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Health Promotion Profile of Beliefs, Attitudes and Activities of Tennessee Primary Care Physicians

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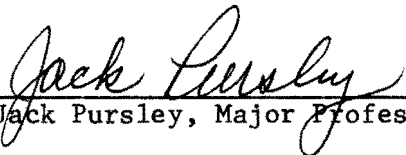
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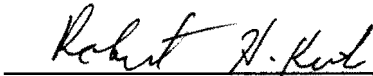
I am submitting herewith a dissertation written by Christine Assmann Collins entitled "Health Promotion Profile of Beliefs, Attitudes and Activities of Tennessee Primary Care Physicians, 1986." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Health Education.




Jack Pursley, Major Professor

We have read this dissertation
and recommend its acceptance:










Accepted for the Council:



Vice Provost
and Dean of The Graduate School

HEALTH PROMOTION PROFILE OF BELIEFS, ATTITUDES AND ACTIVITIES
OF TENNESSEE PRIMARY CARE PHYSICIANS,
1986

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Christine Assmann Collins

August 1986

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DEDICATION

This study is dedicated to my mother, Kay Assmann, and to my late father, Bernard Assmann. Both made the greatest contribution to my education by communicating their values of integrity, dignity, perseverance and love.

ACKNOWLEDGMENTS

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ABSTRACT

The primary purpose of this study was to develop a profile of selected health promotion beliefs, attitudes and activities of Tennessee primary care physicians. A secondary purpose was to identify physicians' perceived need for training and support activities in health promotion on selected lifestyle behaviors.

This study was undertaken using a mail survey of 628 randomly selected primary care physicians practicing medicine in Tennessee. The target population was stratified on the basis of the following subgroups: specialty, population size of county, and state grand division in which they practice. Four hundred sixty-one questionnaires were returned resulting in a 73.4% response rate.

Analysis of the cross classified data took place using logistic tests for multivariate discrete data. Analysis of the findings of this investigation led to the following conclusions:

1. Interspecialty differences exist among Tennessee primary care physicians with response to the frequency in which they gather information from their patients on smoking, alcohol, diet, and stress.
2. Significant interspecialty differences exist among Tennessee primary care physicians with response to their self-reported success in counseling patients on smoking and blood pressure.
3. Tennessee primary care physicians tend to agree that there is a need for information and training concerning health

promotion in smoking, alcohol, diet, exercise, stress, and blood pressure.

4. Tennessee primary care physicians report that support and assistance would be valuable in helping patients with health promotion.
5. There is some evidence of a relationship between Tennessee primary care physicians' self-reported health behavior and self-reported success in counseling patients on smoking, alcohol, diet, exercise, stress and blood pressure.

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CHAPTER I

INTRODUCTION

"The health of human beings is determined by their behavior, their food, and the nature of their environment . . ." (Knowles, 1984, p. 88). This statement is related to the concept that the individual must be responsible for his or her health and that the improvement of health is the result of personal behavior such as exercise, diet, coping with stress, as well as environmental conditions such as safe food and water supplies. According to the Surgeon General's Report on Health Promotion and Disease Prevention, most Americans could reduce their risk of disease and premature death by making certain lifestyle choices (DHEW, 1979, p. 10). It cited several behavioral risk factors that are associated with eight out of ten leading causes of death in the United States today. Cigarette smoking, obesity, sedentary lifestyle, lack of seat belt use and uncontrolled hypertension adversely influence an individual's health (DHEW, 1979, p. 10). Behavioral risk factors, primarily cigarette smoking and alcohol abuse, are responsible for more than 40% of hospital admissions (Mason, 1980, p. 147). According to the Centers for Disease Control, lifestyle, the set of habitual behaviors that are adopted by personal choice, may ultimately contribute to over half of the premature deaths in the United States (Centers for Disease Control, 1982, p. 141).

While the United States' health care delivery system has made great strides in the treatment of diseases and their symptoms, only until

recently has it begun to examine its role in the prevention of disease. An emerging consensus among scientists and the health community is that the nation's health strategy must be dramatically recast to emphasize the prevention of disease. We are now coming to realize that victory over today's major killers--heart disease, cancer, stroke, and others--must be achieved more by prevention than by cure (DHEW, 1979, p. 9).

At present, physicians influence much of the health care delivery system. They give it its tone, ethic, direction and priorities for programs and expenditures. In fact, it is the physician who determines about two thirds of the total health care dollars spent (Jonas, 1982, p. 201). Presently, the central focus of health care delivered by physicians is treatment oriented: making diagnoses, prescribing drugs from a restricted list, treating disease, and performing surgery (Jonas, 1982, p. 201). Thus, health care in the United States is generally oriented toward treatment of individuals subsequent to the onset of their symptoms and diseases (Weinberg, 1982, p. 20).

Treatment orientation has been very much a part of Western medicine. It is thought to be derived from the Greek god of cures, Aesculapius. Allopathic medicine, the discipline in which most American physicians practice, is the modern version of Aesculapian-Cartesian disease oriented thought (Jonas, 1981, p. 701). This approach was strengthened by important events in the 19th Century; the industrial revolution and the germ theory of disease which followed the work of Pasteur and Koch. Thus, our modern health care delivery system was led

into scientific and technical approaches to disease (Knowles, 1984, p. 88).

The results of the scientific technical approach are impressive when one examines current cure, treatment and rehabilitation efforts. Despite this, the medical care sector, with its sophisticated technology, may be able to offer gains of only 10% to 15% against disease. Yet lifestyle, the factor that affords us the greatest opportunity to reduce premature death and disability, is estimated to be responsible for as much as half of disease mortality (McGinnis, 1981, p. 17). Preventive, rather than curative, care can be advanced by positive personal preventive health attitudes and behaviors of medical professionals. Physicians play a role in the realization of efforts aimed at encouraging adoption of healthier personal habits (Fielding, 1978, p. 274).

Benefits of health promotion efforts by physicians have been documented. For example, there is a positive association between the physician's active teaching of breast self examination and patients' confidence in and regular practice of breast self examination (Weinberg, 1982, p. 22; Marin, 1984, p. 194). Others have reported that if doctors simply advise patients not to smoke, at least 5% will quit or reduce the amount they smoke (Russell, 1979, p. 232). A survey of persons who quit smoking revealed that the physician was the single, most important motivating factor in quitting smoking (Burtaine, 1982, p. 11). The health care consumer perceives the physician to be an important source of health information, and this perception is underestimated by the physician (Strull, 1984, p. 2990; Clearie, 1982, p. 503).

At the same time that the Surgeon General was proposing disease prevention and health promotion as a national health strategy, additional forces were beginning to affect the role of health education in medicine: changing methods of third party reimbursement from fee-for-service payments to prospective payments, growth of new systems of health care delivery (including HMO's), advances in health education research, increased competition among various health care professionals, and evolving expectations of health consumers (Bartlett, 1984, p. 103). In response to the above factors, the Tennessee Department of Health and Environment (TDHE) planned a health promotion strategy for the State of Tennessee. Its purpose was to attempt to reduce selected risk factors among Tennessee citizens. The strategy, called Healthy Tennesseans, was distributed to health professionals, educators and policy makers in government and voluntary agencies. The Healthy Tennesseans project targeted selected risk behaviors which were selected because the problem or disease:

- affected a large number of people.
- had relatively severe effects on health directly or indirectly by means of health behaviors, and
- could be primarily prevented.

(TDHE, 1983, p. 4).

The Healthy Tennesseans project has cited physicians as an important resource for health promotion activities. Activities proposed included active provision of preventive information, becoming involved in school and community health education programs and serving as role models by engaging in healthy lifestyles (TDHE, 1983, p. 75).

A. NEED FOR THE STUDY

Health practices are known to affect physical health status, morbidity and mortality (Belloc et al., 1973, p. 409). In the United States our health care delivery system is dominated by a medical profession oriented toward disease treatment and cure rather than toward prevention (Jonas, 1981, p. 700). Physicians are being encouraged to take a more active role in disease prevention and health promotion (DHEW, 1979, p. 143; Wells et al., 1984, p. 240; Dismuke, 1983, p. 3182). Little is known, however, about the extent to which they attempt to promote the health of their patients, their perceived success in health promotion activities, and their perceived barriers toward health promotion (Weschler, 1983, p. 97). Since the physician is often viewed by the health consumer as a role model for healthful behavior, it is of benefit to determine the extent to which physicians themselves engage in healthful lifestyles.

While such information has been collected in some communities and in, a few instances, other states (Fuenning, 1979, p. 363; Weschler et al., 1983, p. 97; Barron, 1985), there has apparently been no attempt to investigate the health promotion attitudes and activities of Tennessee primary care physicians. A study of a representative sample of primary care physicians should serve to reveal what what broad categories of physicians are incorporating health promotion in their medical practices, the types of health promotion activities undertaken and the extent to which the physician perceives success with patients. Analysis of data collected from such a sample should serve as a baseline in

measuring the attainment of a selected number of state health objectives. These objectives have been outlined by the Tennessee Department of Health and Environment in response to the Healthy Tennesseans project (Dewey et al., 1984, pp. 13-16 and 25-28).

Because of the treatment/cure orientation of medical education, many physicians are ineffective or reluctant to engage in health promotion activities with patients (Dismuke, 1983, p. 3182). Findings from a study of primary care physicians' health promotion beliefs, attitudes and activities would also be useful in assisting in the development and implementation of health promotion/disease prevention curricula in medical schools and in continuing education courses for physicians and other health professionals.

B. PURPOSE OF THE STUDY

The primary purpose of this study was to develop a profile of selected health promotion beliefs, attitudes and activities of Tennessee primary care physicians (TPCP's). A secondary purpose was to identify perceived selected health promotion training and support needs of TPCP's.

C. STATEMENT OF THE PROBLEM

The basic problem of the study was to survey a random sample of Tennessee primary care physicians (TPCP's) in order to address the following specific research questions:

1. Is there any significant interspecialty difference among TPCP'S and the extent to which they gather patient information concerning the following health behaviors: smoking, alcohol, diet, stress, blood pressure control?

2. Is there any significant interspecialty difference among TPCP's and their self-reported success in helping patients achieve change in lifestyle choices such as smoking, alcohol, diet, stress, blood pressure control?

3. Is there any significant interspecialty difference among TPCP's in their perceived need for training or information on health promotion in smoking, alcohol, diet, exercise, stress, and blood pressure?

4. What do TPCP's believe to be the value of selected health promotion support activities?

5. Is there any significant difference among TPCP's reported health behavior and their self-reported success in helping patients achieve change in lifestyle choices in smoking, alcohol, diet, stress, blood pressure control?

D. ASSUMPTIONS

The basic assumption made regarding this study was that physicians responded truthfully and to the best of their ability.

E. DELIMITATIONS OF THE STUDY

For purposes of this study the following delimitations were made:

1. Only physicians whose reported area of speciality is general practice, family practice, internal medicine, or obstetrics and gynecology were included.

2. Other than controlling for population size of county, state grand division and type of speciality, a random sample was selected.

F. LIMITATIONS OF THE STUDY

The phenomenon not controlled for was that it was not possible to determine the extent to which the current focus on health promotion in the media may have affected the results of this study.

G. DEFINITIONS

Health Activities. Engaging in specific deeds, actions or behaviors to ward off threats to good health.

Health attitudes. Collections of beliefs in which there is an evaluative component such as a good or bad dimension (Kirscht, 1974, p. 129).

Health beliefs. One's perception of the efficacy of actions to ward off threats to good health (Kirscht, 1974, p. 129).

Health education. Any combination of learning experiences designed to facilitate voluntary adaptations of behaviors conducive to health (Green et al., 1980, p. 7).

Health habits. All positive and negative behaviors performed by a person that could be changed and relate to future morbidity or premature mortality (Stewart et al., 1980, p. 2).

Health promotion. Application of methods to augment physical and emotional well-being, increase longevity, and enhance the quality of life (Wydner, 1981, p. 258).

Lifestyle. The set of habitual behaviors adopted by personal choice (Lambert et al., 1981, p. 1048).

Profile. A description of TPCP's regarding selected beliefs, attitudes and activities toward smoking, alcohol, diet, exercise, stress, blood pressure.

Prevention. Primary--Thwarting disease before it occurs. Secondary--Finding inapparent disease and treating it early. Tertiary--Effectively treating apparent disease to prevent later, serious complications (Jonas, 1982, p. 199).

Preventive medicine. Application of the biomedical, behavioral, and epidemiologic sciences to the promotion of health and the elimination or early detection of disease in populations and individual persons (Jonas, 1982, p. 199).

Primary care physician. A liscensed M.D. who is engaged in general or family practice or in internal medicine or in obstetrics and gynecology (TDHE, 1983, p. 116).

Risk factor. The environmental and behavioral influences capable of provoking ill health with or without previous predisposition (DHEW, 1979, p. 13).

H. ORGANIZATION OF THE STUDY

This study was organized as follows:

Chapter I contains the introduction which describes the purpose of the study, research questions, delimitations of the study, limitations of the study, assumptions made about the study, definition of terms, and organization of the study.

Chapter II includes a discussion of investigations that relate to the area of inquiry. It will begin with an introduction and follow with a review of the literature related to content. It will then review literature related to methodology, and finally literature related to both content and methodology.

Chapter III describes the methodology and procedure of the study and includes an introduction, selection of the sample, selection and development of the instrument, data collection procedures, and methods of data analysis.

Chapter IV sets forth the analysis of the data.

Chapter V presents the summary, findings, conclusions and recommendations related to this study.

Chapter VI includes concluding comments by the investigator concerning this study.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter reviews the literature related to this study, including the writing of significant people in the field of health promotion. While some of these contributions are not documented by research, they do offer an interesting perspective to this study. Part A is a review of the literature related to lifestyle choices that affect health. Part B is a review of the literature related to physicians and health promotion including the following: health beliefs of physicians, personal health behaviors of physicians, physicians' perceived role in promoting healthful behaviors, barriers to the physician's role in health promotion, physicians' health promotion activities, types of assistance physicians report as valuable in increasing their success in health promotion activities in their medical practices, physicians' perceived success in promoting behavior change. Part C offers a review of the literature related to self-report mail questionnaire methodology used in the study. Part D is a summary of the literature review.

A. LIFESTYLE CHOICES THAT AFFECT HEALTH

The relationship of lifestyle choices such as not smoking, engaging in physical activity, maintaining weight, and coping with stress has been well documented by the Surgeon General of the United States (DHEW, 1979). Smoking is considered to be the chief cause of preventable death in the United States today (DHEW, 1979, p. 9). Sherin (1982, p. 99)

reported that smoking is related to 356,000 annual deaths due to cardiovascular events, 20,000 annual deaths due to chronic obstructive pulmonary disease and 85% of the annual deaths from lung cancer. The American Cancer Society (ACS) estimated that in 1984 there were 130,000 new cases and deaths due to lung cancer (ACS, 1984, p. 7).

The 1980s are witness to an epidemic of alcohol dependencies occurring in the United States (DHEW, 1979, p. 125). In his report, the Surgeon General estimated the number of alcoholics in the U.S. to be about ten million. Cirrhosis of the liver is one of the top leading causes of death in the U.S. and is associated with alcohol in 95% of the cases (Skinner, 1981, p. 1141). One quarter to one third of automobile fatalities, 10% to 50% of hospitalizations, and two thirds of violent crime are related to alcoholism (Powers et al., 1984, p. 852).

Eating foods high in cholesterol has been found to raise blood cholesterol levels which, in turn, present a greater risk of cardiovascular disease. In January of 1984 (Harlan, 1985, p. 2088) the National Heart, Lung, and Blood Institute released the findings of a ten-year study of the incidence of heart disease among 3,806 middle-aged American men, all of whom had elevated cholesterol levels. Two intervention trials have found significant reduction in coronary heart disease mortality and morbidity following a reduction of plasma cholesterol levels by diet and drugs.

Colon-Rectum cancer is the second most common type of cancer leading to the death of 59,000 victims in 1984 (ACS, 1984, p. 7). Risk factors associated with colon and rectum cancer are personal or family

history of this disease, ulcerative colitis and environmental factors such as dietary patterns. Thus, a diet that is low in fiber content is reported to be a risk factor (ACS, 1984, p. 17).

Kaplan (1984, p. 759) reported obesity to be a serious risk factor for several diseases including heart disease. Hubert and co-workers (1983, p. 986) found in a follow-up study of the participants in the Framingham heart study that evidence suggests that the chances of heart disease increase with degree of obesity. Stewart and Brook (1983, .171) reported that, based on cross sectional data from a general population of 5,817 people aged 14 to 61, being overweight was associated with poorer functional status, more pain and worry, and restricted activity. Results also revealed that only 7% of those who perceive they are overweight are under a doctor's care to lose weight.

Houston (1985, p. 243) examined dietary sodium as a cause for hypertension, and after reviewing related research, concluded that higher sodium intake induces hypertension within a susceptible minority of persons. These people are genetically salt sensitive and will probably not develop hypertension if they limit their daily intake to not more than 60 to 70 mEq. His review also led him to conclude that severe sodium restriction (< 20 mEq/d) normalizes blood pressure in 30% to 50% of those with essential hypertension and that the amount of improvement is related to the amount of restriction in salt sensitive patients.

Physical inactivity has been related to the occurrence of chronic disease including coronary heart disease, hypertension, diabetes mellitus and osteoporosis. Major clinical epidemiologic studies that

support this relationship with heart disease include Paffenbarger's prospective study of San Francisco longshoremen (1975, p. 545), where deaths from coronary heart disease were higher in workers with lower levels of work activity. Coronary disease was examined in a large cohort of Harvard College alumni and, again, lower levels of physical activity were associated with a higher incidence of coronary disease and mortality (Paffenbarger et al., 1978, p. 161). Leisure physical activity was also studied by Morris (1980, p. 1207), who found that individuals who reported that they did not engage in vigorous physical activity had a higher risk of clinical coronary heart disease. Several other studies suggest that lower physical activity may be related to hypertension, diabetes mellitus and osteoporosis; however Siscovick and co-workers (1985, p.180) suggest that further research is needed to determine specific risks and benefits.

Kaplan (1984, p. 756) stated that stress is an important risk factor for disease and premature mortality. Stress has been related to cardiovascular disease and deaths, gastrointestinal disorders, and other diseases and physical health problems as well as mental illness (DHEW< 1979, 135). Since some stress is normal and inevitable, the development of skills to learn to cope with stress has been reported as necessary for health promotion.

Davis and co-workers (1984, p. 10) reported that each year motor vehicle fatalities account for about half of all unintentional injury deaths. The trend of an estimated 51,500 deaths in 1981 to 46,300 in 1983 represents a 10% reduction. Davis attributed this to many

variables, but cited health promotion efforts designed to increase restraint use as an important factor. Seat belt usage rates of 19% nationally reflect the U.S. population's lack of compliance (Fielding, 1978, p. 280); however, Robertson (1975, p. 173) reported that those who do wear their seat belts routinely reduce their chance of serious injury or death by 35% to 50%.

Hypertension is a risk factor for cardiovascular disease (Houston, 1985, p. 235), and this condition can be ascribed to approximately 25% to 30% of adults in the United States. The incidence of end-organ damage and its complications are related to the proportional increase in blood pressure at every level. In the National Health Examination Survey, 40% of those with hypertension did not know they had the condition, and of those who did know, 70% were not under proper control (Ward, 1978, p. 32).

In his document, Healthy People (DHEW, 1979, p. 13), the Surgeon General stated that most serious illnesses are related to several factors. Studies reporting findings that support this statement were undertaken in the 1970s. Findings from the Alameda County Study (Belloc and Breslow, 1972, p. 409) allowed researchers to conclude that the relationship between personal health practices and health consequences is significant. A telephone survey of the residents of Alameda County, California generated data that associated positive health status with (a) sleeping seven to eight hours a night, (b) eating breakfast almost every day, (c) eating snacks seldom, if ever, (d) weighing within 20% of

ideal body weight, (e) exercising regularly, (f) moderate alcohol consumption, and (g) not smoking.

Two community projects that were designed to attack multiple cardiac risk factors simultaneously are the North Karelia Project and the Stanford Heart Disease Prevention Program (Fielding, 1978, p. 294). These community programs focused on community support, education, and in the Stanford study, on one-to-one counseling. The incidence rate of stroke and myocardial infarction mortality dropped in the 1972 to 1975 period in North Karelia and in northern California communities, leading to a difference in total cardiovascular risk of 23% and 28% between control and treatment communities (Fielding, 1978, p. 294).

More recently the National Heart, Lung, and Blood Institute has spent 115 million dollars on the Multiple Risk Factor Intervention Trial (MRFIT) which compared risk factors among a group that was given health promotion counseling and one that was not. Heart disease death rates were not significantly different after a long term follow up (MRFIT Research Group, 1982, p. 1465).

This review of the literature related to risk factors and health leads one to conclude that there are lifestyle choices that affect disease and premature death. Further, when one engages in healthful lifestyle choices one can reduce their risk.

B. PHYSICIANS AND HEALTH PROMOTION

Physicians' Health Beliefs

Weschler and co-workers (1983, p. 97) asked Massachusetts primary care physicians how important specific health related behaviors were in

promoting the health of the average person. More than half responded that eliminating cigarette smoking, avoiding excess calories and using seat belts were very important. Less than half believed that moderation or eliminating alcohol use, decreasing salt consumption, avoiding foods high in cholesterol, and engaging in aerobic exercise were very important. In a similar study of Maryland primary care physicians, Sobal and colleagues reported an average of a 7% higher range in physicians' responses to behaviors being "very important." They reported the only notable exceptions as vitamin use, annual exercise tests and complete abstention from alcohol (Sobal et al., 1985, p. 1427).

Physicians have demonstrated to a small degree that they value the importance of regular blood pressure checks. In its 1977 report, the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure recommended that all health care providers measure patients' blood pressure, regardless of the reason for the visit (DHEW, 1977, p. 12). Cypress (1979, pp. 19 and 24) reported a retrospective study of 6,500 U.S. physicians where patient records were examined to determine the extent to which blood pressures were measured and recorded. Those patients having hypertension were measured 79% of the time while those with no history were measured only 30% of the time.

Physicians' Personal Health Promoting Behaviors

"All things being equal, patient acceptance of physician recommended lifestyle changes is less likely when the patient perceives that the physician is not engaging in healthy lifestyles." This quote by

Shangold (1979, p. 668) suggests that there might be a relationship between physicians health habits and those of patients. A few studies have been undertaken to explore this area. In questioning a sample of California physicians, Wells and his co-workers (1984, p.2848) found a significant correlation between those respondents with better personal health habits and the extent to which they counsel a broader range of patients. Significant correlations were also found with personal health habits and aggressiveness in counseling. The four health habits included in the Wells study were smoking, alcohol, weight and exercise. Physicians with poor habits in more than one area were found to be especially unlikely to counsel.

In 1981, 1163 medical students were surveyed regarding their perception of the doctor's role in smoking education (Elkind, 1983, p. 41). This was compared with number of years of medical training and with their own smoking behavior. The researchers concluded that, although medical education had a significant impact on the thinking of all students, it remained true that smoking students were least likely to view their role as being to discourage clinically healthy patients from smoking.

Greenberg (1981, p. 1172), in a one year study of pediatricians personal behaviors and counseling practices, found a strong correlation between physicians' personal behavior regarding seat belt usage and the frequency of counseling their patients about car restraints. Wyshak (1980, p. 104-107), Glanz and co-workers (1982, p. 637) and Wells et al. (1984, p. 2847) have reported studies examining the extent to which

physicians engage in healthy habits. In comparing health habits of physicians and lawyers, Wyshak found that only 47% of the physicians reported engaging in an aerobic activity. Glanz reported 38% and Wells reported 73% of the physicians in their study as engaging in strenuous exercise one hour or less a week. One fifth of the U.S. population engages in aerobic activity two to three times a week (Stephens, 1985, p. 147).

Regarding seat belts, physicians reported using them more frequently than lawyers. Persons under 40 in both groups reported using them more than the older respondents. Fourteen percent of physicians reported that they currently smoke daily with the fewest percentage of smokers being in the less than 40 age group. A Rhode Island study of physicians' smoking habits reported a cigarette smoking rate of 8.3% in 1983 (Buechner et al., 1986, p. 285). This is less than studies on physicians smoking by Wells (15%), Garfinkel (16.7%), Glanz (18.7%) and by Dismuke (21%) (1983, p. 3181). The national average for smoking in 1984 was 33% of the adult population (ACS, 1984, p. 14).

Regarding alcohol, Wyshak found that 90% of physician respondents drink to some degree. While the amount of alcohol consumed was not reported in this study, Wyshak did note that 3% of the respondents (physicians) reported problems with drinking. Wells reported that 24% of his respondents drink alcohol every day compared to 13% in Glanz' study. Self-reported weight cannot be compared among these studies; however, Wells reported that 54% of his respondents stated that they were overweight. Glanz compared his respondents self-reported behaviors

with those of the general population using the Alameda County data (Belloc et al., 1972, p. 409) and found no marked difference between physicians and the general population. This research suggests that physicians compare equally with their patients regarding preventive activities, however, as a profession, they do not provide good role models (Glanz et al., 1982, 638).

Physicians' Perceived Role in Promoting Healthful Behaviors

The physician's role in health promotion has been studied extensively. In their study of promotion of exercise in medical settings as well as other settings, Iverson and co-workers (1985, p. 213) reported that the patient-physician encounter is an opportunity to promote exercise. They reported that the 1982 National Access Survey revealed that 90% of the respondents had a usual source of health care. Further, 54% of physician visits are with primary care physicians. Of those primary care physician respondents, only 10% reported that they had prescribed diet or exercise to their patients. This trend was confirmed by respondents in the National Health Interview Survey (U.S. Dept. HHS, 1985, p. 5). Provisional data suggest that eating proper foods is rarely or never discussed when visiting the physician.

Physicians in the Florida Panhandle area reported that teaching is an integral component of the office visit. The average percentage of time spent instructing patients on the nature and extent of their disease was 36%; the average percentage of time discussing general health behaviors such as dietary changes and need for exercise was 24%.

Analysis of data from this study suggest that those physicians who ranked high in involvement with health promotion activities also regard the MD as the health professional most suited to assume primary responsibility for health education. General practitioners and family practice physicians were more likely to endorse health promotion activities if they allowed for one-to-one physician-patient interaction (Ford and Ford, 1983, p. 1505).

Wells and co-workers have done much research on the physician's perceived role in counseling patients on smoking, alcohol, weight control and exercise (Wells et al., 1984, p. 241). In their 1978 study of California physicians, they tested a model that was developed to examine two dimensions of counseling. The first dimension was "indications for routine counseling", and this was divided into three categories: physicians who counsel all or most patients with poor habits (primary prevention), those who counsel patients who have a disease that is affected by the habit (tertiary prevention), or those who do not counsel or do so minimally. The second dimension examined was "aggressiveness in counseling," and was categorized as follows: initiating counseling, frequency of counseling, and duration of counseling. The model was tested with a sample of physicians in a county in California using a mail questionnaire. Results support the model as a valid and reliable indicator of the "indications" and "aggressiveness" dimensions of physicians' counseling behaviors.

In another paper (1984, p. 360), Wells and co-workers reported that results of a study of California physicians suggested that counseling

about health habits is seen as a function of the physician's motivation to counsel, perceived risk disease, perceived costs and benefits of counseling and perceived skills in counseling.

Battista and co-workers interviewed a stratified random sample of 430 general practitioners in Quebec in order to determine predictors of cancer detection. They found the principal determinants for detection of lung cancer to be mode of reimbursement, continuing education, and physician belief. If the respondent scored low on continuing education, the likelihood of counseling against smoking was low. If the score on continuing education was high, however, salaried physicians and physicians who scored high on the belief scale were most likely to counsel against smoking (Battista et al., 1986, p. 221).

Some studies have shown that there is a gap between physician's and their patients' perceptions of the practitioner's role in health promotion. Researchers at Johns Hopkins University compared physicians with their patients regarding disclosure of information and involvement in making decisions concerning therapy. Patients tended to prefer more extensive disclosures than physicians felt were necessary, and patients tended to believe more than physicians that the patient should make the final decision regarding therapy (Faden et al., 1981, p. 718). A similar study in San Francisco (Strull et al., 1984, p. 2990) revealed similar findings on the patient's desire for more information than the physician believes is needed. The physician respondents in San Francisco, however, overestimated the patients' desire to make decisions.

Wallace and Haines (1984, p. 534) reported results of a study comparing physicians' and patients' perceptions of health counseling. Despite statements by all five general practitioners that they had regularly given advice on weight, smoking, alcohol and fitness; between 31% and 57% of their patients reported that their physicians were not interested or were unsure of physician interest. David and co-workers (1980, p. 80) and Hyatt (1980, p. 295) also found that patients expect physicians to ask about their health habits and to counsel them on lifestyle changes. Hyatt (1980, p.297) found that 90% of the patients and physicians agreed that the physician should encourage a patient to take steps to preserve his or own health.

Physicians and patients do agree that the physician is the best source of information. A community survey of 2230 Houston, Texas residents on sources of health information revealed that the physician is perceived as being the source of the most accurate health information. Those patients who were considered well informed stated that while the physician is a reliable source, their major source of information was magazines (Gombeski et al., 1981, p. 202).

Barriers to the Physician's Role in Health Promotion

The way medical care is delivered in the United States, plus certain economic realities, create a context that makes the preventive role of the physician more difficult and problematic. Relman (1982, 219) suggests that we must consider the culture in which we live and examine those aspects of our society that do not promote health.

Examples are poor housing, malnutrition, unsafe automobiles, use of tobacco, alcohol, and junk food.

Another barrier to health promotion is the concept of "sick role," as defined by Parsons in 1951 who describes the patient as being exempted from responsibility for his/her own state of health. The doctor's role is to define illness, confer the sick status on the patient, and to control the problem (Broady, 1980, p. 718). Taylor (1982, p. 16) proposed that, in traditional medicine, the illness problem is the patient's ticket into the health care system. As Fielding (1978, p. 276) states, this traditional, diagnostic and therapeutic approach makes the preventive role of the physician more difficult. Mawardi (1979, p. 1483) surveyed physicians about the source of greatest professional satisfaction and found them to be accurate diagnosis and successful therapy of medical problems. Finally, Relman (1982, 219) states that lack of reimbursement is another barrier to health promotion. Physicians in practice tend to concentrate on procedures that are reimbursed.

Studies on health promotion activities or strategies utilized by physicians can be divided into two general areas: first, those having to do with gathering information on patients' health behaviors and specific risks of disease and second, those types of assistance that physicians perceive they need in encouraging patients toward good health habits.

Gathering Information on Patients'
Health Behaviors

The role of the annual physical examination has been reexamined (Breslow, 1977, p 601 and Frame, 1979, p. 57) and reported as an ineffective means of changing the outcome of many diseases. Selective screening has been proposed as an alternative that is more cost effective (Breslow et al., 1977, p. 601). Recommended screening protocol suggested by Frame includes the gathering of information via patient histories and appropriate laboratory tests. Health behaviors suitable for such screening include patient histories on the use of cigarettes and alcohol and measuring weight, blood pressure and serum cholesterol (Frame, 1979, p. 58).

The Medical Practice Committee of the American College of Physicians (1981, p. 729) has developed a preventive health protocol for asymptomatic patients. The plan includes patient histories and screening procedures that are individualized according to age and sex. This committee proposes that this approach is more effective in providing a data base for ongoing medical care and developing a continuing relationship between physician and patient. Development of the plan was based on recommendations, research, and expert opinions from four major studies: Frame and Carlson (1975), Breslow and Somers (1977), the Canadian Task Force on Periodic Health Examinations (1979), and the American Cancer Society, 1980).

Retrospective examination of patient records is one way of examining the extent to which physicians gather information. Fleming and Lawrence (1981, p. 617) examined 2000 records of middle-aged patients and

found that smoking histories were taken on only 25% of them. In a similar study reported in 1981 (Chu, p. 659), charts were examined to determine the extent to which physicians note smoking habits of patients. Results revealed that physicians fail to recognize smoking in large numbers of their patients. Smoking status was not documented on 31% of the charts. After a modest educational program on the need to recognize smoking patients, the lack of documentation was reduced to 21%.

Moore and Malitz (1986, p. 46) studied residents in an ambulatory care setting and found underdiagnosis of alcoholism. The residents' primary diagnostic tool was looking for signs of physical damage of dependence. This method diagnosed 55% of those patients who had previously been diagnosed as alcoholics with the use of an alcoholism questionnaire.

Iverson et al. (1985, p. 214) stated that existing evidence suggests that physicians believe physical activity is important but do not regularly question or counsel their patients regarding exercise.

Physicians' Perceived Need for Assistance and Support for Health Promotion

When physicians were questioned about types of assistance that would be valuable in assisting their patients in engaging in healthful lifestyle choices, the most frequent responses were time and reimbursement (Ford et al., 1983, p. 1510; Morgan, 1980, p. 625; Wells, 1984, p. 2847). Weschler (1983, p. 99) reported that his survey indicated that information on where to send patients was the most valuable, and that financial reimbursement was listed as second.

Wells et al., found that 65% of their physician respondents perceive counseling as difficult and time consuming and only 37% think they are paid enough for their counseling efforts (Wells et al., 1984, p. 2847). Weschler (1983, p. 99) found that only 23% of his respondents believed that additional physician training in smoking cessation, nutrition, alcohol abuse, and other health behaviors would be very valuable.

One approach to behavior change is the use of behavioral techniques, sometimes referred to as behavior therapy or behavior modification. Less than one fifth of Weschler's respondents (1983, p. 100) believed that additional training in behavior modification techniques would be very valuable. Yet, Weinberg and co-workers (1982, p. 23) believe them to be important in modifying health behavior. Ferguson, (1982, p. 141) stated that side effects of behavior modification are few, but cites specific interventions that have reported adverse consequences. For example, when progressive relaxation techniques were used on severely depressed patients, they became more depressed.

The use of validated instruments such as health risk appraisals and tests such as the Michigan Alcoholism Screen Test (MAST) are reported by some as being helpful tools for screening and motivating patients toward behavior change. Powers and Spickard (1984, p. 852) reported that the use of MAST was effective in uncovering unsuspected alcohol dependence. A health history combined with MAST was given to new patients in an internal medicine faculty/resident outpatient practice. Four percent of the patients were found to have positive scores, thus directing therapeutic efforts. These findings are consistent with those of

Leckman et al. (1984, p. 867) who reported that the use of MAST in a university family practice setting detected patients with high scores at a greater rate than did the use of an overall clinical impression.

The health risk appraisal is a tool that describes an individual's probability of becoming ill or dying. The widespread availability of computer programs and health risk appraisal questionnaires allow this tool to be used in many health promotion settings, including the physicians' offices. In 1984, a ten minute assessment of patient lifestyles was obtained with the use of a microcomputer in a randomized trial (Skinner, 1985, p. 216). The results compared favorably with physicians' diagnoses except with patients who tended to be young, well educated, employed in professional positions or were on their first visit to the physician. This finding suggests that doctors tend to stereotype patients, and this hinders detection of unhealthy lifestyle choices. Wagner and co-workers (1982, p. 347) suggest, however, that the efficacy of using health risk appraisals for motivating behavioral change cannot be substantiated from evidence they gathered.

Physicians' Perceived Success in Counseling for Behavior Change

Evaluating the success of physician counseling creates problems. According to Calnan (1981, p. 2), differences in sampling techniques, research design and the method in which the physician counsels make it difficult to generalize and to draw conclusions. Another variable that must be considered is the definition of health promotion activity--is it to affect change in knowledge, attitude or behavior? (Gatherer et al., 1979).

Physicians' perceived success varies among reported studies. For example, Ford and Ford (1983, p. 1510) reported that 75% of the respondents to a physician survey in Florida, feel that health education could be effective as a means of motivating people toward positive health behaviors. The Rand Study (Wells et al., 1984, p. 2847) reported that 85% of the physicians think that smoking is dangerous and that counseling is important, but only 21% feel that physicians know how to counsel well and only 12% think they are personally effective in counseling about smoking. Weschler and others found that only 10% of the physicians responding to their survey felt they were successful in helping patients change behaviors even though 42% rated their ability to counsel as good to excellent (1983, p. 309).

Assisting patients change behavior has been reported at different levels of success; Calnan (1982, p. 42) reports that no known study with negative outcomes involved individual counseling between physician and patient. Two studies that report minimal success due to counseling are the Stanford Disease Prevention Program and the Multiple Risk Factor Intervention Program. Farquhar and co-workers reported that The Stanford Disease Prevention Program led to reduction in the prevalence of two risk factors for cardiovascular disease--smoking and high cholesterol levels. Individual counseling was found to be effective after one year of exposure; however, a treatment group that was exposed to sustained mass media health education experienced a reduction of risks equal to the face-to-face group after two years of exposure (Farquhar et al., 1977, p. 1192). The Multiple Risk Factor Intervention

Trial (MRFIT) which compared risk factors in a group that was given health promotion counseling and one that was not, found that heart disease death rates were not significantly different after long term follow up (MRFIT Research Group, 1982, p. 1465).

Those studies reporting success include the Russell study in England where he and co-workers collected data on smoking cessation utilizing a randomized controlled trial with more than 2000 subjects who were general practice patients. Results revealed that the combination of advice from the physician and use of a follow-up booklet had a significant effect on smoking cessation (Russell, et al, 1979, p. 231). In a similar study reported in 1984, 6052 patients were allocated to one of four study groups--a control, a group that received advice and written antismoking advice from the physician, a group that received advice and an exhaled carbon monoxide demonstration, and a group that received physician advice plus follow up from a health visitor. Results indicated that giving advice does have an effect on patients' cessation of smoking (Jamrozik, 1984, p. 1499).

Rose and Hamilton reported on their randomized controlled study of 1445 male smokers as to the effect of physicians' advice to stop smoking. They reported that patients who received counseling specific to smoking cessation and follow-up had a greater than two-fold chance of maintaining smoking cessation behavior over a three year period than did a group with no intervention (Rose et al., 1978, p. 280).

With this review of literature related to physicians and health promotion, one can conclude that physicians perceive their preventive

role differently and their success in health promotion to different degrees. Their personal health behaviors and health promotion activities with their patients also vary. Barriers to health promotion include cultural and economic factors, some of which are beyond the physician's control.

C. QUESTIONNAIRE SURVEY RESEARCH

This section reviews the literature related to the methodology used in this study. Compared to other research techniques, surveys are the best means available for describing characteristics of large populations (Backstrom et al., 1981, p. 5). Dillman (1978, p. 39) contrasted the benefits of using face-to-face, telephone, and mail survey techniques. The attributes of all survey methods were considered in terms of the study topic, the population to be surveyed, and the precise objectives of the survey.

According to Backstrom and Cesar (1981, p. 23), the mail questionnaire is an excellent tool to reach interest-group members that have a high degree of concern on the same types of issues. While the mail questionnaire is not as versatile as the other techniques, it is the best means of collecting extensive information that is complicated.

One of the difficulties of survey research concerns sampling representative members of the population. The researcher must be concerned that those not selected for the sample do not differ significantly from those selected. Face-to-face interviews have a distinct advantage unless the researcher has available a complete enumeration of the total population (Dillman, 1978, p. 44).

Complete lists are available for special interest groups such as physicians and other professional groups. This does not address the concern of many survey researchers of response selectivity causing the data to be biased. Recipients have an opportunity to read the questionnaire before deciding to respond. Stinchcombe and co-workers listed two causes of respondent selectivity--availability and disposition (1981, p. 374). They suggest that more resources should go into converting refusals than into finding difficult-to-reach respondents. Those who refuse to respond are apparently socially distinct from those who do respond. Further, every survey should also be reported with the number of nonrespondents who refused and the number who were never reached. In order to estimate the nonresponse bias accurately, it is essential to be able to distinguish nonresponse due to refusal and nonresponse due to inaccessibility.

The mail questionnaire has a high probability of reaching the respondent when other methods fail. In one study (Dillman, 1978, p. 47), 20% of respondents who could not be contacted for a telephone interview returned a mail version of the interview schedule without any follow-up efforts. Dillman does warn, however, that the mail questionnaire might not reach respondents due to "gatekeepers" such as receptionists or secretaries.

Dillman (1978, p. 53) acknowledges that time, money and available manpower are considerations for determining the type of survey technique. Shosteck and Fairweather (1979, p. 209) examined time and cost issues when implementing a physician survey on antibiotic prescription

practices. The groups were divided into personal interview and mail questionnaire groups; survey outcomes were compared. Results led them to conclude that mail surveys take less time to implement (9 weeks versus 15 weeks). Regarding cost--when administration and overhead were included--the mail survey was more advantageous. The approximate field cost associated with mail contacts averaged twenty four dollars per initial respondent versus sixty three dollars per personal interview respondent.

Quality of data has been reported as a major weakness in using mail questionnaires. Surveys of physicians have historically yielded low response rates. One study of physicians described in the literature reported results with an 18% response rate (Fuenning et al., 1979, p. 363); and another one reported a 25% response rate (Modrow et al., 1980, p. 686). Other physician mail survey studies have published results with response rates from 45% (Ford et al., 1978, p. 1505) to 76% (Weschler et al., 1983, p. 97). Shosteck and Fairweather (1981, p. 209), in their comparison of previous research on response rates, stated that it is feasible to achieve a gross response rate of 75% with physicians. Gough and Hall (1977, p. 778) reported an 80% physician response rate, which is considered very high for any population.

Shosteck and Fairweather (1979, p. 208) determined in their comparison of survey methods that the key influence on response rate is not the survey method as much as the research sponsor, extent of follow-up, questionnaire length, and relevance of the topic.

Jones (1979, p. 110) reported that sponsorship did affect the response rate in a state wide study. He reported that a university sponsoring a mail survey affected the rate according to geographic region due to regional loyalties. A study of physicians' attitudes toward health promotion was sponsored by a university and it received a 70% response rate (Barron, 1985). The cover letter included with the questionnaire was signed by a physician, and the researchers believed that this was important to the achievement of the response rate. Another state wide study of physicians' attitudes and activities toward health promotion had a 76% response rate using the state medical society as the sponsoring agency (Weschler et al., 1983, p. 97).

Dillman's discussion of implementing mail surveys (1978, p. 166) confirms Shosteck and Fairweather's comments (1979, p. 208) on the relevance of the study being important to response rate. Dillman warns, however, not to build an appeal for relevance around an issue that is rejected by some of those to be surveyed. This could result in respondent selectivity. Dillman suggests that appeal to the respondent should utilize a social utility issue that the researcher assumes would benefit the respondent. The main objective is to convince the respondent that the study is useful.

Follow-up activities are an important part of survey implementation. Heberlein and co-workers (1981, p. 102) reported that adding a questionnaire in a second mailing has little influence on the overall response; others have found that replacement questionnaires in follow-up mailings will increase the response rate significantly. Vogel and

co-workers (1983, p. 905) reported a response rate of 40% with an initial mailing of a questionnaire to 1,603 physicians. Fourteen days later, 137 nonrespondents were sent a replacement questionnaire and 137 were sent only a reminder letter. They found that the inclusion of the replacement questionnaire significantly increased the response rate. Reminder phone calls were used in two physician studies reporting high response rates (Barron, 1985 and Wells, 1984, 2846).

Length of the mail questionnaire was reported as not having an effect on response rate in two surveys reported by Dillman (1978, p. 54); Marin and Howe (1984, p. 193), however, found length to be a factor when surveying physicians. They reported a 78% response rate to one page as compared to 57% to an eight page mail survey.

Other factors reported to affect response rate are monetary incentives and assurance of anonymity. Gunn and co-workers (1981, p. 109) studied the effects of monetary incentives to response rates to a telephone survey. They reported that this incentive increased the rate of response. Further, the response rate increased proportionately with the amount the the monetary incentive. The rate with no incentive was 58%; with \$25, 68%; and with \$50, 77%.

Jones (1979, p.104) found that assurance of anonymity appeared to have a more positive effect on response rates with populations who were highly educated. Bradburn and co-workers (1964, p. 57) also examined this issue and found that assuring respondents of absolute confidentiality has a small but consistent effect on willingness to respond--especially with threatening questions.

This section of the review of the literature addressed the major issues of survey research that were important for the implementation of this study. Advantages and disadvantages were addressed along with variables that affect the quality of the data generated from this type of research.

D. SUMMARY

This review of the literature outlined research and the writings of significant people in the field of health promotion. Part A reviewed the literature related to lifestyle choices and their relationship to health. Specific lifestyle choices were selected. Part B examined the literature on physicians and health promotion. Part C addressed research and writing related to the methodology used in this study--specifically, mail questionnaire survey methodology.

CHAPTER III

METHODOLOGY AND PROCEDURES

A. INTRODUCTION

The primary purpose of this study was to develop a profile of selected health promotion beliefs, attitudes and activities of Tennessee primary care physicians (TPCP's). A secondary purpose was to identify perceived needs of TPCP's for health promotion training and support. The methodology and procedures used in the study are described in the following sections in this chapter: Selection of the Sample, Selection of the Instrument, Data Collection, Data Description, Data Analysis.

B. SELECTION OF THE SAMPLE

The Tennessee Department of Health Statistics was selected as the source having the most current and accurate list of Tennessee physicians. The Department of Health Statistics provided a list of physicians by county and specialty including mailing and telephone information. Of the 11,147 physicians licensed in Tennessee, 7,558 were actively practicing medicine full or part time in August of 1985. A total of 2872 practicing physicians were listed as reporting areas of specialization that are defined as primary care.

Stratification of the Sample

The 2872 physicians were stratified into the following subgroups: specialty, population size of county in which they practice, and state grand division in which they practice.

Specialty. The Tennessee Directory of Doctors of Medicine listed physicians by reported specialty. Thus, all 2872 physicians reported themselves as having one of the following specialities: general practice, family practice, internal medicine, Ob-Gyn.

Population Size of County. Physicians were further stratified by rural, intermediate or metropolitan counties. The Tennessee State Health Plan defines type of county by the following criteria: rural counties contain no city with a population of more than 10,000; intermediate counties contain cities with a population from 10,000 to 99,999; metropolitan counties contain a city with a population of 100,000 or more (Tennessee Statewide Health Coordinating Counsel, 1982, p. 21).

State Grand Division. Due to the diverse geographic, demographic and socioeconomic characteristics of a state that spans from part of the Mississippi Delta on the west to part of the greater Appalachian Region on the east it was also decided to stratify the sample according to counties in the west, middle, and east grand divisions. The Department of Health and Environment divides the 95 counties into six administrative regions. For the purposes of this study, Regions 1 and 2 were designated East Tennessee; Regions 3 and 4, Middle Tennessee, and Regions 5 and 6, West Tennessee (see Appendix A).

Each stratification contained the number of TPCP's as shown in Table 1.

TABLE 1

LISTED NUMBER AND SELECTED NUMBER OF TENNESSEE PRIMARY CARE
PHYSICIANS STRATIFIED BY SPECIALTY, COUNTY TYPE AND
STATE GRAND DIVISION

| | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total Number | Total Sample |
|-------------------|---------------------|--------------------|----------------------|----------|-----------------|-----------------|
| Rural E | 41 (7)* | 79 (12) | 22 (4) | 4 ** | 146 | |
| Rural M | 55 (9) | 111 (18) | 26 (4) | 7 ** | 179 | 438 |
| Rural W | 31 (5) | 45 (7) | 13 (2) | 4 ** | 93 | |
| Inter. E | 51 (8) | 111 (18) | 129 (20) | 55 (9) | 353 | |
| Inter. M | 54 (9) | 111 (18) | 91 (15) | 62 (10) | 318 | 802 |
| Inter. W | 16 (3) | 56 (9) | 38 (6) | 21 (3) | 131 | |
| Metro E | 25 (4) | 88 (14) | 71 (11) | 58 (9) | 242 | |
| Metro M | 55 (9) | 82 (13) | 468 (74) | 136 (22) | 741 | 1632 |
| Metro W | 68 (11) | 97 (16) | 342 (55) | 142 (23) | 649 | |
| Total | 396 (65) | 787 (125) | 1200 (191) | 489 (91) | 2872 | |
| TOTAL Sample size | | | | | | 472 |

* () = Sample size

** = Total population used.

Sample Size Determination

The sample size was determined so that intraspecialty estimates of the proportion of the population having a specified characteristic could be made with a statistical error of 10% or less at a 95% level of confidence. Given the above qualifications, the formula for the selection of the sample size may be written as:

$$n = \frac{(1.96)^2(P)(1-P)}{(0.10)^2}$$

where n = required sample size,

± 1.96 = standard deviation of 95% confidence level,

p = proportion in population having specified characteristic,

.10 = maximal error of estimate desired.

The conclusion that can be drawn is that since $p(1-p) \leq 1/4$, $n \leq 100$. With a sample size of 100, one can be 95% confident that the sample proportion will not differ from the true population on selected variables by more than 10%.

Using the above stated formula, the approximate sample size needed for each specialty was 100 with a total sample size of approximately 400. Assuming that a response rate of 75% would be achieved, it was decided to mail surveys to a total of 628 randomly selected physicians. The number of subjects selected from each stratum is presented in Table 2. Because of the small population of rural Ob-Gyn physicians, it was decided to mail surveys to the entire population of fifteen. The surveys mailed totaled 628.

A table of random numbers was generated from a table found in Gay (1981, p. 408). The physician listings in each stratum were numbered and a random selection process took place until 613 subjects were identified. The fifteen Ob-Gyn's in rural counties were added to complete the mailing list of 628 subjects.

TABLE 2
NUMBER OF SUBJECTS IN EACH STRATUM

| | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total |
|----------|---------------------|--------------------|----------------------|--------|-------|
| Rural E | 10 | 16 | 6 | 4** | 36 |
| Rural M | 12 | 23 | 5 | 7** | 47 |
| Rural W | 7 | 10 | 3 | 4** | 24 |
| Inter. E | 11 | 24 | 27 | 12 | 74 |
| Inter. M | 12 | 24 | 20 | 14 | 70 |
| Inter. W | 4 | 12 | 8 | 4 | 28 |
| Metro E | 6 | 19 | 15 | 12 | 52 |
| Metro M | 12 | 17 | 98 | 29 | 156 |
| Metro W | 15 | 21 | 74 | 31 | 141 |
| Total | 89 | 166 | 256 | 117 | 628 |

** = Total population in cell.

C. INSTRUMENTATION

The instrument selected for this study was one that was developed by Weschler, Levine, Idelson, Rohman and Taylor and utilized in a 1982 study of Massachusetts primary care physicians (Weschler et al., 1983, p. 97). (See Appendix B) Permission was granted by Weschler for use of the instrument in this study (Appendix C). Permission was also granted to change the instrument to to collect data for analysis of the following variables:

Dependent Variables. (1) Extent to which physicians gather information on smoking, alcohol, diet, exercise, stress, blood pressure; (2) Extent of perceived success in counseling on smoking, alcohol, weight,

stress, blood pressure; (3) Perceived need for information and training in health promotion on smoking, alcohol, diet, exercise, stress, blood pressure; (4) Assistance reported as valuable to a physician's health promotion efforts with patients.

Independent Variable. (1) Specialty of practice--general practice, family practice, internal medicine, obstetrics and gynecology and (2) Physicians' personal health behaviors.

Other Explanatory Variables. (1) Background variables including year of graduation, sex, race, location of practice, board certification, type of practice; (2) Patient distribution including percent male, female, prenatal, race, age group, non-English speaking, Medicaid.

The following adjustments were made before the questionnaire was pretested. An item about physicians' own health promoting behaviors was added. Background information on location of practice was changed to reflect location of Tennessee physicians. An identification number was placed on the first page of the survey. This was used to identify respondents so that follow-up efforts could be undertaken with all non-respondents. The format was changed from an eight page, eight and one half by eleven size, to a seven page, seven inch by four and one fourth size. A cover was designed according to specifications suggested by Dillman (1979, p. 151). (See Appendix D.)

It was necessary to do a pilot study with the questionnaire and cover letter for the following reasons: first, information regarding validity and reliability was not available; second, the instrument was altered; and third, Tennessee physicians were considered to be a different population than Massachusetts physicians.

Pilot Activities

The pilot activities were undertaken according to procedures proposed by Dillman (1979, p. 155). Every effort was made to produce the cover letter and survey as close to the final form as possible before pilot activities were undertaken. A jury comprising three types of groups was selected (see Appendix E). The first of the three groups were health education colleagues who examined the cover letter and instrument in terms of its usefulness in answering research questions. They were requested to evaluate the questionnaire in terms of whether it would accomplish the study's purpose. The second group consisted of persons who would be interested in using the results of this study for program development. They were asked to critique the questionnaire in terms of the utility of the data to be collected and analyzed. The third group from which pretest information was sought was Tennessee primary care physicians. They were asked to critique the cover letter and questionnaire in terms of understandability and convenience in responding to the items. They were also asked specific questions about the letterhead and the identification number on the survey.

Each juror was sent a letter requesting their assistance along with a copy of the proposed cover letter and survey instrument. The jurors returned the cover letter and survey along with their critical comments.

One month after the questionnaire was pretested, five physician jurors were asked to respond to items a second time. The purpose of this was to determine if the instrument elicited consistent responses. The correlation coefficient resulting from the test-retest study of the

five physicians was .943. The conclusion drawn was that there is a high likelihood the instrument is reliable.

The results of the pretest required that the following changes be made on the questionnaire: (1) To provide space for the respondents to make comments about the questions and responses; (2) To provide a statement of acknowledgement that the survey was adapted from one used by The Medical Foundation in Boston, Massachusetts; (3) The cover letter was reduced in length and a letterhead was designed. (See Appendix F.)

D. DATA COLLECTION

Data were collected with the use of the pretested instrument using an implementation process proposed by Dillman (1978, p. 180). The last page of the 628 questionnaires was coded with an identification number starting with number 110 and ending with 738. Using printed physician address labels provided by the Tennessee Department of Health Statistics, a card file was set up and identification numbers were assigned to each subject. The cover letter, questionnaire with the identification number matching that assigned to the physician, and a stamped return envelope were mailed to all subjects on September 25th, 1985. A record of all respondents was kept with the use of the identification number on all returned surveys. After an additional one month waiting period, a second letter, questionnaire and stamped return envelope were mailed to all nonrespondents. After a one month waiting period, a third follow-up mailing including a letter, questionnaire and return envelope were sent to all nonrespondents. This third mailing was sent by certified mail.

E. DESCRIPTION OF THE DATA

Upon receiving returned surveys, the researcher screened them for eligibility. Forms that were returned with any of the following properties were considered ineligible: (1) the respondent was retired or no longer in practice, (2) the questionnaire was returned without any responses, (3) the respondent did not do patient care, (4) the respondent was not a primary care physician, (5) the respondent was practicing medicine in a setting other than those specified in the questionnaire and, (6) the respondent was practicing medicine in a state other than Tennessee.

The researcher further screened the questionnaires for no responses and for multiple responses to single item. Those that had no response on some variables but responses on others were considered useable. Comments and extra written responses were not coded for data entry; the researcher did keep a record of all written responses.

Questionnaires were coded for identification numbers; respondents response to wave one, two or three; county type; name of county; and if respondent requested results of the study (see Appendix G). All surveys returned after March 1st, 1986, were not included in this study.

Statistical treatment of the data was designed to describe the sample and to make certain inferences about TPCP's regarding the research questions. Analysis was performed at The University of Tennessee Computing Center using Statistical Analysis Systems (SAS). Values were checked with the use of frequency tables and data check procedures in

order to assure that data were ready for analysis. Frequencies of responses were tabulated and cross tabulations were constructed.

Background data on each subject were collected. These variables included year of graduation from medical school, sex, race, practice setting, size of county, specialization, board certification, and type of patient population.

It was possible to measure the degree to which the nonrespondents differed from the respondents on the background variables of year of graduation from medical school, size of county, and specialty type. Information on these variables was made available from the Tennessee Department of Health Statistics. The formula used for this analysis is (Ferguson, 1981, p. 199):

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

when O = The observed value for each cell,

E = The expected value for each cell.

When chi square test was carried out, no significant differences were found between the nonrespondents and the respondents on the three background variables tested.

Data were collected on the following dependent variables--(1) frequency to which subjects collect information on their patients regarding smoking, alcohol, diet, exercise, stress, blood pressure control, (2) extent to which subjects perceive success in counseling patients on smoking, alcohol, diet, exercise, stress, blood pressure control, (3) perceived need for training or information on health promotion in

smoking, alcohol, diet, exercise, stress and blood pressure, (4) types of assistance reported as being valuable to physicians' health promotion activities with patients, (5) extent to which physicians engage in personal health behaviors.

The major independent variable was type of specialty; and additional data were collected on other variables as follows: (1) year of graduation from medical school, sex, race, setting, type of practice and, board certification, and (2) patient distribution according to sex pregnancy, race, age, non-English speaking, Medicaid.

Cross tabulations were constructed on the dependent, independent and other explanatory variables.

F. DATA ANALYSIS

Cross tabulation tables were developed and chi square tests were carried out. Further analysis of the cross classified data was carried out with the use of logistic tests for multivariate discrete data. This test was chosen because of its ability to identify interactions in the multidimensional contingency tables. It is more appropriate than classical multiple regression analysis because the data here are discrete or categorical. Thus, the relationship of the activity variable and the primary independent variable (specialty type) could be investigated after adjusting for possible effects of other background variables (year of graduation, sex, race, location of practice, type of practice).

For example, suppose one would be interested in comparing the probability (P_3) that a physician reports "somewhat unsuccessful" to the probability (P_4) of reporting "very unsuccessful" in diet counseling. For a family practice specialist who is male, the observed counts in a large contingency table yielded:

$$p_3/p_4 = .38/.13$$

An improved estimate of this ratio is obtained by using all of the data fitting a logistic model to the natural logarithm (\ln) of P_3/P_4 :

$$\ln p_3/p_4 = \text{constant} + (\text{effect due to specialty}) + (\text{effect due to sex})$$

The statistical analysis yields:

$$\ln p_3/p_4 = 1.28 + (-0.21) + (-0.11)$$

which can be rewritten:

$$p_3 = (3.6)(0.8)(0.9) p_4$$

showing that p_3 is about 3.6 times larger than p_4 , but their relationship is partially determined by specialty (value of effect = 0.8) and sex (value of the effect is 0.9).

More generally, one investigates the joint effects of several explanatory variables on a selected response variable by fitting the data to the equations such as:

$$\ln (p_{ijk}/p_{4jk}) = a + b_j + c_k$$

where

\ln denotes natural logarithm

p_{ijk} = probability that response variable has value i (e.g., for success in diet counseling, $i = 3$ denotes "somewhat unsuccessful")

p_{4jk} = probability that response variable has value 4 (e.g., for success in diet counseling, $i = 4$ denotes "very unsuccessful")

a = constant

b_j = primary explanatory variable (example: specialty type, $j = 1$ for GP)

c_k = effect of another explanatory variable (example: sex, $k = 1$ for males)

A likelihood ratio chi square with a significance probability of greater than .2 suggests that the model adequately fits the data. One can assess the relative merits of two models by comparing calculated chi square values.

G. SUMMARY

This study sought to develop a health promotion profile of Tennessee primary care physicians' health promotion beliefs and activities. An existing survey was chosen and after being adapted and pretested, it was mailed to a stratified sample of Tennessee primary care physicians. After data were collected, they were summarized and statistical analysis was carried out.

CHAPTER IV

ANALYSIS OF THE DATA

A. INTRODUCTION

This chapter contains an analysis of the data that were collected from a mail survey of 628 randomly selected Tennessee primary care physicians (TPCP's). The primary purpose of this study was to develop a profile of selected health promotion beliefs, attitudes and activities of TPCP's. A secondary purpose was to identify perceived selected health promotion training and support needs of TPCP's.

The data were collected, coded, and entered into the Vax computer of The University of Tennessee's Computer Center (UTCC), and analyzed using the Statistical Analysis System (SAS).

This chapter includes: (1) the introduction, (2) a description of the sample from which the profile was developed, (3) a presentation of the data from which a profile of TPCP's beliefs, attitudes and activities toward health promotion was developed, including a presentation of the effects of selected variables on TPCP's health promotion activities and perceived success, and (4) a summary of the data analysis.

B. SAMPLE DESCRIPTION

Response Rate

A total of 628 TPCP's were randomly selected from a universe of 2,872 licensed and registered TPCP's as of August, 1985. The subjects

were stratified according to specialty and county type as shown in Table 1, p. 39.

After three mailings, the survey instruments were returned by 461 respondents generating a response rate of 73.4%. Table 3 shows the response rate from each mailing.

TABLE 3
FREQUENCY AND PERCENT RESPONSE RATE OF MAILINGS
AS OF MARCH 1, 1986

| Date of Mailing | Number Mailed | Frequency of Response | Cumulative Percent Response |
|--------------------|---------------|-----------------------|-----------------------------|
| September 25, 1985 | 628 | 233 | 37.1 |
| October 25, 1985 | 395 | 123 | 56.6 |
| December 2, 1985 | 272 | 105 | 73.4 |
| Total | | 461 | 73.4 |

Of the 461 returned questionnaires, 413 were eligible for analysis (89.6%). Reasons for nonusability of returned questionnaires were physicians who were no longer practicing medicine, retired or deceased (nine persons or 1.9%), three who returned the questionnaires without any responses (.2%), three who did not engage in patient care (.2%), fourteen who reported that they were not engaged primary medical care (3.0%), eleven who practice in a setting other than those cited on the questionnaire (2.4%), and eight who practice medicine outside the state

of Tennessee (1.7%). Table 4 presents the distribution of the eligibility status of all returned questionnaires.

TABLE 4
FREQUENCY DISTRIBUTION OF USABLE AND NONUSABLE
RETURNED QUESTIONNAIRES

| Status | Frequency | Percent |
|----------------------------------|-----------|---------|
| Usable | 413 | 89.6 |
| Nonusable | | |
| No Longer in Practice | 9 | 1.9 |
| No Responses | 3 | .2 |
| Do Not Engage in Patient Care | 3 | .2 |
| Do Not Practice Patient Care | 14 | 3.0 |
| Wrong Setting | 11 | 2.4 |
| Practice Outside State | 8 | 1.7 |
| Total | 461 | 99.0* |

*Due to rounding error

Description of Respondents by Specialty

The distribution of TPCP's returned questionnaires according to specialty are presented in Table 5. There were 62 responses from TPCP's stating they were in general practice (15%), 106 from family physicians (25.7%), 160 responses from internists (38.4%) and 85 from

TABLE 5
 FREQUENCY AND PERCENT OF RESPONDENTS BY SPECIALTY

| | Total Subjects | Percent Total Subjects | Frequency of Usable Responses | Percent Respondents |
|----------------------|-------------------|------------------------------|----------------------------------|------------------------|
| General Practice | 89 | 14.2 | 62 | 15.0 |
| Family Practice | 166 | 26.4 | 106 | 25.7 |
| Internal Medicine | 256 | 40.8 | 160 | 38.0 |
| Ob-Gyn | 117 | 18.6 | 85 | 20.6 |
| Total | 628 | 100.0 | 413 | 99.3* |

*Error due to rounding.

Ob-Gyn (20.6%). When compared with the stratification of the original sample it can be seen that differences are not appreciable.

Description of Respondents by Time of
 Graduation from Medical School

Some differences were found among specialties when respondents reported the time of graduation from medical school. Over 70% of the general practice physicians graduated before 1966, while 67% of the internists graduated after 1966. Family practice physicians also tended to graduate after that time. Sixty-six percent of the Ob-Gyn's reported to have graduated after 1948 but before 1976. Table 6 presents the frequency distribution of respondents by specialty and time of graduation.

TABLE 6

CELL FREQUENCIES AND PERCENT FOR TIME OF GRADUATION BY SPECIALTY FOR RESPONDENTS IN THE TENNESSEE PHYSICIAN HEALTH PROMOTION PROJECT

| | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total |
|-----------------|------------------|-----------------|-------------------|--------|--------|
| 1947 or earlier | 22 | 7 | 11 | 16 | 50 |
| 1948-1966 | 21 | 38 | 41 | 30 | 130 |
| 1967-1975 | 9 | 19 | 41 | 25 | 94 |
| After 1975 | 9 | 42 | 67 | 18 | 136 |
| Total | 61 | 106 | 160 | 83 | 410 |
| Percent | 14.88 | 25.85 | 39.02 | 20.24 | 100.00 |

*Frequency missing = 3.

Description of Respondents by Sex, Race and Board Certification

The majority of respondents were males accounting for 95.1% of the respondents. Of the 35 female respondents, almost half (48.1%) were graduated from medical school since 1976.

Of the 23 black respondents, sixteen (69.6%) reported internal medicine as their specialty; 3 of the 16 were women. Tables 7 and 8 present the frequencies and percent of the respondents by sex and race.

More than half (53%) of the respondents were board certified in family practice, internal medicine or Ob-Gyn. An additional 25.9% stated that they were eligible for certification in these specialties. The specialty with the highest percent of respondents being board

TABLE 7

CELL FREQUENCIES AND PERCENT FOR SEX AND SPECIALTY FOR RESPONDENTS
IN THE TENNESSEE PHYSICIAN HEALTH PROMOTION PROJECT

| | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total | Percent |
|--------|---------------------|--------------------|----------------------|--------|-------|---------|
| Male | 58 | 98 | 146 | 73 | 375 | 91.46 |
| Female | 3 | 8 | 14 | 10 | 35 | 8.54 |
| Total | 61 | 116 | 160 | 83 | 410 | 100.00 |

*Frequency missing = 3.

TABLE 8

CELL FREQUENCIES AND PERCENT FOR RACE AND SPECIALTY FOR RESPONDENTS
IN THE TENNESSEE PHYSICIAN HEALTH PROMOTION PROJECT

| | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total | Percent |
|----------|---------------------|--------------------|----------------------|--------|-------|---------|
| White | 58 | 105 | 131 | 71 | 365 | 89.0 |
| Black | 1 | 1 | 16 | 5 | 23 | 5.6 |
| Hispanic | 1 | 0 | 2 | | 3 | 0.7 |
| Other | 1 | 0 | 11 | 7 | 19 | 4.6 |
| Total | 61 | 106 | 160 | 83 | 410 | 99.9* |

*Error due to rounding.

**Frequency missing = 3.

certified was family practice (18.5% of the total sample); second, Ob-Gyn with 13.7% and third was internal medicine with 50% of this specialty being certified (19.5% of the respondents). Table 9 shows frequencies of board certification.

TABLE 9
PERCENT DISTRIBUTION FOR BOARD CERTIFICATION AND
SPECIALTY FOR RESPONDENTS IN THE TENNESSEE
PHYSICIAN HEALTH PROMOTION PROJECT

| | Family Practice | Internal Medicine | Ob-Gyn |
|--|--------------------|----------------------|--------|
| Percent Certified | 71.2 | 50.0 | 67.1 |
| Percent Eligible | 15.4 | 41.6 | 26.8 |
| Percent Not Certified or Not Eligible | 13.5 | 7.1 | 6.1 |
| Eligible Other | | .7 | |
| Total | 100.1 | 99.4 | 100.0 |

*Error due to rounding.

Frequency Distribution of Respondents by Setting

Table 10 shows the types of settings in which the respondents practice medicine. Of the total, 253 or 61.6% reported being self-employed, fee-for-service physicians. An additional 63, or 15.3% reported being fee-for-service physicians in a group practice. Eight reported being in a prepaid practice (2%) with the remaining 87 (21.2%) practicing medicine in a university or hospital setting. One fifth

TABLE 10
 FREQUENCY AND PERCENT DISTRIBUTION OF RESPONDENTS
 BY SPECIALTY AND TYPE OF PRACTICE

| | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total |
|------------------------|---------------------|--------------------|----------------------|---------------|----------------|
| Self- Employed | 50 (82.0) | 73 (68.9) | 79 (49.4) | 51 (60.7) | 253 (61.6) |
| Group | 3 (4.9) | 17 (16.0) | 24 (15.0) | 19 (22.6) | 63 (15.3) |
| University | 0 (1.6) | 1 (2.8) | 5 (17.5) | 2 (8.3) | 8 (9.5) |
| Medical Training | 0 (0.0) | 6 (5.7) | 19 (11.9) | 4 (4.8) | 29 (7.1) |
| Private Hospital | 1 (3.3) | 3 (3.8) | 28 (3.1) | 7 (1.2) | 39 (2.9) |
| Prepaid | 0 (0.0) | 1 (.9) | 3 (3.1) | 4 (2.4) | 8 (1.9) |
| Government Hospital | 5 (8.2) | 2 (1.9) | 0 (0.0) | 0 (0.0) | 7 (1.7) |
| Total Percent | 61 (100.0) | 106 (100.0) | 160 (100.0) | 84 (100.0) | 411 (100.0) |

*Frequency missing = 2.

(22.6%) of the Ob-Gyn's reported being part of a group and almost one-third of the internists reported that their practice was in a medical training or university setting.

Greater than 80% of all respondents reported that they engage in patient care more than 75% of the time. Internists reported spending less than 75% of their time doing direct patient care more than any other specialty. Further, 17.2% of the internists reported the

university as their primary setting and, of these 27 respondents, 17 spend less than half their time doing direct patient care. Table 11 describes time spent giving direct patient care by specialty.

TABLE 11

CELL FREQUENCIES AND PERCENT FOR AMOUNT OF TIME SPENT
DOING DIRECT PATIENT CARE BY SPECIALTY FOR THE
TENNESSEE PHYSICIAN HEALTH PROMOTION PROJECT

| | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total Frequency |
|-------------------------|---------------------|--------------------|----------------------|--------------|--------------------|
| Less than 50 percent | 2 (3.4) | 3 (2.9) | 18 (11.4) | 4 (4.9) | 27 (6.7) |
| 50-75 percent | 5 (8.5) | 4 (3.8) | 21 (13.4) | 10 (12.2) | 40 (10.0) |
| More than 75 percent | 52 (88.1) | 97 (93.3) | 118 (75.2) | 68 (82.9) | 335 (83.3) |
| Total | 59 | 104 | 157 | 82 | 402 |
| Percent | (100.0) | (100.0) | (100.0) | (100.0) | (100.0) |

*Frequency missing = 11.

Frequency Distribution of Respondents
by Geographic Area and County Size

When responses were stratified by type of county in which respondents practice, the metropolitan counties from the grand division of Middle Tennessee represented the largest frequency of responses with 23.2%, with the next largest being West-metropolitan (21.8%). More than half of the respondents reported practicing in metropolitan

counties (219 or 53%). Intermediate counties were represented by 114 or 27.6% of the observations and the remaining 80 (19.4%) were from the less populated rural counties. Table 12 presents the geographic distribution of the respondents with that of the sample.

TABLE 12

FREQUENCY AND PERCENT OF RESPONSES BY TYPE OF COUNTY AND GEOGRAPHIC DISTRIBUTION COMPARED WITH GEOGRAPHIC DISTRIBUTION OF THE SAMPLE

| | Total Subjects | Percent Total Subjects | Frequency of Respondents | Percent of Respondents |
|----------|-------------------|------------------------------|-----------------------------|---------------------------|
| Rural E | 36 | 5.7 | 28 | 6.8 |
| Rural M | 47 | 7.5 | 33 | 8.0 |
| Rural W | 24 | 3.8 | 19 | 4.6 |
| Inter. E | 74 | 11.8 | 50 | 12.1 |
| Inter. M | 70 | 11.1 | 42 | 10.2 |
| Inter. W | 28 | 4.5 | 22 | 5.3 |
| Metro E | 52 | 8.3 | 33 | 8.0 |
| Metro M | 156 | 24.8 | 96 | 23.2 |
| Metro W | 141 | 22.5 | 90 | 21.8 |
| Total | 628 | 100.0 | 413 | 100.0 |

C. PROFILE OF HEALTH PROMOTION BELIEFS, ATTITUDES AND ACTIVITIES OF TENNESSEE PRIMARY CARE PHYSICIANS

After frequency of response was calculated, respondents were categorized into specialty type--general practice, family practice, internal medicine and Ob-Gyn. Additionally, other variables were included in the analysis including, type of county, year of graduation,

amount of time doing patient care, board certification, race, and sex. A logistic model was selected that would estimate the effects of specialty and other intervening variables, with self-reported health promotion attitudes, beliefs and activities of the respondents.

Frequency of Gathering Information
on Lifestyle Habits of Patients

Table 13 shows the percent frequency with which the respondents gather information on their patients' lifestyle habits. The most frequently marked response was blood pressure with 262 or 66.2% of respondents noting that they check blood pressure every visit. Gathering information about smoking was the next most frequently noted with 119, or 30% of the respondents inquiring about this habit almost every visit. Information on all other lifestyle behaviors was reported as being gathered "every few visits."

TABLE 13
PERCENT RESPONSE ON GATHERING INFORMATION ON
SELECTED LIFESTYLE BEHAVIORS

| | Never | First Visit | Every Few Visits | Almost Every Visit | Every Visit |
|-------------------|-------|----------------|------------------------|--------------------------|----------------|
| Blood Pressure | .5 | 2.8 | 9.1 | 21.4 | 66.2 |
| Smoking | .3 | 17.6 | 41.1 | 30.0 | 11.1 |
| Diet | 3.0 | 16.2 | 56.6 | 20.2 | 4.0 |
| Stress | 5.4 | 18.3 | 57.1 | 16.5 | 2.8 |
| Exercise | 5.4 | 21.4 | 57.7 | 12.8 | 2.8 |
| Alcohol | 2.0 | 35.2 | 49.1 | 10.6 | 3.0 |

Tables of frequency of gathering information by specialty on each behavior may be found in Appendix H. Regarding smoking, 82.1% of the respondents reported inquiring about smoking at least "every few visits." In order to determine interspecialty differences, a logistic model was applied and the association between specialty gathering information on smoking was found to be significant at the .05 level of confidence (probability equals .0038). Other intervening variables, however, were not found to be significant. To test the goodness of fit of the model, a likelihood ratio chi square was applied. A probability of .9978 indicated a high likelihood that this model accurately fits the data. Table 14 shows those variables that were found to be significant when compared to the frequency of gathering information on patients' lifestyle behaviors.

TABLE 14
TABLE OF SIGNIFICANCE GATHERING INFORMATION BY SPECIALTY

| Behavior | Explanatory Variable | Chi-Square Probability | Likelihood Ratio Chi-Square Probability |
|----------|----------------------|------------------------|---|
| Smoking | Specialty | .0038 | .9978 |
| Alcohol | Specialty | .002 | .9347 |
| | Time* | .0143 | .9931 |
| Diet | Specialty | .0261 | .9099 |
| Stress | Specialty | .0179 | .6434 |
| | Sex | .0344 | .6434 |
| | MD Behavior | .0255 | .3354 |

*Time = Amount of time doing patient care.

The most frequently reported response on gathering information on use of alcohol was "every few visits" with 194 or 49.1% of the respondents. See Appendix Table H-2. Ob-Gyn's were the only specialty that had its highest frequency of responses in the "initial visit" category. When the logistic model was applied, the association between specialty and gathering information on use of alcohol was found to be significant at the .05 level of confidence. Additionally, the amount of time spent doing patient care was found to be significant at the .05 level. The remaining intervening variables were not found to be significant at the .05 level of confidence. A probability of .9931 generated from the likelihood ratio chi square is an indication that this model adequately fits the data.

The highest percentage of respondents from all specialties reported gathering information on diet "every few visits" with 224 or 56.6% of the total marking this response. Less than 25% (96) reported gathering information more often. When the logistic model was applied, specialty was found to be significant at the .05 level (.0261) when time of graduation was included as a variable in the model. Specialty was not significant when used in conjunction with the other variables in the model. Levels of significance ranged from .0560 to .5496. The chi-square probability of time of graduation was .0783. Further, the fit of the model was very significant at .9099 when year of graduation was included in the model. Appendix Table H-3 summarizes the frequency and percent of responses.

Respondents' highest reported frequency of gathering information on patients' exercise habits was "every few visits" (55.7%). Analysis of the model indicated that there were no significant differences among specialty or other intervening variables. The likelihood chi-square ratio generated a probability of .9792, indicating a good fit of the model. See Appendix Table H-4.

The most frequently marked response for gathering information on patients' ability to cope with stress was "every few visits" with 222 or 57.1%. There was a higher percentage of responses in the "Never" or "Initial visit" categories totalling 92 or 23.7%. Specialty was found to be a significant variable at a .0179 probability. Further, sex and the respondents' own perceived ability to cope with stress were found to be significant. The likelihood ratio chi square generated a probability of .6434 indicating a good fit of the model. See Appendix Table H-5.

The last question on gathering information was blood pressure with the highest percentage of all specialties reporting that information is gathered "every visit" (Table H-6, Appendix). Greater than 50% of respondents from all specialties were in this category; however, 10% fewer of the general practice physicians marked this category than did other specialties. When the logistic model was applied, no significant difference was found when checking blood pressure was compared with specialty or any other intervening variables. The likelihood ratio chi-square probability was .9877, indicating a good fit of the model.

Physicians' Perceived Success in Counseling Patients

Physicians' perceived success in assisting patients achieve lifestyle change is presented in Table 15. The highest percent of the respondents reported "somewhat successful" on all behaviors. However, reported success with alcohol and stress were almost equally divided between "somewhat successful" and "somewhat unsuccessful." Blood pressure had the highest reported success with 366 or 90.2% of the respondents reporting "very successful" or "somewhat successful."

TABLE 15

PERCENT RESPONSE OF PERCEIVED SUCCESS IN ASSISTING PATIENTS
ACHIEVE LIFESTYLE BEHAVIOR CHANGE

| | Very Successful | Somewhat Successful | Somewhat Unsuccessful | Very Unsuccessful | Don't Know |
|-------------------|--------------------|------------------------|--------------------------|----------------------|---------------|
| Blood Pressure | 34.5 | 55.7 | 6.7 | 1.7 | 1.5 |
| Exercise | 1.7 | 54.1 | 35.7 | 6.5 | 2.0 |
| Diet | 2.2 | 52.8 | 33.6 | 10.6 | 0.7 |
| Smoking | 2.7 | 51.6 | 28.5 | 16.5 | 0.7 |
| Stress | 1.7 | 44.1 | 41.3 | 7.7 | 5.2 |
| Alcohol | 1.2 | 38.5 | 36.8 | 17.5 | 5.9 |

Appendix I presents tables of frequencies and percent of responses to perceived success in counseling patients on lifestyle change by specialty. In order to analyze the relationship between specialty and

perceived success in counseling patients, the "don't know" responses were counted as missing responses and not included in the analysis.

Every specialty responded most frequently with the "somewhat successful" response on every category except alcohol and stress. A higher percentage of family practice physicians reported "somewhat unsuccessful" as their most frequent response to alcohol (47 or 44.8%). Internists and Ob-Gyn's most frequently noted "somewhat unsuccessful" in their response to success in counseling patients to cope with stress with 76 or 49.4% and 35 or 41.7% respectively.

While the highest percentage of responses on perceived success about blood pressure were in the "very successful" category for all specialties, 35.5% of general practice physicians and 40% of family practice and 41.9% of the internists reported that they were "very successful." On the other hand, 13.1% of the Ob-Gyn's reported that they were "very successful."

When the logistic analysis was used, the relationship of specialty to perceived success was found to be significant at the .05 confidence level when specialty, perceived success in smoking behavior, and time of graduation were in the model. The likelihood chi-square ratio yielded .9630 indicating a good fit of the model. Except for blood pressure, no significant relationships were found among the other behaviors. Specialty was found to be significant with blood pressure when the following variables were included in the model: size of county, geographic area of the state, year of graduation, amount of time doing patient care, sex, and the respondents' own behavior regarding

checking blood pressure. This yielded a chi-square probability of .9632 indicating an accurate fit of the model to the data. Table 16 summarizes these data in a table of significance.

TABLE 16

TABLE OF SIGNIFICANCE PERCEIVED SUCCESS IN COUNSELING PATIENTS
TOWARD LIFESTYLE CHANGE FOR SELECTED BEHAVIORS

| Behaviors | Explanatory Variables | Chi-Square Probability | Likelihood Ratio Chi-Square Probability |
|----------------|------------------------|------------------------|---|
| Smoking | Specialty (with grad.) | .0405 | .9630 |
| Alcohol | Size of County | .0397 | .8141 |
| Blood Pressure | Specialty | .0002 | .9996 |

Reported Need for Information and Training on Counseling Patients

Almost 70% of all respondents reported that it would be useful to have more information or training in order to counsel patients in selected health behaviors. Table 17 reports the frequency of responses from all respondents according to specific health behaviors and Appendix J presents the responses according to specialty.

In order to examine the relationship between need for information and training by specialty, logistic models were selected that included specialty, other intervening variables, and need for information and training in each of the selected lifestyle behaviors.

TABLE 17
 PERCENT RESPONSE ON PERCEIVED NEED FOR INFORMATION
 AND TRAINING ON COUNSELING PATIENTS

| | Very Useful | Somewhat Useful | Somewhat Useless | Not Useful |
|----------------|-------------|-----------------|------------------|------------|
| Diet | 35.3 | 45.6 | 10.3 | 8.8 |
| Stress | 30.2 | 47.2 | 13.0 | 9.6 |
| Exercise | 26.1 | 48.8 | 14.8 | 10.3 |
| Blood Pressure | 28.7 | 42.3 | 12.3 | 16.7 |
| Alcohol | 29.7 | 40.8 | 13.8 | 15.7 |
| Smoking | 31.4 | 38.1 | 12.3 | 18.2 |

Analysis of the models revealed no significant interspecialty differences at a .05 level of confidence. Significant differences were found, however, among other intervening variables including year of graduation from medical school and need for training in counseling patients on coping with stress ($p = .0373$). Additionally, a relationship between year of graduation and counseling about alcohol was found (chi-square probability of .0626) but not significant at the .05 level of confidence.

Sex was found to be significant with a chi-square probability of .0186 when need for information and training on stress (dependent variable) were in the model. A final relationship was found when a model was selected for need for training or information on exercise and the

respondents' own exercise behavior. A probability of .0532 suggests a strong but not significant relationship at the .05 level of confidence.

Likelihood ratio chi-square probability indicated a good fit of the models to the data. Table 18 summarizes those variables that were found to be significant when analyzing respondents perceived need for training on selected behaviors.

TABLE 18

TABLE OF SIGNIFICANCE PERCEIVED NEED FOR INFORMATION
AND TRAINING ON SELECTED LIFESTYLE BEHAVIORS

| Behaviors | Explanatory Variables | Chi-Square Probability | Likelihood Ratio Probability |
|-----------|-----------------------|------------------------|------------------------------|
| Stress | Time of Graduation | .0373 | .4663 |
| Stress | Sex | .0186 | .6482 |

Perceived Value of Types of Assistance
in Working With Patients on Health
Promotion

When given a list of types of assistance available when working with patients on health promotion, over half of the respondents noted that all types would be valuable. Almost 90% stated that literature for patients' use would be valuable (360 or 89.6%) with the next most frequently noted type of assistance being information on where to refer patients (338 or 84.7%). Table 19 shows the frequency and percent distribution of the responses to types of assistance perceived as being valuable.

TABLE 19

FREQUENCY AND PERCENT OF RESPONSES ON TYPES OF ASSISTANCE REPORTED AS BEING "VALUABLE" OR "VERY VALUABLE" IN WORKING WITH PATIENTS ON HEALTH PROMOTION

| Types of Assistance | Frequency Response | Percent Response |
|--|--------------------|------------------|
| Literature | 360 | 89.6 |
| Information on Where to Refer Patients | 338 | 84.7 |
| Health Risk Appraisals | 332 | 82.8 |
| Training for Support Staff | 303 | 75.6 |
| Reimbursement | 291 | 72.8 |
| Reimbursement for Staff | 284 | 71.5 |
| Physician Training | 286 | 71.3 |
| Training in Behavior Modification | 273 | 68.4 |
| Video Tapes | 270 | 68.2 |

Physicians' Own Health Promoting Behaviors

Physicians were asked about their own health behaviors and over half responded that they "always" or "almost always" eat breakfast (69.4%), control the amount of salt (65.6%) or cholesterol (64%), and wear their seat belt (70%). Almost half (43.5%) engage in regular exercise. Further, 90% have quit or have never smoked cigarettes and 63.6% reported to be within normal body weight. Regarding use of alcohol, 91.2% reported not drinking more than seven alcoholic beverages a week and 88.8% never have more than five drinks on any one occasion. Eighty percent reported that they developed stress coping mechanisms, and 53.6% stated that they regularly check their blood pressure.

Appendix K presents frequencies and percentages of the respondents own health promoting behavior by perceived success in counseling patients in that behavior. Regarding smoking, 10% of the respondents (42) reported that they presently smoke. Twenty-six of the smokers reported that they were "somewhat unsuccessful" or "very unsuccessful" in counseling patients about smoking. The logistic model yielded a probability of .1671 suggesting a possible relationship between physicians' smoking behavior and perceived success in counseling about smoking. This relationship is not significant at the .05 level of confidence. The likelihood ratio chi-square probability of .9861 indicates a good fit of the model to the data.

Appendix Table K-2 shows the number of alcoholic beverages that were reported to be consumed during one week compared with perceived success in counseling about alcohol. "Somewhat successful" was the most frequently reported response with 211 or 49.8%. The likelihood ratio test probability of .9305 resulting from the logistic model indicates that the relationship between the number of alcoholic beverages consumed and perceived success in counseling patients about alcohol is not significant at the .05 level of confidence. Application of the likelihood ratio chi square indicates a good fit of the model (probability of .8244). Appendix Table K-3 shows the number of times the respondents reported having five alcoholic beverages on any one occasion during a one month period of time and perceived success in alcohol counseling. Again, no significant differences were found among respondents' reported behavior and perceived success in counseling patients.

Appendix Table K-4 shows respondents' perceived success in counseling about diet by reported weight range. More than half of the respondents, 211 or 52.4% stated that they were "somewhat" or "very successful." Of those respondents, 72 or 18.5% reported either being above or below normal weight. The logistic model revealed no significant differences among the respondents on any variable. A likelihood ratio chi square of .6308 suggests that the model adequately fits the data.

Models selected for the respondents' reported exercise behavior and perceived success in counseling about exercise revealed no significant differences on any variable at the .05 level of confidence. The likelihood ratio chi square of .6501 suggests a good fit of the model to the data.

While 301 (80.7%) of the respondents stated that they were able to cope with stress, 191 (51.2%) stated that they were "somewhat" to "very unsuccessful" in counseling patients about stress. The logistic model yielded a chi-square probability of .1262 and no other significant differences when other variables were included in the model. A likelihood ratio chi square of .3575 suggests an adequate fit of the model. Appendix Table K-7 shows a similar result when selecting a model for blood pressure. The respondents' own behavior and perceived success in counseling about blood pressure yielded a chi-square probability of .1843. The likelihood ratio chi square of .9996 indicates strength in the fit of the model to the data.

D. SUMMARY

This chapter presented an analysis of the data that were collected from a mail survey of 413 randomly selected primary care physicians practicing in Tennessee. Presented here was a description of the sample, an analysis of their self reported attitudes, beliefs and practices toward health promotion including a presentation of the effects of selected variables on TPCP's health promotion activities and perceived success in counseling patients.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

A. SUMMARY

Purpose

The purpose of this study was to develop a profile of selected health promotion beliefs, attitudes and activities of Tennessee primary care physicians. A secondary purpose was to identify perceived selected health promotion training and support needs of TPCP's.

Importance of the Study

Physicians are being encouraged to take a more active role in disease prevention and health promotion. Little is known, however, about the extent to which they attempt to promote the health of their patients, their perceived success in health promotion activities, and their perceived need for health promotion training and support.

There has been no reported attempt to investigate the health promotion attitudes and activities of Tennessee primary care physicians. Data from such a study will serve as a baseline in measuring a selected number of state health objectives developed by the Tennessee Department of Health and Environment. Further, findings from such a study are useful in the development and implementation of health promotion/disease prevention curricula in medical schools and continuing education courses for physicians and other health professionals.

Specifically, this study attempted to answer the following questions:

1. Is there any significant interspecialty difference among TPCP's and the extent to which they gather information from their patients on the following health behaviors: smoking, alcohol, diet, stress, blood pressure control?
2. Is there any significant interspecialty difference among TPCP's and their self-reported success in helping patients achieve change in lifestyle choices such as smoking, alcohol, diet, stress, blood pressure control?
3. Is there any significant interspecialty difference among TPCP's and their perceived need for training or information on health promotion in smoking, alcohol, diet, exercise, stress, and blood pressure?
4. What do TPCP's perceive to be the value of selected health promotion support activities?
5. Is there any significant difference among TPCP's self-reported health behavior and their self-reported success in helping patients achieve change in lifestyle choices in smoking, alcohol, diet, stress, blood pressure control?

Methodology

This study was undertaken with a mail survey of 628 randomly selected primary care physicians practicing medicine in Tennessee. The sample was stratified into the following subgroups: specialty,

population size of county in which they practice, and state grand division in which they practice.

The questionnaires were mailed in September of 1985 followed by two additional mailings to nonrespondents. After the data were collected, key punched and verified, analysis was performed at the University of Tennessee Computing Center using Statistical Analysis System (SAS). Analysis of the cross classified data took place using logistic tests for multivariate discrete data.

B. FINDINGS

Frequency of Gathering Information

1. Information gathered on health promotion was reported with the greatest frequency (every visit or almost every visit) by the following specialties: internists for smoking (50.98%) and exercise (19.74%), general practice physicians for alcohol (22.03%) and stress (22.81%), family practice physicians for diet (38.43%) and blood pressure (90.29%).

2. Obstetricians and gynecologists inquired about all lifestyle behaviors with the lowest frequency.

3. Specialty type was found to have a significant relationship with frequency of gathering information on smoking ($p = .0038$), alcohol ($p = .002$), diet ($p = .0261$) and stress ($p = .0179$).

4. The amount of time spent doing patient care was found to have a significant relationship ($p = .0143$) with the frequency of gathering information on alcohol.

5. The sex of the physician ($p = .0344$) and their perceived ability to cope with stress ($p = .0255$) were found to have a significant relationship with frequency of gathering information on stress.

Perceived Success in Counseling

6. Specialty type was found to have a significant relationship ($p = .0405$) with perceived success in counseling patients about smoking.

7. Population size of the county in which the respondent practices was found to have a significant relationship ($p = .0397$) with perceived success in counseling about alcohol.

8. Specialty type was found to have a significant effect ($p = .0002$) on perceived success on counseling about blood pressure.

Perceived Need for Information or Training

9. The sex of the physician was found to have a significant effect ($p = .0186$) on reported need for information and training on stress.

10. Year of graduation from medical school was found to have a significant effect ($p = .0373$) on reported need for information and training on stress.

11. Year of graduation was found to have a strong positive relationship but not a statistically significant one ($p = .0626$), with need for information and training about alcohol.

Need for Support and Assistance

12. Every type of support and assistance in helping patients with health promotion were cited by at least 68% of the physicians as being "valuable" or "very valuable." Literature for distribution to patients (89.6%) and information on where to refer patients (84.7%) were reported with the highest frequency.

Physicians' Own Health Promoting Behaviors and Perceived Success in Counseling

13. While not statistically significant, a positive relationship was found among the physicians' own health promoting behaviors and perceived success in counseling about smoking ($p = .1671$) and blood pressure ($p = .1843$) and stress ($p = .1262$).

C. CONCLUSIONS

Based upon analysis of the findings, the following conclusions are presented:

1. Interspecialty differences exist among TPCP's with response to the frequency in which they gather information from their patients on smoking, alcohol, diet and stress.

2. Interspecialty differences exist among TPCP's with response to their self reported success in counseling patients on smoking and blood pressure.

3. Tennessee primary care physicians tend to agree that there is a need for information and training concerning health promotion in smoking, alcohol, diet, exercise, strses, and blood pressure.

4. Tennessee primary care physicians report that support and assistance would be valuable in helping patients with health promotion.

5. There is some evidence of a relationship between Tennessee primary care physicians' self-reported health behavior and self-reported success in counseling patients on smoking, alcohol, diet, exercise, stress and blood pressure.

D. RECOMMENDATIONS

1. Further study should be given to the type and extent of health promotion training currently included in medical school curricula.

2. Further study should be given to those intervening variables that were found to be significant predictors of TPCP's health promotion beliefs, attitudes, and activities.

3. Further study should be given to the availability of continuing education programs in health promotion.

4. Further investigations of the physicians' perceived responsibility in promoting health is indicated.

5. Further analysis of the data from this study would identify patterns of results suggesting those interactive factors involved in physicians' health promotion beliefs, attitudes and activities.

CHAPTER VI

RESEARCH IN RETROSPECT

A. INTRODUCTION

Epidemiological evidence suggests that lifestyle behaviors have an effect on the health of an individual. Specific lifestyle choices such as smoking, excessive use of alcohol, poor diet, little or no exercise, inability to cope with stress and hypertension have been identified as increasing an individual's risk of becoming sick or dying.

Physicians provide the primary direction to the "health" care delivery system. Their "orders" and "prescriptions", in fact, control or account for approximately two thirds of the total health care resources expended (Jonas, 1982, 201). This control is assumed not only by the physicians but also by the health care consumer who perceives the physician as an important "health" resource. Evidence suggests that physicians agree with the Surgeon General's recommendations regarding the importance of engaging in healthful lifestyles (Weschler et al., 1983, p. 97; Sobal et al., 1985, p. 1487). A dilemma arises, however, when the physician, who is trained with a curative rather than a preventive emphasis, is encouraged to take a more active role in health promotion.

The primary purpose of this study was to explore the physicians' perceived role in health promotion and to develop a profile of selected health promotion beliefs, attitudes and activities of Tennessee primary

care physicians. A secondary purpose was to identify types of information and assistance perceived to be needed by the physicians.

This chapter provides the researcher the opportunity to share observations about the Tennessee Physician Health Promotion Project that go beyond the scope of this research. This chapter includes: (1) an introduction, (2) observations about this study, (3) its relationship to other studies, and (4) its implications for physicians and health promotion.

B. OBSERVATIONS ABOUT THIS STUDY

Limitations of Survey Research

One limitation of survey research is that the items on the questionnaire establish the parameters for the subjects' responses. Thus the findings and conclusions derived from such a study are limited to the questions asked by the investigator. An example in this study is counseling practices of physicians. While physicians were asked about their perceived success in counseling, they did not have an opportunity to describe their specific counseling practices. Wells and co-workers (1982, p. 242) suggest that success in counseling is determined by many factors. Their study explored two dimensions of counseling: (1) the physician's perception of the patient's need for counseling (preventive orientation or lack thereof); and (2) the aggressiveness with which the physician counsels patients (frequency and duration). The Tennessee Health Promotion Project attempted to explore specified background variables as predictors of success in health counseling but, due to the

nature of descriptive research, did not to explore the actual counseling behavior of the respondents.

Exploration of Significant Terms in the Models

The models explored in this study contained many significant interactive variables. The independent variables and the ordering of their importance are different for each dependent variable.

Frequency of gathering information. As noted in the presentation of the results of this study, specialty was significant with frequency of gathering information on four of the six behaviors: smoking, alcohol, diet and stress. Examination of the data suggest that the significance arises from the tendency of Ob-Gyn's to gather information on smoking, alcohol use, and diet less frequently than the other specialties.

The amount of time spent engaging in patient care was found to be a significant variable with frequency of gathering information on alcohol use. Those who spend 50 to 75% of their time providing direct patient care tend to gather information on alcohol use more than those who spend greater or lesser amount of time providing direct care.

Analysis suggests that general practice physicians gather information on stress more often than do physicians in other specialties. Additionally, female physicians gather information on stress more than males. Those who reported that they have not developed skills for coping with stress tend to gather information on the subject less frequently than those who reported having developed those skills.

Perceived success in counseling. Significant interspecialty differences were found with perceived success in counseling patients toward lifestyle change in smoking. Analysis suggests that general practice physicians who graduated after 1976 tend to feel less successful in counseling about smoking.

Regarding success in counseling about blood pressure, Ob-Gyn's reported that they were "somewhat unsuccessful" more often than respondents from the other specialty types. Interspecialty differences were significant with perceived success in counseling about alcohol. Physicians from rural areas tend to report "very unsuccessful" with a higher frequency than their counterparts in larger counties.

Perceived need for information and training. Significant interspecialty differences were examined for perceived need for information and training in selected lifestyle behaviors. Evidence suggests that physicians who graduated after 1976 reported that training and information on stress would be of more use than those who graduated earlier. Further, female physicians reported that training and information in this area could be useful--this difference appears to be significant.

Exploration of Patterns in Models

Analysis of the data using logistic models allows for further exploration of other categorical variables. In this study, many variables, while not significant at the .05 level of confidence yielded probabilities that were consistent each time a model was tested.

Exploration of those consistent patterns could suggest equally as much useful information as investigation of only "significant" effects.

Ambiguous Response Choices

Weinberg (1982, p. 211) suggests that one barrier to preventive activities is the predominant system of fee-for-service reimbursement. Battista and others (1986, p. 216) reported that mode of reimbursement was a major predictor of cancer prevention scores. This study elected not to explore this notion. While fee-for-service and pre-paid service were included on the questionnaire, they were part of the section on "type of setting." In retrospect, the researcher views type of reimbursement and setting type as two separate variables. Analysis of "setting type" did not yield any clear pattern of results.

Patient mix was another categorical variable that elicited ambiguous responses. Due to the broad nature of this response on patient demographics this term was not included in the model for analysis.

C. COMPARISON WITH SIMILAR STUDIES

Response Rate

An overall response rate of 73% was consistent with response rates of similar state wide studies--Maryland with 65%, North Carolina with 70% and Massachusetts with 75%. The response rates suggest that (1) the topic of health promotion is important enough to physicians that they wish to participate in such a study, or (2) that good methodology and implementation procedures maximized opportunities for good

response rates. This researcher proposes that the latter is true since only 22% of the respondents in this study requested results.

Comparison of Physicians' Responses

Frequency of gathering information from patients. The Massachusetts and Tennessee studies assessed the physicians' involvement in health promotion by the extent to which they gathered information from patients on selected lifestyle behaviors. Weschler et al. reported that 80% routinely asked patients about smoking, and drinking. Fewer than half regularly gathered information about diet, exercise, or stress (1983, p. 98). Tennessee physicians differed in their responses with more than 80% gathering information at least every few visits on smoking, diet, stress and blood pressure; 70% on exercise and over 60% on alcohol use.

Interspecialty differences were found in both studies. In Massachusetts, general practice physicians were found to be least likely to gather information. In Tennessee Ob-Gyn's were found to gather information least frequently.

Perceived success in counseling. In the Massachusetts study (Weschler et al., 1983, p. 97), respondents expressed some confidence in their current success in helping patients change behavior. Only 3 to 8% thought they were "successful" and 40 to 57% "somewhat successful." Similar findings were found in a state wide study of North Carolina general practice and family practice physicians. The findings from these studies are consistent with those reported here. Success in

counseling about blood pressure was included in the Tennessee study and a high percentage of respondents reported that they were "very successful" (34.5%). Additionally, Tennessee Physicians were comparable with those in Massachusetts in reporting a high percentage of success in counseling about exercise. North Carolina physicians reported least success in counseling about stress and alcohol. Tennessee physicians also reported least success with alcohol, smoking and diet.

No interspecialty differences were found among the Massachusetts physicians; in Tennessee, specialty was found to be a significant predictor on success in smoking and blood pressure.

Perceived value of health promotion support and assistance. Physicians in North Carolina, Massachusetts and Tennessee noted similar types of assistance that would be "very valuable." The following were noted with the highest percentage of respondents in all states: information on where to refer patients and literature for distribution to patients.

D. IMPLICATIONS FOR PHYSICIANS AND HEALTH PROMOTION

Continuing Medical Education

Over 70% of the respondents reported that more information or training in health promotion would be useful. Weinberg and colleagues (1982, p. 212) reported that prevention oriented courses in continuing medical education are limited and not growing substantially. This researcher was surprised by this inconsistency and suggests that further analysis be given to encourage physicians to seek further

information and training in health promotion. Weinberg suggests that because of the curative orientation of medicine, physicians tend to engage in continuing education activities that focus on areas where immediate rewards are realized. Rewards for prevention are less striking and require more time in order for the physician to feel successful. These factors must be considered in order for continuing education courses in health promotion to be successful.

The Health Consumer

While this study did not address patients or health consumers, their lifestyle behaviors are the major thrust of physicians' health promotion activities. Studies (Hyatt, 1980, p. 297; Strull, 1984, p. 2990) suggest that patients desire more health information from their physicians. Findings from this study suggest that physicians perceive some success regarding their health promotion counseling. It would be helpful to determine from the patients if their physicians did, in fact, accurately self-report the degree of their success.

A Final Consideration

One final issue to consider is the system in which the physician and health consumer work and live. There are many factors affecting lifestyle behavior that are beyond the reach of the physician. Emotional health, environmental or occupational hazards, commercial production of tobacco, consumption of highly processed foods are examples of social, economic and cultural issues that are beyond the scope of the physicians' control. One must question just how much of a role the

physician can have in health promotion if the society is unwilling or unable to take responsibility for the lifestyle choices that are available.

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APPENDICES

APPENDIX A

ADMINISTRATIVE REGIONS OF TENNESSEE

HEALTH SERVICE AREAS IN TENNESSEE

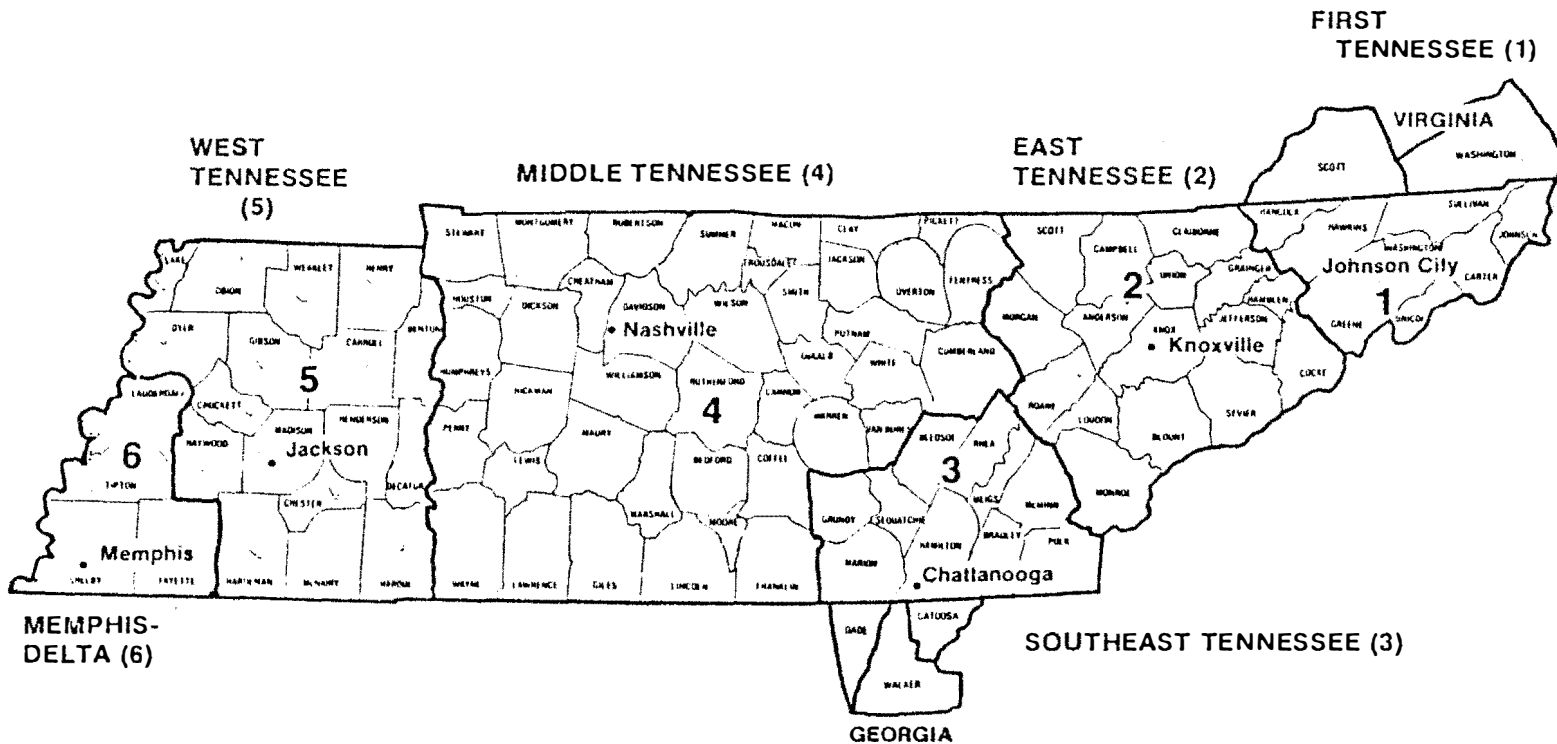


Figure A-1. Health service areas in Tennessee.

APPENDIX B

QUESTIONNAIRE DEVELOPED BY MEDICAL FOUNDATION

frequencies less than .5 not included

PHYSICIAN HEALTH PROMOTION SURVEY
 The Medical Foundation, Inc.
 29 Commonwealth Avenue
 Boston, Massachusetts 02116

(3 b)

(7) (b)

1. in general, do you think it is worth trying to modify people's behaviors in an effort to minimize so-called 'risk factors'?

(N=331) 70 definitely yes 25 probably yes 5 probably no 4 definitely no 9/1

2. The following are behaviors that some health professionals believe to be related to health. How important do you think each of the following behaviors is in promoting the health of the average person? (PLEASE CIRCLE ONE NUMBER FOR EACH)

| | Very Important | Somewhat Important | Somewhat Unimportant | Very Unimportant | |
|---|----------------|--------------------|----------------------|------------------|-----|
| (N) 432 eliminate cigarette smoking | 93 1 | 6 2 | 1 3 | 4 | 10/ |
| 421 eliminate pipe smoking | 25 1 | 49 2 | 21 3 | 4 6 | 11/ |
| 425 eliminate cigar smoking | 28 1 | 49 2 | 20 3 | 3 4 | 12/ |
| 430 drink alcohol moderately/not at all | 47 1 | 39 2 | 11 3 | 3 4 | 13/ |
| 431 drink coffee moderately/not at all | 14 1 | 52 2 | 30 3 | 6 4 | 14/ |
| 432 limit daily caffeine intake | 18 1 | 50 2 | 21 3 | 5 4 | 15/ |
| 433 eat breakfast every morning | 33 1 | 32 2 | 21 3 | 14 4 | 16/ |
| 431 avoid foods high in cholesterol | 26 1 | 57 2 | 15 3 | 3 4 | 17/ |
| 431 take daily vitamin supplements | 3 1 | 10 2 | 34 3 | 53 4 | 18/ |
| 431 minimize sugar-intake | 12 1 | 39 2 | 36 3 | 13 4 | 19/ |
| 431 eat a balanced diet | 58 1 | 36 2 | 5 3 | 1 4 | 20/ |
| 433 avoid excess caloric intake | 79 1 | 27 2 | 2 3 | 4 | 21/ |
| 432 avoid foods high in saturated fats | 38 1 | 50 2 | 11 3 | 1 4 | 22/ |
| 432 decrease salt consumption | 40 1 | 49 2 | 10 3 | 1 4 | 23/ |
| 431 be knowledgeable about drug contents and side effects | 56 1 | 34 2 | 8 3 | 2 4 | 24/ |
| 432 have an annual physical exam | 19 1 | 37 2 | 33 3 | 11 4 | 25/ |
| 433 have a baseline exercise test | 6 1 | 25 2 | 35 3 | 34 4 | 26/ |

*Example of exact copy received.

| (N) | | Very Important | Somewhat Important | Somewhat Unimportant | Very Unimportant | |
|-----|--|----------------|--------------------|----------------------|------------------|------|
| 428 | have an annual exercise test | 5 1 | 15 2 | 33 3 | 49 4 | 27/1 |
| 425 | engage in aerobic activity at least 3 times a week | 27 1 | 46 2 | 20 3 | 6 4 | 28/1 |
| 426 | avoid undue stress | 31 1 | 53 2 | 13 3 | 2 4 | 29/1 |
| 429 | regularly practice relaxation methods | 12 1 | 41 2 | 37 3 | 10 4 | 30/1 |
| 431 | always use a seat belt when in a car | 61 1 | 27 2 | 9 3 | 3 4 | 31/1 |
| 430 | get 7 hours of sleep each night | 23 1 | 42 2 | 29 3 | 7 4 | 32/1 |

3 In general, how successful are most patients in modifying their behavior in a given area?

| (N) | | Very Successful | Somewhat Successful | Somewhat Unsuccessful | Very Unsuccessful | |
|-----|-------------|-----------------|---------------------|-----------------------|-------------------|------|
| 431 | Smoking | 2 1 | 31 2 | 40 3 | 28 4 | 33/1 |
| 432 | Alcohol | 1 1 | 41 2 | 40 3 | 19 4 | 34/1 |
| 423 | Other drugs | 2 1 | 45 2 | 45 3 | 8 4 | 35/1 |
| 430 | Diet | 3 1 | 37 2 | 45 3 | 16 4 | 36/1 |
| 429 | Exercise | 3 1 | 54 2 | 38 3 | 5 4 | 37/1 |
| 428 | Stress | 1 1 | 29 2 | 51 3 | 19 4 | 38/1 |

4. Physicians differ in what they know about different health practices of their patients. Please indicate below the extent to which you gather information on your patients in each of the areas listed.

| (N) | | Routinely | Occasionally, When Indicated | Rarely/Never | |
|-----|-------------|-----------|------------------------------|--------------|------|
| 431 | Smoking | 90 1 | 10 2 | 3 | 39/1 |
| 432 | Alcohol | 84 1 | 16 2 | 3 | 40/1 |
| 432 | Other drugs | 85 1 | 14 2 | 3 | 41/1 |
| 431 | Diet | 48 1 | 51 2 | 1 3 | 42/1 |
| 431 | Exercise | 48 1 | 47 2 | 5 3 | 43/1 |
| 432 | Stress | 42 1 | 51 2 | 7 3 | 44/1 |

5. As a rough estimate, what percentage of all your patients would you say fit the following descriptions? (CIRCLE ONE ANSWER FOR EACH)

| | Less than 25% | 25-50% | 51-75% | More than 75% | Don't know | |
|---------------------------------|---------------|--------|--------|---------------|------------|------|
| (X) 426 Are heavy smokers | 45 | 47 | 5 | 6 | 8 | 45/1 |
| 425 Have alcohol problems | 89 | 18 | 2 | 4 | 8 | 46/1 |
| 429 Are obese | 28 | 55 | 14 | 2 | 8 | 47/1 |
| 420 Have problems of drug abuse | 94 | 5 | 1 | 4 | 8 | 48/1 |
| 425 Have emotional problems | 22 | 45 | 29 | 4 | 8 | 49/1 |
| 420 Are completely sedentary | 59 | 38 | 29 | 4 | 8 | 50/1 |

6. [Physicians vary in their knowledge, skills and training in counseling or advising patients about various health matters.] How well prepared do you feel when counseling patients in each of these areas?

(Do you feel your training prepared)

| | Very Prepared | Prepared | Unprepared | Very Unprepared | |
|-----------------|---------------|----------|------------|-----------------|------|
| (X) 429 Smoking | 51 | 39 | 3 | 4 | 51/1 |
| 430 Alcohol | 46 | 49 | 4 | 4 | 52/1 |
| 429 Other drugs | 31 | 59 | 10 | 4 | 53/1 |
| 430 Diet | 36 | 54 | 9 | 4 | 54/1 |
| 430 Exercise | 41 | 52 | 8 | 4 | 55/1 |
| 429 Stress | 39 | 52 | 17 | 4 | 56/1 |

7. How successful do you feel you are in helping patients achieve change in each area?

| | Very Successful | Somewhat Successful | Somewhat Unsuccessful | Very Unsuccessful | |
|-----------------|-----------------|---------------------|-----------------------|-------------------|------|
| (X) 429 Smoking | 3 | 53 | 35 | 8 | 57/1 |
| 428 Alcohol | 3 | 48 | 39 | 10 | 58/1 |
| 421 Other drugs | 5 | 55 | 34 | 7 | 59/1 |
| 428 Diet | 7 | 59 | 36 | 7 | 60/1 |
| 428 Exercise | 8 | 57 | 35 | 4 | 61/1 |
| 425 Stress | 4 | 41 | 45 | 10 | 62/1 |

8. Different kinds of patients pose different kinds of problems. In general, how difficult or easy has it been for you to help modify the health behavior of the following groups of patients?

| | Very Difficult | Difficult | Easy | Very Easy | Does Not Apply | |
|-------------------------------|----------------|-----------|------|-----------|----------------|---------|
| (X) 175 Children | 26 | 42 | 26 | 8 | 9 | 63/1 |
| 293 Adolescents | 25 | 59 | 14 | 2 | 9 | 64/ |
| 398 Young adults | 19 | 54 | 34 | 3 | 9 | 65/ |
| 413 Middle-aged adults | 8 | 54 | 32 | 4 | 9 | 66/ |
| 407 The elderly | 18 | 49 | 27 | 6 | 9 | 67/ |
| ----- | | | | | | |
| 400 Men | 12 | 66 | 21 | 2 | 9 | 68/ |
| 399 Women | 6 | 62 | 29 | 3 | 9 | 69/ |
| ----- | | | | | | |
| 405 Healthy people | 14 | 52 | 27 | 6 | 9 | 70/ |
| 408 People with known illness | 7 | 43 | 43 | 9 | 9 | 71/ |
| ----- | | | | | | |
| Other (SPECIFY): _____ | 1 | 2 | 3 | 4 | 9 | 72/ |
| | | | | | | |
| | | | | | | 50 |
| | | | | | | (1-2/2) |
| | | | | | | (3-6/2) |
| | | | | | | 2 |
| | | | | | | (7) |

(X) 9. If Continuing Medical Education courses were available at a convenient time, how likely would you be to take courses teaching skills in the following subject areas?

| | Very Likely | Somewhat Likely | Somewhat Unlikely | Very Unlikely | |
|-----------------------------------|-------------|-----------------|-------------------|---------------|-----|
| 423 Smoking cessation techniques | 79 | 33 | 29 | 17 | 8/2 |
| 425 Alcoholism and alcohol abuse | 18 | 32 | 32 | 19 | 9/ |
| 425 Drug abuse | 15 | 29 | 35 | 21 | 10/ |
| 425 Diet and nutrition | 20 | 44 | 25 | 12 | 11/ |
| 426 Exercise and physical fitness | 22 | 38 | 29 | 12 | 12/ |
| 425 Stress reduction | 22 | 39 | 28 | 12 | 13/ |
| 425 Behavior modification | 24 | 41 | 23 | 12 | 14/ |

10. The following are types of assistance which might help in working with patients on health promotion. Please indicate how valuable to you each of the following might be.

| | | Very Valuable | Valuable | Not Valuable | Not At All Valuable | |
|-----|------------------------|---------------|----------|--------------|---------------------|------|
| (X) | 421 | 27 | 54 | 21 | 5 | 15/2 |
| | 415 | 11 | 42 | 36 | 10 | 16/ |
| | 422 | 23 | 53 | 20 | 5 | 17/ |
| | 419 | 17 | 53 | 23 | 6 | 18/ |
| | 416 | 22 | 51 | 18 | 8 | 19/ |
| | 423 | 25 | 56 | 15 | 4 | 20/ |
| | 425 | 39 | 52 | 7 | 2 | 21/ |
| | 409 | 30 | 43 | 19 | 9 | 22/ |
| | 410 | 28 | 39 | 22 | 12 | 23/ |
| | Other (SPECIFY): _____ | 1 | 2 | 3 | 4 | 24/ |

11. In general, given appropriate support, how successful do you feel physicians could be in helping patients change behavior in each area?

| | | Very Successful | Somewhat Successful | Somewhat Unsuccessful | Very Unsuccessful | |
|-----|-----|-----------------|---------------------|-----------------------|-------------------|------|
| (N) | 425 | 13 | 49 | 14 | 3 | 25/2 |
| | 425 | 11 | 62 | 24 | 3 | 26/ |
| | 422 | 12 | 64 | 22 | 2 | 27/ |
| | 425 | 19 | 63 | 15 | 2 | 28/ |
| | 425 | 21 | 67 | 11 | 1 | 29/ |
| | 421 | 14 | 62 | 20 | 4 | 30/ |

12. At the present time, who in your office would you say is the major person responsible for health education? (CIRCLE ONE ANSWER)

- (N=429)
- 2 Nobody
 - 81 The Physician
 - 5 Nurse Practitioner
 - 3 Nurse
 - Physician Assistant
 - 1 Health Educator
 - 1 Nutritionist
 - 6 Other (SPECIFY): M.D. plus 1 or more others

31/2

13. In addition to diagnosing illness and providing prompt and appropriate treatment, physicians may be called upon to do many other things in the course of their practice. Do you consider it your responsibility to do the following?

| | Definitely | | Probably | | |
|--|------------|---------|----------|--------|------|
| | Yes | No | Yes | No | |
| (N) 429 Encourage the patient to talk about personal life problems | 77 1 | 20 2 | 2 3 | 1 4 | 32/2 |
| 430 Educate the patient about each of the 'risk factor' areas | 74 1 | 23 2 | 2 3 | 1 4 | 33/ |
| 430 Understand the patient's family problems | 73 1 | 24 2 | 3 3 | 4 | 34/ |
| 429 Understand the patient's job problems | 68 1 | 28 2 | 4 3 | 4 | 35/ |
| 428 Provide emotional support | 70 1 | 27 2 | 3 3 | 4 | 36/ |
| 426 Help the patient overcome problems experienced in following a given regimen, e.g., curtailing egg consumption, learning to relax, etc. | 50 1 | 40 2 | 9 3 | 4 | 37/ |
| 428 Know about available resources in a patient's community | 64 1 | 30 2 | 5 3 | 4 | 38/ |
| 428 Educate patients about available resources in the community | 56 1 | 36 2 | 9 3 | 4 | 39/ |
| 426 Involve or motivate other members of the family to participate in the patient's health behavior | 47 1 | 42 2 | 10 3 | 1 4 | 40/ |
| Other (SPECIFY): _____ | | | | | |
| _____ | 1 | 2 | 3 | 4 | 41/2 |

BACKGROUND INFORMATION:

14. Year of graduation from medical school:
 (N=427) Before 1948 = 357. 1948 → 1966 = 327. After 1966 = 337. 42-43/2
15. Sex:
 (N=428) 91 Male 9 Female 44/2
16. In which setting do you principally work? (CIRCLE ONE ANSWER)
 (N=430) 60
1 Self-employed clinical practice (solo or partners)
11
2 Group practice, fee-for-service
2
3 Group health plan, prepaid
2
4 Medical or other professional school 45/2
4
5 University/college or other educational institution
9
6 Hospital/clinic, private
5
7 Hospital/clinic, government (other than federal)
3
8 Other (SPECIFY): Hospital/clinic, federal
3 More than 1 of above -
17. Location of your practice (IF MORE THAN ONE, THE MAIN LOCATION)
 (N=431) 32
1 Boston
47
2 Other major area 46/2
21
3 Rural
18. What is your primary area of specialization?
 (N=433) 19
1 General practice
17
2 Family practice 47/2
62
3 Internal medicine
2
4 Other (SPECIFY): Internal Medicine (Subspecialty)
19. Are you Board certified in any areas?
 (N=431) 24
1 No
13
2 No, but eligible (qualified) for Board exam in: Internal Medicine 48/2
34
3 Yes, certified in (LIST ALL): Internal Medicine
4 Eligible, Family Practice
9 Certified, Family Practice
11 Certified in Internal Medicine and eligible/certified in Subspecialty

20. What percentage of your time do you spend providing direct patient care (as opposed to research, teaching, administration)?
 (N=432)

| | | |
|----|---------------------------------|------|
| 1 | No time at all | |
| 7 | Less than half my time | 49/2 |
| 15 | 50 - 75% of my time | |
| 78 | Full time OR more than 3/4 time | |

21. Of that time spent providing direct patient care, what proportion do you spend doing general medicine as opposed to subspecialty care?
 (N=428)

| | | |
|----|-----------------------------------|------|
| 1 | No time at all | |
| 71 | Less than half of that time | 50/2 |
| 29 | 50 - 75% of that time | |
| 61 | All OR more than 3/4 of that time | |

22. Approximately what percentage of your patients would you estimate:

| | More than 75% | 51-75% | 25-50% | 1-25% | 0% | |
|------------------------------|---------------|--------|--------|-------|----|------|
| (N) 424 Are female | 5 | 77 | 18 | 4 | 5 | 51/2 |
| 429 Are black | 1 | 2 | 4 | 86 | 13 | 52/ |
| 427 Are 15 years or younger | 1 | 1 | 9 | 54 | 36 | 53/ |
| 431 Are 65 years or older | 4 | 2 | 39 | 18 | 1 | 54/ |
| 431 Are non-English speaking | 1 | 2 | 3 | 64 | 33 | 55/ |
| 429 Are Medicaid patients | 1 | 7 | 17 | 66 | 9 | 56/ |

23. Please use the space below for any comments you may have about this study.

57/2

58/2

59/2

THANK YOU FOR YOUR TIME AND THOUGHTFUL RESPONSES.

APPENDIX C

CORRESPONDENCE

THE MEDICAL FOUNDATION, INC.

29 COMMONWEALTH AVE. • BOSTON, MASSACHUSETTS 02116 • TELEPHONE (617) 262-1530

MERLE W. MUDD, Ph.D.
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October 23, 1984

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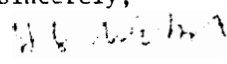
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Knoxville, Tennessee 37996-2700

Dear Ms. Collins:

Thank you for your recent letter about my survey of physicians' health promotion beliefs. Enclosed is information about how you can obtain a copy of the questionnaire and summarized responses.

You have my permission to use the questionnaire in Tennessee. I would appreciate being informed about the results.

Sincerely,


Henry Wechsler, Ph.D.
Director of Research
Hlw:pw
enc.



Tennessee Medical Association

112 LOUISE AVENUE, NASHVILLE, TENNESSEE 37203
PHONE (615) 327-1451

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Gallatin

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McMinnville

EXECUTIVE DIRECTOR
L. Hadley Williams
Nashville

July 19, 1985

Barbara Levin, M.D.
Health Promotion Section
TN Dept. Of Health & Environment
100 9th Ave., North
Nashville, TN 37219-5405

Dear Dr. Levin:

The Tennessee Medical Association Board of Trustees met this past weekend and considered your request for sponsorship of the Physician Health Promotion Survey. The Board of Trustees understanding of your request, is that we would participate by endorsing the project as well as co-sponsoring the research effort. This support endorsement would be in the form of a cover letter to the physicians who would be included in the survey.

Thank you for bringing this matter to our attention and we look forward to this joint effort.

Sincerely,

John R. Nelson, Jr.
John R. Nelson, Jr., M.D.
Chairman
TMA Board of Trustees

JRN/am

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Nashville

APPENDIX D

DRAFT OF COVER LETTER AND QUESTIONNAIRE

USED FOR PILOT STUDY

DRAFT OF COVER LETTER FOR HEALTH PROMOTION SURVEY
LETTERHEAD FROM:

Tennessee Medical Association

Date

Name
Address
City

Dear Dr. _____

The role of health promotion and disease prevention is being recognized more and more in Tennessee. It is recognized that the physician plays an important part in these areas, however, no one really knows what physicians like yourself need so that they can participate more actively in health promotion and disease prevention in their medical practices.

You are one of a small number of Tennessee primary care physicians who are being asked to give your opinion on this matter. Your name was drawn in a random sample of Tennessee primary care physicians. In order that the results will truly represent the thinking of Tennessee primary care physicians, it is important that each questionnaire be completed and returned.

You may be assured of complete confidentiality. The questionnaire has an identification number for mailing purposes only. This is so that we may check your name off of the mailing list when your questionnaire is returned. Your name will never be placed on the questionnaire.

The results of this research will be made available to officials in the State Department of Health and Environment, the membership of the Tennessee Medical Association, the administrators of all Tennessee medical schools and all interested Tennessee physicians. You may receive a copy of the results by writing "copy of the results requested" on the back of the return envelope, and printing your name and address below it. Please do not put this information on the questionnaire itself.

I would be most happy to answer any questions you might have. Please write or call. The telephone number is (615) 974-5041.

Thank you for your assistance.

Sincerely,

HEALTH PROMOTION SURVEY OF
TENNESSEE PRIMARY CARE PHYSICIANS



tennessee
medical association

112 Louise Ave.
Nashville, TN. 37203

PHYSICIAN HEALTH PROMOTION SURVEY

INSTRUCTIONS

This survey takes ten minutes or so to complete. It is designed to be as brief as possible and yet provide the information necessary for this study.

Please read each question carefully and circle the most appropriate response to the question.

The small numbers in the right margin are to facilitate processing and analysis. Please disregard them as you complete the survey.

Again, thank you for your cooperation.

1. How important do you think each of the following behaviors is in promoting the health of your patients? (PLEASE CIRCLE ONE NUMBER FOR EACH)

| | <u>Very</u> <u>Important</u> | <u>Somewhat</u> <u>Important</u> | <u>Somewhat</u> <u>Unimportant</u> | <u>Very</u> <u>Unimportant</u> | |
|--|---------------------------------|-------------------------------------|---------------------------------------|-----------------------------------|-----|
| a. eliminate cigarette smoking | 1 | 2 | 3 | 4 | 1/ |
| b. drink alcohol moderately/not at all | 1 | 2 | 3 | 4 | 2/ |
| c. eat breakfast every morning | 1 | 2 | 3 | 4 | 3/ |
| d. avoid foods high in cholesterol | 1 | 2 | 3 | 4 | 4/ |
| e. include fiber in diet | 1 | 2 | 3 | 4 | 5/ |
| f. avoid excess caloric intake | 1 | 2 | 3 | 4 | 6/ |
| g. decrease salt consumption | 1 | 2 | 3 | 4 | 7/ |
| h. engage in aerobic activity at least three times a week | 1 | 2 | 3 | 4 | 8/ |
| i. develop skills for coping with stress | 1 | 2 | 3 | 4 | 9/ |
| j. always use a seat belt when in a car | 1 | 2 | 3 | 4 | 10/ |
| k. get blood pressure checked regularly | 1 | 2 | 3 | 4 | 11/ |

2. Physicians differ in what they know about different health practices of their patients. Please indicate below the frequency with which you gather information on your patients in each of the areas listed. (CIRCLE ONE NUMBER FOR EACH)

| | Never _____ | Initial visit <u>only</u> | Every few <u>years or so</u> | About once <u>a year</u> | 2 to 3 times <u>a year</u> | More than 3 <u>times a year</u> | |
|------------------------|----------------|------------------------------|---------------------------------|-----------------------------|-------------------------------|------------------------------------|-----|
| a. smoking cigarettes | | 2 | 3 | 4 | 5 | 6 | 12/ |
| b. alcohol | | 2 | 3 | 4 | 5 | 6 | 13/ |
| c. diet | | 2 | 3 | 4 | 5 | 6 | 14/ |
| d. exercise | | 2 | 3 | 4 | 5 | 6 | 15/ |
| e. stress | | 2 | 3 | 4 | 5 | 6 | 16/ |
| f. blood pressure | | 2 | 3 | 4 | 5 | 6 | 17/ |

3. As a rough estimate, what percentage of all your patients would you say fit the following descriptions? (CIRCLE ONE NUMBER FOR EACH)

| | Less <u>than 25%</u> | <u>25-50%</u> | <u>51-75%</u> | More <u>than 75%</u> | Don't <u>Know</u> | |
|-----------------------------------|-------------------------|---------------|---------------|-------------------------|----------------------|-----|
| a. are heavy cigarette smokers .. | | 2 | 3 | 4 | 5 | 18/ |
| b. have alcohol problems | | 2 | 3 | 4 | 5 | 19/ |
| c. are obese | | 2 | 3 | 4 | 5 | 20/ |
| d. have emotional problems | | 2 | 3 | 4 | 5 | 21/ |
| e. are completely sedentary | | 2 | 3 | 4 | 5 | 22/ |
| f. have hypertension | | 2 | 3 | 4 | 5 | 23/ |

4. In general, do you think it is worth trying to modify your patient's behaviors in an effort to minimize so-called 'risk factors'?

___ definitely yes ___ probably yes ___ probably no ___ definitely no | 24/

5. How successful do you feel you are in helping patients achieve change in each area?
(CIRCLE ONE NUMBER FOR EACH)

| | <u>Very Successful</u> | <u>Somewhat Successful</u> | <u>Somewhat Unsuccessful</u> | <u>Very Unsuccessful</u> | |
|-----------------------------|------------------------|----------------------------|------------------------------|--------------------------|-----|
| a. smoking cigarettes | 1 | 2 | 3 | 4 | 25/ |
| b. alcohol | 1 | 2 | 3 | 4 | 26/ |
| c. diet | 1 | 2 | 3 | 4 | 27/ |
| d. exercise | 1 | 2 | 3 | 4 | 28/ |
| e. stress | 1 | 2 | 3 | 4 | 29/ |
| f. blood pressure | 1 | 2 | 3 | 4 | 30/ |

6. Physicians vary in their knowledge, skills, and training in counseling or advising patients about various health matters. Do you feel it would be useful to have more information or training in order to counsel your patients in the following areas? **(CIRCLE ONE NUMBER FOR EACH)**

| | <u>Very Useful</u> | <u>Somewhat Useful</u> | <u>Somewhat Useless</u> | <u>Very Unsuccessful</u> | |
|----------------------------|--------------------|------------------------|-------------------------|--------------------------|-----|
| a. cigarette smoking | 1 | 2 | 3 | 4 | 31/ |
| b. alcohol | 1 | 2 | 3 | 4 | 32/ |
| c. diet | 1 | 2 | 3 | 4 | 33/ |
| d. exercise | 1 | 2 | 3 | 4 | 34/ |
| e. stress | 1 | 2 | 3 | 4 | 35/ |
| f. blood pressure | 1 | 2 | 3 | 4 | 36/ |

7. If Continuing Medical Education courses were available at a convenient time, how likely would you be to take courses teaching skills in the following subject areas? CIRCLE ONE NUMBER FOR EACH)

| | Recently taken <u>a course</u> | Very <u>Likely</u> | Somewhat <u>Likely</u> | Somewhat <u>Unlikely</u> | Very <u>Unlikely</u> | |
|---|-----------------------------------|-----------------------|---------------------------|-----------------------------|-------------------------|-----|
| a. cigarette smoking cessation techniques | 1 | 2 | 3 | 4 | 5 | 37/ |
| b. alcoholism and alcohol abuse | 1 | 2 | 3 | 4 | 5 | 38/ |
| c. diet and nutrition | 1 | 2 | 3 | 4 | 5 | 39/ |
| d. exercise and fitness | 1 | 2 | 3 | 4 | 5 | 40/ |
| e. stress coping skills | 1 | 2 | 3 | 4 | 5 | 41/ |
| f. behavior modifications | 1 | 2 | 3 | 4 | 5 | 42/ |
| g. health risk assessment | 1 | 2 | 3 | 4 | 5 | 43/ |

8. The following are types of assistance which might help in working with patients on health promotion. Please indicate how valuable to you each of the following might be. (CIRCLE ONE NUMBER FOR EACH)

| | Very <u>Valuable</u> | Valuable | Not <u>Valuable</u> | Not At All <u>Valuable</u> | |
|---|-------------------------|----------|------------------------|-------------------------------|-----|
| a. Preprinted 'risk factor' questionnaires | 1 | 2 | 3 | 4 | 44/ |
| b. Videotapes for use with patients | 1 | 2 | 3 | 4 | 45/ |
| c. Literature for distribution to patients | 1 | 2 | 3 | 4 | 46/ |
| d. Physician training in specific subjects, e.g., alcohol, exercise, nutrition | 1 | 2 | 3 | 4 | 47/ |
| e. Physician training in behavior modification | 1 | 2 | 3 | 4 | 48/ |
| f. Training for support staff | 1 | 2 | 3 | 4 | 49/ |
| g. Information on where to refer patients | 1 | 2 | 3 | 4 | 50/ |
| h. Financial reimbursement for time spent with patients on health promotion | 1 | 2 | 3 | 4 | 51/ |
| i. Financial reimbursement to enable hiring additional staff | 1 | 2 | 3 | 4 | 52/ |
| j. Other (Specify) _____ | 1 | 2 | 3 | 4 | 53/ |

9. This question is about your personal health behavior. Please respond to the following statements regarding your personal health habits.

| | <u>Always</u> | <u>Almost Always</u> | <u>Sometimes</u> | <u>Almost Never</u> | <u>Never</u> | |
|--|---------------|---|---|---|--------------|-----|
| a. I eat breakfast every morning | 1 | 2 | 3 | 4 | 5 | 54/ |
| b. I avoid foods high in cholesterol | 1 | 2 | 3 | 4 | 5 | 55/ |
| c. I limit my salt consumption | 1 | 2 | 3 | 4 | 5 | 56/ |
| d. I engage in aerobic activity at least three times a week | 1 | 2 | 3 | 4 | 5 | 57/ |
| e. I always use a seat belt when in a car | 1 | 2 | 3 | 4 | 5 | 58/ |
| | | I have never smoked <u>cigarettes</u> | I have quit smoking <u>cigarettes</u> | I now smoke <u>cigarettes</u> | | |
| f. Cigarette smoking..... | 1 | 2 | 3 | | | 59/ |
| | | I weigh under <u>"normal" range</u> | I weigh within <u>"normal" range</u> | I weigh more than <u>"normal" range</u> | | |
| g. Weight | 1 | 2 | 3 | | | 60/ |
| | | <u>YES</u> | <u>NO</u> | | | |
| h. I have developed skills for coping with stress | 1 | 2 | | | | 61/ |
| i. I regularly check my blood pressure | 1 | 2 | | | | 62/ |

10. Background information:

Year of graduation from medical school:

Before 1948 1 1948-1966 2 1966-1975 3 After 1976 4 63/

11. Sex:

1 Male 2 Female 64/

12. In which setting do you principally work? (Circle one answer)

- 1 Self-employed clinical practice (solo or partners) 65/
- 2 Group practice, fee-for-service
- 3 Group health plan, prepaid
- 4 Medical or other professional school
- 5 University/college or other educational institution
- 6 Hospital/clinic, private
- 7 Hospital/clinic, government (other than federal)
- 8 Other (Specify): _____

13. Name of county in which you practice. (If you practice in more than one county, the county of the main location.)

County _____ 66-67/

14. What is your primary area of specialization?

- 1 General practice
- 2 Family practice
- 3 Internal medicine
- 4 OB-GYN
- 5 Other (Specify): _____ 68/

15. Are you Board certified in any areas?

- No 1
- No, but eligible for Boards in: 2 Family Practice
- 3 Internal Medicine
- 4 OB-GYN
- 5 Other

Yes, certified in (list all): _____

69/

16. What percentage of your time do you spend providing direct patient care (as opposed to research, teaching, administration)?

- 1 No time at all
- 2 Less than half my time
- 3 50% - 75% of my time
- 4 Full time or more than 3/4 time

70/

17. Approximately what percentage of your patients would you estimate are: (CIRCLE ONE NUMBER FOR EACH)

| | More than 75% | 51-75% | 25-50% | 1-25% | 0% | |
|-------------------------------|------------------|--------|--------|-------|----|-----|
| a. male | 1 | 2 | 3 | 4 | 5 | 71/ |
| b. pregnant female | 1 | 2 | 3 | 4 | 5 | 72/ |
| c. black | 1 | 2 | 3 | 4 | 5 | 73/ |
| d. 15 years or younger | 1 | 2 | 3 | 4 | 5 | 74/ |
| e. 65 years or older | 1 | 2 | 3 | 4 | 5 | 75/ |
| f. non-English speaking | 1 | 2 | 3 | 4 | 5 | 76/ |
| g. Medicaid patients | 1 | 2 | 3 | 4 | 5 | 77/ |

Thank you for your time and thoughtful responses.

CC/kav (Indef. #2 860)

APPENDIX E

JURY LIST FOR QUESTIONNAIRE REVIEW

JURY LIST FOR QUESTIONNAIRE REVIEW

HEALTH EDUCATION COLLEAGUES

David Anspaugh, Ph.D., Ed.D.
Memphis State University
Memphis, Tennessee

Dianne Binkley, M.S.
The University of Tennessee
Knoxville, Tennessee

William Buckalew, Ph.D.
University of North Carolina-Ashville
Asheville, North Carolina

Stephen M. Dorman, Ph.D.
Onslow County Schools
Jacksonville, North Carolina

Doris Kilgore, M.S.
The University of Tennessee
Knoxville, Tennessee

John C. Turner, M.D.
The University of Tennessee
Knoxville, Tennessee

Richard F. Walton, M.D.
MAHEC
Family Practice Residency
Asheville, North Carolina

USERS OF THE DATA

Don Alexander
Tennessee Medical Association
Nashville, Tennessee

Mary Jane Dewey
Tennessee Department of Health and Environment
Nashville, Tennessee

S. Edwards Dismuke, M.D.
The University of Tennessee
Center for the Health Sciences
Memphis, Tennessee

Barbara S. Levin, M.D.
Tennessee Department of Health and Environment
Madisonville, Tennessee

Conrad E. Schackelford, M.D.
Bureau of Health Services
Tennessee Department of Health and Environment
Nashville, Tennessee

Frieda S. Wadley, M.D.
Chief Medical Officer
Tennessee Department of Health and Environment
Nashville, Tennessee

TENNESSEE PRIMARY CARE PHYSICIANS

Janice D. Armstrong, M.D.
Family Practice
Maynardville, Tennessee

Monte B. Biggs, M.D.
Internal Medicine
Knoxville, Tennessee

Alfred D. Beasley, M.D.
Internal Medicine
Knoxville, Tennessee

William Bost, M.D.
Family Practice
Knoxville, Tennessee

Martin, Davis, M.D.
OB/GYN
Knoxville, Tennessee

R.V. Downing, M.D.
Family Practice
Maynardville, Tennessee

R.H. Duncan, M.D.
Family Practice
Knoxville, Tennessee

Patricia Eachus, M.D.
Family Practice
Knoxville, Tennessee

Mark Rice, M.D.
General Practice
Knoxville, Tennessee

Joshua Ettinger, M.D.
Family Practice
Madisonville, Tennessee

Jo G. Sweet, M.D.
Internal Medicine
Knoxville, Tennessee

Paul Watson, M.D.
Family Practice
Knoxville, Tennessee

Robert B. Whittle, M.D.
Internal Medicine
Knoxville, Tennessee

APPENDIX F

COVER LETTERS SENT WITH QUESTIONNAIRES



TENNESSEE DEPARTMENT OF
HEALTH AND ENVIRONMENT

TENNESSEE PHYSICIAN
HEALTH PROMOTION PROJECT



TENNESSEE MEDICAL
ASSOCIATION

September, 1985

Health promotion and disease prevention are a part of overall health care services, but the role of the primary care physician is unclear. The Tennessee Department of Health and Environment is cooperating with the Tennessee Medical Association in a study of physicians' attitudes and knowledge of health promotion.

You have been selected by random sample to respond to this questionnaire. Your confidential answers are important in order for this study to be truly representative. The questionnaire has an identification number for mailing purposes only. The results of this study will be made available to the Department of Health and Environment, the Tennessee Medical Association and any interested physicians. If you would like a copy, please mark the back of the envelope and include your name and address. Please do not put this information on your questionnaire itself.

Ms. Collins is coordinating this study. She would be most happy to answer any questions you might have. The telephone number is (615) 974-5041, or write The University of Tennessee, Division of Health and Safety, 1914 Andy Holt Avenue, Knoxville, Tennessee 37916.

Thank you for your assistance.

Sincerely,

Fredia S. Wadley, M.D., M.S.H.P.A.
Chief Medical Officer
Tennessee Department of
Health and Environment

FWS/CRS/CJC/vm/2-2

Enclosure

Clarence R. Sanders, M.D.
President
Tennessee Medical Association

Christine J. Collins, M.P.H.
Project Coordinator



TENNESSEE DEPARTMENT OF
HEALTH AND ENVIRONMENT

TENNESSEE PHYSICIAN
HEALTH PROMOTION PROJECT



TENNESSEE MEDICAL
ASSOCIATION

October 18, 1985

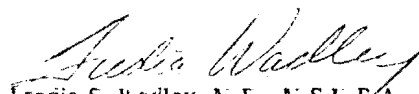
About one month ago we wrote to you seeking your opinions on health promotion. As of today we have not received your completed questionnaire.


As stated in our last letter, this study was undertaken by Tennessee Department of Health and Environment with the cooperation of the Tennessee Medical Association in order to better understand the role of the primary care physician in health promotion and disease prevention.

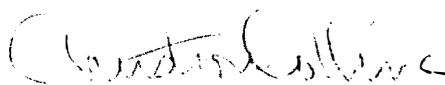
We are writing again because of the significance each questionnaire has to the usefulness of this study. Your confidential answers are important in order that this study be truly representative. We ask that you return the completed questionnaire in the accompanying pre-addressed envelope for your convenience. Please return it as soon as possible. If you have any questions, please contact Ms. Collins, Division of Health and Safety, University of Tennessee. (615) 974-5041.

The questionnaire has an identification number for mailing purposes only. If you would like a copy of the results of this survey, please mark the back of the envelope and include your name and address. Please do not put this information on your questionnaire itself.

Your cooperation is greatly appreciated.


Fredia S. Wadley, M.D., M.S.H., F.A.
Chief Medical Officer
Tennessee Department of
Health and Environment


Clarence R. Sanders, M.D.
President
Tennessee Medical Association


Christine J. Collins, M.P.H.
Project Coordinator

FWS/CKS/CJC/dkc



TENNESSEE DEPARTMENT OF
HEALTH AND ENVIRONMENT

TENNESSEE PHYSICIAN
HEALTH PROMOTION PROJECT



TENNESSEE MEDICAL
ASSOCIATION

December 2, 1985

We are writing to you regarding our study on physicians' attitudes and knowledge of health promotion.

The large number of responses is encouraging. However, whether we will be able to describe accurately how Tennessee physicians feel about this issue depends upon you and others who have not yet responded. This is the first statewide study of this type that has been done. Therefore, the results are of particular importance to us all.

It is for this reason that we are sending this by certified mail to insure delivery. May we urge you to complete and return the questionnaire as soon as possible.

The questionnaire has an identification number for mailing purposes only. If you would like a copy of the results of this survey, please mark the back of the envelope and include your name and address.

Your contribution to the success of this study is greatly appreciated.

Handwritten signature of Fredia S. Wadley in cursive.

Fredia S. Wadley, M.D., M.S.H.P.A.
Chief Medical Officer
Tennessee Department of
Health and Environment

Handwritten signature of Clarence R. Sanders in cursive.

Clarence R. Sanders, M.D.
President
Tennessee Medical Association

Christine J. Collins, M.F.H.
Project Coordinator

FWS/CRS/CJC/dkc

APPENDIX G

CODING INFORMATION SHEET

CODING INFORMATION SHEET

Column number
Card 1

1,2,3

110 to 638 = respondents' identification number.
000 = ID# removed by respondent.

4

1 = Responded to first wave mailed 9-15-85
2 = Responded to second wave mailed 10-30-85.
3 = Responded to third wave mailed 12-12-85

5

Type of county from which respondent practices (main location)

1 = Rural East Tennessee
2 = Intermediate East Tennessee
3 = Metropolitan East Tennessee
4 = Rural Middle Tennessee
5 = Intermediate Middle Tennessee
6 = Metropolitan Middle Tennessee
7 = Rural West Tennessee
8 = Intermediate West Tennessee
9 = Metropolitan West Tennessee

6

1 = Card #1 (For data entry purposes)

7-17

Importance of behaviors

1 = very important
2 = somewhat important
3 = somewhat unimportant
4 = very unimportant

18-23

Frequency of gathering information on patient's behaviors.

1 = never
2 = initial visit only
3 = every few visits
4 = almost every visit
5 = every time I see patient

24-29

Percent of patients by lifestyle behaviors

1 = less than 25 percent
2 = 25-50 percent
3 = 50-75 percent
4 = more than 75 percent
5 = don't know

- 30
Can physician help patients minimize risk factors
1 = definitely yes
2 = probably yes
3 = probably no
4 = definitely no
- 31-36
Success in helping patients achieve lifestyle change.
1 = very successful
2 = somewhat successful
3 = somewhat unsuccessful
4 = very unsuccessful
5 = don't know
- 37-42
Training in counseling patients about lifestyle change
1 = very useful
2 = somewhat useful
3 = somewhat useless
4 = very useless
- 43-49
How likely physicians would take a course on selected lifestyle behaviors
1 = recently taken a course
2 = very likely
3 = somewhat likely
4 = somewhat unlikely
5 = very unlikely
- 50-59
Value of types of assistance in working with patients.
1 = very valuable
2 = valuable
3 = not valuable
4 = not at all valuable
- 60-64
Physicians' own health promoting behavior
1 = always
2 = almost always
3 = sometimes
4 = almost never
5 = never
- 65
1 = never smoked
2 = I quit smoking
3 = I now smoke
- 66
1 = weight under normal
2 = weight within normal range
3 = weight above normal

- 67 . Number of alcoholic beverages consumed in past week.
 0 = none
 1 = 1-7 week
 2 = 8-14 week
 3 = GE 15 week
- 68 Number of times consumed five or more alcoholic beverages
 at one time in the past month.
 0 = none
 1 = once
 2 = twice
 3 = three to seven times
 4 = more than seven times
- 69 Developed coping skills for stress.
 1 = yes
 2 = no
- 70 Check blood pressure
 1 = yes
 2 = no
- 71 Year of graduation from medical school
 1 = Before 1948
 2 = 1948-1966
 3 = 1967-1975
 4 = after 1975
- 72 Race/Origin
 1 = White
 2 = Black
 3 = Hispanic
 4 = Other. ts 5,25,45
- 73 Sex
 1 = male
 2 = female
- 74 Principal work setting
 1 = Self-employed clinical practice
 2 = Group practice, fee-for-service
 3 = Group health plan, prepaid
 4 = Professional training program
 5 = Educational institution
 6 = Hospital/clinic private
 7 = Hospital/clinic government
 8 = Other

75-76

Name of county in which physician practices
 Rural Counties--no city of 10,000 or more Intermediate
 Counties--cities from 10,000-99,000 Metropolitan
 Counties--city of 100,000

EAST TENNESSEE

| RURAL | INTERMEDIATE | METROPOLITAN |
|--------------|---------------|--------------|
| 01 Campbell | 16 Anderson | 24 Knox |
| 02 Claiborne | 17 Blount | |
| 03 Cocke | 18 Carter | |
| 04 Grainger | 19 Greene | |
| 05 Hancock- | 29 Hamblin | |
| 06 Hawkins | 21 Sullivan | |
| 07 Jefferson | 22 Washington | |
| 08 Johnson | 23 Monroe | |
| 09 Loudon | | |
| 10 Morgan | | |
| 11 Roane | | |
| 12 Scott | | |
| 13 Sevier | | |
| 14 Unicoi | | |
| 15 Union | | |

MIDDLE TENNESSEE

| RURAL | INTERMEDIATE | METROPOLITAN |
|---------------|---------------|--------------|
| 25 Bledsoe | 60 Bedford | 73 Davidson |
| 26 Cannon | 61 Bradley | 74 Hamilton |
| 27 Cheatham | 62 Coffee | |
| 28 Clay | 63 Lawrence | |
| 29 Cumberland | 64 McMinn | |
| 30 DeKalb | 65 Maury | |
| 31 Dickson | 66 Montgomery | |
| 32 Fentress | 67 Putnam | |
| 33 Franklin | 68 Rutherford | |
| 34 Giles | 69 Summer | |
| 35 Grundy | 70 Warren | |
| 36 Hickman | 71 Williamson | |
| 37 Houston | 72 Wilson | |
| 38 Humphreys | | |
| 39 Jackson | | |
| 40 Lewis | | |
| 41 Lincoln | | |
| 42 Macon | | |
| 43 Marion | | |

44 Marshall
 45 Meigs
 46 Moore
 47 Overton

RURAL INTERMEDIATE METROPOLITAN

48 Perry
 49 Pickett
 50 Polk
 51 Rhea
 52 Robertson
 53 Sequatchie
 54 Smith
 55 Stewart
 56 Trousdale
 57 VanBuren
 58 Wayne
 59 White

WEST TENNESSEE

RURAL INTERMEDIATE METROPOLITAN

| | | |
|---------------|------------|-----------|
| 75 Benton | 90 Dyer | 95 Shelby |
| 76 Carroll | 91 Gibson | |
| 77 Chester | 92 Henry | |
| 78 Crockett | 93 Madison | |
| 79 Decatur | 94 Obion | |
| 80 Fayette | | |
| 81 Hardeman | | |
| 82 Hardin | | |
| 83 Haywood | | |
| 84 Henderson | | |
| 85 Lake | | |
| 86 Lauderdale | | |
| 87 McNairy | | |
| 88 Tipton | | |
| 89 Weakley | | |

77

Primary area of specialization

1 = General practice
 2 = Family practice
 3 = Internal medicine
 4 = OB=GYN
 5 = Other

78

Board certification

- 1 = No
- 2 = Eligible in family practice
- 3 = Eligible in Internal medicine
- 4 = Eligible in OB-GYN
- 5 = Eligible in other
- 6 = Certified in family practice
- 7 = Certified in internal medicine
- 8 = Certified in OB-GYN
- 9 = Certified in other.

79

Amount of time spent doing patient care

- 1 = no time
- 2 = less than 50 percent
- 3 = 50-75 percent
- 4 = more than 75 percent.

Card 2

Columns 1 through 5 same as card one.

6

2 = Card 2 (For data entry purposes)

7-13

Demographics of patients

- 1 = More than 75 percent
- 2 = 51-75 percent
- 3 = 25-50 percent
- 4 = 1-25 percent
- 5 = 0 percent

14

- 1 = Respondent did not request results of study.
- 2 = Respondent did request results of study.

APPENDIX H

CELL FREQUENCIES AND PERCENT OF FREQUENCY OF GATHERING INFORMATION
ON: SMOKING, ALCOHOL, DIET, EXERCISE, STRESS, AND BLOOD PRESSURE
FOR RESPONDENTS IN THE TENNESSEE PHYSICIAN
HEALTH PROMOTION PROJECT

TABLE H-1

FREQUENCIES AND PERCENT OF FREQUENCY OF GATHERING INFORMATION
ON PATIENT SMOKING BEHAVIORS BY SPECIALTY

| Frequency and Percent | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total |
|--------------------------|---------------------|--------------------|----------------------|--------------|---------------|
| Never | 1 (1.7) | 0 (.0) | 0 (.0) | 0 (.0) | 1 (.3) |
| First Visit | 9 (15.0) | 8 (7.8) | 24 (15.7) | 29 (35.4) | 70 (17.6) |
| Every Few Visits | 27 (45.0) | 52 (51.0) | 51 (33.3) | 33 (40.2) | 163 (41.1) |
| Almost Every Visit | 17 (28.3) | 34 (33.3) | 58 (37.9) | 10 (12.2) | 119 (30.0) |
| Every Visit | 6 (10.0) | 8 (7.8) | 20 (13.1) | 10 (12.2) | 44 (11.1) |
| Total | 60 | 102 | 153 | 82 | 397 |
| Percent Total | (100.0) | (99.9)* | (100.0) | (100.0) | |

*Rounding error.

$$\chi^2 = 21.12; \text{ df} = 12; \text{ p} = .0038$$

$$\chi_L^2 = 120.56; \text{ df} = 168; \text{ p} = .9978$$

TABLE H-2

FREQUENCY AND PERCENT OF FREQUENCY OF GATHERING INFORMATION
ON PATIENT ALCOHOL BEHAVIORS BY SPECIALTY

| Frequency and Percent | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total |
|--------------------------|---------------------|--------------------|----------------------|---------------|---------------|
| Never | 3 (5.1) | 0 (.0) | 0 (.0) | 5 (6.1) | 8 (2.0) |
| First Visit | 14 (23.7) | 28 (27.2) | 46 (30.5) | 51 (62.2) | 139 (35.2) |
| Every Few Visits | 29 (49.1) | 61 (59.2) | 80 (53.0) | 24 (29.3) | 194 (49.1) |
| Almost Every Visit | 9 (15.3) | 12 (11.7) | 20 (13.2) | 1 (1.2) | 42 (10.6) |
| Every Visit | 4 (6.8) | 2 (1.9) | 5 (3.3) | 1 (1.2) | 12 (3.0) |
| Total Percent Total | 59 (100.0) | 103 (100.0) | 151 (100.0) | 82 (100.0) | 395 |

$$\chi^2 = 37.76; df = 12; p = .0002$$

$$\chi^2_L = 14.49; df = 24; p = .9347$$

TABLE H-3

FREQUENCY AND PERCENT OF FREQUENCY OF GATHERING INFORMATION
ON DIET BY SPECIALTY

| Frequency and Percent | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total |
|-----------------------|------------------|-----------------|-------------------|--------------|---------------|
| Never | 3 (5.0) | 2 (2.0) | 2 (1.3) | 5 (6.1) | 12 (3.0) |
| First Visit | 7 (11.7) | 11 (10.8) | 24 (15.8) | 22 (26.8) | 64 (16.2) |
| Every Few Visits | 38 (63.3) | 60 (58.8) | 91 (59.9) | 35 (42.7) | 224 (56.6) |
| Almost Every Visit | 10 (16.7) | 25 (24.5) | 30 (19.7) | 15 (18.3) | 80 (20.2) |
| Every Visit | 2 (3.3) | 4 (3.9) | 5 (3.3) | 5 (6.1) | 16 (4.0) |
| Total | 60 | 102 | 152 | 82 | 396 |
| Percent Total | (100.0) | (100.0) | (100.0) | (100.0) | |

$$\chi^2 = 23.20; df = 12; p = .0261$$

$$\chi_L^2 = 96.17; df = 116; p = .9099$$

TABLE H-4

FREQUENCIES AND PERCENT OF FREQUENCY OF GATHERING INFORMATION
ON EXERCISE BY SPECIALTY

| Frequency and Percent | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total |
|--------------------------|---------------------|--------------------|----------------------|---------------|---------------|
| Never | 5 (8.5) | 3 (2.9) | 5 (3.3) | 8 (10.3) | 21 (5.4) |
| First Visit | 10 (17.0) | 18 (17.5) | 33 (21.7) | 23 (29.5) | 84 (21.4) |
| Every Few Visits | 38 (64.4) | 68 (66.0) | 84 (55.3) | 36 (46.2) | 226 (57.7) |
| Almost Every Visit | 4 (6.8) | 12 (11.7) | 26 (17.1) | 8 (10.3) | 50 (12.8) |
| Every Visit | 2 (3.4) | 2 (1.9) | 4 (2.6) | 3 (3.7) | 11 (2.9) |
| Total Percent Total | 60 (100.1) | 102 (100.0) | 153 (100.0) | 82 (100.0) | 397 |

$$\chi^2 = 18.35; df = 12; p = .1055$$

$$\chi_L^2 = 132.79; df = 168; p = .9792$$

TABLE H-5

FREQUENCY AND PERCENT OF FREQUENCY OF GATHERING INFORMATION
ON PATIENTS' ABILITY TO COPE WITH STRESS BY SPECIALTY

| Frequency and Percent | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total |
|--------------------------|---------------------|--------------------|----------------------|--------------|---------------|
| Never | 6 (10.5) | 1 (1.0) | 6 (4.0) | 8 (10.1) | 21 (5.4) |
| First Visit | 4 (7.0) | 15 (14.7) | 40 (26.5) | 12 (15.2) | 71 (18.3) |
| Every Few Visits | 34 (59.7) | 70 (68.6) | 76 (50.3) | 42 (53.2) | 222 (57.1) |
| Almost Every Visit | 9 (15.8) | 14 (13.7) | 27 (17.8) | 14 (17.7) | 64 (16.5) |
| Every Visit | 4 (7.0) | 2 (2.0) | 2 (1.3) | 3 (3.8) | 11 (2.8) |
| Total | 57 | 102 | 151 | 79 | 389 |
| Percent Total | (100.0) | (100.0) | (99.9)* | (100.0) | |

*Rounding error.

$$\chi^2 = 24.41; df = 12; p = .0179$$

$$\chi_L^2 = 47.70; df = 52; p = .6434$$

TABLE H-6

FREQUENCY AND PERCENT OF FREQUENCY OF GATHERING INFORMATION
ON BLOOD PRESSURE BY SPECIALTY

| Frequency and Percent | General Practice | Family Practice | Internal Medicine | Ob-Gyn | Total |
|--------------------------|---------------------|--------------------|----------------------|---------------|---------------|
| Never | 2 (3.3) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 2 (.5) |
| First Visit | 2 (3.3) | 3 (2.9) | 3 (2.0) | 3 (3.7) | 11 (2.8) |
| Every Few Visits | 10 (16.7) | 7 (6.8) | 14 (9.1) | 5 (6.3) | 36 (9.1) |
| Almost Every Visit | 14 (23.3) | 23 (22.3) | 30 (19.5) | 18 (22.5) | 85 (21.41) |
| Every Visit | 32 (53.4) | 70 (68.0) | 107 (69.4) | 54 (67.5) | 263 (66.3) |
| Total Percent Total | 60 (100.0) | 103 (100.0) | 154 (100.0) | 80 (100.0) | 397 |

$$\chi^2 = 8.89; df = 12; p = .7127$$

$$\chi_L^2 = 60.91; df = 88; p = .9877$$

APPENDIX I

FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED SUCCESS
IN COUNSELING PATIENTS ABOUT: SMOKING, ALCOHOL, DIET,
EXERCISE, STRESS AND BLOOD PRESSURE FOR RESPONDENTS
IN THE TENNESSEE HEALTH PROMOTION PROJECT

TABLE I-1

FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED SUCCESS
IN COUNSELING PATIENTS ABOUT SMOKING BY SPECIALTY

| | General Practice | Family Practice | Internal Medicine | OB-GYN | Total |
|--------------------------|---------------------|--------------------|----------------------|--------------|---------------|
| Very Successful | 2 (3.3) | 1 (.9) | 7 (4.5) | 1 (1.2) | 11 (2.7) |
| Somewhat Successful | 29 (47.5) | 64 (61.0) | 80 (51.3) | 37 (45.1) | 210 (52.0) |
| Somewhat Unsuccessful | 21 (34.4) | 30 (28.5) | 41 (26.3) | 24 (29.3) | 116 (28.7) |
| Very Unsuccessful | 9 (4.8) | 10 (9.5) | 28 (17.9) | 20 (24.4) | 67 (16.6) |
| Total | 61 | 105 | 156 | 82 | 404 |
| Percent Total | (100.0) | (99.9)* | (100.0) | (100.0) | |

*Rounding error.

$$\chi^2 = 17.57; df = 9; p = .0405.$$

$$\chi^2_L = 109.83; df = 138; p = .9630.$$

TABLE I-2

FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED SUCCESS
IN COUNSELING PATIENTS ABOUT ALCOHOL BY SPECIALTY

| | General Practice | Family Practice | Internal Medicine | OB-GYN | Total |
|--------------------------|---------------------|--------------------|----------------------|--------------|---------------|
| Very Successful | 2 (3.3) | 1 (1.0) | 2 (1.3) | 0 (.0) | 5 (1.3) |
| Somewhat Successful | 26 (43.3) | 32 (32.0) | 69 (45.1) | 29 (42.6) | 156 (40.9) |
| Somewhat Unsuccessful | 21 (35.0) | 47 (47.0) | 58 (37.9) | 23 (33.8) | 149 (39.1) |
| Very Unsuccessful | 11 (18.3) | 20 (20.0) | 24 (15.7) | 16 (23.5) | 71 (18.6) |
| Total | 60 | 100 | 153 | 68 | 381 |
| Percent Total | (99.9)* | (100.0) | (100.0) | (99.9) | (99.9) |

*Rounding error.

$$\chi^2 = 8.35; \text{ df} = 9; \text{ p} = .4994.$$

$$\chi^2_L = 17.55; \text{ df} = 24; \text{ p} = .8244.$$

TABLE I-3

FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED SUCCESS
IN COUNSELING PATIENTS ABOUT DIET BY SPECIALTY

| | General Practice | Family Practice | Internal Medicine | OB-GYN | Total |
|--------------------------|---------------------|--------------------|----------------------|---------------|---------------|
| Very Successful | 3 (4.9) | 1 (.9) | 2 (1.3) | 3 (3.6) | 9 (2.2) |
| Somewhat Successful | 29 (47.5) | 63 (60.6) | 78 (50.3) | 44 (53.7) | 214 (53.2) |
| Somewhat Unsuccessful | 22 (36.1) | 29 (27.9) | 56 (36.1) | 29 (35.4) | 136 (33.8) |
| Very Unsuccessful | 7 (11.5) | 11 (10.6) | 19 (12.3) | 6 (7.3) | 43 (10.7) |
| Total Percent Total | 61 (100.0) | 104 (100.0) | 155 (100.0) | 82 (100.0) | 402 |

$$\chi^2 = 9.05; df = 9; p = .4322.$$

$$\chi^2_L = 96.66; df = 102; p = .6308.$$

TABLE I-4

FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED SUCCESS
IN COUNSELING PATIENTS ABOUT EXERCISE BY SPECIALTY

| | General Practice | Family Practice | Internal Medicine | OB-GYN | Total |
|--------------------------|---------------------|--------------------|----------------------|--------------|---------------|
| Very Successful | 0 (0.0) | 1 (.9) | 5 (3.3) | 1 (1.3) | 7 (1.8) |
| Somewhat Successful | 33 (55.0) | 60 (57.7) | 83 (54.6) | 42 (53.2) | 218 (55.2) |
| Somewhat Unsuccessful | 22 (36.7) | 35 (33.7) | 57 (37.5) | 30 (38.0) | 144 (36.5) |
| Very Unsuccessful | 5 (8.3) | 8 (7.7) | 7 (4.6) | 6 (7.6) | 26 (6.6) |
| Total | 60 | 104 | 152 | 79 | 395 |
| Percent Total | (100.0) | (100.0) | (100.0) | (100.1)* | |

*Rounding error.

$$\chi^2 = 3.50; df = 9; p = .9409.$$

$$\chi_L^2 = 12.71; df = 18; p = .8086.$$

TABLE I-5

FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED SUCCESS
IN COUNSELING PATIENTS ABOUT STRESS BY SPECIALTY

| | General Practice | Family Practice | Internal Medicine | OB-GYN | Total |
|--------------------------|---------------------|--------------------|----------------------|--------------|---------------|
| Very Successful | 1 (1.7) | 3 (3.0) | 2 (1.4) | 1 (1.3) | 7 (1.8) |
| Somewhat Successful | 33 (56.9) | 55 (54.5) | 57 (38.5) | 33 (43.4) | 178 (46.5) |
| Somewhat Unsuccessful | 18 (31.0) | 38 (37.6) | 76 (51.4) | 35 (46.1) | 167 (43.6) |
| Very Unsuccessful | 6 (10.4) | 5 (5.0) | 13 (8.8) | 7 (9.2) | 31 (8.1) |
| Total | 58 | 101 | 148 | 76 | 383 |
| Percent Total | (100.0) | (100.1)* | (100.1) | (100.0) | |

*Rounding error.

$\chi^2 = 12.44$; $df = 9$; $p = .1895$.

$\chi^2_L = 13.52$; $df = 18$; $p = .7595$.

TABLE I-6

FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED SUCCESS
IN COUNSELING PATIENTS ABOUT SMOKING

| | General Practice | Family Practice | Internal Medicine | OB-GYN | Total |
|--------------------------|---------------------|--------------------|----------------------|--------------|---------------|
| Very Successful | 22 (35.5) | 42 (40.4) | 65 (41.9) | 11 (13.9) | 140 (35.0) |
| Somewhat Successful | 34 (54.8) | 57 (54.8) | 83 (53.6) | 52 (65.8) | 226 (56.5) |
| Somewhat Unsuccessful | 3 (4.8) | 5 (4.8) | 5 (3.2) | 14 (17.7) | 27 (6.8) |
| Very Unsuccessful | 3 (4.8) | 0 (0.0) | 2 (1.3) | 2 (2.5) | 7 (1.8) |
| Total | 62 | 104 | 155 | 79 | 400 |
| Percent Total | (99.9)* | (100.0) | (100.0) | (99.9) | |

*Rounding error.

$\chi^2 = 31.50$; $df = 9$; $p = .0002$.

$\chi^2_L = 63.15$; $df = 105$; $p = .9996$.

APPENDIX J

CELL FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED NEED
FOR INFORMATION AND TRAINING ON SMOKING, ALCOHOL, DIET,
EXERCISE, STRESS, BLOOD PRESSURE FOR RESPONDENTS
IN THE TENNESSEE HEALTH PROMOTION PROJECT

TABLE J-1

CELL FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED NEED
FOR TRAINING AND INFORMATION ON SMOKING BY SPECIALTY

| | General Practice | Family Practice | Internal Medicine | OB-GYN | Total |
|---------------------|---------------------|--------------------|----------------------|---------------|---------------|
| Very Useful | 22 (36.7) | 35 (33.0) | 48 (30.6) | 23 (27.4) | 128 (31.5) |
| Somewhat Useful | 18 (30.0) | 48 (45.3) | 54 (34.4) | 35 (41.7) | 155 (38.1) |
| Somewhat Useless | 12 (20.0) | 6 (5.7) | 22 (14.0) | 10 (11.9) | 50 (12.3) |
| Not Useful | 8 (13.3) | 17 (16.0) | 33 (21.0) | 16 (19.0) | 74 (18.2) |
| Total | 60 (100.0) | 106 (100.0) | 157 (100.0) | 84 (100.0) | 407 |

$$\chi^2 = 14.44; \text{ df} = 9; \text{ p} = .1075.$$

$$\chi^2_{\text{L}} = 131.50; \text{ df} = 147; \text{ p} = .8156.$$

TABLE J-2

CELL FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED NEED
FOR TRAINING AND INFORMATION ON ALCOHOL BY SPECIALTY

| | General Practice | Family Practice | Internal Medicine | OB-GYN | Total |
|---------------------|---------------------|--------------------|----------------------|---------------|-----------------|
| Very Useful | 22 (36.7) | 34 (32.1) | 46 (29.3) | 19 (22.6) | 121 (29.7) |
| Somewhat Useful | 21 (35.0) | 47 (44.3) | 62 (39.5) | 36 (42.9) | 166 (40.8) |
| Somewhat Useless | 11 (18.3) | 12 (11.3) | 21 (13.4) | 12 (14.3) | 56 (13.8) |
| Not Useful | 6 (10.0) | 13 (12.3) | 28 (17.8) | 17 (20.2) | 64 (15.7) |
| Total | 60 (100.0) | 106 (100.0) | 157 (100.0) | 84 (100.0) | 407 (100.00) |

$$\chi^2 = 8.49; df = 9; p = .4861.$$

$$\chi_L^2 = 93.86; df = 90; p = .3694.$$

TABLE J-3

CELL FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED NEED
FOR TRAINING AND INFORMATION ON DIET BY SPECIALTY

| | General Practice | Family Practice | Internal Medicine | OB-GYN | Total |
|---------------------|---------------------|--------------------|----------------------|---------------|-----------------|
| Very Useful | 21 (34.4) | 40 (37.7) | 56 (35.7) | 27 (32.2) | 144 (35.3) |
| Somewhat Useful | 30 (49.2) | 48 (45.3) | 70 (44.6) | 38 (45.2) | 186 (45.6) |
| Somewhat Useless | 8 (13.1) | 11 (10.4) | 12 (7.6) | 11 (13.1) | 42 (10.3) |
| Not Useful | 2 (3.3) | 7 (6.6) | 19 (12.1) | 8 (9.5) | 36 (3.8) |
| Total | 61 (100.0) | 106 (100.0) | 157 (100.0) | 84 (100.0) | 408 (100.00) |

$$\chi^2 = 8.90; \text{ df} = 9; p = .4469.$$

$$\chi_L^2 = 103.88; \text{ df} = 132; p = .9616.$$

TABLE J-4

CELL FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED NEED
FOR TRAINING AND INFORMATION ON EXERCISE BY SPECIALTY

| | General Practice | Family Practice | Internal Medicine | OB-GYN | Total |
|---------------------|---------------------|--------------------|----------------------|---------------|-----------------|
| Very Useful | 19 (31.7) | 29 (27.3) | 39 (25.0) | 19 (22.6) | 106 (26.1) |
| Somewhat Useful | 26 (43.3) | 55 (51.9) | 72 (46.2) | 45 (53.6) | 198 (48.8) |
| Somewhat Useless | 12 (20.0) | 13 (12.3) | 25 (16.0) | 10 (11.9) | 60 (14.8) |
| Not Useful | 3 (5.0) | 9 (8.5) | 20 (12.8) | 10 (11.9) | 42 (10.3) |
| Total | 60 (100.0) | 106 (100.0) | 156 (100.0) | 84 (100.0) | 406 (100.00) |

$$\chi^2 = 6.66; \text{ df} = 9; \text{ p} = .6721.$$

$$\chi_L^2 = 106.79; \text{ df} = 126; \text{ p} = .8917.$$

TABLE J-5

CELL FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED NEED
FOR TRAINING AND INFORMATION ON STRESS BY SPECIALTY

| | General Practice | Family Practice | Internal Medicine | OB-GYN | Total |
|---------------------|---------------------|--------------------|----------------------|---------------|----------------|
| Very Useful | 19 (31.6) | 32 (30.2) | 51 (32.5) | 21 (25.0) | 123 (30.2) |
| Somewhat Useful | 27 (45.0) | 55 (51.9) | 68 (43.3) | 42 (50.0) | 192 (47.2) |
| Somewhat Useless | 13 (21.7) | 12 (11.3) | 17 (10.8) | 11 (13.1) | 53 (13.0) |
| Not Useful | 1 (1.7) | 7 (6.6) | 21 (13.4) | 10 (11.9) | 39 (9.6) |
| Total | 60 (100.0) | 106 (100.0) | 157 (100.0) | 84 (100.0) | 407 (100.0) |

$$\chi^2 = 12.19; df = 9; p = .2027.$$

$$\chi^2_L = 35.10; df = 39; p = .6482.$$

TABLE J-6

CELL FREQUENCY AND PERCENT OF RESPONSES ON PERCEIVED NEED
FOR TRAINING AND INFORMATION ON BLOOD PRESSURE
BY SPECIALTY

| | General Practice | Family Practice | Internal Medicine | OB-GYN | Total |
|---------------------|---------------------|--------------------|----------------------|---------------|-----------------|
| Very Useful | 23 (38.3) | 28 (26.4) | 45 (28.7) | 21 (25.0) | 117 (28.8) |
| Somewhat Useful | 21 (35.0) | 51 (48.1) | 56 (35.7) | 44 (52.4) | 172 (42.3) |
| Somewhat Useless | 9 (15.0) | 9 (8.5) | 24 (15.3) | 8 (9.5) | 50 (12.3) |
| Not Useful | 7 (11.7) | 18 (17.0) | 32 (20.3) | 11 (13.1) | 68 (16.7) |
| Total | 60 (100.0) | 106 (100.0) | 157 (100.0) | 84 (100.0) | 407 (100.1)* |

*Rounding error.

$$\chi^2 = 8.24; df = 9; p = .5098.$$

$$\chi_L^2 = 50.22; df = 60; p = .8117.$$

APPENDIX K

CELL FREQUENCIES AND PERCENT OF RESPONSES ON REPORTED PERSONAL
BEHAVIORS AND SUCCESS IN COUNSELING PATIENTS FOR
RESPONDENTS IN THE TENNESSEE PHYSICIAN HEALTH
PROMOTION PROJECT

TABLE K-1

CELL FREQUENCIES AND PERCENT OF RESPONSES ON REPORTED
SMOKING BEHAVIOR AND PERCEIVED SUCCESS IN COUNSELING
PATIENTS ABOUT SMOKING

| Perceived Success | Response to Statement | | | Total |
|--------------------------|------------------------|------------------------|---------------------|----------------|
| | "I Never Smoked" | "I Quit Smoking" | "I Now Smoke" | |
| Very Successful | 5 (1.3)* | 6 (1.5) | 0 (0.0) | 11 (2.8) |
| Somewhat Successful | 111 (27.8) | 81 (20.3) | 16 (4.0) | 208 (52.1) |
| Somewhat Unsuccessful | 64 (16.0) | 32 (8.0) | 18 (4.5) | 114 (28.6) |
| Very Unsuccessful | 39 (9.8) | 19 (4.8) | 8 (2.0) | 66 (16.5) |
| Total Percent Total | 219 (54.9) | 138 (34.6) | 42 (10.5) | 399 (100.0) |

*Percent of total responses.

$$\chi^2 = 9.12; df = 9; p = .1671.$$

$$\chi_L^2 = 96.26; df = 129; p = .9861.$$

TABLE K-2

CELL FREQUENCIES AND PERCENT OF RESPONSES ON REPORTED NUMBER
OF ALCOHOLIC BEVERAGES CONSUMED AND PERCEIVED SUCCESS
IN COUNSELING PATIENTS ABOUT ALCOHOL

| Perceived Success | Number of Alcoholic Beverages Consumed in One Week | | | | Total |
|--------------------------|---|---------------|-------------|--------------------|----------------|
| | None | 1-7 | 7-14 | Greater than 14 | |
| Very Successful | 2 (.5)* | 3 (.8) | 0 (0.0) | 0 (0.0) | 5 (1.3) |
| Somewhat Successful | 56 (14.8) | 90 (23.8) | 9 (2.4) | 0 (0.0) | 155 (41.0) |
| Somewhat Unsuccessful | 59 (15.6) | 71 (18.8) | 14 (3.7) | 4 (1.1) | 148 (39.2) |
| Very Unsuccessful | 26 (6.9) | 39 (10.3) | 4 (1.1) | 1 (2.6) | 70 (18.5) |
| Total Percent Total | 143 (37.8) | 203 (53.8) | 27 (7.1) | 5 (1.3) | 378 (100.0) |

*Percent of total responses.

$\chi^2 = 3.69$; $df = 9$; $p = .9305$.

$\chi^2_L = 17.55$; $df = 24$; $p = .8244$.

TABLE K-3

CELL FREQUENCIES AND PERCENT OF RESPONSES ON REPORTED
DRINKING BEHAVIOR AND PERCEIVED SUCCESS IN COUNSELING
PATIENTS ABOUT ALCOHOL

| Response to Statement: "In the past month the number of times I consumed five or more alcoholic beverages on any one occasion" | | | | | | |
|--|---------------|-------------|------------|------------|--------------------|---------------|
| | Never | 1 time | 2 times | 3-7 times | 8 or more times | Total |
| Very Successful | 5 (1.3)* | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 5 (1.3) |
| Somewhat Successful | 141 (37.4) | 7 (1.9) | 2 (.5) | 5 (1.3) | 0 (0.0) | 155 (41.1) |
| Somewhat Unsuccessful | 126 (33.4) | 15 (4.0) | 2 (0.0) | 3 (.8) | 2 (.5) | 148 (39.3) |
| Very Unsuccessful | 61 (16.2) | 5 (1.3) | 2 (.5) | 1 (.3) | 0 (0.0) | 69 (18.3) |
| Total | 333 | 27 | 6 | 9 | 2 | 377 |
| Percent Total | (88.3) | (7.2) | (1.6) | (2.4) | (.5) | (100.0) |

*Percent of total responses.

$$\chi^2 = 4.25; df = 12; p = .9785.$$

$$\chi_L^2 = 65.34; df = 93; p = .9869.$$

TABLE K-4

CELL FREQUENCIES AND PERCENT OF RESPONSES REPORTED
BY RESPONDENTS' WEIGHT RANGE AND PERCEIVED SUCCESS
IN COUNSELING PATIENTS ABOUT DIET

| Perceived Success | Under Normal Weight | Normal Weight | Above Normal Weight | Total |
|--------------------------|---------------------------|------------------|---------------------------|---------------|
| Very Successful | 1 (.2)* | 8 (2.0) | 0 (0.0) | 9 (2.3) |
| Somewhat Successful | 19 (4.9) | 131 (33.8) | 52 (13.4) | 202 (52.1) |
| Somewhat Unsuccessful | 7 (1.80) | 87 (22.4) | 40 (10.3) | 135 (34.5) |
| Very Unsuccessful | 2 (.5) | 27 (7.0) | 14 (3.6) | 43 (11.1) |
| Total | 29 | 253 | 106 | 388 |
| Percent Total | (7.5) | (65.2) | (27.3) | (100.0) |

*Percent of total responses.

$$\chi^2 = 2.33; df = 6; p = .8866.$$

$$\chi_L^2 = 96.66; df = 102; p = .6308.$$

TABLE K-5

CELL FREQUENCIES AND PERCENT OF RESPONSES ON REPORTED
EXERCISE HABITS AND PERCEIVED SUCCESS IN COUNSELING
PATIENTS ABOUT EXERCISE

| Perceived Success | Response to Statement: "I engage in aerobic activity at least 3 times a week" | | | | | Total |
|--------------------------|--|------------------|--------------|-----------------|-------------|---------------|
| | Always | Almost Always | Sometimes | Almost Never | Never | |
| Very Successful | 0 (0.0)* | 2 (.5) | 2 (.5) | 1 (.3) | 2 (.5) | 7 (1.8) |
| Somewhat Successful | 53 (13.7) | 49 (12.7) | 60 (15.5) | 39 (9.6) | 12 (3.1) | 21 (54.5) |
| Somewhat Unsuccessful | 30 (7.8) | 29 (7.5) | 40 (10.3) | 28 (7.2) | 16 (4.1) | 143 (37.0) |
| Very Unsuccessful | 5 (1.3) | 6 (1.6) | 6 (1.6) | 7 (1.8) | 2 (.5) | 26 (6.7) |
| Total | 88 | 86 | 108 | 75 | 32 | 387 |
| Percent Total | (22.7) | (22.2) | (29.9) | (19.4) | (8.3) | (100.0) |

*Percent of total responses.

$$\chi^2 = 2.91; df = 12; p = .9961.$$

$$\chi_L^2 = 4.39; df = 9; p = .8846.$$

TABLE K-6

CELL FREQUENCIES AND PERCENT OF RESPONSES ON REPORTED
 ABILITY TO COPE WITH STRESS AND PERCEIVED SUCCESS
 IN COUNSELING PATIENTS ABOUT STRESS

| Perceived Success | Response to Statement: "I have developed skills for coping with stress" | | Total |
|--------------------------|---|--------------|---------------|
| | Yes | No | |
| Very Successful | 6 (1.6)* | 0 (0.0) | 6 (1.6) |
| Somewhat Successful | 152 (40.8) | 24 (6.4) | 176 (47.2) |
| Somewhat Unsuccessful | 122 (32.8) | 40 (10.7) | 162 (43.4) |
| Very Unsuccessful | 21 (5.6) | 8 (2.1) | 29 (7.8) |
| Total | 301 | 72 | 373 |
| Percent Total | (80.7) | (19.3) | (100.0) |

*Percent of total responses.

$$\chi^2 = 5.72; df = 9; p = .1262.$$

$$\chi^2_L = 9.91; df = 9; p = .3575.$$

TABLE K-7

CELL FREQUENCIES AND PERCENT OF RESPONSES ON CHECKING
BLOOD PRESSURE AND PERCEIVED SUCCESS IN COUNSELING
PATIENTS ABOUT BLOOD PRESSURE

| Perceived Success | Response to Statement: "I regularly check my blood pressure" | | |
|--------------------------|---|---------------|---------------|
| | Yes | No | Total |
| Very Successful | 83 (21.1)* | 54 (13.7) | 137 (34.8) |
| Somewhat Successful | 114 (28.9) | 110 (27.9) | 224 (27.9) |
| Somewhat Unsuccessful | 12 (3.0) | 15 (3.8) | 27 (6.9) |
| Very Unsuccessful | 3 (.8) | 3 (.8) | 6 (1.5) |
| Total | 212 | 182 | 394 |
| Percent Total | (53.8) | (46.2) | (100.0) |

*Percent of total responses.

$$\chi^2 = 4.83; df = 3; p = .1843.$$

$$\chi_L^2 = 63.15; df = 105; p = .9996.$$

VITA

Christine Assmann Collins was born in Columbus, Ohio, where she received her early education. She attended the Ohio State University, completed a dental hygiene program in the College of Dentistry and received a Bachelor of Science degree in Health Education in 1963. Upon graduation, she served as a research assistant in the College of Dentistry at the Ohio State University.

After several years experience as a dental hygienist in Ohio, Connecticut and California she entered graduate school at the University of Tennessee, Knoxville, and received a Master's degree in Public Health in 1980.

In 1981 she accepted a research assistantship with the Division of Health and Safety at the University of Tennessee, Knoxville. Here she assisted in completing the Tennessee Health Curriculum Guide for the Tennessee Department of Education. She served as a graduate teaching assistant for the same institution for three years.

In the summer of 1986 she received a Ph.D. in Health Education from the University of Tennessee, Knoxville.

In addition to her studies and teaching she has served as a health promotion consultant for two national firms. Additionally, she coordinated wellness programming for university students at the University of Tennessee, Knoxville, presented workshops on health promotion to teachers and pre-med students.

She has been actively involved in health planning in East Tennessee. She is vice president of the county health planning agency

and a member of the advisory board for the Knox County Ambulatory Care Program where she served as president for two years.

She is a member of the American Public Health Association; American Alliance for Health, Physical Education, Recreation and Dance; Eta Sigma Gamma and the Society for Prospective Medicine.

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**TENNESSEE PHYSICIAN
HEALTH PROMOTION SURVEY**

SPONSORED BY:



**TENNESSEE DEPARTMENT OF
HEALTH AND ENVIRONMENT**

ENDORSED BY:



**TENNESSEE MEDICAL
ASSOCIATION**

Plate 1

Collins, 1986

This questionnaire was adapted with permission from
The Medical Foundation, Boston, Mass.

PHYSICIAN HEALTH PROMOTION SURVEY

INSTRUCTIONS

This survey takes fifteen minutes or so to complete. It is designed to be as brief as possible and yet provide the information necessary for this study.

Please read each item carefully and circle your personal response to the item.

The small numbers in the right margin are to facilitate processing and analysis. Please disregard them as you complete the survey.

Again, thank you for your cooperation.

1. How important do you think each of the following behaviors is in promoting the health of your patients? (Please circle one number for each)

| | <u>Very Important</u> | <u>Somewhat Important</u> | <u>Somewhat Unimportant</u> | <u>Very Unimportant</u> | |
|---|---------------------------|-------------------------------|---------------------------------|-----------------------------|-----|
| a. eliminate cigarette smoking..... | 1 | 2 | 3 | 4 | 7/ |
| b. drink alcohol moderately..... | 1 | 2 | 3 | 4 | 8/ |
| c. eat breakfast every morning..... | 1 | 2 | 3 | 4 | 9/ |
| d. avoid foods high in cholesterol..... | 1 | 2 | 3 | 4 | 10/ |
| e. include fiber in diet..... | 1 | 2 | 3 | 4 | 11/ |
| f. avoid high caloric intake..... | 1 | 2 | 3 | 4 | 12/ |
| g. decrease salt consumption..... | 1 | 2 | 3 | 4 | 13/ |
| h. engage in aerobic activity at least three times a week..... | 1 | 2 | 3 | 4 | 14/ |
| i. develop skills for coping with stress..... | 1 | 2 | 3 | 4 | 15/ |
| j. always use a seat belt when in a car..... | 1 | 2 | 3 | 4 | 16/ |
| k. get blood pressure checked regularly..... | 1 | 2 | 3 | 4 | 17/ |

2. Physicians differ in what they know about different health practices of their patients. Please indicate below the frequency with which you gather information on your patients in each of the following areas listed. (Circle one number for each)

| | <u>Never</u> | <u>Initial visit only</u> | <u>Every few visits</u> | <u>Almost every visit</u> | <u>Every time I see the patient</u> | |
|-----------------------|--------------|---------------------------|-------------------------|---------------------------|-------------------------------------|-----|
| a. smoking cigarettes | 1 | 2 | 3 | 4 | 5 | 18/ |
| b. alcohol..... | 1 | 2 | 3 | 4 | 5 | 19/ |
| c. diet..... | 1 | 2 | 3 | 4 | 5 | 20/ |
| d. exercise | 1 | 2 | 3 | 4 | 5 | 21/ |
| e. stress..... | 1 | 2 | 3 | 4 | 5 | 22/ |
| f. blood pressure.... | 1 | 2 | 3 | 4 | 5 | 23/ |

3. As a rough estimate, what percentage of all your patients would you say fit the following descriptions? (Circle one number for each)

| | <u>Less than 25%</u> | <u>25-50%</u> | <u>51-75%</u> | <u>More than 75%</u> | <u>Don't know</u> | |
|----------------------------------|----------------------|---------------|---------------|----------------------|-------------------|-----|
| a. are heavy cigarette smokers.. | 1 | 2 | 3 | 4 | 5 | 24/ |
| b. have alcohol problems..... | 1 | 2 | 3 | 4 | 5 | 25/ |
| c. are obese | 1 | 2 | 3 | 4 | 5 | 26/ |
| d. are completely sedentary.... | 1 | 2 | 3 | 4 | 5 | 27/ |
| e. have emotional problems..... | 1 | 2 | 3 | 4 | 5 | 28/ |
| f. have hypertension..... | 1 | 2 | 3 | 4 | 5 | 29/ |

4. In general, do you think it is worth trying to help your patients to modify behaviors in an effort to minimize so-called "risk factors"?

 definitely yes probably yes probably no definitely no 30/

5. How successful do you feel you are in helping your patients achieve lifestyle change for each of the following: (circle one number for each)

| | <u>Very successful</u> | <u>Somewhat successful</u> | <u>Somewhat unsuccessful</u> | <u>Very unsuccessful</u> | <u>Don't know</u> | |
|--------------------------|----------------------------|--------------------------------|----------------------------------|------------------------------|-----------------------|-----|
| a. smoking cigarettes... | 1 | 2 | 3 | 4 | 5 | 31/ |
| b. alcohol..... | 1 | 2 | 3 | 4 | 5 | 32/ |
| c. diet | 1 | 2 | 3 | 4 | 5 | 33/ |
| d. exercise | 1 | 2 | 3 | 4 | 5 | 34/ |
| e. stress | 1 | 2 | 3 | 4 | 5 | 35/ |
| f. blood pressure | 1 | 2 | 3 | 4 | 5 | 36/ |

6. Tennessee physicians vary in their knowledge, skills, and training in counseling or advising patients about various health matters. Do you feel it would be useful to have more information or training in order to counsel your patients relative to the following: (circle one number for each)

| | <u>Very Useful</u> | <u>Somewhat Useful</u> | <u>Somewhat Useless</u> | <u>Not Useful</u> | |
|--------------------------|------------------------|----------------------------|-----------------------------|-----------------------|-----|
| a. cigarette smoking.... | 1 | 2 | 3 | 4 | 37/ |
| b. alcohol..... | 1 | 2 | 3 | 4 | 38/ |
| c. diet/nutrition..... | 1 | 2 | 3 | 4 | 39/ |
| d. exercise | 1 | 2 | 3 | 4 | 40/ |
| e. stress | 1 | 2 | 3 | 4 | 41/ |
| f. blood pressure..... | 1 | 2 | 3 | 4 | 42/ |

7. If Continuing Medical Education courses were available at a convenient time, how likely would you be to take courses teaching about the following areas? (circle one number for each)

| | <u>Recently taken a course</u> | <u>Very likely</u> | <u>Somewhat likely</u> | <u>Somewhat unlikely</u> | <u>Very unlikely</u> | |
|---|--------------------------------|--------------------|------------------------|--------------------------|----------------------|-----|
| a. cigarette smoking cessation techniques.. | 1 | 2 | 3 | 4 | 5 | 43/ |
| b. alcoholism and alcohol abuse..... | 1 | 2 | 3 | 4 | 5 | 44/ |
| c. diet and nutrition..... | 1 | 2 | 3 | 4 | 5 | 45/ |
| d. exercise and fitness.... | 1 | 2 | 3 | 4 | 5 | 46/ |
| e. stress coping skills.... | 1 | 2 | 3 | 4 | 5 | 47/ |
| f. behavior modification... | 1 | 2 | 3 | 4 | 5 | 48/ |
| g. health risk assessment.. | 1 | 2 | 3 | 4 | 5 | 49/ |

8. The following are types of assistance which might help in working with patients on health promotion. Please indicate how valuable to you each of the following might be.(Circle one number for each)

| | <u>Very Valuable</u> | <u>Valuable</u> | <u>Not Valuable</u> | <u>Not at all Valuable</u> | |
|--|----------------------|-----------------|---------------------|----------------------------|-----|
| a. preprinted "risk factor" questionnaires | 1 | 2 | 3 | 4 | 50/ |
| b. videotapes for use with patients..... | 1 | 2 | 3 | 4 | 51/ |
| c. literature for distribution to patients | 1 | 2 | 3 | 4 | 52/ |
| d. physician training in specific subjects, e.g., alcohol, exercise, nutrition.... | 1 | 2 | 3 | 4 | 53/ |
| e. physician training in behavior modification | 1 | 2 | 3 | 4 | 54/ |
| f. training for support staff..... | 1 | 2 | 3 | 4 | 55/ |
| g. information on where to refer patients.. | 1 | 2 | 3 | 4 | 56/ |
| h. financial reimbursement for time spent with patients on health promotion..... | 1 | 2 | 3 | 4 | 57/ |
| i. financial reimbursement to enable hiring additional staff..... | 1 | 2 | 3 | 4 | 58/ |
| j. other(Specify)_____ | 1 | 2 | 3 | 4 | 59/ |

9. This item is about your personal health behavior. Please respond to the following statements regarding your personal health habits.

| | <u>Always</u> | <u>Almost</u> <u>Always</u> | <u>Sometimes</u> | <u>Almost</u> <u>Never</u> | <u>Never</u> | |
|--|--------------------------------------|--------------------------------|------------------|-------------------------------|--------------|-----|
| a. I eat breakfast every morning..... | 1 | 2 | 3 | 4 | 5 | 60/ |
| b. I avoid foods high in cholesterol.. | 1 | 2 | 3 | 4 | 5 | 61/ |
| c. I limit salt consumption..... | 1 | 2 | 3 | 4 | 5 | 62/ |
| d. I engage in aerobic activity at least three times a week..... | 1 | 2 | 3 | 4 | 5 | 63/ |
| e. I use a seat belt when in a car..... | 1 | 2 | 3 | 4 | 5 | 64/ |
| f. cigarette smoking (check one)..... | I have never smoked cigarettes _____ | | | | | |
| | I have quit smoking cigarettes _____ | | | | | |
| | I now smoke cigarettes _____ | | | | | 65/ |
| g. My weight is (check one)..... | Under "normal" range _____ | | | | | |
| | Within "normal" range _____ | | | | | |
| | Above "normal" range _____ | | | | | 66/ |
| h. In the past week, the number of alcoholic beverages I consumed (glasses of wine, beer, liquor) was: (state number) _____ . | | | | | | 67/ |
| i. In the past month the number of times I consumed five or more alcoholic beverages on any one occasion was: (state number of occasions) _____ . | | | | | | 68/ |
| | | <u>YES</u> | | <u>NO</u> | | |
| j. I have developed skills for coping with stress.. | 1 | | | 2 | | 69/ |
| k. I regularly check my blood pressure..... | 1 | | | 2 | | 70/ |

10. Background information:

Year of graduation from medical school:

Before 1948 _____ 1948 - 1966 _____ 1966 - 1975 _____ After 1975 _____ 71/

11. Race/Origin:

White _____ Black _____ Hispanic _____ Other _____ 72/

12. Sex:

Male _____ Female _____ 73/

13. In which setting do you principally work? (Circle one answer)

- 1 Self-employed clinical practice (solo or partners)
2 Group practice, fee-for-service
3 Group health plan, prepaid
4 Medical or other professional training program
5 University/college or other educational institution
6 Hospital/clinic, private
7 Hospital/clinic, government (other than federal)
8 Other, (specify): _____ 74/

14. Name of county in which you practice. (If you practice in more than one county, the county of the main location.)County _____ 75/
76/

15. What is your primary area of specialization? (Circle one)

- _____ General Practice
 _____ Family Practice
 _____ Internal Medicine
 _____ OB-GYN
 _____ Other (Specify): _____ 77/

16. Are you Board certified in any specialities?

No..... 1

No, but eligible for Boards in..... 2 Family Practice

3 Internal Medicine

4 OB-GYN

5 Other

Yes, certified in (list all): _____

78/

17. What percentage of your time do you spend in providing direct patient care (as opposed to research, teaching, administration)?

1 No time at all

2 Less than half my time

3 50% - 75% of my time

4 Full time or more than 3/4 time

79/

18. Approximately what percentage of your patients would you estimate are: (Circle one number for each)

| | <u>More than 75%</u> | <u>51 - 75%</u> | <u>25 - 50%</u> | <u>1 - 25%</u> | <u>0%</u> | |
|------------------------------|----------------------|-----------------|-----------------|----------------|-----------|-----|
| a. male..... | 1 | 2 | 3 | 4 | 5 | 80/ |
| b. pregnant female. | 1 | 2 | 3 | 4 | 5 | 81/ |
| c. black..... | 1 | 2 | 3 | 4 | 5 | 82/ |
| d. 15 years or younger | 1 | 2 | 3 | 4 | 5 | 83/ |
| e. 65 years or older | 1 | 2 | 3 | 4 | 5 | 84/ |
| f. non-English speaking..... | 1 | 2 | 3 | 4 | 5 | 85/ |
| g. Medicaid patients | 1 | 2 | 3 | 4 | 5 | 86/ |

THANK YOU FOR YOUR TIME AND THOUGHTFUL RESPONSES!

Is there anything else you would like to tell us about health promotion in your medical practice? If so, please use this space for that purpose.

Also, any comments you wish to make that you think may help us in future efforts to understand what Tennessee physicians think about health promotion will be appreciated, either here or in a separate letter.

Your contribution to this effort is very greatly appreciated. If you would like a summary of results, please print your name and address on the back of the return envelope (NOT on this questionnaire). We will see that you get it.

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