambles et al. (2004) revealed how no-shows influenced staff perceptions of patients in general practice. “Patients living in more deprived areas were perceived to lack responsibility and miss more appointments” and “younger patients were perceived to miss more compared with older people, and to be more troublesome by repeatedly missing appointments. They were regarded as having chaotic lives, having short term health problems, lacking respect and responsibility, and valuing appointments less than older patients” (p. 111). These findings illustrate how no-shows may foster negative relationships between staff and those who frequently miss appointments.

Emotional Factors

Emotional factors include fear and anxiety surrounding the appointment.

Fear and Anxiety

Fear and anxiety also are important determinants of appointment attendance. Patients reported fear of being seen by a junior doctor was a reason for missing appointment in a gastroenterology clinic (Murdock et al., 2002). In primary care, no-shows were higher on return visits when a patient was scheduled to be seen with someone other than their usual doctor. No-shows were also higher among patients seeing practice nurses, medical students, and first year residents compared to those visiting doctors (George & Rubin., 2003). Waller and Hodgkin (2000) also reported higher rates of no-shows with practice nurses compared to physicians. Because the JAHVAH is a teaching

facility, these findings are especially pertinent. Patients at the JAHVAH are often faced with seeing a variety of health professionals in various stages of training: medical and pharmacy residents, student nurses, social work students, physician assistant students, and dietetic interns. In the nutrition department, it is a common occurrence for a patient to be seen for an initial appointment by one dietitian or dietetic intern and attend follow-up with a different person.

Fear of medical procedures and findings also were reported as barriers to attendance. For some participants, negative anticipation of the visit outweighed the potential benefits of attendance. Participants faltered when they were concerned about undergoing uncomfortable procedures (Lacy et al., 2004). As one participant in this study stated, “I said, ‘Nope, I’m not going! That’s uncomfortable...so I just didn’t come” (p. 543). Another quote from a patient (Lacy et al., 2004) highlights fear of the unknown as a barrier to attendance, “...I’m scared they might tell you something, some bad news...Come in with a headache and they say you’ve got a big brain tumor up there... I don’t want to go back, I don’t want to hear no bad news” (p.543). The negative impact of anxiety and stress on appointment attendance was also confirmed with diabetes appointments (Weinger et al., 2005; Ziemer et al., 1998).

Structural and Logistical Factors

Logistical issues associated with scheduling and attending appointments also may affect no show rates. Structural/Logistical issues include long wait times, difficulty scheduling, competing priorities, costs, type of provider, and transportation.

Wait Times

In addition to conveying disrespect, long wait times are among many structural determinants that influence appointment attendance. Across all disciplines, patients voiced frustration related to long wait times and reported long wait times as a barrier to attendance in primary care (Martin et al., 2005), diabetes clinics (Ziemer et al., 1998), and psychiatric appointments (Killaspy et al., 2000). Finally, longer wait times also were associated with failure to establish care in HIV patients (Mugavero et al., 2007).

Long wait times negatively impact patient satisfaction. As satisfaction declines, so does appointment attendance. Patients were more likely to miss an appointment when many days had passed between scheduling and the actual date of the appointment (Lacy et al., 2004). Although not explicitly cited in the literature, personal interviews and discussions with VA staff indicate three reasons long wait times are likely to decrease attendance: 1) the patients are more likely to forget about the appointment as the wait time increases; 2) a patient is more likely to attend when the conversation with the provider is fresh in their mind; and 3) concern about the nutrition related health condition is likely to fade as days between the phone call or scheduling of the appointment and the date of the actual appointment increase.

Difficulty with Scheduling System

The next structural factor that influences appointment attendance is difficulty with the scheduling system. In primary care clinics, cancellation difficulty was reported as a major issue (Hussain-Gambles et al., 2004). Patients reported difficult communication, such as busy telephone lines, difficulty in contacting scheduling clerks, and failure to receive appointment notices as barriers to attendance (Martin et al., 2005; Ziemer et al.,

1998). Another barrier to attendance for cardiac rehabilitation patients was inconvenient scheduling (Ramm et al., 2001). Lastly, gastroenterology patients also perceived clerical error as a reason for missed appointments (Murdock et al., 2002).

George and Rubin (2003), illustrate how several structural barriers to attendance can be interrelated:

Appointment systems can be a barrier to health care, and non-attendance may be a reflection of difficulty of access to services. Where there are problems in accessing health care, waiting lists for appointments get longer and this in turn leads to increased non-attendance. Appointment systems may be difficult to use for members of communities in areas of social deprivation or low socio-economic class. Some patients have less predictable, chaotic lifestyles that are not easily compatible with a structured system (p.180).

Problems related to telephone communication is especially pertinent in this study because the JAHVAH uses a phone based scheduling system. In addition, many of the JAHVAH patients are snowbirds, or transients, who live in Florida for the winter months and return home, typically to Northern regions for the summer months. Having patients that live in another region for one half of the year can complicate phone communication. Also, inconvenient scheduling also may be of concern for working Veterans. Currently, the JAHVA has limited primary care access, as the majority of primary clinics have appointment availability on weekdays between 8:00am and 4:00pm.

Competing Priorities

Long waits and limited clinic hours may be linked to the next structural barrier - competing priorities and conflicting events. The first competing priority is difficulty

taking time off of work. In a study of attendance in primary care, employment competed for patient's time and contributed to no-shows (Martin et al, 2005). Humphreys et al. (2000) did not find an association between taking time off from work and appointment attendance. However, respondents who were not paid for time taken off from work were more likely to miss appointments than those who were (Humphreys et al., 2000).

Other types of schedule conflicts were reported as barriers to attendance. Simply being "too busy" has been reported as an obstacle (Humphreys et al., 2000). In several studies, the most common reasons for non-attendance, after forgetfulness, were family or work obligations (Little et al., 1991; Sharp and Hamilton, 2001; Ziemer et al., 1998). Having to arrange childcare was a commonly reported family care issue that was a barrier to attendance (Humphreys et al., 2000; Sharp & Hamilton, 2001). Diabetes patients also reported scheduling conflicts like other health care appointments (Ziemer et al., 1998).

In addition to scheduling conflicts, other common barriers reported by cardiac rehabilitation and diabetes patients were financial costs related to appointment attendance, medications, and transportation (Hagan et al., 2007; Ziemer et al., 1998). Transportation problems also were reported as barrier to attendance in a different study of cardiac rehabilitation (Ramm et al., 2001). It is notable that "transportation problems" may infer matters other than cost, including issues such as reliable personal or public transportation or perhaps relying on family members for transportation. Findings regarding transportation were not consistent. Humphreys et al. (2000) did not find a significant association between appointment attendance and mode of transportation in their study of appointment keeping at a genetics clinic.

Additional transportation concerns, such as driving distance and convenience of facility location may play important roles in appointment attendance. In a study of appointment behavior in HIV patients, no shows were more common among those who lived outside of the coverage area (Mugavero et al., 2007). Rose and Chung (2003) also reported that location and convenience of the health care facility influenced attendance. Transportation issues are especially pertinent to Veterans. Many Veterans drive from distant and surrounding areas to attend appointments at JAHVAH, they deal with limited parking, and increasing fuel prices while living on fixed incomes.

Other

Two remaining factors that do not readily fit into the categories discussed above are also important: feeling too unwell and feeling better. Feeling too psychiatrically unwell was one of the most common reasons for missing follow-up psychiatry appointments (Killaspy et al., 2000). Internal medicine patients also reported missing appointments because of feeling too unwell. Conversely, symptoms may improve and the patient may feel like the appointment is no longer necessary (Lacy et al., 2004). This finding was confirmed by the results of Little et al. (1991), whose participants reported missing appointments because of feeling better. General practice providers and clinic staff also felt that patients missed appointments because of feeling better (Hussain-Gambles et al., 2004).

Nutrition Specific

Three studies related to nutrition appointment or program attendance were found in the literature. The first study assessed factors associated with attendance in a voluntary nutrition education program for women served by the Special Supplemental

Nutrition Program for Women, Infants, and Children (WIC). The authors used surveys and focus groups to gather demographic information and patients reported reasons for failing to attend. The results of this study indicated that the relationship between attendance rates and ethnicity and attendance rates and marital status were statistically insignificant. Participants in this study reported the following reasons for failed attendance: no longer participating in WIC, moving, competing priorities, negative feelings about nutrition education, and lack of transportation or childcare (Damron, Langenberg, Anliker, Ballesteros, Feldman, & Havas, 1999)

The second study was a brief intervention study to investigate the impact of reminder phone calls on attendance at a diabetes outpatient clinic in Ireland (Finucane, Gaffney, Hatunic, Burns, & Nolan, 2007). This study found that phone calls were helpful in improving attendance rates. Forty-three percent of patients in the observation group (no reminder) attended while 63% of patients who received a reminder call attended. Demographic variables such as age, weight, blood sugar control, and body mass index were similar in attenders and non-attenders (Finucane et al., 2007).

The third study examined the reasons diabetic patients do not attend appointments with their dietitian. This study was conducted in the Netherlands where referrals to the dietitian occur as a standard course of practice in a multidisciplinary health care team. The authors gathered information regarding possible determinants of failed appointments through qualitative research consisting of a literature review, interviews with specialists, dietitians, diabetic nurses and internists, and patients. The interview findings informed the development of a telephone survey.

The results of this study indicated that non-attendees of nutrition appointments also were more likely to no-show with their doctor or nurse than attendees. The demographic characteristics of marital state, social class, education level, and sex were not significantly associated with attendance. Findings indicated that those born outside of the Netherlands were less likely to attend than those from the country. Mean BMI was higher in non-attendees than attendees. Several psychosocial variables were related to attendance. Non-attendees perceived fewer diabetes-related risks, greater difficulty in attending appointments with dietitian, less obligation to attend the appointment, and lower efficacy of dietary advice. Patients also reported forgetting, having a stable body weight, and feeling that the nutrition appointment was not useful. Study authors stressed the importance of helping patients understand they can contribute to their own health and the belief that improved marketing of dietitian services and different approaches to address clients are needed (Spikmans, Brug, Doven, Kruizenga, Hofsteenge, & van Bokhost-van der Schueren, 2003).

Although these three studies examined populations that differ significantly from Veterans in the United States, they provide insights about factors affecting nutrition appointment attendance. Of special interest are findings that negative feelings associated with attending dietitian appointments and a perception that they would not learn anything new may be salient in this study.

Conclusion

Many factors have been identified that influence appointment attendance. Predictors of non-attendance include: social economic status and educational level, employment status, insurance status, age, gender, race, family size and composition, and

history of mental illness. Reasons for missing appointments include cognitive, emotional, social, and logistical/structural barriers. These factors interrelate with demographic factors to contribute to non attendance.

Despite the extensive research that exists on appointment attendance, further investigation is needed to better understand nutrition appointment attendance in the Veteran population. This study will examine what reasons Veterans report for non-attendance to nutrition appointments and which factors are correlated to attendance. This proposal seeks to conduct research from a grounded theory perspective, contributing to current knowledge by addressing existing gaps in the literature regarding nutrition appointment attendance in the Veteran population.

CHAPTER 3 METHODS

Introduction

This chapter describes the research methodology and includes six major sections: (1) a review of the study's research questions and purpose; (2) study design; (3) survey and interview instruments; (4) analysis and data management; (5) strengths and limitations; (6) hypotheses.

Purpose & Research Questions

The purpose of this study was to identify factors that influence nutrition appointment attendance in the Veteran population. The results of this study will be used to identify ways to reduce no shows for nutrition appointments at the James A. Haley Veterans Hospital. The impact of increasing nutrition appointment attendance includes: improved access to nutrition appointments, more efficient use of resources, improved management of nutrition related conditions, and improved patient satisfaction.

The study was designed to answer the following questions:

Research Question 1: What reasons do Veterans report for non-attendance for individual nutrition appointments?

Research Question 2: What factors are correlated with appointment non-attendance for nutrition appointments at the VA?

Study design

This study utilized a sequential mixed methods design. Individual interviews were followed by a mail survey. Semi-structured interviews were used to explore views regarding non-attendance, its causes and impact. The mail survey examined the relationship between these factors and attendance. Individual interviews have been found particularly useful in gathering feedback from the patient and provider points of view. As described by Martin et al. (2004) interviews provide the opportunity to gather information from a purposive sample, until a saturation of themes is reached. A mail survey was chosen for the quantitative portion because of its relatively low cost, the anonymity provided by mail surveys, and the elimination of interviewer bias. These methods have been used in many previous studies of appointment attendance (Brown et al., 1999; Humphreys et al., 2000; Hussein-Gambles et al., 2004; Lacy et al., 2004; Little et al., 1991; Martin et al., 2005; Murdock et al., 2002; Spikmans et al., 2003).

Population and Sample

The sample was drawn from the outpatient population of the JAHVAH main ambulatory care clinics. The clinic population is predominately male and older than 55. To be eligible for the study, Veterans were scheduled for a nutrition appointment during the preceding 30 days of the phone interview or mail survey. In the Ambulatory Care population, nutrition appointments most often originate with referrals from the patient's primary care provider. Patients are predominately referred for weight management, hyperlipidemia, hypertension, and diabetes. A minority of patients is seen in outpatient nutrition clinics for issues such as gastrointestinal disorders, swallowing difficulty, or loss of weight related to disease treatment or status, such as HIV or cancer.

Sample Selection

In addition to having been scheduled for an appointment within the previous month, to be included in the study Veterans were also classified as ambulatory care patients, between the ages of 18-79, enrolled for VA health care, and receiving primary care at JAHVAH to be included in the study. Non-Veterans, those aged 80 and older, patients of the women's center, CBOC patients, and patients of the diabetes, internal medicine, and geriatric clinics were excluded from the study. Individuals aged 80 and older were excluded as the majority were likely to receive their care through the geriatric clinic. The women's center has a separate dietitian who is staffed to cover women's center nutrition appointments. Nutrition appointments in the women's center account for 11-13% of all outpatient nutrition appointments. The diabetes and internal medicine clinics are considered specialty clinics whose patients are likely to have more complicated health issues and are beyond the scope of the primary care setting. The CBOC clinics are typically located in more rural areas and patients of these clinics receive their primary care off of the JAHVAH campus.

Sample Size

Interview Sample

Veterans selected to participate in the study were drawn from patients who had been scheduled for outpatient nutrition appointments in the main ambulatory care clinics of JAHVAH. A purposive sample was selected based on the matrix outlined in Table 6 and included only individuals whom the principle investigator had not previously seen for individual appointments or classes. A one-month retrospective appointment history list for appointments that were scheduled for December, 2008 was used to begin sampling.

Interviews began during January, 2009. Sampling continued through mid January and interviews were conducted through the end of January 2009. Although the following matrix served as the basis of the sampling plan, the strategy of theoretical saturation determined the final number of interviews. Table 7 summarizes the final interview sample.

Table 6

Interview Sampling Matrix: Minimum Sampling Estimates by Age Group

	18-44	45-64	65+
Attended appointments	2	2	2
Failed to show	4	4	4
		Total	18

The sampling matrix included three age groups. Eighteen to 44 years olds represent a population segment that is likely to have recently departed from the military given than age of enlistment is 18 years of age, and 20 years of service is considered a full military career. Individuals forty-five to 65 years of age represent those who are more likely to have been separated from the military for a significant time period but have not yet reached retirement age. Although the focus of this research was non-attendance, interviews were also conducted with attendees to provide a basis for comparison. The majority of individuals seen in ambulatory care are above 45 years of age. The interviews conducted with the 18-44 year age group did not add significantly new or different findings than those interviewed from the older age groups.

Table 7

Actual Interview Sample

	18-44	45-64	65+
Attended appointments	2	3	3
Failed to show	1	5	3
		Total	17

Survey Sample

Historical attendance data provided insight to the potential sample population for survey collection. Table 8 outlines attendance patterns for ambulatory care nutrition during selected months of 2007.

Table 8

Historical Attendance Data, 2007

	March	April	May	June	July	Aug
Attendance	297	278	253	260	247	257
No-shows	62	45	63	40	115	57
Cancellations	157	141	99	79	111	160
Total	516	464	415	379	473	474

Cancellations represent a significant proportion of potentially failed appointments. To further investigate attendance patterns of those who cancelled, a chart review of 100 patient scheduling records was conducted to investigate the scheduling patterns of those who cancel. Of the 100 charts reviewed, 25 of these appointments were

cancelled by the clinics for various administrative reasons. The other 75 were cancelled by patients. Of the 75 that were cancelled by patients, 39 rescheduled and later attended the nutrition appointment. Given the variance within the cancellation group, they were not included in the survey sample. Only people who failed to show or attended were interviewed or mailed surveys. Sample size calculations (based on power of .8, alpha of .05, a baseline attendance rate of 70% and an odds ratio of 2.0) determined that a sample size of 288 was sufficient to provide statistically significant results.

Data Collection

Interviews

One week prior to calling individuals, a pre-notification letter was mailed to potential participants. The letter outlined the purpose of the study, privacy information, and provided an opt-out option.

Semi-structured interviews were conducted by telephone on JAHVAH premises. Interviews were audio recorded only when participants granted permission to do so. One individual did not grant permission. Interviews were conducted within 1-30 days of the scheduled nutrition appointment. Informed consent was obtained verbally. See Appendices B and C for a copy of the pre-notification letter, recruiting script, and interview guide that were used for this study.

Surveys

To optimize the response rate, surveys were distributed using concepts from Dillman's tailored design method (2000). This method entails sending personalized pre-notice letters prior to distribution of the questionnaire, mailing questionnaires by certified mail with postage pre-paid return envelope, incentives, reminder post cards for

unreturned questionnaires, and thank you postcards for completed questionnaires (Dillman, 2000). A pre-notice letter, incentives and certified mail were not used. Token incentives were not feasible, and certified mail would have contributed to increased subject burden in a population that may have limited mobility and transportation. In a previous study of appointment attendance, Hussain-Gambles and associates (2004) obtained a 74.9% response rate using pre-paid return envelopes and second and third reminders.

Elements of the Tailored Design Method (Dillman, 2000) were used to establish the time sequence for mailings. For the first mailing, potential subjects were mailed a survey and cover letter within 14 to 30 days of their scheduled appointment. Approximately one week later, a thank you/reminder postcard was mailed. In keeping with Dillman's (2000) recommended timeline, those who failed to respond were sent a second letter and the complete survey packet approximately three weeks from the date of the first mailing.

Recruitment occurred between mid-March and mid-July. Initially, surveys were mailed to 207 attenders and 55 non-attenders who had been scheduled for appointments within the previous month. Surveys were then sent on a more frequent basis to people who had been scheduled the past two weeks. Post card and second survey mailing were sent to these participants though June 2, 2009.

Because the volume of attenders who returned the survey was far more abundant than non-attenders, several strategies were adopted to obtain an adequate sample of non-attenders. For appointments occurring from mid-April to the end of May, smaller batches (4 to 10 surveys) were mailed within one to two weeks of the scheduled appointment (70

surveys) to non-attenders only. Second, in an attempt to improve the response rate, a handwritten note in contrasting ink was added to the cover letter that accompanied surveys (approximately 41 surveys). Finally, the IRB granted permission to place a reminder phone call after the mailings to encourage non-attenders to return the survey (52 surveys). These strategies resulted in an adequate number of responses from non-attenders by mid-July, at which point recruitment was terminated.

Instrumentation

Existing literature on appointment attendance was used to inform the development of the semi structured interview guide and draft survey instrument. See Appendices C and D for a list of study variables and interview guide. Interview questions were designed to elicit patient opinions related to appointment attendance, with follow-up questions related specifically to their most recently scheduled nutrition appointment. Nutrition-specific questions focused on: how the appointment was scheduled, reasons for missing/attending the appointment, expectations and feelings related to the nutrition appointment, social influences (healthcare team or family members), and suggestions for improving appointment attendance. Interview questions addressed certain demographic variables including: size of household, employment status, education level, insurance, and income. For sampling purposes, scheduling records were used to identify gender, age, and if the scheduled appointment was an initial or follow-up appointment.

The mail questionnaire drew on qualitative interview results as well as results from previous studies. The initial survey, or draft instrument, included history of appointment attendance, reported reason for not attending, social support, perceived importance of the appointment, perceived effectiveness of the appointment, health status,

understanding of the scheduling system, and demographic variables. Answer format included multiple choice and likert scales. The draft survey was piloted during the interview phase. Interviews brought to light topics were not previously on the interview guide and nullified previous topics of interest. Several variables were added and deleted from the original instrument. A summary of these changes are outlined in Table 9. The final list of survey variables is listed in Appendix D. The survey and related mailings are included in Appendices E through H. The revised survey instrument was resubmitted to the IRB for approval before administration. Dillman's Tailored Design Method (2000) was used in the survey format and layout. The goal was to develop a questionnaire instrument that looked appealing and important. A usable, easy to manipulate, format is intended to reduce costs to the participant, and facilitate trust (Dillman, 2000).

Table 9

Survey Changes

Added Variables	Deleted Variables
Appointment attendance History (ever attended)	Patient understands reason for Referral
Attitude towards appointment	Perceived obligation
Memory	Perceived need
Parking time	Travel distance
Parking difficulty	Transportation mode
Perceived difficulty attending appointment because VA is too busy	
Perceived trust of VA healthcare vs. civilian healthcare	
Reminder letter/call was split into two separate Questions	
Scheduling- ability to request convenient time	
Scheduling system- perceived ease of use	
Service connected disability	
Transportation difficulty	
Way finding	
Weather	
Who referred patient to nutrition appointment	

Data Management

All data collected were stored in a locked file cabinet. Electronic data were password protected. Interview recordings were destroyed after transcription. Participant confidentiality was maintained by avoiding use of patient names/identifiers in reports and on surveys and by using non-identifying participant codes for data analysis. In keeping with the Dillman Tailored Design Method (Dillman, 2000), a list of people who were mailed a survey and those who responded were maintained until data collection was complete. The list was destroyed when recruitment ended.

Data Analysis

Interviews

Qualitative data was analyzed using the constant comparative analysis method (Strauss & Corbin, 1990). Interviews were audio recorded and key quotes transcribed. Themes were identified using concepts of the long-table approach, as described by Krueger and Casey (2000). This approach is a low-technology option that includes literally cutting key quotes from the transcript and pasting them into another document to identify themes and categories (Krueger & Casey, 2000).

Attender and non-attender results were then summarized in two separate documents. Similar responses to interview questions were grouped together to identify themes. Attender and no-show results were placed in a spread sheet and reviewed to eliminate duplications. Themes were then sorted into the constructs identified in the literature review. Finally, the variables and constructs identified in the interviews were compared to the original list of variables. Themes and concepts that emerged from interviews informed the revision of survey questions.

Surveys

Descriptive statistics were performed to provide an initial summary of survey responses and to determine the completeness of the survey responses. Appendix I provides a summary of missingness by question. Appendix J summarizes descriptive statistics for demographic variables. Survey results were then evaluated, eliminating missing data, by Chi-square, Fisher's exact tests, and t-tests to make comparisons between non-attenders and attenders to determine significant variables for constructing the regression models. A p value of .05 was used to determine the statistical significance of results. Chi-square and Fisher's exact tests were used for categorical non-ordinal dependent variables, while t-tests were used for continuous dependent variables (BMI and age) as well as ordinal dependent variables (income, education, likert scales). T-tests on ordinal variables provided insight as to the differences between attender and non-attender mean scores.

Lastly, the hypotheses were tested with binary logistic regression using SPSS® statistical software. Regression was chosen so that significant variables could be controlled for while testing each hypothesis variable. In the regression model, criterion and explanatory variables were continuous, categorical, or both (Agresti, 1996). As in the bivariate analysis, the criterion, or dependent, variables were classified according to attendance at the previous appointment: 1) non-attenders 2) attenders. The regressors (predictor variables) included significant variables from the following categories: demographic, cognitive, structural, and social factors. Demographic and socio-psychological variables that were determined to be significant with t-test and chi-square analyses were controlled for in the hypothesis testing. These variables included prior

attendance history, insurance status, perceived health, income, perceived importance of the appointment, and BMI. The null hypothesis stated appointment attendance occurred independently of predictor variables (age, income, satisfaction with care, etc).

Hypotheses

1. Perceived family support will be positively associated with nutrition appointment attendance after controlling for significant demographic and socio-psychological factors.
2. Perceived importance of the nutrition appointment will be positively associated with nutrition appointment attendance after controlling for significant demographic and socio-psychological factors.
3. Perceived expertise of the dietitian as a health professional will be positively associated nutrition appointment attendance after controlling for significant demographic and socio-psychological factors.
4. Perceived provider encouragement will be positively associated with nutrition appointment attendance after controlling for demographic and socio-psychological factors.
5. Veteran participation in the referral process will be positively associated with nutrition appointment attendance after controlling for demographic and socio-psychological factors.

CHAPTER 4 RESULTS

Introduction

The purpose of this study was to identify the factors that influence Veterans determinants of nutrition appointment attendance at the James A. Haley Veterans' Hospital. This study used a mixed methods design to answer two research questions:

- 1) What reasons do Veterans report for non-attendance for individual nutrition appointments? and,
- 2) What factors are correlated with appointment non-attendance for nutrition appointments at the VA?

This chapter presents the findings of this study, beginning with a description of the study sample, reasons Veterans gave in individual interviews for missing appointments and results of logistical regression analyses of survey data to identify factors correlated with appointment attendance.

Interview Sample

Veterans who did not show for the nutrition appointment are referred to as non-attenders and those who attended the nutrition appointment are referred to as attenders. Interview respondents were intentionally selected to represent attenders and non-attenders in specific age ranges, with 2 attenders and 1 non-attender between 18-44 years, 3 attenders and 5 non-attenders between 45-64 years, and 3 attenders and 3 non-attenders aged 65 years or older.

Reasons for Missing Appointments

Veterans reported the following reasons for missing or having difficulty attending nutrition appointments: competing demands, feeling too poorly to go, transportation problems, scheduling problems, forgetting, experience with past appointment, knowledge not new or useful, negative attitude toward VA, and lack of social support. This section reports on interview findings for cognitive, structural, and social variables related to nutrition appointment non-attendance.

Structural

The following section summarizes interview findings related to structural variables and nutrition appointment attendance: competing demands, difficulty with transportation, and scheduling barriers.

Competing Demands

Interview participants identified several competing priorities as barriers to appointment attendance. Work conflicts were a commonly reported reason for missing nutrition appointments. Several scenarios were presented to illustrate how work interfered with appointment attendance. Working several jobs was a common barrier. As a 43 year old Veteran reported *“One reason I miss appointments is, a couple I’ve had to reschedule, is that I work the equivalent of 3 jobs.”* The prospect of losing income was another problem that interfered with appointment keeping. As a self employed Veteran stated,

“Let’s suppose I’ve been scheduled for an appointment at Tuesday at 11:00, and I have a job. I would have to decide for myself will I give up the income to attend

the appointment. I don't have the opportunity to make money like young kids do. So if it comes down to it, I'll earn the money."

Some Veterans reported that retirement status provided more flexibility in scheduling and attendance. The impact of retirement was summarized by a respondent who had recently retired from the military this way:

"For those of us in the retired status, it's easier than when I do go back to work. At that point, it's going to be almost impossible to make them [nutrition appointments]. Right now since I'm in an almost pure retirement status, my flexibility is what makes it easy."

Family care such as caring for a child, spouse, or parent was also reported. Respondents reported caring for sick children, ailing spouses, and being primary care givers to elderly parents.

Another reason appointments were missed was due to travel. For example, one respondent missed his nutrition appointment because he was out of town traveling for the holidays.

Transportation difficulty

Transportation difficulty was another commonly reported barrier to attendance. Transportation issues included travel cost, travel distance, difficulty with transportation, needing to make special travel arrangements, parking, inclement weather, and difficulty navigating the building and VA grounds. The cost of gas was of concern to many Veterans. Travel distance and sharing a vehicle were a challenge for others, as a 48 year old non-attender reported, *"I share a vehicle and I live about 20 miles away, it's hard for me to get there if I don't have a vehicle."* Another individual described the travel

difficulty of his car breaking down, and the neighbor that was going to give him a ride was drunk and unable to bring him. Other Veterans had to make special travel arrangements such as scheduling for a VA van in advance. Limitations of the VA van schedule also posed barriers to attendance, *"I guess having it scheduled at the right time...some of them, a lot of guys ride vans and can only be there in the morning but some clinics are in the afternoon."* Or as another individual put it, *"Like the van I ride in, we catch it about the same place you do the city bus...it's 5 miles for me to catch the van...usually I have to get somebody to get me there."*

JAHVA is an expanding facility, with a challenging parking situation. When asked, "What makes it difficult to attend nutrition appointments," one of the most common responses was summarized by this statement: *"For those who are driving, it's parking...big time."* In the last several years patients and staff parking has decreased as new construction has edged into lots previously allocated to parking. To address this situation, the VA provides complimentary valet parking and offers a shuttle from a neighboring shopping mall where patients and staff can park in a satellite lot and take a bus to the VA. This quote from a 60 year old attender sums up the situation well,

"They are doing valet parking now, it's still the valet line gets backed up, you have to wait. If it gets too long, you have to go down to the mall and then you have to wait on transportation from the mall back to the hospital and you can be late for your appointment or actually miss it...you are spending so much time just trying to get in the building. Now I just take the city bus instead of dealing with parking."

Inclement weather was also reported as a reason for non-attendance. Heavy rains common in the summer time can greatly aggravate the transportation and parking challenges mentioned above.

Finally, difficulty navigating the VA facility and grounds was identified as reason for missing appointments. Interview respondents indicated the building is large, and it is easy to get lost. For those with limited mobility, long walks are a challenge and at times there are not enough wheelchairs available. As one individual described, "*everybody gets lost...it's a given that you are dealing with this miasma, you arrive a half hour early to figure it out....*" Another respondent simply stated, "*Getting lost in the building- they have so many different clinics...if they don't come in the main entrance it's easy to get lost.*" These respondents indicated that when an individual gets lost, they may be late for, or miss the appointment.

Scheduling Difficulty

Some participants reported that they missed appointments when they had not had a chance to participate in determining the appointment day and time. Respondents stated appointments were often made automatically, a letter would arrive in the mail, and they were not asked if that date and time were acceptable. Several respondents explained why this practice is such an inconvenience,

"The VA sets an appointment and doesn't contact us...for example I get assigned appointments without my input. Maybe afternoon appointments are better for me, but I get stuck with morning appointments. "

“The important thing is to have a say in what time the appointment is made. I would like to have more input into it, if they would have called me and said ‘hey what to do you think about this date.’ That would have been helpful.”

The heavy volume of patients seen at the VA was also mentioned as a deterrent to attending appointments. Patients reported that doctors were so busy that their previous clinic appointments with them ran later than scheduled, overlapping with their nutrition appointments scheduled on the same day. One Veteran described the problem this way:

"It's so many people there, and it seems like they are overbooked at times for appointments, or appointments run over. And then if you are running behind on your first appointment, then most people tend to try to just make it, if they have a lot of appointment, make it an all day affair. But if you are late for that first or second one, then that just bumps everything down the line."

Interview respondents indicated that receiving appointment reminders promoted attendance while difficulty with the reminder system was a barrier to attendance.

Respondents indicated varying levels of consistency with reminders. Some felt reminders were plentiful and consistent, as a 74 year old non-attender stated, *“They remind us when we are checking out, we get a reminder card, and phone calls. That should be enough.”* However, other respondents indicated they did not get consistent reminder phone calls or that appointment reminder letters arrived days after the actual date of the appointment.

Interview results suggested that failure to understand the scheduling system may impact appointment attendance. A 65 year old attender explained his dislike for the system and difficulty he's observed,

"The ridiculous method that as I am leaving the appointment, I have a follow up appointment that is currently for three months, but the appointment they make me is not the appointment that is made. I will get a notice that I need to call and make the appointment. As logic goes, this is absolutely pathetic. I was there last Wednesday, there was this older couple there in their 70's, who had an appointment but they didn't have an appointment and they couldn't figure out what that was. They were supposed to call in at that time to make the appointment. And they said that made no sense to them."

Feeling Unwell

A variable that falls within its own category is feeling too unwell to attend the appointment. As this non-attender explained,

"Sometimes you actually feel too bad to go, you gotta realize I'm 66, I've had a stroke, I'm not in the greatest shape in the world...my blood pressure is too high, or I'm dizzy. My stroke left me feeling dizzy a lot of the time...I don't trust getting in the car and driving when I feel that way."

Cognitive

Interview results indicated several cognitive factors related to nutrition appointment attendance.

Forgetting

Interview respondents commonly reported forgetting as a reason for missing their nutrition appointment. Statements that reflect this finding include:

"I got my dates mixed up."

"Sometimes I flat out forget."

"I say yep I'm going to be there and the appointment is for 2:00 and 2:30 get's here and I say, oh shit."

Experience with Past Appointment

During interviews, participants were asked to describe their feelings about attending nutrition appointments. Their responses varied widely, from positive comments about looking forward to the appointment, to indifference and disinterest. Those who looked forward to the appointment often referred to positive experiences with previous nutrition sessions or success that resulted from following the dietitian's advice. One 66 year old Veteran who regularly attended appointments stated, *"The education is very helpful, I learn more every time I see the nutritionist...I was looking forward to going."* One Veteran acknowledged having his original skepticism changed by the help he received: *"My mind was closed, I'm set in my ways...I came in thinking I'm not going to listen to them, and I found it started making sense."* Many Veterans who expressed disinterest, ambivalence, or negative attitudes towards nutrition appointments also referred to previous appointments, but their experiences had not been as helpful.

Knowledge Not New or Useful

A closely related factor is Veterans' perception of dietitian's advice. Interview results revealed that Veterans had widely varying levels of perceived dietitian knowledge or expertise. Some regarded the dietitian as an expert in nutrition and a valuable health care team member. Others believed the dietitian doesn't know much more they do and will not tell them anything they don't already know

Those who did not feel they were getting new or useful information and did not find additional appointments necessary. As one individual described,

“You know, if thought I was going to get something out of it that I didn’t have before I went there....I feel like, you know, like you can probably get all that information in one good sitting instead of having to get one piece at time or something. I don’t think they know all that much. I mean they tell you to reduce your calories and your salt. I mean, I guess they could recommend things to eat and things not to eat...”

Others felt the dietitian gave them advice that was impractical to follow, *“The problem is that they want me to eat things I cannot afford.”*

Those who felt the dietitian provided new or useful information were more satisfied and reported coming back for additional appointments. As one individual stated, *“I like it. I always enjoy talking to her...She always explains everything in detail. I know she is telling me right....I like the dietitians advice. She’s got more knowledge than me. The more I attend, the more I learn.”*

Another individual stated, *“I learned new things I didn’t expect to. She approached it in a logical, realistic approach.”*

Some Veterans attributed their good attendance record to the impact previous sessions had had on their health status.

“I look forward to it...for one I am seeing a lot of progress, I’ve seen a whole bunch of progress in the weight loss, I’ve come down from 210 to now I’m 158, I’m very close to the 155 I’m shooting at....I was very pleased with that. And then through the dietitian I got involved in the MOVE program, so now I lift weights and do a lot of cardio. So I’ve seen a big improvement in just my body composition. It’s kind of great to look in the mirror because I see muscles now.

I'm very satisfied with the results. Everyone is working as team. I just look forward to all of my appointment because it is working for me."

Others did not necessarily feel they were learning new information, but did continue to attend because nutrition appointments helped them stay on track and increase accountability.

As simply stated by a 61 year old attender, *"In a roundabout way I knew what I should have been doing, this was just reinforcement."* Another reported he went to appointments to

"just basically to get more ideas, more reiteration, someone else that is really in the field of nutrition, as dietitians do actually tell me what I already knew, they reinforced it, but hearing it from somebody else made it easier to make changes."

Attitude Toward VA

Attitudes towards the James A. Haley Veterans' Hospital were also discussed as a factor influencing appointment attendance. Varying attitudes towards VA care were reported by interview respondents. Some had negative feelings, reflected in distrust. One Veteran admitted that his feelings were quite negative, because he figured that this was the latest gimmick.

"That the government... that some bureaucrat somewhere had this idea and they were now having to spend a couple million dollars from congress...I figured that I knew that I knew everything that anybody ever had to know [about nutrition]..."

Others reported positive feelings towards the VA and higher levels of trust. A common theme was that VA culture was familiar after years of military service and that the VA better understands the healthcare needs of Veterans. As a 45 year old non-

attender stated, *“I did just short of 26 years in, the VA to me, seems more what I’m used to.”* Another reflected that the VA better understands the healthcare needs of Veterans,

“I would have to say in terms of trust; in the VA they have your best interest at heart because you are a Veteran. They really do a lot, to help you and they have a lot more generalized things to help you with ultimately the many problems you face, as a combat vet, or just a regular vet. They personalize it a little more.... I’ll give you a good example. Say you have PTSD. If you go to the emergency room [non-VA] for a PTSD issue, you might sit there for 10 hours before they get you in, and then what are they really going to tell you. They are going to tell you, here take these drugs, or here is this prescription, go sleep it off. Where if you went to the VA they will direct you in the right areas to get you the proper care you need, say as a combat vet with PTSD.”

Social

Interview participants identified lack of social support as a reason for non-attendance. In contrast, social support encouraged attendance and came from many sources including health care professionals and family members. A 61 year old attender summarized who encouraged him to attend, *“Several people, my primary care doctor, my wife, myself of course.”*

Family Support

Interview respondents reported varying levels of social support from family. Social support ranged from “none whatsoever” and “no one” to stronger levels of support. Spouses and adult children were identified sources of support. Spouses often attend nutrition appointment with the Veteran. However, this practice is not always seen

as supportive, the 29 year old attender reported that his wife attended the appointment but “it wasn’t really encouragement, it was more knowledge on her part since she’s the main cook.” In contrast, another individual stated that his wife attends appointments with him and reminds him of the importance of eating well and attending nutrition appointments.

Provider support

Lack of provider support was another social factor in non-attendance. Some respondents did not recall receiving a referral from their provider for a nutrition appointment. In a few cases, participants reported that a nutrition appointment had been scheduled automatically, and they learned about the referral from a letter in the mail or when a clerk scheduled them for an appointment as they were checking out for the doctor appointment.

"I'm under the assumption the doctor wants me to go- because I get these appointment reminders in the mail."

"I was referred by my doctor; they sent me a date and time I wasn't able to make. So, I cancelled that appointment and told them I would reschedule at a later date. And then they automatically rescheduled me again, which I never even knew about. And then the doctor had called me and told I missed the appointment and so then I rescheduled for a time that I was able to be there."

Other Veterans reported that their providers had encouraged them to talk with a nutritionist and referred them to the nutrition clinic. Provider support ranged from simply telling them an appointment was needed to strongly recommending a nutrition consult and/or deciding together if it would be helpful. Patients’ perceptions of discussions with their providers also varied. Some described these as open and helpful. *"She said I*

needed to lose some weight and (asked) would I like to have some help." Other respondents indicated that the conversation was stern, and was less of a recommendation and more of an order. A 63 year old attender put it in these terms,

"I respect his opinion, that's why I went. We sat down during an appointment and he said the only problem I had was my cholesterol. And he said he was going to schedule me. If he would have asked me, I would have said no. If I get a letter, I go."

Another stated, *"yes...he said that you need to see a nutritionist and then he stated one or two reasons why, and I said yes sir."*

This individual describes the importance of the doctor's encouragement,

"What would get them to attend appointments is the doctor; stress how important it is for them. Especially we can do all we can with medications, but if you are not eating right, then the medications and stuff then that's just trying to take care of the symptoms. The doctor needs to stress just how important the nutrition meetings are so you can get your diet right. Because some people don't care about diet, just give me my medicine."

When asked about social support, interview respondents also responded that they were their own source of encouragement or motivation. This concept was expressed with comments such as *"No, I wanted to do this myself. The doctor left the decision up to me"* and *"I'm self motivated- it's me."*

In summary, interview results identified multiple reasons why Veterans do not keep nutrition appointments. These factors included competing demands, feeling too poorly to go, transportation problems, scheduling problems, forgetting, experience with

past appointment, knowledge not new or useful, negative attitude toward VA, and lack of social support. These results were used to design the mail survey. The following section reports significant findings from the survey analysis.

Survey Response Rate

The overall response rate for attenders and non-attenders is summarized in Table 10. Responses rates for non-attenders varied slightly as new recruitment strategies were employed. The overall response rate for attenders was 66%. The following response rates apply to non-attenders. The response rate for individuals who received the first mailing without a note or phone call within two to four weeks of the scheduled appointment was 27.7%. The response rate for individuals who received the first mailing without a note or phone call within one to two weeks of the scheduled appointment was 30%. The response rate for surveys that included a personal note and were mailed within one to two weeks of the scheduled appointment was 24%. Finally, the response rate for surveys that included a personal note and a reminder phone call was 33%.

Table 10

Survey Response Rate

	Attender	Non-attender
Responded	267	82
Did Not Respond	138	162
Response Rate	66%	33%

Survey Sample

A total of 349 individuals returned the survey. Of these respondents, only 3 were female. Females were excluded from the survey analysis because of the small number and inability to generalize to the female Veteran population.

For the remaining 346 respondents, demographic characteristics are summarized below and are fully outlined in Appendix J. Mean age of respondents was 59 years (ranging from 2-79 years). Mean BMI was 30.4 (ranging from 14.6-55.5). Seventy-eight percent lived in households of two or more people. Forty eight percent did not have insurance outside of VA healthcare, 505% received VA disability, and 21.3% received non-VA disability. Nearly 58% of respondents were married. Only 21% reported their health status as very good or excellent, with remaining respondents rating their health as good, fair, or poor. Nearly 30% of respondents had completed high school, 43% attended some college, and 21% had completed college or beyond. The majority of respondents were not employed, with 74% reporting being out of work, retired, or unable to work. Fifty eight percent reported income of less than \$25,000 per year.

Survey Results

The following tables summarize the statistical analysis of survey data. Table subheadings indicate the construct category for each set of variables. Each test examined the correlation between the following independent variables and attendance, while examining differences between attenders and non-attenders. The tables are followed by a discussion of the results.

Table 11

Significant Survey Results

<u>Demographic variables</u>	Statistical test	p-value	Effect size	Attended ^a	Did not attend ^b
<u>Previous nutrition</u>					
appointment attendance	χ^2	.001	.186	70.43	49.33
Private Insurance	χ^2	.011	.140	54.65	37.84
Health Status	<i>t-test</i>	.011	.339	3.16	3.49
Income ^c	<i>t-test</i>	.047	.230	4.16	3.49
BMI	<i>t-test</i>	.039	.277	30.79	28.94
<u>Cognitive variables</u>					
Forgot about					
appointment	χ^2	<.0001	.421	94.70	60.81
Satisfaction with dietetic					
care	t-test	.007	.434	1.20	1.49
Perceived Importance of					
appointment	t-test	.013	.336	1.26	1.49

Understanding of
scheduling system-
impact on other

Veterans	t-test	.04	.282	1.34	1.57
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RD knowledge	t-test	.020	.306	1.16	1.32
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Social variables

Family support	t-test	.014	.341	2.51	2.98
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How referred	χ^2^d	.018	.202	37.16	34.67
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Structural variables

Reminder call	χ^2	<.0001	.245	78.49	52.63
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Reminder letter	χ^2	.002	.176	89.6	75.32
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Convenient time	χ^2	<.0001	.314	92.06	66.22
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Travel	χ^2	<.0001	.246	97.7	84.62
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Weather	χ^2	<.0001	.226	98.11	87.01
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Difficulty with transportation	χ^2	<.0001	.288	94.34	73.42
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Family care	χ^2	<.0001	.265	96.21	79.45
Feeling well enough to attend	χ^2	<.0001	.281	91.83	68.92
Cost	χ^2	.011	.138	95.4	87.34
Parking time	χ^2^d	.027	.158	78.57	68.52
Preferred Day	χ^2^d	.022	.154	73.09	65.75

Note: for χ^2 , effect size = Cramer's V, for t-test effect size = Cohen's d. ^aFor χ^2 tests indicates proportion that attended, for t-test indicates mean score on an ordinal scale of 1-5 for attenders, in χ^2^d indicates proportion of attenders for modal category. ^bFor χ^2 indicates proportion that did not attend, for t-test indicates mean score on an ordinal scale of 1-5 for non-attenders, in χ^2^d indicates proportion of non-attenders for modal category. ^cIncome was measured on an 8 point scale 1 being <\$10,000/year, 8 being above \$50,000/year. ^dIndicates χ^2 with Fisher option.

Table 12

Non-significant survey results

<u>Demographic variables</u>	Statistical test	p-value	Effect size	Attended ^a	Did not attend ^b
Employment on day of appointment	χ^2	.707	.020	78.03	80.00
Wait days	<i>t-test</i>	.914	.017	2.79	2.78
Travel time	<i>t-test</i>	.324	.131	1.77	1.88
VA Disability Status	χ^2	.365	.050	51.98	46.05
Non VA disability Status	χ^2	.824	.012	78.54	77.33
Marital Status	χ^2^d	.493	.116	58.73	53.25
Household size	χ^2^d	.501	.085	47.22	40.26
Age	<i>t-test</i>	.132	.197	59.97	58.18
Education	<i>t-test</i>	.082	.229	4.82	4.61
Employment	χ^2^d	.052	.169	36.51	32.89

Cognitive variables

Appointment expectations	<i>t-test</i>	.578	.093	2.03	2.12
Looked forward to appointment	<i>t-test</i>	.579	.074	1.53	1.59
Understanding of scheduling-impact on dietitian	<i>t-test</i>	.843	.029	3.38	3.42
Trust VA more than civilian healthcare	<i>t-test</i>	.807	.032	1.93	1.90
VA better understands health care needs	<i>t-test</i>	.303	.135	1.89	1.75

Social variables

Who referred	χ^2^d	.814	.082	84.23	80.00
Provider support	<i>t-test</i>	.896	.018	1.88	1.86

Structural variables

Wait days	<i>t-test</i>	.914	.017	2.79	2.78
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Travel time	<i>t-test</i>	.324	.131	1.77	1.88
Parking difficulty	<i>t-test</i>	.114	.207	3.02	2.71
VA too busy	<i>t-test</i>	.830	.029	3.69	3.65
Scheduling System	<i>t-test</i>	.114	.29	1.67	1.89
Way finding	<i>t-test</i>	.875	.02	4.07	4.05

Note: see notes for above table

Demographic and Other Background Characteristics

Prior Nutrition Appointment Attendance

In survey respondents, attenders appeared more likely than non-attenders to have previously attended a nutrition appointment. Seventy percent of attenders had previously attended a nutrition appointment, while only 49.3% of non-attenders had previously attended a nutrition appointment. Chi-square analysis revealed significant differences in prior attendance ($p=.001$, effect size .186).

Insurance

Statistical analysis indicated insurance status was significantly different among attenders than non-attenders. Attenders were more likely to have private insurance: 54.7% of attenders had private insurance compared to 37.3% of non-attenders. Chi-square analysis was statistically significant ($p=.011$, effect size .140).

Health Status

Although this variable was not explicitly discussed in interviews, it was included in the survey because of its importance in other studies (Payne, et al., 2005). T-test

analysis revealed that attenders reported significantly different health status than non-attenders ($p=.011$, effect size .339). Attenders were more likely to better rate their health than non-attenders. Forty three percent (mode) of attenders rated their health as good while nearly 38% (mode) of non-attenders rated their health as fair. On a scale of one to five (excellent to poor), mean health status was 3.16 for attenders and 3.49 for non-attenders.

Income

There was a statistically significant difference in the reported income level of attenders and non-attenders ($p=.047$, effect size of .230). Income was measured on an 8 point scale, with 1 being <\$10,000 per year, and 8 being above \$50,000 per year. On this scale, mean income was 4.2 for attenders and 3.5 for non-attenders. Descriptive statistics indicated that nearly 55% of non-attenders have an annual income of less than \$25,000 per year, while 44.6% of attenders have income in the same range. Similarly, 14.2% of attenders have an income above \$50,000 annually while 9.8% of non-attenders have income in the same range.

BMI

One of the most frequently reported reasons for nutrition appointment attendance was for weight management or weight related conditions. Descriptive analysis indicated that mean BMI was similar for attenders and non-attenders. Mean BMI was 30.8 for attenders (range 14.6-55.5) and 28.9 for non-attenders (range 17.6-51.7). T-test results reflected significant differences in BMI for attenders and non-attenders ($p=.039$, effect size .277).

Cognitive

Forgetting

Chi-square analysis indicated strong statistical significance ($p < .0001$, with an effect size of .421). Forty percent of non-attenders reported forgetting their appointments.

Satisfaction with dietetic care

T-test analysis of satisfaction with dietetic care also indicated a statistically significant differences between attenders and non-attenders ($p = .007$, effect size .434). Attenders were more likely to report higher satisfaction levels than non-attenders.

Perceived importance of appointment

Whereas large proportions of both groups agree that attending nutrition appointments was important to their health, attenders were more likely to strongly agree while non-attenders were slightly more likely to agree somewhat that appointments are importance ($p = .013$, effect size .336).

Understanding of scheduling system-impact on other Veterans

Survey analysis suggest that respondents understood the impact of no-shows on fellow Veterans but were less clear on how it impacted VA staff. There was a significant difference between attenders and non-attenders on their understanding of how missing an appointment impacts other Veterans ($p = .04$, effect size .282). Attenders were more likely than non-attenders to agree that missing an appointment will mean fewer appointments are available for other Veterans. There was not a significant difference in how either group viewed the impact of missing appointments on dietitians.

RD knowledge

T-test analysis for perceived knowledge of the dietitian was statistically different between attenders and non-attenders ($p = .020$, effect size of .306). This question asked survey respondents to rate their belief that a dietitian is a knowledgeable source of health information on a “strongly agree” to “strongly disagree” scale. While large proportions of both groups agreed with this statement, the attenders were more likely than those who missed appointments to strongly agree.

Social

Family support

T-test analysis revealed significant difference for attenders and non attenders for perceived family support ($p = .014$, effect size .341). There was not a significant difference in attendance by marital status. As a group, attenders reported higher levels of family support than non-attenders.

Provider Support and Referral

There was not a significant difference between attenders and non-attenders in the likelihood that a provider had referred them for a nutrition appointment. The majority (80-85%) of respondents reported that a doctor referred them. However, differences between attenders and non-attenders in how the Veteran viewed the referral process was significant ($p = .018$, effect size .202). Twenty eight percent of attenders reported that they decided together with their doctor compared to only 17.3% of non-attenders..

Structural

Reminder calls and letters

Reminder calls ($p < .0001$, effect size .245) and reminder letters ($p = .002$, effect size .176) also appear to impact appointment attendance. Nearly seventy nine percent of attenders reported getting a reminder call compared to only 52% of non-attenders. Similarly, nearly 90% of attenders reported getting a reminder letter compared to 75% of non-attenders.

Convenient time

Veterans' ability to participate in setting an appointment time was significantly different between attenders and non-attenders ($p < .0001$, effect size of .314). Nearly 92% of attenders reported that they were able to request a convenient time compared to 66% of non-attenders.

Weather

Weather had statistically significant relationship with appointment attendance. Although this variable was significantly correlated with attendance behavior ($p < .0001$, effect size .226), very few non-attenders (10 out of 78 responses) indicated that bad weather interfered with keeping their appointment.

Transportation

Non-attenders were more likely to report difficulty with transportation to the appointment ($p < .0001$, effect size .276) than attenders. Twenty six percent of non-attenders reported difficulty with transportation compared to 6% of attenders.

Cost

Non-attenders were more likely to report that the cost of the nutrition appointment (for example cost of gas, or co-payments) kept them from attending. Nearly 13% of non-attenders reported difficulty with cost compared to 4.6% of attenders ($p=.011$, effect size .138).

Parking

Reports of parking problems were widespread: Nearly 79% of attenders and 68.5% of non-attenders reported that parking took less than 30 minutes. However, the relationship with attendance is weak. Despite a significant p -value, the effect size was quite small ($p = .030$, effect size .155).

Preferred day

Survey respondents were asked to identify the preferred time (morning, afternoon, or evening) and day of the week (weekday or Saturday) for appointments. Statistical analysis revealed significant differences in the appointment day and time preferences for attenders and non attenders ($p=.022$, effect size .154). Seventy three percent of attenders and 65.8% of non-attenders preferred appointments on weekdays. Although non-attenders were slightly more likely than attenders to prefer weekend appointments, the number of individuals indicating this preference (7) was quite small. It may be worth noting that for both attenders and non-attenders, 24% indicated no preferences between weekdays and weekends.

Competing Demands

Attendance correlated with both competing priorities of travel ($p<.0001$, effect size .246) and need to care for a family member ($p<.0001$, effect size .265). Fifteen

percent of non-attenders reported being out of town or traveling and 20.5% reported family care as a barrier to appointment attendance.

Feeling Unwell

Chi-square analysis indicated a significant difference for attenders and non-attenders on feeling well enough to attend ($p < .0001$, effect size .281). Nearly 69% of non-attenders reported feeling well enough to attend on the day of the appointment compared to 92% of attenders.

Hypothesis Testing

Binary logistic regression was used to test the following hypothesis statements, while controlling for significant demographic and socio-psychological factors:

Hypothesis One: Perceived family support will be positively associated with nutrition appointment attendance.

Hypothesis Two: Perceived importance of the nutrition appointment will be positively associated with nutrition appointment attendance.

Hypothesis Three: Perceived expertise of the dietitian as a health professional will be positively associated nutrition appointment attendance.

Hypothesis Four: Perceived provider encouragement will be positively associated with appointment attendance.

Hypothesis Five: Veteran participation in the referral process will be positively associated with nutrition appointment attendance.

Significant demographic and socio-psychological factors were determined during bivariate analysis and included: prior attendance history, insurance status, perceived

health, income, perceived importance of the appointment, perceived provider support, perceived family support, and BMI. In each regression model, attendance was the dependant variable. Family support, perceived importance of the appointment, perceived knowledge of the dietitian, perceived provider encouragement, and participation in the referral process were the independent variables.

Regression results

The following tables summarize regression results. Table 13 shows the variables that remained significant in the regression models. Ranges of p values reflect a summary of results for all 5 regression models used for hypothesis testing. Table 14 summarizes hypothesis testing. The dependent variable in each regression is appointment attendance. Under each hypothesis, the independent variable is indicated by bold font. Results for control variables included in each regression model are also displayed.

Table 13

Significance of Control Variables in Regression Models

Variable	p value in regressions
Past attendance history	.002-.005
Health status	.006-.009
Family Support	.029-.038
BMI	.046-.067
Insurance	.075-.090
Perceived Importance	.053-.189
Provider Support	.576-.778
Income	.800-.898

Table 14

Logistic Regression Results

Variable	Hypothesis 1 ^a			Hypothesis 2 ^b			Hypothesis 3 ^c			Hypothesis 4 ^d			Hypothesis 5 ^e		
	B	S.E.	Sig	B	S.E.	Sig	B	S.E.	Sig	B	S.E.	Sig	B	S.E.	Sig
Past attendance															
history	.987	.313	.002	.987	.313	.002	.900	.319	.005	.987	.313	.002	.975	.313	.002
Insurance	.545	.319	.087	.545	.319	.087	.545	.322	.090	.545	.319	.087	.585	.329	.075
Health status	.453	.172	.009	.453	.172	.009	.490	.177	.006	.453	.172	.009	.452	.173	.009
Income	.015	.058	.800	.015	.058	.800	.008	.059	.898	.015	.058	.800	.014	.058	.806
BMI	.048	.025	.058	.048	.025	.058	.051	.025	.046	.048	.025	.058	.047	.026	.067
Family Support	.227	.109	.038	.227	.109	.038	.241	.110	.029	.227	.109	.038	.236	.110	.032
Provider															
Support	.038	.135	.778	.038	.135	.778	.078	.140	.576	.038	.135	.778	.039	.135	.771

Perceived															
Importance	.330	.171	.053	.330	.171	.053	.244	.186	.189	.330	.171	.053	.327	.172	.057
RD knowledge	-	-	-	-	-	-	.323	.248	.192		-	-	-	-	-
Veteran															
participation in															
referral process	-	-	-	-	-	-	-	-	-	-	-	-	.021	.130	.872

Note: bolded values indicate variables for hypothesis test. ^a Perceived family support will be positively associated with nutrition appointment attendance.

^bPerceived importance of the nutrition appointment will be positively associated with nutrition appointment attendance. ^cPerceived expertise of the dietitian as a health professional will be positively associated with nutrition appointment attendance. ^dPerceived provider encouragement will be positively associated with appointment attendance. ^eVeteran participation in the referral process will be positively associated with nutrition appointment attendance.

Hypothesis One: Perceived family support will be positively associated with nutrition appointment attendance.

This hypothesis was accepted: The relationship between family support and attendance was statistically significant, indicating that those with increased family support had higher odds of attending than those that did not ($p = .039$, Odds Ratio= 1.3).

Hypothesis Two: Perceived importance of the nutrition appointment will be positively associated with nutrition appointment attendance.

This hypothesis was rejected: There was not a statistically significant correlation between perceived importance of the nutrition appointment and nutrition appointment attendance when controlling for other variables.

Hypothesis Three: Perceived expertise of dietitian as health professional will be positively associated nutrition appointment.

This hypothesis was rejected: There was not a statistically significant correlation between perceived expertise of the dietitian and nutrition appointment attendance when controlling for other variables.

Hypothesis Four: Perceived provider encouragement will be positively associated with appointment attendance.

This hypothesis was rejected: There was not a statistically significant correlation between perceived provider encouragement and nutrition appointment attendance when controlling for other variables.

Hypothesis Five: Veteran participation in the referral process will be positively associated with nutrition appointment attendance.

This hypothesis was rejected: There was not a statistically significant correlation between Veteran participation in the referral process and appointment attendance when controlling for other variables.

CHAPTER 5. DISCUSSION & CONCLUSION

Introduction

This chapter includes a discussion of the results for each research question. It is organized into the following sections: research summary, discussion of results, strengths and limitations of the study, implications for future research, and implications for improving nutrition appointment attendance.

Research Summary

This study sought to identify factors that influence nutrition appointment attendance and to use these findings to identify strategies for reducing the no-show rate for nutrition appointments and improve the ability of the JAHVAH to provide nutrition services to Veterans. Benefits of increasing nutrition appointment attendance includes: improved access to nutrition appointments, more efficient use of resources, improved management of nutrition related conditions, and improved patient satisfaction. The following research questions were addressed:

What reasons do Veterans report for non-attendance for individual nutrition appointments?

What factors are correlated with appointment non-attendance for nutrition appointments at the VA?

The study design entailed sequential use of qualitative and quantitative methods. Individual, semi-structured interviews were used to identify factors associated with

outpatient nutrition appointment attendance. Seventeen individuals were purposively selected to represent appointment attenders (8 individuals) and non-attenders (9 individuals) in the following age groups: 18-44, 45-64, and 65 and older. Individual interviews were analyzed using the constant comparative analysis. Results informed the development of a survey instrument that was mailed to a sample of Veterans to examine the relationship between appointment keeping and potential determinants identified in the qualitative portion of the study and literature review. To obtain a statistically significant sample, mail surveys were sent to individuals drawn from the clinic's attendance and no-show reports and continued until 349 individuals responded. Logistic regression analysis was performed on survey results to identify correlates of appointment attendance.

Research Summary

Interviews revealed numerous cognitive, structural, and logistical reasons for missing appointments. These barriers and others reported in the literature were included in the mail survey. Bivariate comparisons of attenders and non-attenders revealed significant relationships between appointment keeping and the following variables: past nutrition appointment attendance, non-VA insurance, health status, income, BMI, forgetting, satisfaction, perceived importance, understanding of scheduling system, RD knowledge, family support, how referred, reminders, input to appointment time, travel, weather, difficulty with transportation, family care, feeling well, cost, parking time, and preferred day.

Regression analyses suggest that only perceived family support, past attendance history, health status, and BMI remained correlated with appointment keeping when

controlling for other variables. As result, “*Perceived family support will be positively associated with nutrition appointment attendance*” is the only hypothesis accepted.

Discussion of Results

There were many similarities and differences in this study’s findings and those found in the literature. Results of this study are similar to previous studies that found family support (Brown et al., 1999; Hagan et al., 2007; Killaspy et al., 2000; 2007; Ramm et al., 2001; Ziemer et al., 1998), patient-provider communication (Beck et al., 2002; Cooper et al., 2002; Humphrey et al., 2000; Martin et al., 2002), having private insurance (Brown et al., 1999; George & Rubin, 2003; Mugavero et al., 2007; Rose and Chung, 2003) and perceived importance (Hagan et al., 2007; Humphrey et al., 2000) were positively associated with attendance. Also consistent with previous studies, lower income level (George & Rubin, 2003; Neat et al., 2001; Waller & Hodgkin, 2000) and forgetting (Humphreys et al., 2000; Hussain-Gambles et al., 2004; Killaspy et al., 2000; Martin et al., 2005; Little et al., 1991; Murdock et al., 2002) are associated with non-attendance.

In contrast to previous findings, this study did not find that education level (Cooper et al., 2002; Evenson et al., 1998; Humphreys et al., 2000; Ramm et al., 2001) or long wait times (Lacy et al., 2002; Killaspy et al., 2000; Martin et al., 2005; Ziemer et al., 1998) were associated with attendance. Other demographic variables that were identified in the literature were not significant in this study, including employment status (Brown et al., 1998; Evenson et al., 1998; Gucciardi et al., 2007; Hagan et al., 2007; Ramm et al., 2001), age (Cooper et al., 2002; Evenson et al., 1998; Humphreys et al., 2000; George & Rubin, 2003, Gucciardi et al., 2007; Neal et al., 2001; Weinger et al., 2005; Waller &

Hodgkin, 2000), gender (Evenson et al., 1998; Mugavero et al., 2007; Neal et al., 2001; Sharp & Hamilton, 2001; Waller & Hodgkin, 2000), and family size (Evenson et al., 1998; Hagan et al., 2007; Humphreys et al., 2000; Ramm et al., 2001).

Social

The relationship of social support and appointment attendance was an important finding of this study. Social support is multifaceted and includes many different types of support: emotional, instrumental, information, and appraisal (Coreil, Bryant, and Henderson, 2001). Interview respondents indicated trust in their physicians and encouragement from family members were sources of emotional support. Interview respondents also reported receiving useful health information and advice from their primary care providers and dietitians as sources of support. Family members also demonstrated instrumental support by assisting with appointment scheduling, providing transportation, grocery shopping, and preparation of meals.

The vast majority of Veterans reported that they were referred to the nutrition appointment by their primary care provider. Surprisingly, differences between attenders and non attenders in perceived provider support were not statistically significant. Study results indicate that non-attenders and attenders were similar in who referred them to appointments. However, patient's participation and ownership in the process is important to nutrition attendance. Those who reported deciding together with their physician, and those who were able to request a time that was convenient were more likely to attend.

Surprisingly, marital status was not statistically associated with attendance. Also, there was a significant difference in social support from family and friends. However, interviews suggest that verbal and emotional encouragement and assistance with food

choices and preparation by spouses are important in making nutrition related lifestyle changes.

Structural

Difficulty parking at the VA was not a significant predictor of attendance. However, further discussion of this variable is warranted as this problem was reported by many Veterans. Interview results, as well as personal experience, indicate that the parking situation is a very frustrating ordeal for anyone visiting JAHVAH. Interview responses indicated that many individuals negotiate the parking situation by planning head and allowing extra time for parking. Allocating additional time for parking may reflect increased motivation for attending nutrition appointments.

Although scheduling preferences was also excluded from the regression models, findings for this variable may have implications for practice. To determine if appointments are currently being offered at convenient days and times, interview and survey respondents were asked to identify their preferred time of day (morning, afternoon, or evening) and day of the week (weekday, or weekend) for appointments. Interview respondents indicated a variety of preferences. Survey analysis indicated that 24% of both attenders and non-attenders indicated no preference between weekday and weekend appointments.

Results from this study and the literature suggest that providing reminders is also helpful (Sharp & Hamilton, 2001; Hardy, O'Brien, & Furlong 2001). In this study, 58% of non-attenders received a reminder call compared to 78% of attenders. Ninety percent of attenders and 76% of non-attenders received reminder letters. Clearly, receipt of a reminder is related to appointment attendance. However, it is difficult to surmise why

one group is more consistently getting reminders than the other. Those who are not receiving phone or mail reminders may not have consistent phone service or accurate addresses in the system. This trend was noted when attempting to contact non-attenders for interviews, with non-working phone numbers and returned mail.

Study Strengths

This study benefits from the combination of qualitative and quantitative data. Qualitative information was used to inform the collection and interpretation of quantitative data. This study also contributes unique information to the literature as, at the time of this writing, it is the only research identified that examines non-attendance of nutrition appointments at a VA facility. This study was conducted in the setting of the nation's largest single payer healthcare system. Although results may not readily transfer to the private healthcare industry, the study results may contribute to improved understanding of nutrition appointments in a healthcare system that serves millions of Veterans.

Limitations

Methodological Difficulties

Several methodological difficulties may have affected study results. Because the survey was self-administered, the ability to clarify questions or probe was lacking, and it was not possible to ensure that the Veteran answered each question unaided by others. Another limitation stemmed from the use of the telephone for interviews, making it impossible to observe body language, facial expression, and other visual cues that may have lent insights to attendance barriers. It also was impossible to examine gender differences because the vast majority of patients in the selected clinics were male.

Finally, the survey only included two questions on social support, one question related to family support and one questions related to provider support. Given the small number of questions on this variable, limited insight may be drawn from the results of this study.

Bias

Selection bias resulted from mailing surveys which may have been less appealing to younger Veterans than web-based or telephone surveys. Utilization of phone and mail contacts also missed homeless individuals.

Non-response bias also applied. Whether agreeing to participate in interviews or to complete a mail survey, those who responded were likely to be different from those who did not. It was hoped use of the Tailored Design Method (Dillman, 2000) would enhance the response rate and minimize the impact of response bias. However, it is important to acknowledge that 47% of individuals chose not to respond, and it was not feasible to compare respondents with non-respondents to examine the source of response bias.

Social desirability also may have affected findings. This may have been enhanced by the fact that the researcher introduced herself as a VA employee as well as a USF student. As a result, the participants may have felt less inclined to answer candidly knowing that the researcher was a VA employee. Although information was kept in strict confidence, participants may not have fully trusted my promise. Social desirability may also be reflected in how survey respondents rated their satisfaction with care. Many no-shows marked that they were satisfied with their appointment despite having apparently missed the appointment.

Because of the researcher's personal involvement with the nutrition department and clinical care of Veterans, at times it was difficult to clearly delineate the role between researcher and VA dietitian. Because of the researcher's knowledge of the VA system, there were times research subjects became patients. Such as one individual who had questions for his dietitian before his next follow-up. The researcher was able to put him in touch with his dietitian so that his questions could be answered in a timely manner. To enhance reflexivity, the researcher kept a brief journal of her thoughts and reactions to the interviews. This helped maintain objectivity and supported a process that encouraged participants to voice their opinions as freely as possible.

Chance

Because of the large number of outcome variables being examined, multiple comparisons in this study could have led to false positives. This is possible for variables that were significant, yet had smaller effect sizes ($<.2$), including previous nutrition appointment attendance, insurance status, how referred, reminder letter, cost, parking time, and preferred day of the week.

External Validity

This study has limited external validity due to the unique nature of the VA health care system in comparison to the general public. Improving the study design to include women, younger Veterans, and patients of major hospital centers as well as small community clinics would improve validity within the VA system.

Recommendations for Future Research

Future studies of nutrition attendance in the Veteran population are needed to confirm this study's results. Because were underrepresented in this study and are

entering the VA healthcare system at increasing rates, this study should be replicated to include these populations. In future research, women should be interviewed to identify any additional barriers to attendance or potential differences between male and female Veterans in reasons for missing appointments. With this input, the survey instrument should be revised and adapted to an internet survey. Shifting from mail to a web-based survey may be more appealing to younger Veterans.

Although social support was found to be significantly related to appointment attendance in this study, further investigation of this topic is needed due to the limited number of survey questions that were used to measure this construct. To expand on the analysis of the relationship of support and appointment attendance, the survey instrument should be revised to include several questions on this topic. Established instruments such as the The Social Support Appraisals Scale (SS-A) (Vaux, et al., 1986) and the Perceived Social Support-Friends/Family (PSS-Fr/Fa) (Procidano and Heller, 1983) provide depth and insight to further measurement of social support.

Implications

The relationship of social support and appointment attendance have several implications for primary care providers and registered dietitians. Because of the important role family members play in providing instrumental, informational, and emotional support, spouses and family members should be included in the nutrition counseling process starting at the initiation of the referral. Including spouses in the scheduling process could facilitate instrumental support in terms of transportation and appointment arrangements. Inviting and encouraging family members to attend

appointments and providing spouse/family specific education material would also promote further instrumental and informational support.

To enhance informational social support received from primary care providers, the nutrition department should provide training and information to VA physicians, encouraging them to focus on the importance of nutrition appointments when referring patients to the dietitian. The patient's social situation also should be considered when referring Veterans to nutrition programs. The referring provider should seek input from the patient as to their desired level of support, this information may help guide the patient towards individual appointments or group classes.

Study findings also have implications for the management of James A Haley nutrition counseling services. For instance, results suggest that attendance would improve if patients were allowed to select a time and date for the next appointment. Lack of input as to day and time of the appointment was consistently reported as a barrier to attendance by non-attender interview participants and reinforced with the bivariate analysis. In similar fashion, patient involvement in the referral process is likely to improve nutrition appointment attendance.

Study findings also suggest that income level is a potential barrier to attendance. As a result, referring providers should be sensitive to transportation and communication costs of attending appointments, and dietitians should be sensitive to income related restrictions on dietary choices when providing advice. Findings related to preferred appointment time do not necessitate creating weekend nutrition clinics. However, results indicate Veterans may be willing to attend Saturday nutrition appointments if they were

offered. Piloting a weekend nutrition clinic may provide further insight as to the utility of this intervention.

Currently, reminder calls are initiated through an automated system. However, the automated system calls only the primary phone number. Personalized reminder calls may be improved if both home and cellular numbers are called. Interview results also indicated that some Veterans received their reminder letter after the date of the appointment. Veterans also indicated that without their prior knowledge of the referral, appointment letters arrived automatically. Because of lack of input as to the appointment time, many individuals had to call in and reschedule their appointment.

Specific strategies for addressing these and other barriers to appointment keeping have been discussed in the literature. Rose and Chung (2003) suggest an open-book appointment method, modified wave method, and appointment reminder system. Double booking is another strategy. However, as noted by Izard (2005) and Sharp and Hamilton (2001), the potential for staff frustration and decreased patient satisfaction is great. In practice, the above interventions are not likely applicable within the VA. Strategies such as the open-book appointment method and modified wave method would likely be frustrating to staff and Veterans as respondents indicated that attendance problems occurred when various health care appointments ran too close together. As noted by Izard (2005), serving on a first come first served basis also creates long waits.

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APPENDICES

Appendix A, Historical Appointment Trends

Figure 2. Appointment trends for ambulatory care nutrition clinics FY2007

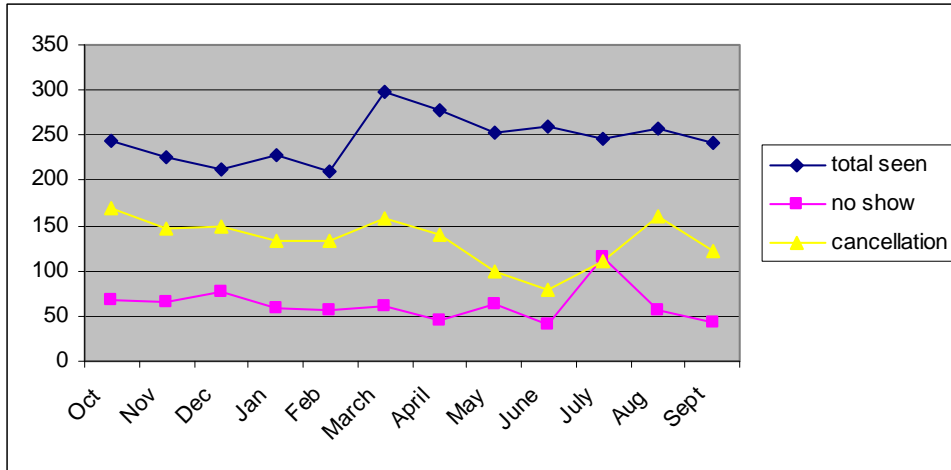
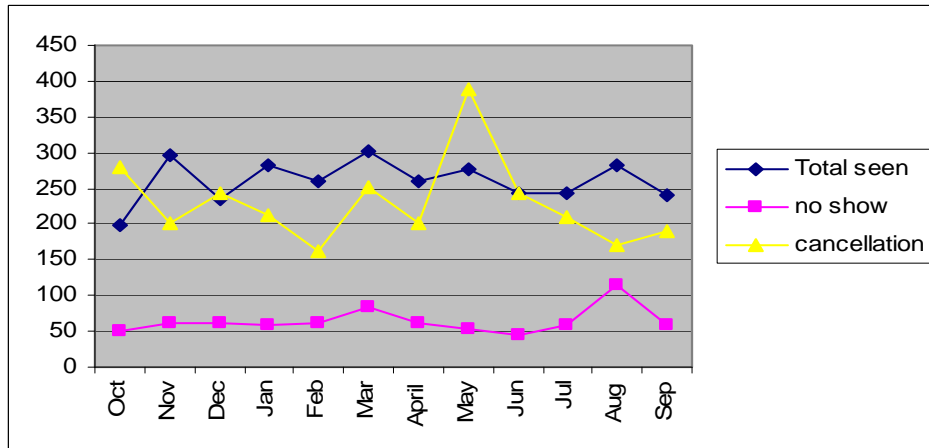


Figure 3. Appointment trends for ambulatory care nutrition clinics FY2006



Appendix B, Pre-letter (Phone Interview)



DEPARTMENT OF VETERANS AFFAIRS
James A. Haley Veterans' Hospital
13000 Bruce B. Downs Blvd
Tampa, FL 33612

In Reply Refer To: 673/120B

Date

Inside address (of recipient)

Dear

I am writing to ask for your help with an important research project being conducted by the James A. Haley Veterans Hospital. This study is part of an important effort to improve the nutrition services we offer Veterans. Results from study will help us understand what affects appointment attendance and will give us information that may be used to improve nutrition programs at the VA.

You have been selected because you were scheduled for a nutrition appointment in the last month and we would like to hear your feedback and opinions. To participate in the study we are asking you to take part in a telephone interview. We estimate it will take about 20 minutes to complete the interview.

This survey is voluntary and deciding not to participate will not affect your care in any way. However, you can help us very much by taking a few minutes to share your experiences and opinions about nutrition appointments at the VA. If for some reason you prefer not to be interviewed, please let us know by calling (813)972-2000 x6336 and leaving a message stating that your preference is not to participate. We will allow one week from the time this letter is sent. If we do not receive a message, we will attempt to call you for a telephone interview.

This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study. We don't know if you will get any benefits by taking part in this study. We will not pay you for the time you volunteer while being in this study.

Your answers are completely confidential. We will only publish a summary of what we have learned from everyone we interview. No individual Veteran's answers will be identified. When you return your completed questionnaire, your name will be deleted from the mailing list and never connected to your answers in any way.

Appendix B (Continued)

If you have any questions, concerns, or comments about this study, I would be happy to talk with you. Please call me at (813) 972-2000 x6336, or you can write to:

James A. Haley Veterans' Hospital

Claire Bell, 120B

13000 Bruce B. Downs Blvd

Tampa, FL 33612

Thank you very much for helping with this important study.

Sincerely,

Claire F. Bell

Appendix C, Telephone Recruitment and Interview Script

Introduction

Hello, may I please speak to [name]

If the person is at home:

Hello, I am Claire Bell from the Tampa VA calling about a research project I am conducting as a student at the University of South Florida.

(Skip to explanation.)

If the person is not at home and speaking to a family member?

Hello, I am Claire Bell from the Tampa VA calling about a research project I am conducting as a student at the University of South Florida.

When would be a good time to reach him?

Could I get a number where I could reach him?

If the person is not at home and an answering machine is reached:

Hello, I am Claire Bell from the Tampa VA calling about a research project I am conducting as a student at the University of South Florida. I would like to ask you a few questions regarding a recent nutrition appointment you were scheduled for. If you could please call me back, my number is 813-972-2000 x6336.

Explanation

You (or name of person) have been selected to participate in a very important project I am working on to learn more about opinions about nutrition appointments at the VA.

May I tell you a little more about this?

Appendix C (Continued)

If not, thank them and tell them that they can call you if they change their mind.

If yes, continue.

What I would like to do is interview you, and ask you a few questions about your experiences, thoughts, and opinions related to nutrition appointments at the VA.

Your personal information will be kept in strict confidence.

Participation is voluntary. Declining participation will not impact your care at the VA. If you decide to participate, I will need to get your verbal permission to interview you by phone. Also, with your permission I would like to record the call. If you prefer not to have the call recorded we do not have to. Do mind if I record?

I anticipate this interview should take about 20 minutes.

Just a few more things...

I would also like to let you know that this research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day.

There are no known additional risks to those who take part in this study. We don't know if you will get any benefits by taking part in this study. We will not pay you for the time you volunteer while being in this study.

Would you like to go ahead with the interview?

If not, thank them and give them a number to call if they change their mind.

(813)972-2000 x6336

If yes, continue.

Appendix C (Continued)

We want to find out more about what makes it easy and what makes it difficult to attend nutrition appointment. We are interested in your ideas to change or improve the VA nutrition programs, and plan to use what we learn from this research to improve nutrition programs at the VA.

Thinking about VA appointments in general

- What do you think makes it easy for a person to attend appointments?
- What do you think makes it hard for people to attend appointments?

Now, thinking more specifically about your recently scheduled nutrition appointment,

- Tell me about how the appointment was scheduled
(probing for patient requesting their own appointment versus provider recommending it)
- Did your provider discuss the reason for the appointment?
If so, what was the reason?

Did the provider encourage you to attend?
- How long did you wait to have your nutrition appointment?
- How did you feel about the length of time you had to wait? (probe if needed: Was this an appropriate amount of time to wait?)
- If no-show or cancellation: Can you describe what you expected the nutrition appointment to be like?
- If they attended: How did your experience compare with your expectations?
- Please tell me about your reasons for coming to (or missing) the nutrition appointment? Probes:
What other reasons?

What else?

Appendix C (Continued)

If attended: What could have prevented you from attending?

If missed: What could have made it easier to attend?

- How did you feel about having to see the dietitian? Can you tell me a little more about why you felt that way?
- Who influenced your decision to attend? What did they do that affected whether or not you went?
- How did your spouse/partner/family affect your decision to attend the appointment?
- How did your health care team (doctor, nurse, pharmacist, physician assistant) influence your decision?
- Did you have to make special travel arrangements to come to the appointment?
- What would make it more appealing to learn about nutrition?
- In an ideal situation, what can be changed to make it easier for people to attend nutrition appointments?
 - Do you have a time of day that you prefer for appointments?
 - What about weekends versus weekdays?

And just a few last questions to wrap up here....

Can you please tell me how many people are in your household?

What is your employment status?

How many years of education have you completed?

Do you have any other healthcare insurance besides the VA?

Do you attend non-VA nutrition appointments using other insurance?

Appendix D, Survey Variables

Demographic Variables

Age

Attendance History (in the past month, and ever)

BMI (height/weight)

Disability status (VA and Non-VA)

Employment status

Family size/number in household

Gender

Income

Insurance

Marital status

Years of Education Completed

Cognitive factors

Attitude towards appointment

How referred/scheduled (on patient's request or on the recommendation of the provider)

Memory (forgetting)

Outcome efficacy

Perceived health

Perceived importance of the appointment

Perceived trust of VA vs. civilian health care

Satisfaction with dietetic care

Understanding of the scheduling system

Appendix D, Survey Variables

Structural

Competing priorities

Traveling/out of town

Work

Family care

Cost

Feeling unwell

Parking: time, difficulty

Perceived difficulty attending scheduling because VA is too busy

Reminder letter

Reminder call

Scheduling: ability to request convenient time; use of scheduling system

Travel Time

Transportation difficulty

Wait time

Weather

Who referred (doctor, pharmacist, nurse, etc)

Way finding (difficulty finding location of appointment)

Social

Perceived encouragement from health care professional

Perceived encouragement from family and friends

Appendix E, Survey Cover Letter



DEPARTMENT OF VETERANS AFFAIRS
James A. Haley Veterans' Hospital
13000 Bruce B. Downs Blvd
Tampa, FL 33612

In Reply Refer To:
673/120B

Date

Inside address (of recipient)

Dear

I am writing to ask for your help with an important research project being conducted by the James A. Haley Veterans Hospital. This study is part of an important effort to improve the nutrition services we offer Veterans. Results from this survey will help us understand what affects appointment attendance and will give us information that may be used to improve nutrition programs at the VA.

You have been selected because you were scheduled for a nutrition appointment in the last month and we would like to hear your feedback and opinions. To participate in the study we are asking that you complete one mail survey and return it in the enclosed pre-paid envelope. We estimate it will take you about 20 minutes to fill out the survey.

This survey is voluntary and deciding not to participate will not affect your care in any way. However, you can help us very much by taking a few minutes to share your experiences and opinions about nutrition appointments at the VA. If for some reason you prefer not to respond, please let us know by returning the blank questionnaire in the enclosed pre-paid envelope.

This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study. We don't know if you will get any benefits by taking part in this study. We will not pay you for the time you volunteer while being in this study.

By completing this survey, and returning it, you are consenting to participate in the study. Your answers are completely confidential. We will only publish a summary of what we have learned from everyone we survey. No individual Veteran's answers will be identified. When you return your completed questionnaire, your name will be deleted

Appendix E (Continued)

from the mailing list and never connected to your answers in any way. If you have any questions or comments about this study, I would be happy to talk with you. Please call me at (813) 972-2000 x6336, or you can write to:

James A. Haley Veterans' Hospital
Claire Bell, 120B
13000 Bruce B. Downs Blvd
Tampa, FL 33612

Thank you very much for helping with this important study.

Sincerely,

Claire F. Bell

Appendix F, Survey Reminder Post Card

DEPARTMENT OF VETERANS AFFAIRS
James A. Haley Veterans' Hospital
13000 Bruce B. Downs Blvd
Claire F. Bell, N&FS, 120B
Tampa, FL 33612

Insert recipient address

Date

Last week a questionnaire seeking your opinion about nutrition appointments at the VA was mailed to you.

If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please do so today. We are especially grateful for your help because it is only by asking Veterans like you to share your experiences and opinions that we can understand why people attend nutrition appointments at what we can do to improve nutrition programs.

If you did not receive a questionnaire, or if it was misplaced, please call us at 813-972-2000 x6336 and we will get another one in the mail to you today.

Claire F. Bell
James A. Haley Veterans Hospital
13000 Bruce B. Downs Ave, 120B
Tampa, FL 33613

Appendix G, Third Mailing Cover Letter



DEPARTMENT OF VETERANS AFFAIRS
James A. Haley Veterans' Hospital
13000 Bruce B. Downs Blvd
Tampa, FL 33612

In Reply Refer To: 673/120B

Date

Inside address (of recipient)

Dear

A few weeks ago a questionnaire seeking your opinion about nutrition appointments at the James A. Haley hospital was mailed to you. This questionnaire is part of an important research study that is being done to improve the nutrition services we offer Veterans.

If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please do so today. A new copy of the questionnaire is enclosed for your convenience. We are especially grateful for help because it is only by asking people like you to share your experiences that we can understand your opinions about nutrition appointments.

You were selected because you were scheduled for a nutrition appointment in the last month and we would like to hear your feedback and opinions. To participate in the study we are asking that you complete one mail survey and return it in the enclosed pre-paid envelope. We estimate it will take you about 20 minutes to fill out the survey.

This survey is voluntary and deciding not to participate will not affect your care in any way. However, you can help us very much by taking a few minutes to share your experiences and opinions about nutrition appointments at the VA. If for some reason you prefer not to respond, please let us know by returning the blank questionnaire in the enclosed pre-paid envelope.

This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study. We don't know if you will get any benefits by taking part in this study. We will not pay you for the time you volunteer while being in this study.

Appendix G (Continued)

Your answers are completely confidential. We will only publish a summary of what we have learned from everyone we survey. No individual Veteran's answers will be identified. When you return your completed questionnaire, your name will be deleted from the mailing list and never connected to your answers in any way.

If you have any questions or comments about this study, I would be happy to talk with you. Please call me at (813) 972-2000 x6336, or you can write to:

James A. Haley Veterans' Hospital

Claire Bell, 120B

13000 Bruce B. Downs Blvd

Tampa, FL 33612

Thank you very much for helping with this important study,

Sincerely,

Claire F. Bell

Appendix H, Survey

Start here

The following questions ask about a nutrition appointment you were scheduled for in the past month. Think back to the date of your most recently scheduled appointment and answer the following questions. (Please circle your answer.)

	Yes ▼	No ▼	Don't Know ▼
1. Have you attended a nutrition appointment in the past month?	1	2	3
2. Did you receive a reminder phone call for a nutrition appointment in the past month?	1	2	3
3. Did you receive a reminder letter/postcard for a nutrition appointment in the past month?	1	2	3
4. Were you able to request an appointment time that was convenient to you?	1	2	3
5. At the time of the appointment, were you employed full time?	1	2	3
6. At the time of the appointment, were you traveling or on vacation?	1	2	3
7. At the time of the appointment, did bad weather interfere with keeping the appointment?	1	2	3
8. At the time of your appointment, did you have transportation difficulty?	1	2	3
9. At the time of your appointment, were you attending to family needs (such as caring for a loved one or attending a funeral)?	1	2	3
10. At the time of your appointment, did you feel well enough to attend?	1	2	3
11. At the time of the appointments, did the cost of the appointment keep you from attending (for example the cost of gas, or co-pays)?	1	2	3
12. Did you forget to attend your last nutrition appointment?	1	2	3

Appendix H (Continued)

13. From the time it was scheduled, how many days did you have to wait for your appointment? In other words, how many days lapsed between the day you scheduled it and the day you had your appointment?)

- 0 days
- 1-14 days
- 15-30 days
- 31-45 days
- More than 45
- I have never attended a nutrition appointment
- Not sure/does not apply

14. At the time of your last scheduled nutrition appointment, how long did it take you to travel from where you live to the James A. Haley VA?

- 0-30 minutes
- 31-60 minutes
- 61-90 minutes
- 91-120 minutes (1 ½-2 hours)
- More than 2 hours

15. At the time of your last scheduled nutrition appointment, how long did it take you to park?

- 0-30 minutes
- 31-60 minutes
- more than 60 minutes
- Does not apply

16. Besides the past month, have you ever attended a nutrition appointment?

- Yes
- No
- Not sure

17. Besides the VA, do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?

- Yes
- No
- Don't know / Not sure

18. How satisfied were you with the care you received at the last nutrition appointment you had at the VA?

- Completely satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Completely dissatisfied
- Does not apply, you did not attend

19. Compared to what you expected the appointment to be like, would you say the nutrition appointment:

- Greatly exceeded your expectations
- Somewhat exceeded your expectations
- Met your expectations
- Fell somewhat below your expectations
- Fell a great deal below your expectations
- Does not apply, you did not attend

Appendix H (Continued)

20. Who referred you to the nutrition appointment?

- My doctor/primary care provider
- Nurse
- Pharmacist
- Psychologist/Mental Health Professional
- I requested the appointment myself
- None of the above

21. Which of the following best describes how you were referred to the nutrition appointment?

- I requested the appointment on my own
- My doctor told me to go
- My doctor recommended I go
- My doctor and I decided together
- I was automatically scheduled for the appointment
- Other

The following questions ask about a nutrition appointment you were scheduled for in the past month. Think back to your most recently scheduled nutrition appointment as you answer the following questions. (Please circle your answer.)

Strongly Agree ▼	Some what agree ▼	Neither agree nor disagree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	Don't know ▼
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22. My family and friends encouraged me to attend the last nutrition appointment I was scheduled for at the VA.

1 2 3 4 5 6

23. A health professional encouraged me to attend the last nutrition appointment I was scheduled for at the VA.

1 2 3 4 5 6

24. I looked forward to attending the nutrition appointment.

1 2 3 4 5 6

25. Attending the nutrition appointment was important to my health.

1 2 3 4 5 6

Appendix H (Continued)

The following questions address your general opinion about nutrition appointments. To what extent do you agree or disagree with the following statements? (Please circle your answer.)

	Strongly Agree ▼	Somewhat agree ▼	Neither agree nor disagree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	Not Sure ▼
26. When someone misses a nutrition appointment, there are fewer appointment openings for other Veterans.	1	2	3	4	5	6
27. When someone misses a nutrition appointment, the dietitian has free time.	1	2	3	4	5	6
28. I believe a dietitian is a knowledgeable source of health information.	1	2	3	4	5	6

Appendix H (Continued)

The following questions address your general opinion about the James A. Haley VA. To what extent do you agree or disagree with the following statements? (Please circle your answer.)

	Strongly Agree ▼	Somewh at agree ▼	Neither agree nor disagree ▼	Somewhat Disagree ▼	Strongly Disagree ▼	Not sure ▼
29. I trust James A. Haley more than civilian healthcare.	1	2	3	4	5	6
30. James A. Haley better understands my healthcare needs than civilian healthcare.	1	2	3	4	5	6
31. I have had difficulty attending an appointment because of trouble with parking.	1	2	3	4	5	6
32. I have had difficulty attending an appointment because the VA is too busy.	1	2	3	4	5	6
33. The scheduling system is easy to use.	1	2	3	4	5	6
34. I have had difficulty attending an appointment because I could not find the location of the appointment.	1	2	3	4	5	6

Appendix H (Continued)

35. Which of the following best describes your current employment status? Check all that apply.

- Employed for wages full time
- Employed for wages part time
- Self-employed
- Out of work, more than 1 year
- Out of work, less than 1 year
- A homemaker
- A student
- Retired
- Unable to work

36. How would you describe your health at the time of your last nutrition appointment?

- Excellent
- Very good
- Good
- Fair
- Poor

37. Are you currently receiving service connected disability? (VA disability)

- Yes
- No

38. Are you currently receiving non-VA disability?

- Yes
- No

39. What is your marital status?

- Married
- Divorced
- Widowed
- Separated
- Single
- Unmarried, living together

40. Including yourself, how many people live in the same house with you?

- 1 (you only)
- 2
- 3
- 4 or more

41. How old are you?

____ Years

42. What is your gender?

- Male
- Female

Please write in your height and weight.

43. Height: ____ feet ____ inches

44. Weight: _____ pounds

45. What day of the week would you most prefer to have a nutrition appointment?

- Monday-Friday (weekdays)
- Saturday (weekend)
- No preference

46. What time of day would you most prefer to have a nutrition appointment?

- Morning
- Afternoon
- Evening

Appendix H (Continued)

47. What is the highest grade or year of school you have completed?
- Never attended school or only kindergarten
 - grades 1-8
 - grades 9-11
 - high school graduate or GED college 1-3 years (some college or technical school)
 - college 4 years or more (college graduate)
48. Which of the following categories best describes your yearly household income?
- \$9999 or less
 - \$10,000-14,999
 - \$15,000-19,999
 - \$20,000-24,999
 - \$25,000-34,999
 - \$35,000-49,999
 - \$50,000-74,999
 - \$75,000+
 - Prefer not to answer

Thank you for completing the survey. Please make additional comments on the back of this page.

Return the survey in the enclosed pre-paid/pre addressed return envelop.

Please note, in the mailed version, the survey was kept to 5 pages, questions 21 and 48 did not split onto separate pages. Some of the original formatting to the survey was lost to due compliance with thesis submission guidelines.

Appendix I, Summary of Missingness

variable	complete responses	missing responses	not sure/don't know/does not apply
Reported attendance	345	0	4
Reminder call	329	3	17
Reminder letter	330	3	16
Convenient time	329	2	18
Employment at time of Appointment	347	2	0
Travel	342	4	3
Weather	344	3	2
Transportation	347	1	1
Family care	345	1	3
Feeling well	334	4	11
Cost	343	2	4
Forget	341	3	5
Wait days	328	10	11
Travel time	336	13	0
Parking time	294	13	42
Previously attended nutrition Appointment	334	11	4

Insurance	335	9	5
Satisfaction	304	10	35
Expectations	304	10	35
Who referred	337	12	0
How referred	338	11	0
Family support	320	13	16
Provider support	330	13	6
Looked forward to			
appointment	330	13	6
Importance	333	11	5
Understanding of impact1	326	9	14
Understanding of impact2	277	9	63
RD knowledge	339	8	2
Trust	334	10	5
VA versus Civilian	332	11	6
Parking	334	13	2
VA too busy	331	11	7
Scheduling System	331	13	5

Appendix I (Continued)

Way finding	336	11	2
Employment	336	13	0
Perceived health	330	19	0
Disability	331	19	0
Non VA disability	325	24	0
Marital Status	332	16	0
Household size	332	17	0
Age	334	15	0
Gender	333	16	0
Height	328	21	0
Weight	327	22	0
Preferred Day	325	24	0
Preferred Time	325	23	0
Education	333	16	0
Income	269	24	55
BMI	324	25	0

Appendix J, Demographic Variables Descriptive Summary

Survey Respondent Demographic Characteristics

Variable	Attended		Did not attend		Total	
	Mean	Range	Mean	Range	Mean	Range
Age	59.97	26-79	58.6	30-76	59.7	26-79
BMI	30.8	14.6-55.5	28.95	17.6-51.7	30.4	14.6-55.5
Gender						
<i>Male</i>	253		76		329	
	n	%	n	%	n	%
<u>Household Size</u>						
1	55	21.8	17	22.4	72	22
2	119	47.2	30	39.5	149	45.4
3	38	15.1	17	22.4	55	16.8
>4	40	15.8	12	15.8	52	15.9
<u>Attendance History</u>						
Never attended	77	29.2	37	50	113	33.7
Previously attended	181	69.6	37	50	2198	65.1
<u>Insurance Status</u>						
Private insurance	141	53.8	28	37.3	169	50.1
VA only	117	44.7	45	60	162	48

VA Disability

Yes	131	52	34	45.3	165	50.5
No	121	48	41	54.7	162	49.5

Non VA Disability

Yes	53	21.5	17	21.3	70	20.3
No	194	78.5	57	77	251	72.8

Marital Status n(%)

Married	148	58.7	41	53.9	189	57.9
Divorced	41	16.3	19	25	60	18.3
Widowed	11	4.4	1	1.3	12	3.7
Separated	13	5.2	4	5.3	17	5.2
Single	33	12.7	9	10.5	40	12.2
Living together	8	2.8	3	3.9	10	3.0

Health Status

Excellent	9	3.5	4	5.5	13	4.0
Very Good	50	19.7	6	8.2	56	17.1
Good	109	42.9	25	32.9	133	40.7
Fair	63	24.8	28	38.4	91	27.6
Poor	23	9.1	11	15.1	34	10.4

Years of Education

grades 1-8	4	1.6	2	2.7	6	1.8
grades 9-11	9	3.5	5	6.8	14	4.3
high school/GED	75	29.4	23	31.1	98	29.8
college 1-3 years	109	42.7	34	45.9	143	43.5
college or more	58	21.9	10	13.5	68	20.7

Employment Status

Employed full time	42	16.5	9	11.4	51	15.4
Employed part time	11	4.3	2	3.8	13	3.9
Self-employed	20	7.8	2	2.5	22	6.6
Out of work, >1 yr	21	8.2	10	12.7	31	9.3
Out of work, < 1yr	19	7.5	3	3.8	22	6.6
Homemaker	1	4	0	0	1	.3
Student	2	.8	1	1.3	3	.9
Retired	92	36.1	25	31.3	117	35.2
Unable to work	47	18.4	25	31.3	72	21.7

Income

\$9999 or less	32	13.0	13	18.3	45	14.2
\$10,000-14,999	34	13.8	14	19.7	48	15.1
\$15,000-19,999	20	8.1	2	2.8	22	6.9
\$20,000-24,999	24	9.7	10	14.1	34	10.7
\$25,000-34,999	34	13.8	2	2.8	36	11.3
\$35,000-49,999	28	11.3	8	11.3	36	11.3
\$50,000-74,999	16	6.5	4	5.6	20	6.3
\$75,000+	20	8.1	3	4.2	23	7.2
Prefer not to answer	39	15.8	15	21.1	54	17.0
