

**FACULTY'S PARTICIPATION IN A UNIVERSITY
WELLNESS PROGRAM**

By

DANIELLE G. DUNCAN

Bachelor of Science

Oklahoma State University


Stillwater, Oklahoma

1994

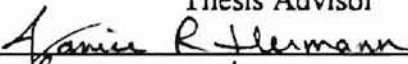
**Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
July, 1996**

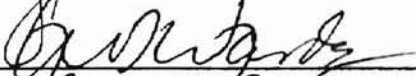
FACULTY'S PARTICIPATION IN A UNIVERSITY
WELLNESS PROGRAM


Thesis Approved:

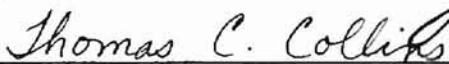


Thesis Advisor









Dean of Graduate College

ACKNOWLEDGMENTS

I wish to express my deepest appreciation to my research committee members, Dr. Lea Ebro, RD/LD, Dr. Mac McCrory, Dr. Janice Hermann, RD/LD, and Dr. William Warde. Dr. Ebro, RD/LD, thank you for the professional and personal support and guidance throughout my undergraduate work, my dietetic internship experience, and my master's thesis. Thank you, Dr. Mac McCrory, for the wellness history reports and for making me laugh when I needed it most. Dr. Hermann, RD/LD, it was a pleasure working with you and I appreciate your insights. Dr. Warde, thank you for your time, statistical expertise, and interesting stories.

Special gratitude is extended to Oklahoma State University Wellness Center Staff for their guidance and support throughout my 10 months there as a nutrition graduate assistant for Elizabeth Lohrman, MS, RD/LD. Thank you, Elizabeth, for everything. Darren Hackney, Computer Systems Programmer, thank you for your time and assistance with my computer needs for my thesis and my nutrition information.

Finally, this thesis is dedicated to my parents, Bill Duncan and Marsha Poplin, and to my best friends, Amy Shobert and Andy Jensen. Their understanding of me and the emotional support they gave me throughout my life and graduate studies have helped me through the tough times and has given me motivation to achieve my goals of completing my master's degree and becoming a registered/licensed dietitian.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
Purpose and Objectives.....	3
Hypotheses.....	4
Assumptions.....	6
Limitations	6
Definitions.....	6
Format of Thesis.....	8
II. REVIEW OF THE LITERATURE	9
Perspective of Wellness	9
History	9
Definitions.....	10
Components of Wellness Programs.....	12
Cigarette Smoking.....	12
Alcohol/Drug Abuse.....	13
Exercise/Fitness.....	15
Nutrition.....	16
Stress Control.....	20
Safety.....	21
Established Wellness Programs	23
Hospital Settings	23
Industry/Business Settings	25
University Settings.....	27
Summary	30
III. METHODOLOGY.....	31
Research Design	31
Sample/Population.....	32
Data Collection.....	32
Instrumentation	32
Procedure.....	33
Data Analysis.....	34

Chapter	Page
IV. FACULTY'S PARTICIPATION IN A UNIVERSITY WELLNESS PROGRAM.....	35
Abstract.....	35
Introduction.....	36
Methods	37
The Sample	37
The Questionnaire	37
Statistical Analysis.....	38
Results and Discussion.....	39
Personal Health Habits and Current Health Status.....	39
Tobacco Usage.....	39
Alcohol/Drug Abuse.....	40
Eating Habits.....	41
Exercise/Fitness Habits	42
Stress Control.....	43
Safety Awareness	43
Interest and Participation in the OSU Wellness Center	44
Applications	46
References.....	54
V. SUMMARY AND RECOMMENDATIONS	55
Summary	55
Recommendations	59
BIBLIOGRAPHY	61

	Page
APPENDICES	65
APPENDIX A - JOURNAL OF THE AMERICAN DIETETIC ASSOCIATION GUIDELINES TO AUTHORS	66
APPENDIX B - RECOMMENDED DIETARY ALLOWANCES	71
APPENDIX C - FOOD GUIDE PYRAMID	73
APPENDIX D - CORRESPONDENCE AND RESEARCH INSTRUMENT	75
APPENDIX E - INSTITUTIONAL REVIEW BOARD APPROVAL	82
APPENDIX F - SCORING SYSTEM OF PART I UTILIZED BY THE RESEARCHER.....	84
APPENDIX G - ANOVA AND DUNCAN'S TABLES	87
APPENDIX H - T-TEST TABLES	95
APPENDIX I - CHI-SQUARE TABLES	100

LIST OF TABLES

Table	Page
CHAPTER IV	
1. P Values for Personal Health Habit Scores of the 1987 Eckhart Study Versus the 1996 Duncan Study (Hypothesis Nine).....	50
2. P Values for ANOVA and T-test Analyses of Personal Health Habit Scores by Demographics (Hypothesis One).....	50
3. P Values for ANOVA and T-test Analyses of Personal Health Habit Scores by Current Health Status of Faculty (Hypothesis Five)	51
4. Wellness Programs Indicated by Faculty that They Prefer to Attend.....	51
5. Estimated Usage of the Wellness Center by Faculty Since Opening in January, 1991.....	52
6. P Values for Chi-Square Analyses of Wellness Programs Preferred to Attend by Faculty's Demographics (Hypothesis Eight).....	53
CHAPTER V	
VII. Where Faculty Obtain Health Information.....	60

LIST OF FIGURES

Figure	Page
CHAPTER IV	
1. Faculty's Current Tobacco Use.....	47
2. Faculty's Former Tobacco Use	47
3. The Number of Meals a Day Consumed by the Faculty ...	48
4. Percentage of Faculty Who Eats Breakfast.....	48
5. Percentage of Faculty Currently Utilizing An Exercise/Fitness Center.....	49
6. Faculty's Mean Category Scores from Part I (Personal Health Habits).....	52

CHAPTER I

INTRODUCTION

In 1983, Roger B. Smith, Chairman of General Motors, stated "American industry can't afford not to expand the wellness movement in the workplace. We need to go with the prevention over the cure. We need to get down to our fighting weight and explore every opportunity we can to hold our own against the competition. The bottom line is, we can only be as good as our people. So if we're to keep our competitive edge in America, our employees of all ages have to be healthy" (Kizer, 1987).

Between 1982 and 1993, the United States health care expenditures rose from \$320 billion to \$884.2 billion. In 1993, Federal health expenditures comprised 18.6 percent of total Federal Government expenditures, up from 15.4 percent in 1990. Hospital care, which is treatment of the disease rather than prevention, accounted for the greatest share, 37 percent in 1993, of the national health expenditures (Public Health Service, 1995).

Employer health care costs are rising at the rate of 25 to 100 percent a year. Companies are paying as much as 25 percent of total payroll for health care, including hidden items such as absenteeism, disability, turnover, decreased productivity, and replacement/recruiting. Each year, 500 million workdays are lost because of illness or disability, 26 million of these are due to heart disease and hypertension, and 93 million are due to lower back problems (U. S. Department of Agriculture, 1987).

The leading cause of serious illness and death in adult Americans is cardiovascular disease. Modifying personal health habits can reduce or eliminate many of the risk factors associated with heart disease. Illness and deaths from routine unhealthy choices make a sizable contribution to overall health care expenditures (Public Health Service, 1995).

The way people live directly impacts on the chances of suffering from heart disease. The same is true for cancer and other major illnesses, many due to poor dietary habits or exercise/fitness habits, and others, such as alcohol and drug abuse, uncontrolled stress, and poor safety habits. People should redirect their efforts from treatment of disease to preventive measures of these diseases and health threats (U. S. Department of Agriculture, 1987).

According to *Wellness at the Worksite*, 1987 edition, the long-term goal of wellness at the worksite programs is to decrease health care costs by redirecting expenditures to preventative measures. The short term goal is to increase productivity and boost morale by incorporating wellness among all employees. It is more convenient for employees to attend wellness programs on the job site than for the employers to provide the location, opportunity, transportation, funding, and time for an off-the-job program. The employers already have an interest in the health of their employees by paying for health care, but wellness programs take employers' interests even further by introducing them into areas of prevention versus treatment programs. Worksite wellness programs are now included in all types of businesses, hospitals, as well as universities (U. S. Department of Agriculture, 1987).

The Oklahoma State University Wellness Center opened January, 1991. It was the first facility specifically designed and staffed for wellness on a campus of higher education.

Before the center opened, OSU faculty were asked to participate in a healthstyle survey. Fifty percent of faculty voluntarily participated in the 1987 Needs Assessment of University Faculty for a Wellness Program survey (Eckhart, 1987). Since opening, the OSU Wellness Center has not done a thorough healthstyle survey to ask about faculties' health habits, current health status, and interests and participation in the OSU Wellness Program. Therefore, this study will be conducted to up-date the OSU faculty's personal health habits, current health status, and interests and participation in the OSU Wellness Center. By re-evaluating the faculty, the OSU Wellness Center can adjust its programs to better fit the needs of the current faculty.

Purpose and Objectives

The purpose of this study is to evaluate the OSU faculty's personal health habits, current health status, and interests and participation in the Wellness Center Program. Specific objectives are:

1. To identify personal health habits and current health status of the faculty at Oklahoma State University; and to relate these with demographic variables.
2. To relate personal health habit scores with the variables: exercise/fitness, eating habits, cigarette smoking, and current health status scores.
3. To find the interests, level of participation, and program preferences of faculty in the wellness program.

4. To compare and contrast differences in results of this survey with the results of the 1987 Needs Assessment of University Faculty for a Wellness Program (Eckhart, 1987).
5. To recommend topic areas of health promotion, based on results of study, for faculty to the Oklahoma State University Wellness Center Director and staff.

Hypotheses

This study postulated the following hypotheses:

- H01: There are no significant associations between the personal health habit scores in the categories of cigarette smoking; alcohol and drug abuse; eating habits; exercise/fitness; stress control; and safety with demographic variables: academic rank, college, age, relative weight, and gender.
- H02: There are no significant associations between belonging to an exercise/fitness center and walking the stairs in a multiple story building with exercise/fitness scores.
- H03: There are no significant associations between the number of meals consumed a day, snacking between meals, breakfast habits, being on a special diet, and the number of meals a week eaten away from home with eating habit scores.
- H04: There are no significant associations between being a current smoker and the cigarette smoking scores.

- H05: There are no significant associations between the personal health habit scores in the categories of cigarette smoking; alcohol and drug abuse; eating habits; exercise/fitness; stress control; and safety with current health status scores: physical examination during past two years, current treatment of a health problem, being on medication, having a cardiovascular evaluation, and number of continuous hours of sleep in a 24 hour period.
- H06: There are no significant associations between interest in the OSU Wellness Program with demographic variables: academic rank, college, age, relative weight, and gender.
- H07: There are no significant associations between level of participation in the OSU Wellness programs with demographic variables: academic rank, college, age, relative weight, and gender.
- H08: There are no significant associations between preference of wellness programs with demographic variables: academic rank, college, age, relative weight, and gender.
- H09: There are no significant associations between personal health habit scores in the 1987 Needs Assessment of University Faculty for a Wellness Program study (Eckhart, 1987) with personal health habit scores in 1996.
- H10: There are no significant associations between interests among faculty in 1987 Needs Assessment of University Faculty for a Wellness Program study (Eckhart, 1987) with interests in a wellness program among faculty in 1996.

Assumptions

In this study, the researcher will assume that faculty will objectively answer questions according to their current health status. It was also assumed that OSU faculty have needs and interests in a wellness program.

Limitations

A major limitation of this study is that only faculty at Oklahoma State University in Stillwater employed full-time during the 1995-1996 academic year were surveyed. Generalizations of results, therefore, will only apply to surveyed faculty on the Stillwater campus.

Definitions

The following definitions were used in this study:

1. Wellness: The actualized potential in each person to function at peak levels of performance with a healthy body, alert mind, and sound emotional health (Cook, 1981).
2. Workplace wellness and workplace health promotion: Refers to system efforts by employers to provide various kinds of preventive health care to employees (Kotarba & Bentley, 1988).

3. Employee Assistant Programs: Worksite-based program designed to assist in the identification and resolution of productivity problems associated with employees impaired by personal concerns including, but not limited to: health, marital, family, financial, alcohol, drug, legal, emotional, stress, or other personal concerns which may adversely affect employee job performance (Cooper, 1994).
4. Worksite program: A program offered to employees that is located at the job site (Cogwell, 1986).
5. Personal health habits: Pertains to six categories of the individual's habits consisting of smoking, alcohol and drugs, eating, exercise/fitness, stress, and safety (U. S. Department of Health and Human Services, 1981).
6. Current health status: Participants are asked to respond to questions pertaining to personal demographics, exercise/fitness, participation in the OSU Wellness Center, eating habits, medical history, and sleeping habits (U. S. Department of Health and Human Services, 1981).
7. Health: 1. well-being 2. a condition of the body or mind.
Style: manner of artistic composition, writing, living, etc. (Kidney, 1993)
8. Healthstyle: A manner of living life that exhibits a healthy condition of the body or mind.
9. Healthy lifestyle: The way an individual lives his/her life by choosing to make healthy choices versus unhealthy choices.

10. Faculty: Consists of those individuals who hold an academic appointment in a department and who may be involved in teaching, research, and/or extension (Oklahoma State University, 1994).
11. Relative Weight: Initial values were taken from a table (Bray, 1979), which was used in the 1987 Eckhart Study and in this study.

Format of Thesis

Chapters I, II, and III follow the format set by the Graduate College Style Manual. Chapter IV will be written in the journal article style following the Guidelines for Authors of the Journal of the American Dietetic Association (Appendix A). Chapter V will contain a brief summary of the study, recommendations, and implications.

CHAPTER II

REVIEW OF LITERATURE

Perspective of Wellness

History

In 1991, Healthy People 2000: National Health Promotion and Disease Prevention Objectives for the year 2000 were set by the Department of Health and Human Services. This initiative is intended to reduce preventable death and disability, enhance the quality of life, reduce disparities in the health status of various population groups with the United States. Reaching the health goals can only be accomplished through the efforts of a range of professional, private, advocacy, and consumer groups. Therefore, the implementation of the objectives involves not only the federal government, but also state and local health departments, professional associations, advocacy and consumer groups, individual health practitioners, the food industry, and others in the private sector (Lewis, Crane, Moore, and Hubbard, 1994). Through the promotion of healthy worksites, companies with their large groups of employees can help obtain these goals for the nation. Recent indicators show that over half of all large American companies provide worksite health promotion programs.

Opportunities for employees to become more physically fit at the workplace have changed since the turn of the century. The number of worksite physical fitness programs

has increased significantly since 1879, when the Pullman Company reportedly formed a worksite physical fitness program within its own athletic association. John R. Patterson, president of National Cash Register, five years later, regularly assembled his employees at dawn for pre-exercise breaks and, 10 years later, built an employee gym. To top that off, Patterson built a 325-acre recreation park for his employees in 1911. The number of physical fitness programs within companies leveled off for several decades until the National Employee Services and Recreation Association (NESRA) was formed in 1941, and created new interest in employee health and fitness by encouraging employee recreation programs. Today, most large companies offer a variety of recreational programs such as softball teams, basketball teams, and bowling. In addition to recreational programs, these companies are offering their employees stress management, smoking cessation, healthy cooking and eating, weight control, lower back health, and various other worksite health promotion programs (Chenoweth, 1987).

Definitions of Wellness

1. Wellness is a process of being aware of and of altering behavior toward a more successful physical, mental, emotional, psychological, occupational, and spiritual existence (Kizer, 1987).
2. Wellness is a conscious and deliberate approach to an advanced state of physical and psychological/spiritual health (Ardell, 1985).
3. Wellness: From the holistic viewpoint, health is a way of life in which people seek positive wellness - a maximization of individual potentialities to make life as meaningful and harmonious as possible (Edlin, 1985).

4. Wellness is a dynamic and multifaceted approach to optimal health that centers upon individuals taking responsibility for their health status (Rosato, 1986).
5. Wellness is the actualized potential in each person to function at peak levels of performance with a healthy body, alert mind, and sound emotional health (Cook, 1981).
6. High-level Wellness is a process of growth, evolving and changing. It involves optimal development of the physical self, the constructive use and management of stress energy, effectiveness in communicating and dealing with emotions, positive use of the mind, environmental sensitivity, and the development of productive relations with other people (Rosato, 1986).

A strict definition of wellness varies with different people, places, and times. But the overall concept of wellness remains constant. These above mentioned definitions of wellness hold in common the concept that wellness is a process or an approach to obtain optimal health, which includes one's maximal strengths in physical, emotional, social, and occupational capabilities. The researcher prefers to use the definition of wellness given by Cook, which states that wellness is the actualized potential in each person to function at peak levels of performance with a healthy body, alert mind, and sound emotional health. In this study, wellness encompassed cigarette smoking, exercise/fitness, eating habits, alcohol/drug abuse, stress control, and safety.

Components of Wellness Programs

Cigarette Smoking

“Smoking in Public Places Act” effective November 1, 1987 incorporates the possession of lighted tobacco in any form is a public nuisance and dangerous to public health when such possession is in any of the following places used by or open to the public: elevators, theaters, libraries, art galleries, museums, indoor roller skating rinks, and buses. This includes educational facilities, which means a building owned, leased or under the control of a public or private school system, college, or university (Public Health & Safety, 1991). Smoking is prohibited in Oklahoma State University classrooms, halls, restrooms, elevators, common work facilities, laboratories, the Library, and in other designated areas where smoking would create a discomfort to others present or would constitute a fire hazard (Oklahoma State University, 1994).

Cigarette smoking is strongly associated with educational attainment. In 1993, the age-adjusted prevalence of current cigarette smoking among persons twenty-five years of age and over ranged from 14 percent for college graduates to 36 percent for persons with less than a high school education. Between 1983 and 1993, the prevalence of cigarette smoking declined more rapidly among college graduates than among persons with less than a high school education (34 and 12 percent declines), widening the gap in smoking prevalence between these two groups (Public Health Service, 1995).

Coors Brewing Company’s smoking-cessation programs are proving to be very successful. The percentage of former smokers who are cigarette-free after 24 months is 40%, compared with a national average of 15%. A key to their smoking-cessation

program is that all instructors are former smokers who use drug-rehabilitation techniques (Verespej, 1993).

Alcohol/Drug Abuse

Alcoholism is defined by the National Council on Alcoholism, Incorporated as a chronic, progressive and potentially fatal disease characterized by tolerance and physical dependency or pathologic organ changes, or both. Alcoholism and alcohol abuse can occur in all socio-economic groups. It is one of the most serious public health problems in America. Among the 18.3 million adult "heavier drinkers" (those consuming more than 14 drinks per week) 12.1 million have one or more symptoms of alcoholism (Noble, 1990).

Alcohol is the most widely used and abused drug in the United States. In 1981, the equivalent of 2.77 gallons of absolute alcohol was sold per person over age 14 (Secretary of Health and Human Services, 1983). Alcohol abuse accounts for approximately 98,000 deaths annually. People die from diseases and other various ways from alcoholism, which include cirrhosis of the liver and other medical consequences, alcohol-related motor vehicle accidents and alcohol-related homicides, suicides and non-motor vehicle accidents (Ravenholt, 1983).

Alcoholism treatment reduces total health care costs. In a study of over 20 million claim records between 1980 and 1983, alcoholic families used health care services and incurred costs at twice the rate of similar families with no known alcoholic members. The average alcoholic's treatment cost was offset by reductions in other health care costs within two to three years following the start of treatment (U. S. Department of Health and Human Services, 1985). One out of three adults in the United States, report that alcohol

abuse has brought trouble to their families. This is about four times the number of families that report that other drugs have troubled their families (Regans, 1985).

A drug is any chemical substance that brings about physical, emotional, or mental changes in people. Drugs can include alcohol, tobacco, caffeine, and other drugs less widely used. These include marijuana, amphetamines, barbiturates, tranquilizers, narcotics, cocaine, phencyclidine (PCP), volatile chemicals (glue and other inhalants), LSD, and more. Drug abuse is the use of a drug, legal or illegal, which causes physical, mental, emotional, or social harm to a person or to people close to him or her (Johnson, 1993).

Some illegal drug use has shown to be declining, while other forms of illegal drug use are on the rise. Between 1985 and 1992, the prevalence of cocaine use declined from 2.7 to 0.6 percent. In 1993, the prevalence of cocaine use remained unchanged at 0.6 percent of the U.S. civilian non-institutionalized population. Between 1990 and 1993 the number of cocaine-related emergency room episodes increased 53 percent to nearly 123,000 episodes, following a drop between 1989 and 1990 (Public Health Services, 1995). According to a national survey in 1990, 68% of young adults (ages 18 to 25) tried marijuana at least once with 35% reporting current use (smoking marijuana within the past month); 20% of adults over 26 years of age tried the drug with 6% reporting current use; and 31% of young people (ages 12 to 17) tried the drug with almost 17% reporting current use (Janeczek, 1991).

Identification and treatment of alcohol/drug abuse are far more successful when detected at an early stage. Widespread treatment programs include group programs like Alcoholic Anonymous (AA) and individual counseling sessions with a drug/alcohol abuse

counselor (U. S. Department of Health and Human Services, 1994). Employers should have counseling and rehabilitation programs available for alcohol and drug abusers. If programs are not available in the workplace or abusers do not feel comfortable informing employers about their situation, the alcohol/drug dependent person can seek help within the local community programs, which are available for treatment of alcohol or substance abuse (American Psychiatric Association, 1994).

Exercise/Fitness

The fitness boom has been underway for more than two decades and studies conducted over the past years are redefining the standards of what makes physical activity beneficial. From a wellness standpoint, exercise/fitness is part of protecting and promoting good health. Physical fitness, as experts in the field have emphasized, actually has four components: Cardiorespiratory endurance, muscular fitness, flexibility, and body composition. Cardiorespiratory endurance is reflected in the sustained ability of the heart and blood vessels to carry oxygen to your body's cells. Muscular fitness consists of both strength (the force a muscle produces in one effort) and endurance (the ability to perform repeated muscular contractions in quick succession). Flexibility refers to the ability of your joints to move freely and without discomfort through their full range of motion. Body composition refers to how much of a person's weight is lean mass (muscle and bone) and how much is fat. Each of these components can be measurably improved with appropriate types of exercise (White, 1993).

Before beginning an exercise/fitness regimen, the American College of Sports Medicine recommends that healthy women over 50 years old, and men over 40, should

first consult a physician. Younger people should also see a physician if two or more risk factors or symptoms for heart disease are present (such as recurrent chest pain, high blood cholesterol levels, smoking, or obesity). Furthermore, at any age one should consult a physician first if you have any cardiovascular, lung, or joint-muscle condition. After the physician gives the approval to begin an exercise/fitness program, then one should begin with these few objectives in mind: do not overdo it, use adequate footwear, watch the form and technique, do not bounce while stretching, consume enough fluid to replace and hydrate, and warm up and cool down (White, 1993).

Exercise burns calories and, if a balanced fitness program is chosen, improves muscular strength, endurance, and flexibility. In addition, aerobic exercises such as jogging, swimming, cycling, and dancing provide the added benefits of improving cardiovascular and respiratory endurance and resistance to disease. Regular exercise provides psychological benefits as well. These include a positive self-image, a sense of well-being, and a positive attitude in general. It is recommended by the Committee on Diet and Health of the Food and Nutrition Board of the National Research Council Report in 1989, to balance food intake and physical activity to maintain appropriate body weight. Anytime an individual is on an exercise program, one should be informed of the importance of increased effectiveness with a proper diet program (Rolfes and DeBruyne, 1990).

Nutrition

Dietitians have an important leadership role in the worksite wellness, community health, and social programs. Defining and describing people with special needs and the

magnitude of their food and nutrition problems can be articulated by the dietitian who first conducts a needs assessment. Once this is accomplished, the dietitian, in collaboration with the multidisciplinary health care team, implements group-specific and culturally relevant nutrition intervention strategies. After monitoring the intervention, an evaluation of the impact of the intervention can be measured and, where needed, can be modified or changed. Dietitians in a wellness program can increase the income of the facility by enhancing the credibility of the organization, and help the healthcare team or facility to understand customer needs and expectations (Frankle and Owen, 1993). Dietitians use certain nutritional guidelines scientifically researched to counsel, guide, reinforce, and to change eating behaviors of their clients. Some guidelines used are the Recommended Dietary Allowances, The Dietary Guidelines, The Food Guide Pyramid, the Eat Five Fruits and Vegetables a Day Campaign by the National Cancer Institute, and the new nutrition labels entitled, "Nutrition Facts".

Recommended Dietary Allowances (RDA's) (Appendix B) are the level of intake of essential nutrients that, on the basis of scientific knowledge, are judged by the Food and Nutrition Board to be adequate to meet the known nutrient needs of practically all healthy adults. The first edition of the RDA's was published in 1943 during World War II with the objective of "providing standards to serve as a goal for good nutrition". The initial publication has been revised at regular intervals. RDA's are typically used for planning and procuring food supplies for population subgroups, for interpreting food consumption records of individuals and populations, for establishing standards for food assistance programs, for evaluating the adequacy of food supplies in meeting national nutritional

needs, for designing nutrition education programs, and for developing new products in industry (National Research Council, 1989).

The Dietary Guidelines for Americans emphasize balance, moderation, and variety in food choices. The Guidelines are published jointly by the United States Department of Agriculture and the United States Department of Health and Human Services. The first time the Dietary Guidelines were published was in 1980, and they are revised every five years. The 1995 edition of the Dietary Guidelines makes the following recommendations, all consistent with the advisory committee's report and with previous editions:

- 1) Eat a variety of foods.
- 2) Balance the food you eat with physical activity--maintain a healthy weight.
- 3) Choose a diet with plenty of grain products, vegetables, and fruits.
- 4) Choose a diet low in fat, saturated fat, and cholesterol.
- 5) Choose a diet moderate in sugars.
- 6) Choose a diet moderate in salt and sodium.
- 7) If you drink alcoholic beverages, do so in moderation.

The Dietary Guidelines include instructions on using the Food Guide Pyramid and the Nutrition Facts Label. All of these guidelines and tools can be followed by the general public in order to maintain good health (Kennedy, Myers, and Layden, 1996).

The Food Guide Pyramid (Appendix C), used by many Americans today, is a tool to assist people in following the Dietary Guidelines. The Pyramid is a general outline of what to eat each day. It promotes eating foods in balance, moderation, and variety to obtain the nutrients you need, and at the same time, the right amount of calories to maintain a healthy weight. The number of servings per food group are given on the Pyramid to be individualized according to the calorie level needed. The Pyramid also focuses on fat, because most Americans eat too much fat, especially saturated fat (Oklahoma Dietetic Association, 1992).

The National Cancer Institute launched a nutrition campaign entitled, "Time to Take Five: Eat 5 Fruits and Vegetables a Day". This campaign is one way to alert the public about the positive values of incorporating at least five fruits and vegetables a day in your diet. Some obvious values to eating fruits and vegetables: 1) low in calories and fat, 2) high in vitamins, minerals, and fiber, and 3) fast and easy foods to prepare. Research has suggested that people who eat diets with lots of fruits and vegetables may have lower risks for some cancers than people who eat few of these foods (National Cancer Institute, 1995).

The new food labels, labeled "Nutrition Facts", support the Dietary Guidelines for Americans. They are supported and enforced by the Food and Drug Administration, established with the 1990 Nutrition Labeling Act. "Nutrition Facts" is a packaging label that creates a single system by which all products can be compared, helps the consumer make better, more informed decisions about the food eaten, and provides uniform definitions for nutrient claims such as "free", "light", "reduced", "high", and "good source" (Kutzweil, 1995).

In a wellness program, dietitians must promote healthy eating and cooking, physical fitness with a balanced diet, and emphasis should be placed on changing eating patterns for a lifetime rather than dieting for the present. The dietitian must know the community and clientele being served in order to better provide nutrition services for the wellness facility.

Stress Control

Pressures, demands, and worries that make you feel tense are facts of life. These are considered stress, but the key is to keep them within manageable limits, and that is stress control. Stress producing factors (such as heat, cold, fear, joy) are called stressors, and the body responds to stressors automatically, according to their intensity, with a series of changes in body chemistry. In popular terminology, it is known as the “fight or flight response” that has been observed in animals and is often described by athletes as getting “hyped up” in preparation for a competitive event. Some stress can be positive, but too much can interfere with normal activities and contribute to many medical problems such as, fatigue, headaches, cramps, prolonged depression, heart disease, ulcers, and colitis can result from stress (Cunningham, 1982).

Occupational stress is a negatively perceived quality which as a result of inadequate coping with sources of stress, has negative mental and physical ill health consequences (Cooper, 1994). Stress-related issues are being addressed more in the working environment. Employees are finding an increasing number of programs are being offered by their bosses on stress-related issues. Wellness programs promote steps to protect yourself against stress. The first step in controlling stress is to identify what is causing the stress. Individuals may feel stress from home, workplace, or other environments. On the job, we encounter deadlines, pressures, work overloads, confusion over assignments or priorities, unprotected changes or reassignments. Even positive changes, such as promotions, can be a source of stress. These are all examples of stress by outside sources, but we should also be aware of the stress we impose upon ourselves. Sometimes these stressors can be managed by simple steps, such as: getting plenty of

sleep, exercising for 30 minutes at least three times a week, maintaining normal weight, develop a support system of family and friends, or talking to a counselor from an employee assistance program (U. S. Coast Guard, 1991).

Wellness programs incorporate stress management education in their programs and employee assistance programs are other avenues (Fisher, 1993). According to Cooper, the term 'employees assistance programme' was originally introduced by the National Institute of Abuse and Alcoholism (NIAA) in the United States during World War II to describe their occupational alcoholism program. The employee assistance program (EAP), as we know it today, is largely a product of the 1960's: it now usually offers assistance to workers with personal problems of a more general nature, as well as problems related specifically to alcohol abuse (Cooper, 1994).

Oklahoma State University has an EAP at the OSU Wellness Center. According to an OSU EAP pamphlet, this program was developed exclusively for the administration, faculty and staff of OSU. EAP represents a commitment by OSU to improve the well-being of faculty and staff members through a confidential, professional program which can provide assistance in addressing personal difficulties. The EAP is free of service for any faculty and staff member and members of their families. The following services are provided through this program: consultation, problem assessment/evaluation, referral to community resources or treatment, follow-up on client progress, education and training.

Safety

Operators and front seat passengers are required to wear safety belts under the Oklahoma Mandatory Seat Belt Use Act 1985, but it was not effective until February 1,

1987. Every operator and front seat passenger of a passenger car operated in this state shall wear a properly adjusted and fastened safety seat belt system, required to be installed in the motor vehicle when manufactured pursuant to Federal Motor Vehicle Safety Standard 208. The department of Public Safety shall establish an educational program designed to encourage compliance with this Oklahoma Mandatory Seat Belt Use Act (Motor Vehicles, 1991).

Oklahoma Status of State Motorcycle Helmet Use Requirements, original law established on April 27, 1967, states that helmet use is required for all motorcyclists. In the United States, 25 states plus the District of Columbia and Puerto Rico require helmet use for all riders. Only 22 states, however, require helmet use for certain riders. And, there are still three states that do not require helmet use for riders (U. S. Department of Transportation, 1994).

Between 1988 and 1992, the age-adjusted death rate for motor vehicle crashes declined by 20 percent to 15.8 percent deaths per 100,000 population. In 1990-1992, among young males 15 to 24 years of age, the death rate for American Indian males (67.2 per 100,000) was 41 percent greater than for white males. Death rates for motor vehicle crashes for Black and Asian American males ages 15 to 24 years were 28 and 55 percent lower than for white males (Public Health Service, 1995).

Between 1985 and 1990, the death rate for occupational injuries decreased at an average annual rate of almost six percent. During this period, the average annual rate of decline in occupational injury death rates was nine percent for the transportation, communication, and public utilities industries and 11% for the agriculture, forestry, and fishing industries (Public Health Service, 1995).

Each year, 500 million workdays are lost because of illness or disability, 26 million of that are due to heart disease and hypertension, and 93 million of that are due to lower back problems. Lower back pain affects almost every person at some point in their lifetime. It is one of the most common ailments that people encounter. It can be described as fibrositis, slipped disc, lumbago, arthritis in the back, rheumatism, and even, sciatica when pain is extended into the leg. Lower back pain can interfere with daily activities, a good nights sleep, and especially, your exercise routine. Most lower back pain can be avoided with proper lifting techniques and proper postures at all times (McKenzie, 1995). Neck pains and problems can affect daily activities as well.

Neck problems can be referred to as arthritis in the neck, spondylosis of the neck, rheumatism, fibrositis, slipped disc, and even, pain extending into the arm called neuritis and/or neuralgia. Some people with these problems take medications and some even stop working. Most people with neck problems suffer from pain, which makes their life miserable. Activities are often limited in order to lower their discomfort. Neck problems, therefore, affect our lifestyle (McKenzie, 1995).

Established Wellness Programs

Hospital Settings

Traditional hospitals and health care systems are changing their roles by observing their surrounding communities and actively searching for opportunities to make these communities healthier. Hillcrest Medical Center in Tulsa, Oklahoma, has a wellness program called Hillcrest Exercise and Lifestyle Programs (HELP). Some of the programs

include exercise and fitness classes, healthy weight loss group programs, Heart Smart Supermarket tours, and cholesterol management series (Hillcrest Medical Center, 1994).

West Calcasieu Cameron Hospital created Dynamic Dimensions, an exercise and community education center, offering aerobic classes, workout equipment, wellness seminars, and classes on diabetes and cardiovascular disease. The Dynamic Dimensions has been successful enough for West Calcasieu to double the center's size by building another center in a neighboring community. Wayne Swiniarski, CEO of West Calcasieu Cameron Hospital, saw this opportunity as meeting an important community need and bringing the hospital one step closer to its future as an institution working to improve the health of its community. Expected in-patient care will decrease about 50 percent within five to 10 years (Davidson, 1995).

In 1991, Chesapeake General Hospital Wellness Program in Virginia began tying participation in wellness programs to employee's insurance costs by paying employees "wellness dollars". By using this incentive, overall wellness level of program participants improved 44.5% from 1992 to 1993. Furthermore, the attendance to their wellness education classes offered increased from an average of 10 to 67 and the number of participants per class grew from 10 to 40. In 1994, the incentive increased, allowing participants to earn 12 dollars per month in "wellness dollars" due to improved health risk appraisal scores over the 1993 test year (Cauldwell, 1995).

Charleston, West Virginia, Area Medical Center employs 4,500. Their wellness program began in 1989, and since opening, participating employees have increased productivity and morale, reduce absenteeism, and lowered health care costs. The health care utilization costs of the 550 active wellness program participants is, in fact, 28% less

than the general employee population. The program's success had been due to the support of the senior management, and the ability to schedule flexible times for workshops and workouts, and by bringing information to their employees rather than the employees going to the facility (Sherer, 1994).

Grafton, West Virginia, City Hospital of 175 employees, was the first hospital under 100 beds to have a wellness center. After doing an employee needs assessment, results showed that their employees wanted to pay a membership fee for participating in order to feel they have an investment in the center and their health. Quarterly employee opinion survey assures the hospital that their work-site wellness programs are meeting employees needs (Sherer, 1994).

The Veteran's Affairs Medical Center in Des Moines, Iowa, has provided a strong link between total quality management and employee wellness, which encourages employee empowerment. This employee wellness program offers smoking cessation classes, annual stress workshops, physical fitness, annual cholesterol and blood pressure screenings, health fairs, a walking program, and a quarterly "lunch-and-learn" program. Physical fitness equipment and area is provided for employees by the physical medicine and rehabilitation department during certain hours (Sherer, 1994).

Industry/Business Settings

In 1991, Coors Brewing Company in Golden, Colorado, opened its wellness program, which includes an on-site cardiac rehabilitation program, health-risk assessments, various seminars, nutrition counseling, and other counseling services (Kelly, 1992). According to an article in Runner's World, Coors employs 6,500 and has over a

50% participation in its wellness program on a weekly basis. All employees and their families use the wellness facility free of charge, and the center stays open late to accommodate the late shift employees. By developing in-house health and rehabilitation programs and other cost-containment efforts, Coors' health care costs rose only 5.9% between 1988 and 1989, when most companies were trying to contain their rising health care costs of 18% (Caudron, 1991).

Coors was the first employer to bring mammography screening to the worksite through an agreement with a local radiologist. Sixty-five percent of eligible women have participated in the program, compared with the national participation in similar services, which is only 17 to 25%. Forty malignancies have been detected and confirmed. Early detection cases cost Coors an average of \$11,388 in direct medical, short term disability, long term disability, and continuous benefits, however, the costs associated with late detection averages \$143,398. Coors estimates that \$471,594 is saved by providing on-site screenings (U. S. Department of Health and Human Services, 1993).

MBNA America in Newark, Delaware, is a credit-card company, which employees over 5,600 people. This company surveyed its employees to evaluate their needs and started a "Masterpiece Idea Program", which encourages employees to make suggestions about all aspects of MBNA. Programs were formed to meet those needs. MBNA's health services department has four major objectives, which include creating an environment that promotes positive lifestyle changes and facilitates appropriate medical care decisions; proactively delivering a broad base of health programs and related services targeted to meet the needs of employees; contributing to financial success of MBNA by improved morale, reduced turnover and absenteeism, and health care cost containment;

and creating a working environment that attracts and retains qualified employees and supports them in achieving individual goals (Kelly, 1992).

At Johnson & Johnson corporate headquarters in New Brunswick, New Jersey, their employees, who utilize the fitness center, can leave their workout clothes at the center and have the company wash their clothes free of charge. Johnson & Johnson also provides towels, grooming items, and toiletries. This may explain why 65% of 1,000 employees participate in the facility's wellness program (Verespej, 1993).

According to the February, 1993, issue of the Employee Benefit Plan Review article, Quaker Oats Company has been working on modifying the insured employees' behaviors through its "Informed Choices" consumer education program. This program is designed to assist employees in obtaining quality and appropriate care, and at the same time, teaches the employee about ways to actively participate in obtaining this excellent care. Employees are informed of their rights as patients and their responsibilities as well. This program has increased employee trust and satisfaction with the company.

University Settings

The Oklahoma State University Wellness Center opened for business in January, 1991. It was the first facility specifically designed and staffed for wellness on a campus of higher education. The 24,000 square-foot center contains the latest in biomedical testing and workout equipment. Each year, the center serves over 10,000 clients. The mission of the Oklahoma State University Wellness Center is to provide quality wellness programming to its clientele, who includes faculty, staff, dependents, OSU alumni, students, and off-campus constituents. Some of the programs offered are exercise/fitness,

nutrition, weight control, Healthy Cuisine Cooking Demonstrations, Biometrics™, stress management, and control of substance use/abuse.

Resinold Engineering Corporation entered into a long-term partnership with the Center for Cardiovascular Research at Northeastern Illinois University, Chicago, to lower their health care costs by addressing acute health care needs discovered in medical evaluations and on a more long term basis, by comprehensive behavioral intervention to help modify individual lifestyles. Participants are given cash incentives for behavioral changes such as tobacco cessation, weight loss, and healthier eating habits. By forming this union with the cardiovascular center, Resinold has managed to keep down rising health care costs (Lesmes, 1993).

West Texas State University in Canyon, Texas, recently sent out a Wellness Services Survey to their faculty and staff. The results showed that 56.2% of respondents believed their overall health was "good", and that 49.2% were less than satisfied with their current level of physical fitness. Of the 308 respondents, 51.5% stated that their diet was average, and 57.2% indicated that the biggest barrier to making healthy changes was lack of time with. Their greatest health related concerns were weight control, stress management, and cardiovascular fitness.

The Wellness Center at Seward County Community College in Liberal, Kansas pamphlet, helps individuals and groups select and maintain lifestyle changes for a healthier and happier life. The center creates cost-effective health promotion and education programs for all individuals. As a part of the wellness program, each individual is tested for cardiovascular fitness, muscular endurance and strength, flexibility, hypertension, body fat composition, health risks, and blood pressure. Each individual receives a personal

exercise prescription based on his or her performance. After a period of exercise and positive health behaviors, each individual will be reevaluated to measure improvement. Currently the wellness center is off campus in a shopping center with enrollment of 200 to 250 members.

Illinois State University Wellness Program is recognized as one of the most diversified and innovative wellness programs in higher education. According to the Illinois State University Wellness Program Newsletter, Fall 1995, over 70% of the faculty and staff and their families participate in wellness activities each year. Activities include an Employee Assistance Program, "Seven Habits of Highly Effective People" seminar, fitness center, cholesterol screenings, early walk/jog, volleyball, basketball, aerobics, table tennis, badminton, Tai Chi, and Yoga. The mission of the program is to improve the quality of life of its employees/retirees and their families. This includes providing a culture which is supportive of positive lifestyle practices; providing quality programs; and providing convenient, cost-effective opportunities for participants to learn and practice these positive lifestyle skills (Illinois State University, 1995).

The National Wellness Information Resource Center (NWIRC) provides resources for wellness professionals about health promotion and wellness in higher education. A directory is sent out yearly updating addresses and information about colleges and universities. In the 1995 issue, more than 550 colleges and universities that offer health promotion and wellness programming were listed. The Fisher Institute for Wellness at Ball State University in Muncie, Indiana, offers several wellness incentives to faculty/staff, among those are health screenings, nutrition and dietary analysis, various physical

activities, retirement planning, and emotional/stress management counseling sessions (National Wellness Information Resource Center, 1995).

Summary

The literature was reviewed concerning the wellness concept, which included the six categories of health for the topic areas. This research review makes it apparent that employees must be given what they ask for as a group with special needs and interests. Wellness programs that target their needs and interests will have a higher rate of participation and chance for positive outcomes. Wellness programs offered in the workplace creates a positive attitude towards healthier lifestyle habits for the employees by the employer, however, wellness programs are only a small portion of the attempts to increase productivity and lower health risks. The employee is responsible for his or her own health. A healthy lifestyle needs to be the individual's priority, however, the employer can offer incentives which would entice their employees to utilize the available wellness programs.

activities, retirement planning, and emotional/stress management counseling sessions (National Wellness Information Resource Center, 1995).

Summary

The literature was reviewed concerning the wellness concept, which included the six categories of health for the topic areas. This research review makes it apparent that employees must be given what they ask for as a group with special needs and interests. Wellness programs that target their needs and interests will have a higher rate of participation and chance for positive outcomes. Wellness programs offered in the workplace creates a positive attitude towards healthier lifestyle habits for the employees by the employer, however, wellness programs are only a small portion of the attempts to increase productivity and lower health risks. The employee is responsible for his or her own health. A healthy lifestyle needs to be the individual's priority, however, the employer can offer incentives which would entice their employees to utilize the available wellness programs.

CHAPTER III

METHODOLOGY

The purpose of this study is to evaluate the Stillwater campus, Oklahoma State University faculty's personal health habits, current health status, and interests and participation in the wellness center program. This chapter includes the research design; description of the population to be studied; data collection including instrumentation and procedure; and data analysis.

Research Design

The research design used in this study is a descriptive status survey. Descriptive research involves the description, recording, analysis, interpretation of current conditions, comparison or contrast, and attempts to discover relationships between existing variables (Best and Kahn, 1986). This study will focus on the relationships between existing variables, and compare and contrast the relationship between existing variables and pre-existing variables from the 1987 Needs Assessment of University Faculty for a Wellness Program (Eckhart, 1987).

Sample/Population

The population, which was also the sample, includes only the faculty employed full-time (75% FTE and higher) at Oklahoma State University during the Spring of the 1996 academic year who hold the position of instructor, assistant professor, associate professor, or full professor. An "other" column was added for those individuals who are visiting and adjunct professors. The OSU Mailing Services sent out 1039 surveys to those faculty.

Data Collection

Instrumentation

Part I entitled, Personal Health Habits, of the research instrument was developed and pretested by the U. S. Department of Health and Human Services (1981) with data obtained from the National Health Interview Survey (U.S. Department of Health and Human Services, 1981). The remaining two portions of the survey, Part II and Part III, were developed in conjunction with the 1987 Needs Assessment of University Faculty for a Wellness Program (Eckhart, 1987), this researcher, and researcher's graduate committee.

Part I of the questionnaire included 24 questions pertaining to six categories: cigarette smoking; alcohol/drugs; eating habits; exercise/fitness; stress control; and safety. Part II entitled, Current Health Habits, included 20 questions pertaining to faculty's demographics, usage of an exercise/fitness center, usage of the OSU Wellness Center,

Data Analysis

Data were coded and entered into a computer, beginning on February 29, 1996, using the Statistical Analysis System (SAS) to tally and evaluate the scores of the participants (Helwig, 1983). Frequencies, percentages, correlations, t-tests, ANOVA, and Duncan's Multiple Range Tests were used to analyze the data to determine if associations existed between specific characteristics of respondents (McClave and Bensen, 1991).

Part I scores were tallied and then evaluated using the scale:

9-10 score indicated "excellent" awareness of health
6-8 score indicated "good" with room for improvement
5 or below score indicated "poor" with health risks

provided by the U. S. Department of Health and Human Services (1981). Each of the six categories of Part I was worth a total of 10 points. The scoring system for Part I used by the researcher is shown in Appendix F. The 0.05 level of significance was used to evaluate the data.

CHAPTER IV

FACULTY'S PARTICIPATION IN A UNIVERSITY WELLNESS PROGRAM

D.G. Duncan, M.S. Candidate, RD, LD, L.L. Ebro, PhD, RD, LD, W.D. Warde, PhD, M.L. McCrory, Ed.D, J. Hermann, PhD, RD, LD, Oklahoma State University, Stillwater, OK

Abstract

This study evaluated faculty's personal health habits, health status, and interests and participation in a wellness program. A survey was distributed to 1039 faculty and the response rate was 42% (N=442). Data were analyzed using frequencies, percentages, correlations, t-tests, ANOVA, and Duncan's Multiple Range Tests to determine if associations existed between specific characteristics of respondents in the categories of tobacco, alcohol/drugs, eating habits, exercise/fitness, stress, safety, and sleep. Respondents were predominately male between 41 to 60 years of age. Weights ranged from 100 to 330 pounds with height ranges of 60 to 78 inches. Two-thirds of the respondents were associate and full professors. Favorable scores of personal health habits were significantly associated (p<0.05) with higher academic rank, college, older age groups, desirable weight, and also with current health status of yearly physical and cardiovascular examination. Better eating habit scores were significantly associated (p<0.05) with eating breakfast, limited number of snacks, and not dieting. Almost all wear

OKLAHOMA STATE UNIVERSITY

seat belts, do not smoke cigarettes, and drink less than two alcoholic beverages per day. Two-thirds eat three meals a day and sleep between seven to eight hours. Almost half use an exercise/fitness center and more than half try to control their stress in various ways. Health habits needing improvement were exercise, eating behavior, and stress control. Almost 75% of the respondents have had a routine physical examination in the past two years, and only 25% are currently having health problems. Faculty of the Colleges of Veterinary Medicine, Engineering, Architecture, and Technology, Agricultural Sciences & Natural Resources, and Arts & Sciences were the most interested in wellness. Most of the faculty were interested in participating in wellness education classes relative to exercise, nutrition, and stress/time management. Wellness education needs promotion and should focus on individuals' needs for continuous and successful wellness participation.

Introduction

Widespread interest in health and preventive medicine over the last two decades has led to an increase of participation in health and fitness promotion programs. Wellness programs are found in approximately two thirds of America's workplaces employing 50 or more employees. According to the National Wellness Institute at the University of Wisconsin, Stevens Point, about 20% of America's colleges and universities currently have health promotion plans for faculty and staff (1). The main purpose of health promotion programs are to aid participants to change their lifestyle behaviors. Health promotion programs need input from participants and comments from non-participants, as well, to keep the program meeting the current and future needs of their customers.

Oklahoma State University Wellness Center opened in January, 1991. Prior to opening, Gale Eckhart in 1987 (2)(3), sent out a survey to assess health behaviors, attitudes, and interests of faculty on the OSU campus. As a follow-up, the researcher sent out a modified version of the Eckhart, 1987 survey (2)(3). This questionnaire will reevaluate the OSU faculty in order for the OSU Wellness Center to adjust its program to better meet the needs of the current faculty.

Methods

The Sample

A total of 1039 questionnaires were mailed by the OSU Mailing Services to faculty at Oklahoma State University on the Stillwater, Oklahoma campus during the 1995-1996 academic year on February 15, 1996. Of the questionnaires completed and returned, 42.5% (N=442) were usable. The subjects consisted of 74.2% (N=314) males and 25.8% (N=109) females. The ages of the subjects ranged from 25 to 71 years with a mean age of 48 years. Weight ranges were 100 to 330 pounds. The range of height was 60 inches to 78 inches with a mean height of 70.5 inches.

The Questionnaire

The questionnaire contained three parts with 51 items, which included both closed and opened ended questions. This questionnaire was identical to the Eckhart 1987 study, except for a few modifications to the former questions and an additional five questions were added to up-date the questionnaire. Part I of the questionnaire entitled, Personal

Health Habits, was developed and pretested by the Public Health Service , 1981 (4). It included data obtained from the National Health Interview Survey, which has a continuous and ongoing bank of data. Part I has 24 questions grouped in the following categories: cigarette smoking; alcohol/drugs; eating habits; exercise/fitness; stress control; and safety. Part II entitled, Current Health Status, of the questionnaire included demographic data such as current employment status, academic rank, current college, age, weight, gender, height, and other health habits in more detail than Part I pertaining to exercise, eating, tobacco usage, health evaluations, and sleep. Part III entitled, Interest and Participation in the OSU Wellness Center, contained questions pertaining to the interest and participation of participants to utilize the Wellness Center.

Statistical Analysis

Data were analyzed using frequencies, percentages, correlations, t-tests, ANOVA, and Duncan's Multiple Range Tests by using the Statistical Analysis System (SAS) to determine if associations existed between specific characteristics of respondents (5). Scores from Part I were totaled and evaluated using the scale provided by the Public Health Service (1981). Scores of 9 or 10 received an "excellent awareness of health", a score of six to eight received a "good awareness of health with room for improvement", and a score of five or below received a "poor awareness of health with serious risks involved". The 0.05 level of significance was used to evaluate the data.

Results and Discussion

Personal Health Habits and Current Health Status

Tobacco Usage

The 1995 Oklahoma Status Public Health Service Chartbook stated that cigarette smoking was strongly associated with educational attainment. In 1993, the age-adjusted prevalence of current cigarette smoking among persons 25 years of age and over, ranged from 14% for college graduates to 36% for persons with less than a high school education (6). The respondents showed no significance between cigarettes smoking and age groups.

Of the 442 respondents, only 42 (9.5%) currently use tobacco and 196 (44.4%) are former users of tobacco. Current tobacco users (N=42) consisted of 19 cigarette smokers, six pipe smokers, six cigar smokers, and 12 smokeless tobacco users (Figure 1). Former tobacco users (N=196) consisted of 148 cigarette smokers, 83 pipe smokers, 67 cigar smokers, and 35 smokeless tobacco users (Figure 2). Frequencies from the Personal Health Habit smoking scores in Part I revealed that 89.8% scored "excellent". Only 7.9% scored "poor", while 2.3% scored "good".

Chi-square (Appendix I) showed significant association ($p=0.000$) between currently using tobacco and avoiding smoking cigarettes; significant association ($p=0.000$) between currently smoking cigarettes and avoiding smoking cigarettes; significant association ($p=0.002$) between currently using smokeless tobacco and avoiding smoking cigarettes; significant association ($p=0.000$) between being a former user of tobacco products and avoiding smoking cigarettes; significant association ($p=0.028$) between being

a former cigarette smoker and avoiding smoking cigarettes; significant association ($p=0.000$) between currently using tobacco and smoking only low tar and nicotine cigarettes or smoking a pipe or cigars; significant association ($p=0.022$) between being a former user of tobacco products and smoking only low tar and nicotine cigarettes or smoking a pipe or cigars; and significant association ($p=0.036$) between the 1996 Duncan study with Personal Health Habit smoking scores and 1987 Eckhart study (2)(3) with Personal Health Habit smoking scores (Table 1). The relationship between smoking scores and weight was not significant, and neither was the relationship between smoking scores and age.

Alcohol/Drug Abuse

Alcoholism and alcohol abuse can occur in all socio-economic groups. It is one of the most serious public health problems in America. Among the 18.3 million adult "heavy drinkers" (those consuming more than 14 drinks per week), 12.1 million have one or more symptoms of alcoholism (7).

Frequencies of Personal Health Habit alcohol/drug scores revealed that 84.4% scored "excellent", 13.1% scored "good", and 2.5% scored "poor". Results indicated that 88.2% ($N=390$) of respondents avoid drinking alcoholic beverages or drink no more than one or two drinks per day. Of the respondents, 96.1% ($N=422$) indicated that they almost always read and follow the label directions when using prescription and over the counter drugs. A t-test (Appendix H) showed a significant association ($p=0.0010$) between alcohol/drug scores and having a cardiovascular examination within the past five years. Another t-test (Appendix H) showed a significant association ($p=0.0034$) between

alcohol/drug scores and having a Resting EKG Cardiovascular Examination within the past five years. Alcohol/drug scores were not significantly associated with demographic variables of the respondents.

Eating Habits

Dietitians in a wellness program can increase the income of the wellness facility by enhancing the credibility of the organization, and help the healthcare team or facility to understand customer needs and expectations (8). In a wellness program, dietitians must promote healthy eating and cooking, physical fitness with a balanced diet, and emphasis should be placed on changing eating patterns for a lifetime rather than dieting for the present. The dietitian must know the clientele being served in order to better provide nutrition service for the wellness facility. The following results show useful information about the dietary habits of the faculty.

Frequencies of Personal Health Habits eating scores revealed that 46.6% of respondents scored "excellent", 29.4% of respondents scored "good with need for improvement", and 24.0% scored "poor". ANOVA showed significant associations between eating habit scores and relative weight, number of meals eaten per day (Figure 3), and having a routine physical exam within the past two years (Appendix G). T-test (Appendix H) showed a significant association ($p=0.0189$) between eating scores and eating breakfast (Figure 4). Analysis showing no significance were eating habit scores and academic rank, gender, health problems, current medications, recent cardiovascular examinations, and sleeping habits. Other frequencies showed that 72.2% (N=319) of respondents almost always eat a variety of foods each day; only 62.0% (N=274) almost

always limit the amount of fat, saturated fat, and cholesterol they eat; only 55.5% (N=244) almost always limit their amount of salt; and only 51.7% (N=228) almost always avoid eating too much sugar.

Exercise/Fitness Habits

By the middle of the 1980's, Americans were spending over one billion dollars annually on home gym equipment, and thousands of American employers had introduced fitness programs in the workplace to their employees (9). The outcomes of these fitness programs, however, may not begin to register until several years after the program has been operating (10). As time evolves, the results indicate that exercise provides work-related benefits, decreased absenteeism, and increased self-esteem (11).

Frequencies of Personal Health Habits of exercise/fitness scores showed that 41.0% scored "poor", 32.1% needs improvement, and only 26.7% scored "excellent". Other frequencies of exercise/fitness scores revealed that only 55.2% (N=243) almost always maintain a desired body weight, avoiding overweight and underweight, while 14.3% (N=63) almost never maintain a desired weight (Table 1); 53.7% (N=237) almost always exercise for 15 to 30 minutes at least three times per week; and only 37.2% (N=164) almost always use part of their leisure time to participate in individual, family, or team activities that increase their level of fitness. ANOVA and Duncan's Multiple Range Test (Appendix G) showed a significant relationship between exercise/fitness scores and relative weight. A t-test (Appendix H) indicated a significance ($p=0.0156$) between exercise/fitness scores and utilizing an exercise/fitness center (Figure 5). Exercise/fitness scores were not significantly associated with rank, college, age group, and gender.

Stress Control

Occupational stress is a negatively perceived quality of life, which results from inadequate coping with sources of stress, has negative mental and physical ill health consequences (12). Stress-related issues are being addressed more in the working environment. Employees are finding an increasing number of programs being offered by their companies or administration on stress-related issues. Wellness programs which incorporate stress management/education in their programs offer employees a tremendous opportunity to re-gain control of their surroundings (13).

Personal Health Habit frequency scores of stress control habits indicated 44.2% scored a need for improvement, 43.3% scored "excellent", and 12.5% scored "poor". Other frequencies revealed that 84.6% (N=373) of respondents enjoy their job; and only 48.8% (N=215) recognize and prepared for stressful situations. ANOVA and Duncan's analysis showed a significant association ($p=0.028$) between stress scores and age group and ($p=0.024$) between stress scores and relative weight (Table 2). A t-test (Appendix H) revealed a significance ($p=0.0149$) between stress scores and having a health problem (Table 3). No significance was found between stress scores and taking medications, having a cardiovascular examination, having a routine physical, and gender.

Safety Awareness

Between 1985 and 1990, the death rate for occupational injuries decreased at an average annual rate of almost six percent. During this period, the average annual rate of decline in occupational injury death rates was nine percent for the transportation,

communication, and public utilities industries, and 11% for the agriculture, forestry, and fishing industries (6).

Personal Health Habit safety scores revealed that 90.5% scored “excellent”, 8.8% scored “good”, and only 0.7% of participants scored “poor”. Other frequencies showed that 89.8% (N=397) almost always wear a seat belt while riding in a car and 80.0% (N=351) almost always obey traffic rules and speed limits. ANOVA and Duncan’s Multiple Range Tests (Appendix G) showed significant associations between safety scores and relative weight (Table 2). T-tests (Appendix H) indicated a significance in stress scores between gender (Table 2), having a routine physical examination, health problems, having a Resting EKG within the past five years, and currently taking medications (Table 3). Chi-square analysis (Appendix I) showed a significance ($p=0.000$) in safety scores between the 1996 Duncan study and the 1987 Eckhart study (Table 1). No significance was found between college and age group.

Interest and Participation

Faculty were asked to indicate if they were interested in the Oklahoma State University Wellness Center. About 75% (N=313) indicated an interest in the OSU Wellness Center. The percentage of faculty interested in the OSU Wellness Center has not changed between the two studies with both indicating about 75%.

The most convenient times for faculty to participate in wellness programs is lunchtime (11:00 a.m. to 1:00 p.m.) (N=104) and early evening (5:00 to 7:00 p.m.) (N=110). Preferences in wellness programs in order of most preferred to least are presented in Table 4.

Of the six Personal Health Habit categories, the area of exercise/fitness scores from Part I of the survey received the “poorest” scores (Figure 6). The top three most needed areas for improvement (a score of eight or below), with 10 being the highest and one being the lowest on the Personal Health Habit mean scores of Part I include:

Exercise/Fitness	6.1
Smoking	6.8
Eating Habits	7.5

In the 1987 Eckhart Study (2)(3), the results showed:

Exercise/Fitness	5.7
Eating Habits	7.3
Stress Control	7.4

The participants demonstrated perception of their needs by indicating that their preferred area of interest in wellness was exercise/fitness (Table 4). Estimated usage of the OSU Wellness Center by the faculty since the opening of the center in January, 1991, is presented in Table 5. Clearly, the Wellness Center Fitness Center received the highest level of utilization. The medical laboratory with annual health screenings, various blood tests, and physical examinations was utilized the second most, although at a much lower response. Other services like physical therapy, nutrition counseling, personal training, and employee assistance program follow in their estimated number of times utilized by the respondents.

Chi-square (Appendix I) showed significant association ($p=0.001$) between preferring to attend cooking classes and age group; significant association ($p=0.000$) between preferring to attend cooking classes and gender; significant association ($p=0.009$) between preferring to attend cooking classes and academic rank; significant association ($p=0.029$) between interest in the OSU Wellness Center and college; significant

association ($p=0.012$) between preferring to attend safety awareness classes and college; significant association ($p=0.002$) between preferring to attend time management classes and college.

In addition, significant association ($p=0.005$) existed between preferring to attend weight management classes and gender; significant association ($p=0.000$) between preferring to attend weight management classes and relative weight; significant association ($p=0.005$) between preferring to attend stress management classes and relative weight; and significant association ($p=0.004$) between preferring to attend health screening and relative weight (Table 6).

Applications

Between 1987 and 1996, changes in the faculty at Oklahoma State University on the Stillwater Campus have occurred. Faculty's interest in the OSU Wellness Center have remained constant at 75%, however, their interests in certain programs which they prefer to attend have changed. Difference in faculty's preferences indicate that wellness education classes and programs should be designed to meet the variety of needs and interests of the current faculty. Wellness education classes that target the needs of the current faculty will have a higher participation rate, higher chance of positive outcomes, and a higher chance of return visits for further learning and participation. The wellness program can also be used as an attractive marketing device to entice prospective employees. Wellness education needs promotion and should focus on individuals' needs for continuous and successful wellness participation.

Figure 1. Faculty's Current Tobacco Use

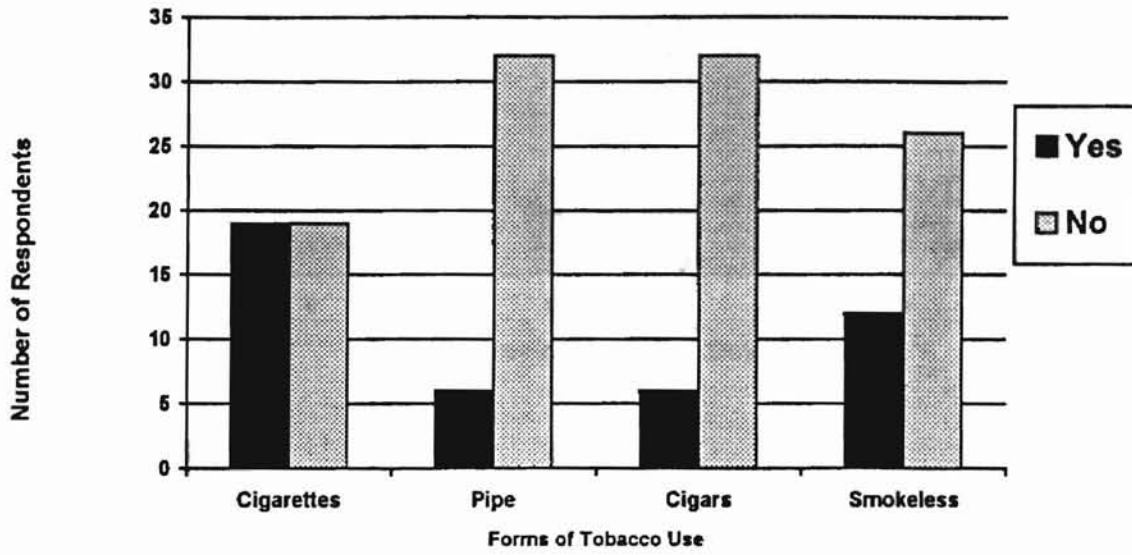


Figure 2. Faculty's Former Tobacco Use

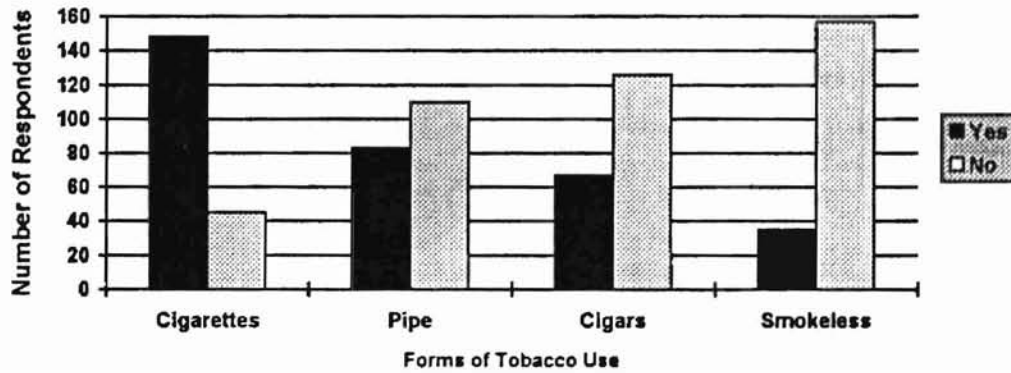


Figure 3. The Number of Meals a Day Consumed by the Faculty

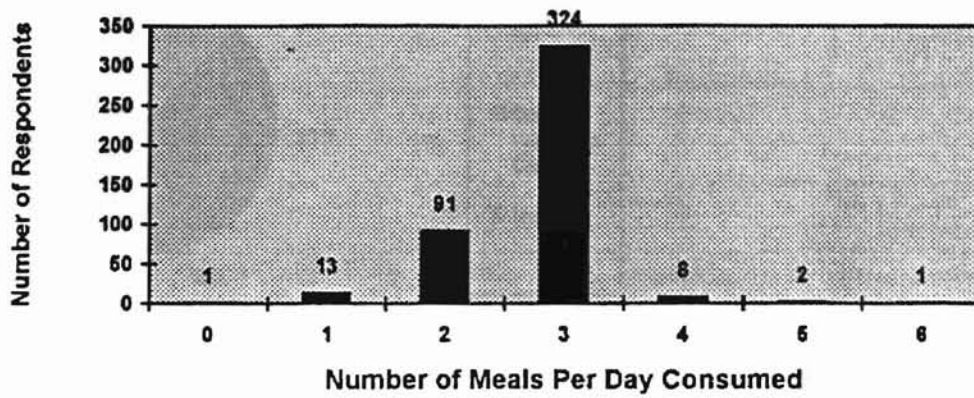


Figure 4. Percentage of Faculty Who Eats Breakfast

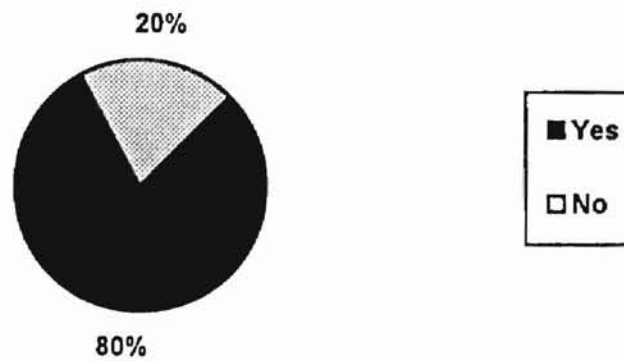


Figure 5. Percentage of Faculty Currently Utilizing an Exercise/Fitness Center

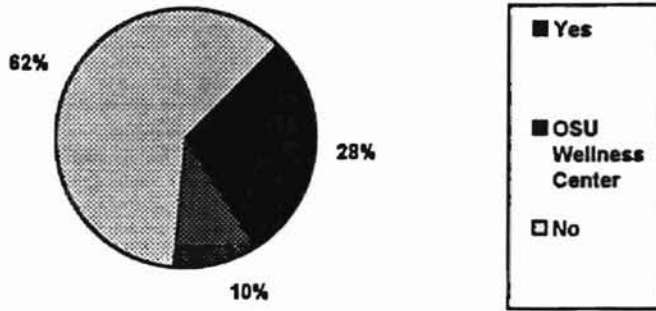


Table 1. P Values for Personal Health Habit Scores of the 1987 Eckhart Study versus the 1996 Duncan Study (Hypothesis Nine)

Category	1987 Means	vs.	1996 Means	P Values
Smoking#	2.5		6.8	p=0.036*
Safety	8.5		7.8	p=0.000***
Eating Habits	7.3		7.5	p=0.711
Exercise	5.7		6.1	p=0.132
Stress	7.4		7.8	p=0.057
Alcohol/Drug Abuse	9.1		9.4	p=0.058

* p≤0.05

*** p≤0.0001

Scoring in Smoking Categories were analyzed differently between the two groups.

Table 2. P Values for ANOVA and T-test Analyses of Personal Health Habit Scores by Demographics (Hypothesis One)

Categories	ANOVA Academic Rank	ANOVA College	ANOVA Age	T-test Gender	ANOVA Relative Weight
Smoking	0.8376	0.0600	0.5661	0.1534	0.7241
Alcohol/Drug	0.8286	0.9732	0.6963	0.3408	0.7135
Eating	0.1514	0.3146	0.0600	0.7544	0.0141*
Exercise	0.2014	0.5591	0.6484	0.4900	0.0001***
Stress	0.1779	0.2948	0.0280*	0.3055	0.0240*
Safety	0.2491	0.6889	0.2243	0.0000***	0.0358*

* p≤0.05

***p≤0.0001

Table 3. P Values for ANOVA and T-test analyses of Personal Health Habit Scores by Current Health Status of Faculty

Category	T-test Physical Examination	T-test Treatment of Health Problem	T-test Being on Medication	T-test Having a Cardiovascular Examination	ANOVA Hours of sleep in 24 hours
Cigarettes	0.1610	0.8324	0.2898	0.1537	NA
Alcohol/Drug	0.6611	0.5249	0.3597	0.0010**	NA
Eating Habits	0.0105*	0.7686	0.2789	0.0644	0.6967
Exercise	0.3935	0.1355	0.9672	0.7849	NA
Stress	0.0687	0.0149*	0.4601	0.7998	NA
Safety	0.0432*	0.0000***	0.0000***	0.0773	NA

* $p \leq 0.05$

** $p \leq 0.001$

*** $p \leq 0.0001$

NA = Not Applicable

Table 4. Wellness Programs Indicated by Faculty that They Prefer to Attend

Responses	Wellness Programs
271	Exercise/Fitness
145	Health Screening
91	Weight Management
88	Stress Management
71	Cooking Classes
63	Nutrition Awareness
56	Time Management
45	Back Rehabilitation
10	Safety
7	Tobacco Cessation
7	Others
0	Alcohol/Drug Abuse

Figure 6. Faculty's Category Mean Scores of Personal Health Habits (Part I)

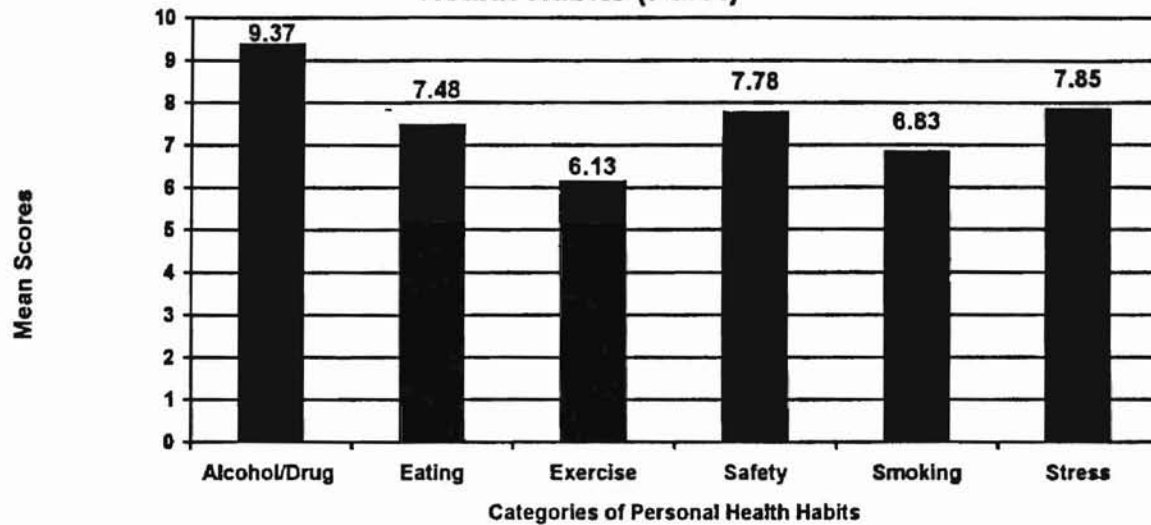


Table 5. Estimated Usage of the Wellness Center Programs by the Faculty Since Opening in 1991

Responses	Program
7722	Exercise/Fitness Center
697	Health Screening
324	Physical Therapy
291	Various Blood Tests
185	Personal Training
148	Physical Exam
146	Nutrition Counseling
134	Employee Assistance Program
112	Cardiac Rehabilitation
104	Treadmill Test
87	Wellness Education Classes
70	Cooking Classes
40	Back Rehabilitation
7	Biometrics™*

* New program since 1995 (a package involves several visits for dietary counseling and exercise)

Table 6. P Values for Chi-square analyses of wellness programs preferred to attend by faculty's demographics.

Interest	Academic Rank	College	Age	Gender	Relative Weight
Preference of Programs:					
Fitness/Exercise	0.170	0.089	0.506	0.147	0.144
Weight Management	0.459	0.584	0.184	0.005**	0.000***
Tobacco Cessation	0.065	0.069	0.629	0.299	0.177
Cooking Classes	0.009*	0.146	0.001**	0.000	0.739
Nutrition Awareness	0.222	0.084	0.444	0.180	0.740
Safety	0.113	0.012*	0.570	0.760	0.688
Alcohol/Drug Misuse					
Back Rehabilitation	0.453	0.726	0.907	0.365	0.775
Stress Management	0.181	0.435	0.136	0.149	0.005**
Health Screening	0.990	0.207	0.278	0.426	0.004**
Time Management	0.117	0.002*	0.219	0.861	0.356
Other	0.842	0.055	0.535	0.173	0.138

* $p \leq 0.05$

** $p \leq 0.001$

*** $p \leq 0.0001$

See also Appendix I

REFERENCES

1. McMillen L. Colleges finding 'wellness' programs cut absenteeism, boost productivity and morale of their staff members. *The Chronicle of Higher Education*. 1986;19:21.
2. Eckhart GA. *Needs assessment of university faculty for a wellness program*. Stillwater, OK: Oklahoma State University; 1987. Thesis.
3. Eckhart GA. Needs, interests and attitudes of university faculty for a wellness program. *J Am Diet Assoc*. 1988;88:916-920.
4. *Public Health Service: Healthstyle: A self test*. Washington, DC: Government Printing Office, 1981.
5. Helwig J. *SAS Introductory Guide*. Cary, NC: SAS Institute, Inc.;1983.
6. *National Center for Health Statistics: Health, United States, 1994 Chartbook*. Hyattsville, MD: Public Health Service, 1995.
7. Noble J. *Projections of alcohol abusers*. National Institute of Alcohol and Drug Abuse: Department of Biometry and Epidemiology, 1990.
8. Frankle RT, Owen AL. *Nutrition in the Community: The art of delivering services*. 3rd ed. St. Louis, MI: Mosby;1993.
9. Gatty B. How fitness works out. *Nation's Business*. 1985;73:18-24.
10. Falkenberg LE. Employee fitness programs: Their impact on the employee and the organization. *Academy of Management Review*. 1987;12:511-522.
11. Mudrack PE. Job involvement and Machiavellianism: Obsession-compulsion or detachment. *J of Psychology*. 1990;123:491-496.
12. Cooper CL. *Creating Healthy Work Organizations*. New York, NY: John Wiley and Sons;1994.
13. Fisher SL. Stress: A prescription for change. *Sales and Marketing Management*. 1993;145:32-33.

CHAPTER V
SUMMARY AND RECOMMENDATIONS

Summary

The purpose of this study was to evaluate faculty's personal health habits, health status, and interests and participation in a wellness program. Specific objectives were to identify personal health habits and current health status of faculty at Oklahoma State University and to relate those with demographic variables; to relate personal health habit scores with the variables: exercise/fitness, eating, cigarette smoking, and current health status scores; to find the interests, level of participation, and program preferences of faculty in the wellness program; to compare and contrast differences in results of this survey with results of the Eckhart survey, 1987; and to recommend topic areas of health promotion, based on results of the study, for faculty to Oklahoma State University Wellness Director and staff. As a result of these objectives, 10 hypotheses were postulated.

Hypothesis one stated that the personal health habit scores in the six categories of cigarette smoking; alcohol and drugs; eating habits; exercise/fitness; stress control and safety were not significantly associated with demographic variables of academic rank; college; age; gender and relative weight. Significant associations were found in 7 of the 60 total analyses performed. Of the six categories, stress habits were significantly

associated with the most demographic variables: academic rank, college, age group, and relative weight. The researcher rejected the hypotheses in part due to the seven analyses that were found to be significant associations out of the 60 total analyses performed (Appendices G and H).

Hypothesis two stated that belonging to an exercise/fitness center and walking the stairs in a multiple story building were not significantly associated with exercise/fitness scores. Significant associations were found in two of the 18 total analysis performed. The significant association was belonging to an exercise/fitness center and exercising length of time per week of participants in the older age groups (Appendix H). As a result of the significant associations, the researcher rejected H02 in part, but failed to reject H02 because of 16 other associations which were not significantly associated.

H03 stated that there would be no significant association between the number of meals consumed per day, snacking, breakfast, being on a special diet, and the number of meals per week eaten away from home and the eating habit scores. Significant associations were found in four of the seven total analysis performed with the significance found among eating breakfast, eating less than five meals a week away from home, and eating at least three meals per day with eating habit scores (Appendices G and H). Based on this information, the researcher rejected H03 in part, and failed to reject H03 based on three other not significant associations.

H04 stated that being a current smoker was not significantly associated with the cigarette smoking scores. Significant associations were found in four of the 10 total analysis performed with the significance found among currently using tobacco products, specifically cigarettes and smokeless tobacco with cigarette smoking scores (Appendix I).

As a result of the significant associations, the researcher rejected H04 in part, and failed to reject H04 based on six other not significant associations.

H05 stated that there were no significant associations between the personal health habit scores in the categories of cigarette smoking; alcohol and drug abuse; eating habits; exercise/fitness; stress control; and safety with current health status scores: physical examination during past two years, current treatment of a health problem, being on medication, having a cardiovascular evaluation, and number of continuous hours of sleep in a twenty-four hour period. Significant associations were found in nine of the 44 total analysis performed (Appendix H). The most significant category was safety habits when compared with participant having a routine physical examination within the past two years, currently being treated for a health problem, currently taking medications on a regular basis, and within the last five years, if participant has had a Resting EKG cardiovascular evaluation. The researcher rejected the hypothesis H05 due to the significant findings.

Hypothesis six stated that there were no significant associations between interest in the OSU Wellness Program with demographic variables: academic rank, college, age, relative weight, and gender. Significant associations were found in only one of the six total analysis performed (Appendix I). The significant association was interest in the OSU Wellness Program and college, therefore, H06 was rejected.

Hypothesis seven stated that there were no significant associations between level of participation in the OSU Wellness Program with demographic variables: academic rank, college, age, relative weight, and gender. There were no significant associations between variables, consequently, the researcher failed to reject hypotheses seven.

Hypothesis eight stated that there were no significant associations between preference of wellness programs with demographic variables: academic rank, college, age, gender, and relative weight. Significant associations were found in only nine of the 72 total analysis performed (Appendix I). Cooking classes were significantly associated with academic rank, gender, and age group. Weight management classes were significantly associated with gender and relative weight. The researcher rejected H08 due to the significant findings.

Hypothesis nine stated that there were no significant associations between personal health habit scores in the 1987 Needs Assessment of University Faculty for a Wellness Program study (Eckhart, 1987) with personal health habit scores in 1996. The researcher rejected H09 due to the significant associations found between two of the six analysis performed (Appendix I). The two significant associations were smoking and safety.

Hypothesis 10 stated that there were no significant associations between interests among faculty in 1987 Needs Assessment of University Faculty for a Wellness Program study (Eckhart, 1987) with interests in a wellness program among faculty in 1996. Interest in the OSU Wellness program has remained constant between the years, therefore, the researcher failed to reject H10.

Results of Part I of the survey, showed that the mean of the top three most needed areas for improvement, with 10 being the highest and 0 being the lowest, in a wellness program included exercise/fitness at 6.1, eating habits at 7.5, and stress control at 7.8. The faculty were asked to mark wellness programs which they would prefer to attend (Table 4) and where they obtain their health information (Table 7). In order of most to least importance, the faculty chose exercise/fitness, nutrition, and stress/time management.

Recommendations

Based on the research, the following suggestions are offered for additional research. The first suggestion is to survey the faculty periodically every five years to keep an accurate record of current faculty's needs and interests concerning the wellness programs and their current health status, in order to offer more programs in certain areas to meet the current needs or interests. After the surveys have been tallied, changes should be made, if needed, to target specific programs to specific audiences (age groups, gender, and departments) and their families. A variety of programs, times and locations should be made available to accommodate the majority of the faculty and their requests.

The second suggestion is to offer incentives to faculty to increase participation to the OSU Wellness Center. Possible incentives to offer the faculty are open houses to specific departments, personal invitations, and a tour of the facility's new employees to market specific available programs.

The third suggestion is to survey staff and students. Survey results from all three groups would give the OSU Wellness Center Director and staff a comprehensive overview of campus-wide wellness needs and interests.

Table 7. Where Faculty Obtain Health Information

Responses	Source
333	Doctor
258	Magazines
217	Newspaper
202	Television
198	Vitality®
152	Dentist
150	Friends
125	Pharmacist
123	Relatives
86	Wellness Center
78	Others: Journals, Books, Internet, etc.
49	Nurse
27	Dietitian
22	Health Food Store
15	Chiropractor
5	Teacher

BIBLIOGRAPHY

- American Psychiatric Association. (1994). Diagnosis and Statistics Manual of Mental Disorders (4th ed.). Washington, D. C.
- Ardell, D. B. (1985). The history and future of wellness. Health Values, 9(6), 37-56.
- Bray, G. A. (1979). Obesity in America. (DHEW Publication No. 79-359). Washington: U. S. Government Printing Office.
- Best, J. W. & Kahn, J. V. (1986). Research in Education. Englewood Cliffs: Prentice-Hall.
- Caudron, S. (1991). Wellness works. Industry Week, 240 (3), 22-24.
- Cauldwell, B. (1995). Wellness and preventive care. Employee Benefit Plan Review, 49(12), 44-56.
- Chenoweth, D. H. (1987). Planning health promotion at the worksite. Indianapolis: Benchmark Press, Inc.
- Cogwell, R. (1986). Promoting employee health: A guide for worksite wellness. Des Plaines: American Society of Safe Engineers.
- Cook, M. H. (1981). Corporate wellness: A key to improved productivity. Training and Development Journal, 35 (10), 4.
- Cooper, C. L. (1994). Creating healthy work organizations. New York: John Wiley and Sons.
- Cunningham, R. M. (1982). Wellness at work. Chicago: Inquiry.
- Davidson, D. (1995). Partners in change are ready to roll. Hospitals and Health Network, 69(8), 58.
- Eckhart, G. A. (1987). Needs assessment of university faculty for a wellness program.
- Edlin, G. (1985). Health and wellness. Boston: Jones and Bartlett Publishers, Inc.

- Fisher, S. L. (1993). Stress: A prescription for change. Sales and Marketing Management, 145(1), 32-33.
- Frankle, R. T., & Owen, A. L. (1993). Nutrition in the community: The art of delivering services (3rd ed.). St. Louis: Mosby.
- Helwig, J. (1983). SAS introductory guide. Cary, NC: SAS Institute, Inc.
- Hillcrest Medical Center. (1994). Hillcrest exercise and lifestyle programs. Tulsa.
- Illinois State University. (1995). Wellness program newsletter. Normal, Illinois.
- Janeczek, C. (1991). Marijuana: Time for a closer look. Columbus, Ohio: Health Star Publications.
- Johnson, V. E. (1993). I'll quit tomorrow. New York: Harper and Row.
- Kelly, T. (1992). Modern problems. Quality Progress, 25(1), 17-23.
- Kennedy, E., Meyers, L., & Layden, W. (1996). The 1995 dietary guidelines for Americans: An overview. Journal of American Dietetic Association, 96(3), 234-237.
- Kidney, W. C. (1993). Webster's 21st Century Dictionary. Nashville: Thomas Nelson Publishers.
- Kizer, W. M. (1987). The healthy workplace. New York: John Wiley and Sons.
- Kotarba, J., Bentley, P. Workplace wellness participation and the becoming of self. Society, Science, and Medicine, 26 (5): 551-558, 1988.
- Kutzweil, P. (1995). The new food label: Help in preventing heart disease. FDA Consumer Magazine.
- Lesmes, G. (1993). Long-term strategy keeps health costs down. HR Magazine, 38(4), 76-80.
- Lewis, C. J., Crane, N. T., Moore, B. J., & Hubbard, V. S. (1994). Healthy people 2000. Nutrition Today, 29(6), 6-12.
- McClave, J.T., Bensen, P.G. (1991) Statistics for business and economics. New York: Macmillan Publishing Company.
- McKenzie, R. (1995). Treat your own back (6th ed.). New Zealand: Spinal Publications LTD.

- McKenzie, R. (1995). Treat your own neck (6th ed.). New Zealand: Spinal Publications LTD.
- Motor Vehicles. (1991). Oklahoma mandatory seat belt use act. Washington, D. C.
- National Cancer Institute. (1995). Time to take five: Eat five fruits and vegetables a day. Washington, D. C.
- National Research Council. (1989). Recommended dietary allowances. Washington, D. C.: National Academy Press.
- National Wellness Information Resource Center. (1995). Wellness in higher education: The 1995 national wellness information resource center directory. Muncie, Indiana: Ball State University.
- Noble, J. (1990). Working paper: Projections of alcohol abusers. National Institute of Alcohol and Drug Abuse: Department of Biometry and Epidemiology, 5-6.
- Oklahoma Dietetic Association. (1992). Oklahoma Dietetic Association Manual. Oklahoma City, Oklahoma.
- Oklahoma State University. (1993). Employee Assistance Program. Stillwater, Oklahoma.
- Oklahoma State University. (1994). Faculty handbook. Stillwater, Oklahoma.
- Public Health and Safety. (1991). Smoking in public places act. Washington, D. C.
- Public Health Service. (1995). Chartbook. Hyattsville, Maryland.
- Ravenholt, M. D. (1983). Addiction mortality in the U. S. National Institute on Alcohol and Drug Abuse.
- Regans, P. (1985). ABC News/Washington Post Poll, Survey No. 0190.
- Rolfes, S. R., & DeBruyne, L. K. (1990). Life span nutrition: Conception through life. New York: West Publishing Company.
- Rosato, F. D. (1986). Fitness and wellness: The physical connection. New York: West Publishing Company.
- Secretary of Health and Human Services. (1983). Special report to the U. S. Congress on alcohol and health. Department of Health and Human Services Publication No. 84-1291.

MINNAPPA UNIVERSITY

- Seward County Community College. (1995). Wellness center pamphlet. Liberal, Kansas.
- Sherer, J. L. (1994). Vested interests. Hospitals and Health Networks, 68(22), 44-50.
- U. S. Coast Guard. (1991). Fit for duty: Fit for life. Washington, D. C.
- U. S. Department of Agriculture. (1987). Wellness at the worksite. Washington, D. C.
- U. S. Department of Health and Human Services. (1994). Alcohol alert. National Institute on Alcohol Abuse and Alcoholism No. 23PH347.
- U. S. Department of Health and Human Services. (1985). Alcoholism treatment impact on total healthcare utilization and costs. Washington, D. C.
- U. S. Department of Health and Human Services. (1993). Companies design preventative care plans: Employee benefit plan review. Washington, D. C.
- U. S. Department of Health and Human Services. (1981). Health Style: A self test. Publication No. (PHS) 81-50155. Washington, D. C.
- U. S. Department of Transportation. (1994). Traffic safety facts. Washington, D. C.
- Verespej, M. A. (1991). A ticket to better health. Industry Week, 240 (3), 24-26.
- Verespej, M. A. (1993). Health care: Cost controls and quality can coexist. Industry Week, 242(1), 18-22.
- West Texas State University. (1995). Wellness services questionnaire results. Canyon, Texas.
- White, T. P. (1993). The wellness guide to lifelong fitness. New York: Random House.

APPENDICES

MINNESOTA STATE UNIVERSITY

APPENDIX A
JOURNAL OF THE AMERICAN DIETETIC
ASSOCIATION GUIDELINES TO AUTHORS

GUIDELINES FOR AUTHORS

The *Journal of The American Dietetic Association* is the official research publication of The American Dietetic Association. Its purpose, as expressed in its mission statement, is "To be the premier peer-reviewed journal in the field of nutrition and dietetics and to embody the mission of The American Dietetic Association." As such, the *Journal* publishes manuscripts that advance knowledge across the range of research and practice issues in nutrition and dietetics and that support the professional growth of Association members. We invite contributions of original research, review, and application in such areas as nutritional science, medical nutrition therapy, public health nutrition, food science and biotechnology, foodservice systems, leadership and management, and dietetics education.

ARTICLE CATEGORIES

The *Journal* typically accepts manuscripts in four categories. The structural requirements of each category are described below. Manuscript components are discussed in the section "Manuscript Preparation."

Research

Manuscripts reporting original research should include (1) structured abstract; (2) introduction stating the purpose and relevance of the study; (3) clear and full description of materials and methods, including criteria for subject selection; (4) report of results (for clarity, this should follow the same order presented under "methods"); (5) discussion (for greatest value, results should be compared with other published data of a similar nature); and (6) applications. Research manuscripts, in general, should not exceed 3,000 words. Word count does not include abstract, tables, illustrations, and references necessary to support the data and their interpretation.

Perspectives in Practice or Review

Manuscripts presenting practical applications or reviews should include (1) conventional abstract; (2) introduction; (3) body, which develops the subject in logical order using appropriate subheads; and (4) applications. These manuscripts should not exceed 2,000 words (review articles on topics that have an extensive body of literature may be allowed to exceed this word limit). Word count does not include abstract, relevant tables, illustrations, and references.

Research and Professional Briefs

Short reports of research findings, case studies, or professional observations should include (1) introduction; (2) body, which develops the subject in logical order using appropriate subheads (research briefs should include "methods," "results," and "applications" subheads; professional reports may use descriptive subheads); and (3) applications. Research and Professional Briefs do not have abstracts. These manuscripts must not exceed 1,000 words and can include a maximum of two illustrations (tables or figures) and pertinent references. Word count does not include tables, figures, and references.

HOW TO SUBMIT A MANUSCRIPT

Authors must submit four copies of their manuscript, one set of original art, a cover letter of submission, and the authorship and copyright statements described in the section "Author Responsibilities." Each copy of the manuscript should be complete in itself; that is, contain all the manuscript components described in the

section "Manuscript Preparation." The accompanying cover letter should identify the manuscript by title, specify the article category for which it is intended, and include pertinent disclosure information, as specified in the "Author Responsibilities" section. The cover letter should also identify one author who will handle correspondence regarding the manuscript and provide a complete address, telephone number, and facsimile (fax) number for this author. Manuscripts should be sent to:

Elaine R. Monsen, PhD, RD
 Editor, *Journal of The American Dietetic Association*
 University of Washington, Mailstop DL-10
 Seattle, WA 98195

Authors will receive written acknowledgment of the initial receipt of their manuscript. All submitted manuscripts are then sent to peer reviewers who are experts in their fields. The identities of both the peer reviewers and the authors are kept confidential. The reviewers evaluate each manuscript on the basis of content, originality, scientific accuracy, clarity, and contribution to the field of nutrition and dietetics. After peer review (usually 10 to 12 weeks after the date of the initial acknowledgment letter), the corresponding author will be notified whether the manuscript has been accepted with revision or rejected. Manuscripts are accepted at the discretion of the reviewers and the *Journal* editors.

AUTHOR RESPONSIBILITIES

Manuscripts must be submitted solely to the *Journal*. All manuscripts are considered for publication with the understanding that they have not been published previously in print or electronic form and are not under consideration by another publication or electronic medium. Findings previously presented in an oral report or in an abstract in conjunction with a scientific or professional conference may be submitted for consideration. However, the author(s) must inform the Editor of any previous disclosure of information contained in a submitted manuscript, including reports of the information in technical papers or newsletters.

Authors must submit several disclosure statements with their manuscript; the requirements of each are detailed below. The statements regarding authorship and copyright should be submitted on separate sheets of paper; therefore, each statement should also include the title of the manuscript. Statements regarding acknowledgments and potential conflicts of interest can be incorporated into the cover letter.

Authorship

All persons designated as authors must meet the criteria for authorship detailed in the statement below. Authors must sign, date, and submit a copy of this statement with their manuscript.

We (or substitute "I") certify that we have participated substantially in the conception and design of this work and the analysis of the data (when applicable) as well as the writing of the manuscript. We have reviewed the final version of the manuscript submitted for publication, approve it for publication, and take public responsibility for its content. Neither this manuscript nor one with substantially similar content under our authorship has been published or is being considered for publication elsewhere, except as described in an attachment.

GUIDELINES FOR AUTHORS

Copyright Transfer

The American Dietetic Association holds the copyright on all material published in the *Journal*. Therefore, all authors must sign and date a statement that transfers their article's copyright to the Association. Suggested wording follows:

In consideration of The American Dietetic Association taking action to review and publish this work, the author(s) undersigned hereby transfer(s), assign(s), or otherwise convey(s) all copyright ownership to The American Dietetic Association in the event that such work is published by The American Dietetic Association.

Manuscripts submitted by authors who were employees of the US federal government at the time their work was investigated and written are not subject to the Copyright Act; therefore, these authors do not have to submit a statement of copyright transfer but must inform the Editor of their status as federal employees. Authors who transfer their copyright will not lose the right to reprint material from their articles but will be required to acknowledge and credit The American Dietetic Association in all reprints. If a manuscript is not accepted, or is withdrawn before publication, the transfer of copyright is null and void.

Conflicts of Interest

Authors must inform the Editor in writing of any financial arrangements, organizational affiliations, or other relationships that may constitute a conflict of interest regarding the subject matter of the manuscript; this information can be included in a cover letter submitted with the manuscript.

Acknowledgments

Authors may acknowledge persons who have made substantial contributions to the development of their study or manuscript but must obtain permission from all persons named in an acknowledgment. Authors must inform the Editor in writing that such permission has been obtained; this information can be included in a cover letter submitted with the manuscript.

Authors should also disclose financial support or gifts of equipment or supplies in an acknowledgment.

Permission to Reprint

Authors who include illustrations or tables taken from other publications in their manuscript must obtain written permission to reproduce this information from the original publisher of the source material. A copy of the reprint permission must be submitted with the manuscript.

MANUSCRIPT PREPARATION

Type manuscripts on one side of standard-sized (8 1/2 by 11-inch) white bond paper; leave at least a 1-inch margin on all sides. Use standard 10- or 12-pitch type size and double-space type throughout, including the title page, abstract, text, acknowledgments, references, tables, and legends for figures. Start each of these manuscript sections on a new page, and number each page consecutively in the upper right-hand corner of the page. A description of the various components of a manuscript follows.

Authors' Page

All manuscripts must include a separate authors' page that lists (1) the title of the manuscript; (2) two to four key words or descriptive phrases; (3) word counts for the abstract and the text; (4) full names, academic degrees, and affiliations (position title, organization, address, telephone number, and fax number) for all authors both at the time the work was completed and at the present time if affiliations have changed since the work was

finished; (5) name and contact information for corresponding author (address, telephone number, and fax number); and (6) name and address of author who will handle reader requests for reprints, if this is different from the corresponding author. Type authors' names in the order they should appear in the published article. The authors' page must be submitted as a separate sheet so that it can be detached from the manuscript when the Editor sends the manuscript for anonymous peer review.

Title

The manuscript title should be specific and informative, conveying the findings of the research (eg, "Dietary fiber lowers serum cholesterol" rather than "Effects of dietary fiber on serum cholesterol"). The manuscript title should appear on the abstract, the first page of the manuscript text, the authors' page, and all correspondence and disclosure statements.

Abstracts

Authors should prepare a structured abstract for manuscripts submitted to *Research* and a conventional (unstructured) abstract for manuscripts submitted to the *Perspectives in Practice* or the *Review* categories. Abstracts are not required for manuscripts submitted to *Research* and *Professional Briefs*. Abstracts should be self-contained and understandable without reference to the main text and should be written for a general journal readership. The two forms of abstract are described below.

Structured abstracts provide a focused overview of a study's design and outcomes by organizing information with descriptive headings. Suggested headings, and the information each heading should elicit, are described below. Structured abstracts should not exceed 250 words.

- **Objective** Describe the question or problem addressed.
- **Design** Identify the design of the study (eg, intervention, randomized controlled trial, case-control, cohort, survey, factorial design, or cost-effectiveness analysis); define the duration of follow-up; describe the criterion standard used for comparison; define and describe methodology used to collect data.
- **Subjects/Setting** Describe criteria used to select subjects, the number of subjects involved in the analysis, and the attrition rate. Describe where the study was conducted and how the setting might relate to the selection of subjects (eg, community-based or hospitalized subjects) or the study's applicability to a specialty practice situation.
- **Intervention** Describe the essential features of the treatment or intervention in studies that use an experimental design. (This heading, as well as "Main outcome measures," should be omitted in descriptive research (eg, studies that use surveys).)
- **Main outcome measures** Note the primary outcome measure as planned before data collection began; if the hypothesis being reported was formulated during or after data collection, this information should be clearly stated.
- **Statistical analyses performed** Indicate statistical tests used in data analysis (eg, χ^2 , analysis of variance, or confidence intervals). Note procedures used to adjust for confounding factors, such as age and gender.
- **Results** Describe the key findings of the study. No data should be reported in the abstract that do not appear in the main text.
- **Applications/Conclusions** Offer key conclusions on the basis of evidence provided by the study and relate these findings to clinical or practice applications.

Conventional abstracts are written in paragraph style and should provide a brief overview of the study and its findings. Abstracts should be organized to identify the problem being addressed, how the study was organized and implemented, the

main findings, and the authors' conclusions. The last sentence should focus the findings for the dietetics practitioner; it may begin "We conclude that..." or "The findings indicate that...". Conventional abstracts should not exceed 200 words.

Tables and Figures

Tables and figures should be limited to those required to clarify an article. Each table or figure should be understandable by itself and not require the reader to refer to the text. Present data only once, either in tabular or graphic form or in the text. Authors should list the title and number of each table and figure on a separate page submitted with their manuscript. More detailed guidance regarding *Journal* style for tables and figures is provided in the sections "Numbers," "Abbreviations," and "Laboratory Values."

Tables Type each table double-space on a separate sheet of paper. Number tables consecutively (in relation to citation in the text) with Arabic numerals and supply a brief title for each. Give each column a short or abbreviated heading. Place explanatory matter in footnotes, not in the column headings or table title. Be sure to include the unit of measure (eg, "No.," "%," "g," or "year") under the appropriate column heading. Tables may not contain more than 14 columns. Do not put more than one unit of information in a single cell of the table.

For numerals less than 1.00, insert a zero to the left of the decimal point (eg, 0.95). Use a hyphen to indicate ranges (eg, 75-100). Identify statistical measures of variations (eg, standard deviation or standard error of the mean). When the designation line at the left-hand side of a table (stub) requires two lines, values in that horizontal row should align with the second line of the designation. Align columns vertically on decimal points, hyphens, or "x". Use superscript letters to indicate footnotes (eg, ^a, ^b, ^c); however, use the standard * for $P < .05$, ** for $P < .01$, and *** for $P < .001$. The order of footnotes is determined by the first appearance of footnoted material in a horizontal row.

Authors who incorporate data from another published or unpublished source in a table must cite the original source in a reference or footnote.

Figures Authors should include copies of all figures in each copy of their manuscript submitted for consideration. In addition, authors must provide original art for each figure included in a manuscript. Original art should be placed in a separate, protective envelope (add cardboard to protect art from bending) marked with the name of the manuscript and the notation "original art."

Original art must be "camera-ready"; that is, clean, clear, and legible. (If a figure is dirty or blurry, has broken letters, or is hard to read, it will not be used.) Glossy black-and-white prints are preferred, but computer-generated figures or graphs produced by a high-quality laser printer (600 to 1,200 dpi for tone art and 300 dpi for line art) are acceptable. Photocopies are not acceptable. Symbols, letters, and numbers that appear in a figure or graph must be large enough to remain legible when the figure is reduced to fit the width of a single *Journal* column (approximately 3 1/2 inches). Photographs must be 8- by 10-inch glossy black-and-white prints; polaroid pictures are unacceptable.

Number figures consecutively according to the order they are cited in the text. Affix a label that shows the figure number, name of first author, short form of the manuscript title, and an arrow indicating the "top" to the back of the original art. Do not glue, staple, or write anything directly on the original art.

To ensure consistency between text and figures, follow *Journal* style when creating the lettering in figures; eg, avoid use of all-capital letters, omit periods in abbreviations, and use Système International (SI) values. See recent issues of the *Journal* for examples of lettering style.

Figure Legends

Figure legends should be brief yet make an illustration fully intelligible by itself. Define all acronyms or abbreviations used in the figure in the legend. Each legend should be numbered to correspond to the illustration and typed double-space on a separate sheet of paper (if legends are short, more than one legend can be typed on a single sheet of paper). If a figure is reproduced from another source, the appropriate credit line should be incorporated into the figure legend.

Software Citations

Cite software developers parenthetically in the text (not in the list of references) after the first mention of a software package. Software citations should include the name, version number, and release date of the software as well as the name and headquarters location (city and state) of the software developer. If software incorporates a nutrient database, provide information in the text about the database. This information should include the release date for the database, a description of substantial modifications made to the database, and an explanation of how missing nutrient data for foods were handled (ie, indicate whether values were extrapolated and evaluate the effect of any missing values on dietary totals for the nutrients of interest).

Footnotes in Text

Footnotes should be kept to a minimum and numbered consecutively, with superscript numerals, throughout the text. Double-space footnotes on a separate sheet of paper. If a brand name or type of equipment is mentioned, cite the name and headquarters location (city and state) of the manufacturer parenthetically in the text (not in a footnote) after the first mention of the item; however, generic names should be used whenever possible.

References

Number references consecutively in the order in which they are mentioned in the text. Identify references in text, tables, and figure legends by Arabic numerals in parentheses; do not use superscript numbers. References cited only in a table or legend should be numbered after all references cited in the text are assigned numbers; then, references cited in tables or legends should be numbered in the order in which a table or figure is presented in the manuscript. Double-space references on pages separate from the main text of a manuscript.

Authors should use relevant, current citations from the professional and scientific literature. No matter how well known a book or source material (eg, *Recommended Dietary Allowances*), it must be included in the list of references if it is mentioned in the manuscript. Avoid using abstracts as references, but theses and dissertations may be used as references. Personal communications may not be cited as references but may be noted parenthetically in the text. Use the following format: "In a letter (November 1994), Jane Smith, RD, reported...". All personal communications should be dated, and authors must secure the approval of the person quoted. Unpublished data, such as an article submitted for publication but not yet accepted, should be cited parenthetically in the text with a date and the notation "unpublished data." Articles accepted for publication but not yet published can be included in the list of references with the notation "In press." Inclusive page numbers must be provided for all periodical articles cited. Page numbers are not required when an entire book is cited, but specific page numbers are needed when only a chapter or section of a book is cited. Provide a page number for all material quoted directly from any source.

Authors are responsible for the accuracy and adequacy of all references cited in their manuscript. For more information on references, see the section "Reference Style" below.

GUIDELINES FOR AUTHORS
JOURNAL STYLE**Numbers**

Spell out numbers from one to nine, except for units of measure or statistical data (eg, nine men, 9 years, 9 g). Numbers that begin a sentence are always spelled out, as are any accompanying units of measure. The number of significant digits reported should be realistic and should be supported by the original data (eg, 2,125 kcal not 2,124.8 kcal). For sample sizes less than 100, frequency should be given (eg, 2 of 7, not 29%); percent may also be provided if necessary.

Abbreviations

Abbreviate units of measure when used with numerals (5 g, 1,000 kcal). Chemical formulas should be written out, unless they are used to economize space in the column headings of a table; however, the formulas should be expanded in the legend or footnotes. Avoid acronyms, unless they are commonly accepted. Always provide the complete form of an acronym the first time it is mentioned in the text.

Laboratory Values

All clinical laboratory values must be expressed in Systeme International (SI) units; authors must also provide the conversion factor to traditional units in a footnote. The exception to this is the use of kilocalories; the *Journal* will continue to use kilocalories instead of kilojoules. Pounds (lb) and inches (in) are also acceptable. A table of normal values in both traditional and SI units and the appropriate conversion factors appears in the March 1987 *Journal* on page 356. Authors should refer to this table when converting data and use it as a guide for choosing the appropriate number of significant digits.

To help readers become familiar with SI, the *Journal* will provide a footnote that shows the conversion factors and presents an equivalent value in the normal range expressed in both SI and traditional units. (These footnotes will contain rounded conversion factors; authors must use precise conversion factors when generating data.) The footnote will appear when an SI value is first mentioned in a manuscript's text, table, or figure. Therefore, authors must provide a comparative footnote for each clinical value presented in their manuscript worded as in the following example: "To convert mmol/L cholesterol to mg/dL, multiply mmol/L by 38.9. To convert mg/dL cholesterol to mmol/L, multiply mg/dL by 0.026. Cholesterol of 5.00 mmol/L = 193 mg/dL."

Reference Style

The *Journal* follows the American Medical Association style for references. One exception is that reference citations in the *Journal* must list all authors' names; use of "et al" is not acceptable. Abbreviate periodical titles according to *Index Medicus*; if a title does not appear in *Index Medicus*, provide the complete title. Examples of common types of references follow:

- *Article in a periodical*: Gottschlich MM, Mayes T, Khoury JC, Warden GD. Significance of obesity on nutritional, immunologic, hormonal, and clinical outcome parameters in burns. *J Am Diet Assoc*. 1993;93:1261-1268.
- *Book*: Wardlaw GM, Insel PM, Seyler MR. *Contemporary Nutrition: Issues and Insights*. 2nd ed. St Louis, Mo: Mosby-Year Book; 1994.
- *Book written by a committee*: Food and Nutrition Board. *Recommended Dietary Allowances*. 10th ed. Washington, DC: National Academy Press; 1989.
- *Chapter in a book*: Delahanty L. Implications of the Diabetes Control and Complications Trial (DCCT) in nutrition intervention. In: Pastors JG, Holler H, eds. *Meal Planning Approaches for Diabetes Management*. 2nd ed. Chicago, Ill: American Dietetic Association; 1994:11-13.

- *Letter to the editor*: Barr SI. Questions about influences of eating patterns. *J Am Diet Assoc*. 1994;94:250. Letter.

- *Abstract*: Samour PQ, St Peter MJ, Harrity MR, Gibbons G, Bistran BR. Continuous quality improvement: patients with pressure ulcers in an acute care teaching hospital. *J Am Diet Assoc*. 1994;94(suppl):A-70. Abstract.

- *Thesis or dissertation*: Smith SB. *Weight Control for Low-Income Black and Hispanic Women*. Denton, Tex: Texas Woman's University; 1990. Dissertation.

- *Federal Register*: National school lunch program and school breakfast program: nutrition objectives for school meals (7 CFR 210, 220). *Federal Register*. June 10, 1994;59:30218-30251.

- *Government bulletin*: The following information should be included in the order given: (1) name of author (if given); (2) title of bulletin; (3) place of publication; (4) name of issuing bureau, agency, department, or other governmental division; (5) date of publication; (6) page numbers, if specified; (7) publication number, if any; and (8) series number, if given. For example:

- *The Surgeon General's Report on Nutrition and Health*. Washington, DC: US Dept of Health and Human Services; 1988. DHHS (PHS) publication 88-50210.

- *Food Guide Pyramid: A Guide to Daily Food Choices*. Washington, DC: US Dept of Agriculture, Human Nutrition Information Service; 1992. Home and Garden Bulletin No. 252.

- *Nutrition and Your Health: Dietary Guidelines for Americans*. 3rd ed. Washington, DC: US Depts of Agriculture and Health and Human Services; 1990. Home and Garden Bulletin No. 252.

- *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*. Washington, DC: US Dept of Health and Human Services; 1990. DHHS (PHS) publication 91-50213.

EDITORIAL PROCESSING AND PRODUCTION

Article content is the authors' responsibility. Accepted manuscripts are copyedited to conform to *Journal* style and to meet space limitations. Authors should note that the editing process is separate from and occurs after the peer-review process. The corresponding author will receive a galley proof of the article and have an opportunity to review editorial changes before publication. However, changes made by copy editors for style, grammar, and readability should not be altered by authors unless a scientific error has been introduced. Except for corrections of typographical errors, cost of excessive changes made by authors on galley proofs, especially on tables, may be charged to the authors.

Reprint order forms will be mailed with the galley proof. Reprints are shipped 6 to 8 weeks after publication. Questions regarding reprints can be directed to 800/877-1600, ext 4828.

RESOURCES FOR WRITING MANUSCRIPTS

For authoritative decisions on style, usage, and spelling, the *Journal* uses the following resources: *American Medical Association Manual of Style*, 8th ed; *Dorland's Illustrated Medical Dictionary*, 28th ed; and *Merriam Webster's Collegiate Dictionary*, 10th ed. A list of additional helpful resources follows.

- Chenoweth R, ed. *Communicating as Professionals*. 2nd ed. Chicago, Ill: American Dietetic Association; 1994.
- Day RA. *How to Write and Publish a Scientific Paper*. 4th ed. Phoenix, Ariz: Oryx Press; 1994.
- Huth EJ. *Scientific Style and Format: The CBE Manual for Authors, Editors, and Publishers*. 6th ed. New York, NY: Cambridge University Press; 1994.
- Monsen ER, ed. *Research: Successful Approaches*. Chicago, Ill: American Dietetic Association; 1992.
- Ross-Larson BC. *Edut Yourself: A Manual for Everyone Who Works With Words*. New York, NY: WW Norton and Co; 1985.
- Strunk W Jr, White EB. *The Elements of Style*. 3rd ed. New York, NY: Macmillan Publishing Co; 1979.

APPENDIX B
RECOMMENDED DIETARY
ALLOWANCES

REPRODUCTION PROHIBITED

FOOD AND NUTRITION BOARD, NATIONAL ACADEMY OF SCIENCES—NATIONAL RESEARCH COUNCIL
RECOMMENDED DIETARY ALLOWANCES,^a Revised 1989

Designed for the maintenance of good nutrition of practically all healthy people in the United States

Category	Age (years) or Condition	Weight ^b		Height ^b		Protein (g)	Fat-Soluble Vitamins				Water-Soluble Vitamins					Minerals								
		(kg)	(lb)	(cm)	(in)		Vita- min A (μg RE) ^c	Vita- min D ^d (μg)	Vita- min E (mg α -TE) ^e	Vita- min K (μg)	Vita- min C (mg)	Thia- min (mg)	Ribo- flavin (mg)	Niacin (mg NE) ^f	Vita- min B ₆ (mg)	Fo- late (μg)	Vitamin B ₁₂ (μg)	Cal- cium (mg)	Phos- phorus (mg)	Mag- nesium (mg)	Iron (mg)	Zinc (mg)	Iodine (μg)	Selen- ium (μg)
Infants	0-0.5	6	13	60	24	13	375	7.5	5	5	30	0.3	0.4	5	0.3	25	0.3	400	300	40	6	5	40	10
	0.5-1.0	9	20	71	28	14	375	10	4	10	35	0.4	0.5	6	0.6	35	0.5	600	500	60	10	5	60	15
Children	1-3	13	29	90	35	16	400	10	6	15	40	0.7	0.8	9	1.0	50	0.7	800	800	80	10	10	70	20
	4-6	20	44	112	44	24	500	10	7	20	45	0.9	1.1	12	1.1	75	1.0	800	800	120	10	10	90	20
	7-10	28	62	132	52	28	700	10	7	30	45	1.0	1.2	15	1.4	100	1.4	800	800	170	10	10	120	30
	11-14	45	99	157	62	45	1,000	10	10	45	50	1.3	1.5	17	1.7	150	2.0	1,200	1,200	270	12	15	150	40
Males	15-18	66	145	176	69	59	1,000	10	10	65	60	1.5	1.8	20	2.0	200	2.0	1,200	1,200	400	12	15	150	50
	19-24	72	160	177	70	58	1,000	10	10	70	60	1.5	1.7	19	2.0	200	2.0	1,200	1,200	350	10	15	150	70
	25-50	79	174	176	70	63	1,000	5	10	80	60	1.5	1.7	19	2.0	200	2.0	800	800	350	10	15	150	70
	51+	77	170	173	68	63	1,000	5	10	80	60	1.2	1.4	15	2.0	200	2.0	800	800	350	10	15	150	70
	11-14	46	101	157	62	46	800	10	8	45	50	1.1	1.3	15	1.4	150	2.0	1,200	1,200	280	15	12	150	45
	15-18	55	120	163	64	44	800	10	8	55	60	1.1	1.3	15	1.5	190	2.0	1,200	1,200	300	15	12	150	50
Females	19-24	58	128	164	65	46	800	10	8	60	60	1.1	1.3	15	1.6	180	2.0	1,200	1,200	280	15	12	150	55
	25-50	63	138	163	64	50	800	5	8	65	60	1.1	1.3	15	1.6	180	2.0	800	800	280	15	12	150	55
	51+	65	143	160	63	50	800	5	8	65	60	1.0	1.2	15	1.6	180	2.0	800	800	280	10	12	150	55
	Pregnant					60	800	10	10	65	70	1.5	1.6	17	2.2	400	2.2	1,200	1,200	300	30	15	175	65
Lactating	1st 6 months					65	1,300	10	12	65	95	1.6	1.8	20	2.1	280	2.6	1,200	1,200	355	15	19	200	75
	2nd 6 months					62	1,200	10	11	65	90	1.6	1.7	20	2.1	260	2.6	1,200	1,200	340	15	16	200	75

^a The allowances, expressed as average daily intakes over time, are intended to provide for individual variations among most normal persons as they live in the United States under usual environmental stresses. Diets should be based on a variety of common foods in order to provide other nutrients for which human requirements have been less well defined. See text for detailed discussion of allowances and of nutrients not tabulated.

^b Weights and heights of Reference Adults are actual medians for the U.S. population of the designated age, as reported by NHANES II. The median weights and heights of those under 19 years of age were taken from Hamill et al. (1979) (see pages 16-17). The use of these figures does not imply that the height-to-weight ratios are ideal.

^c Retinol equivalents. 1 retinol equivalent = 1 μg retinol or 6 μg β -carotene. See text for calculation of vitamin A activity of diets as retinol equivalents.

^d As cholecalciferol. 10 μg cholecalciferol = 400 IU of vitamin D.

^e α -Tocopherol equivalents. 1 mg α -tocopherol = 1 α -TE. See text for variation in allowances and calculation of vitamin E activity of the diet as α -tocopherol equivalents.

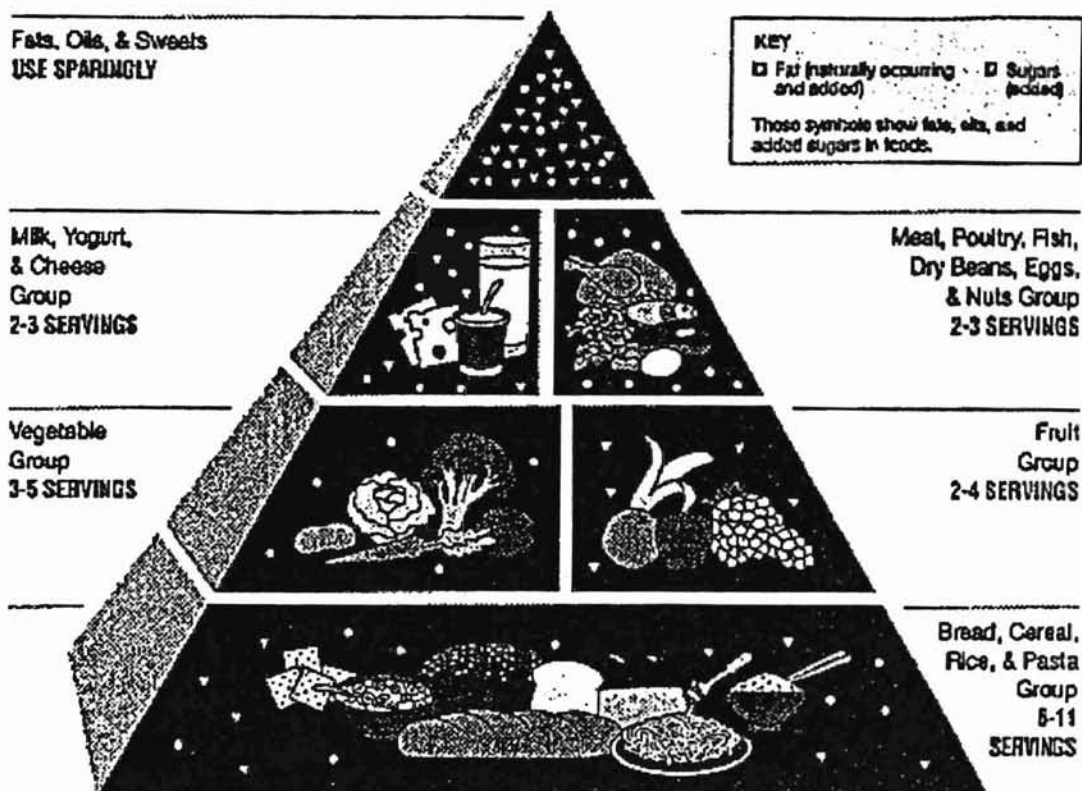
^f 1 NE (niacin equivalent) is equal to 1 mg of niacin or 60 mg of dietary tryptophan.

APPENDIX C

APPENDIX C
FOOD GUIDE PYRAMID

Food Guide Pyramid

A Guide to Daily Food Choices



11007 1100 0000

APPENDIX D
CORRESPONDENCE AND RESEARCH
INSTRUMENT

Oklahoma State University

COLLEGE OF HUMAN ENVIRONMENTAL SCIENCES

Department of Nutritional Sciences
Stillwater, Oklahoma 74078-0337
425 Human Environmental Sciences
405-744-5040

February 15, 1996

Dear OSU Faculty:

Due to the recent rise in health consciousness of worksite healthy lifestyles, my research, **Faculty's Participation in a University Wellness Program**, is being conducted as a completion of the requirements for my Master's Thesis. Institutional Review Board approval has been obtained for this study. The information received from this survey will be confidential. Please complete the questionnaire, and provide your name and campus address on the colored slip of paper, if you wish to be eligible for incentives. I will detach your name and campus address when I receive your completed questionnaire.

Your participation in the attached Healthstyle survey is needed for further development of my research and will be greatly appreciated. The survey will evaluate current status and potential health risks of the OSU faculty. This study is a joint effort of the Nutritional Sciences Department and the OSU Wellness Center.

This survey will require about 10 minutes of your time and may foster valuable information for the further development of the OSU Wellness Program and your own health. Please complete the attached questionnaire, fold, and return in the enclosed pre-addressed envelope to us in campus mail on or before March 1, 1996.

As an incentive for your participation, the first 50 respondents who filled out the name and address slip of paper will each receive a T-shirt. All participants who return the survey with the incentives paper completed on or before March 1, 1996, will be eligible for a drawing of additional prizes. Prizes include Healthy Cuisine Cooking Demonstrations, lunches at Taylor's Dining Room, and fitness memberships to the Wellness Center. Winners of T-shirts and prizes will be contacted by March 29, 1996.

Thank you for your participation and cooperation.

Sincerely,

Danielle G. Duncan
Danielle G. Duncan, RD, FLD
Graduate Student
Ph. (405) 744-7091

Lea L. Ebro
Lea L. Ebro, Ph.D., RD
Professor
Major Advisor

Attachment

FACULTY'S PARTICIPATION IN A UNIVERSITY WELLNESS PROGRAM
OKLAHOMA STATE UNIVERSITY
 Department of Nutrition Sciences, HES
 Healthstyle Survey

Part I: Personal Health Habits: Directions: For each of the following questions, mark your answer with an X in the appropriate column.

	Almost Always	Sometimes	Almost Never
If you <u>never</u> smoke, go to question (4).			
1. I avoid smoking cigarettes.	_____	_____	_____
2. I smoke only low tar and nicotine cigarettes or I smoke a pipe or cigars.	_____	_____	_____
3. I avoid smoking in bed.	_____	_____	_____
4. I avoid drinking alcoholic beverages or I drink no more than 1 or 2 drinks a day.	_____	_____	_____
5. I am careful not to drink alcohol when taking certain medicines (for example, medicine for sleeping, pain, colds, and allergies), or when pregnant.	_____	_____	_____
6. I avoid using alcohol or other drugs (especially illegal drugs) as a way of handling stressful situations or the problems in my life.	_____	_____	_____
7. I read and follow the label directions when using prescribed and over-the-counter drugs.	_____	_____	_____
8. I eat a variety of foods each day, such as fruits and vegetables, whole grain breads and cereals, lean meats, dairy products, dry peas and beans, and nuts and seeds.	_____	_____	_____
9. I limit the amount of fat, saturated fat, and cholesterol I eat (including fat on meats, eggs, butter, cream, shortenings, and organ meats such as liver).	_____	_____	_____
10. I limit the amount of salt I eat by cooking with only small amounts, not adding salt at the table, and avoiding salty snacks.	_____	_____	_____

	Almost Always	Sometimes	Almost Never
11. I avoid eating too much sugar (especially frequent snacks of sticky candy or soft drinks).	—	—	—
12. I maintain a desired weight, avoiding overweight and underweight.	—	—	—
13. I do vigorous exercise for 15-30 minutes at least 3 times a week (examples include running, swimming, brisk walking).	—	—	—
14. I do exercises that enhance my muscle tone for 15-30 minutes at least 3 times a week (examples: aerobics, yoga, calisthenics).	—	—	—
15. I use part of my leisure time participating in individual, family, or team activities that increase my level of fitness (such as gardening, bowling, golf, and baseball).	—	—	—
16. I have a job or do other work that I enjoy.	—	—	—
17. I find it easy to relax and express my feelings freely.	—	—	—
18. I recognize early, and prepare for, events or situations likely to be stressful for me.	—	—	—
19. I have close friends, relatives, or others whom I can talk to about personal matters and call on for help when needed.	—	—	—
20. I participate in group activities (such as church and community organizations) or hobbies that I enjoy.	—	—	—
21. I wear a seat belt while riding in a car.	—	—	—
22. I avoid driving while under the influence of alcohol and other drugs.	—	—	—
23. I obey traffic rules and the speed limit when driving.	—	—	—
24. I am careful when using potentially harmful products or substances (such as household cleaners, poisons, and electrical devices).	—	—	—

Part II: Current Health Status:

Directions: Please **circle** your answer or mark your answer with an X in the space provided. A few questions ask for a response. Please be specific in your response.

- What is your current employment status: a. .75 FTE or greater b. less than .75 FTE
- What is your academic rank: a. Instructor b. Assistant professor
c. Associate professor d. Professor e. Other (specify) _____
- What college are you currently working in: a. Agricultural Sciences & Natural Resources
b. Education c. Human Environmental Sciences d. Arts & Sciences
e. Engineering, Architecture & Technology f. Veterinary Medicine
g. Business Administration h. Other _____
- What is your: age _____ weight _____ gender _____ height _____
- Do you go to an exercise/fitness center? yes _____ no _____
If yes, please specify which _____
- If you answered yes to question 5, how many times a week do you participate? _____
And on the average, how long do you participate each time? _____
- Please estimate the number of times you have utilized the following OSU Wellness Center's services, since the OSU Wellness Center opened in January, 1991:
Nutrition counseling _____ Physical exams _____ Biometrics™ _____
Health screening _____ Fitness center _____ Personal training _____
Treadmill testing _____ Various blood tests _____ Physical therapy _____
Cardiac rehabilitation _____ Back rehabilitation _____ Cooking classes _____
Wellness education classes _____ Employee Assistance Program (EAP) _____
- How many meals a day do you consume? _____
- Do you usually snack between meals? yes _____ no _____
- Do you regularly eat breakfast? yes _____ no _____
- Are you currently on a special diet? yes _____ no _____
If yes, what kind? _____
- How many meals a week do you eat away from home?
0-5 _____ 6-10 _____ 11-15 _____ 16-20 _____ 21+ _____
- When in a multiple story building, do you usually: a. walk the stairs b. take the elevator
- Do you currently use tobacco? yes _____ no _____
If yes, check all that apply:
_____ Cigarettes _____ Pipe _____ Cigars _____ Smokeless

15. Have you ever used tobacco products? yes _____ no _____
If yes, check all that apply: Cigarettes _____ Pipe _____ Cigars _____ Smokeless _____
16. Have you had a routine physical examination within the past two years? yes _____ no _____
17. Are you currently being treated for a health problem? yes _____ no _____
18. Do you take any medications on a regular basis? yes _____ no _____
If yes, what kind & why? _____
19. Have you had, within the last five years, a cardiovascular evaluation? yes _____ no _____
If yes, specify: Treadmill test _____ Resting EKG _____ Other (specify) _____
20. How many continuous hours of sleep do you get in a 24 hour period?
_____ 6 hours or less _____ 7 to 8 hours _____ 9 hours or more

Part III: Interest and Participation in the OSU Wellness Center:

1. Are you interested in the OSU Wellness Program? yes _____ no _____
2. If you are not currently participating in any of the OSU Wellness Center programs, please explain why:
3. Which time is most convenient for you to participate in a wellness program?
a. Early morning (6-7:30 am) b. Lunchtime (11-1 pm) c. Early evening (5-7 pm)
d. Other, specify _____
4. Below is a list of wellness programs, check the programs which you would prefer to attend:
Fitness/exercise _____ Nutrition awareness _____ Stress management _____
Weight management _____ Safety _____ Health screening _____
Tobacco cessation _____ Alcohol/drug misuse _____ Time management _____
Cooking classes _____ Back rehabilitation _____ Other _____
5. What incentives would attract you to participate more in the OSU Wellness Center programs?
Please specify: _____
6. Where do you obtain health information? (Check all that apply):
Doctor _____ Television _____ Health Food Stores _____ Dentist _____
Pharmacist _____ Chiropractor _____ Newspaper _____ Magazines _____
Relatives _____ Friends _____ Dietitian _____ Teacher _____
Vitality@ _____ Nurse _____ Wellness Center _____ Other _____
7. Please provide additional comments about the OSU Wellness Center and/or the promotion of worksite healthy lifestyles:

ATTENTION RESEARCH PARTICIPANT

You will **not** be identified personally with your responses. The researcher will detach this slip of paper from the questionnaire with your name and campus address and place it in a concealed box as soon as the completed questionnaire is returned. **Name and campus address is needed for incentive purposes only!**

Please fill in the information below so that you will be eligible for the prizes.

Name _____ Campus Address _____

Please enclose in the preaddressed envelope provided and return in campus mail. Thank You!

ATTENTION RESEARCH PARTICIPANT

You will **not** be identified personally with your responses. The researcher will detach this slip of paper from the questionnaire with your name and campus address and place it in a concealed box as soon as the completed questionnaire is returned. **Name and campus address is needed for incentive purposes only!**

Please fill in the information below so that you will be eligible for the prizes.

Name _____ Campus Address _____

Please enclose in the preaddressed envelope provided and return in campus mail. Thank You!

ATTENTION RESEARCH PARTICIPANT

You will **not** be identified personally with your responses. The researcher will detach this slip of paper from the questionnaire with your name and campus address and place it in a concealed box as soon as the completed questionnaire is returned. **Name and campus address is needed for incentive purposes only!**

Please fill in the information below so that you will be eligible for the prizes.

Name _____ Campus Address _____

Please enclose in the preaddressed envelope provided and return in campus mail. Thank You!

ATTENTION RESEARCH PARTICIPANT

You will **not** be identified personally with your responses. The researcher will detach this slip of paper from the questionnaire with your name and campus address and place it in a concealed box as soon as the completed questionnaire is returned. **Name and campus address is needed for incentive purposes only!**

Please fill in the information below so that you will be eligible for the prizes.

Name _____ Campus Address _____

Please enclose in the preaddressed envelope provided and return in campus mail. Thank You!

APPENDIX E
INSTITUTIONAL REVIEW BOARD
APPROVAL

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 01-22-96

IRB#: HE-96-029

Proposal Title: FACULTY'S PARTICIPATION IN A WELLNESS PROGRAM

Principal Investigator(s): Lea L. Ebro, Danielle Duncan

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

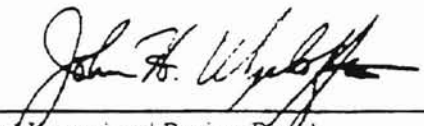
ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL
REVIEW BOARD AT NEXT MEETING.

APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER
WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE
SUBMITTED FOR BOARD APPROVAL.

ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED
FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or
Disapproval are as follows:

Signature:



Chair of Institutional Review Board

Date: February 6, 1996

APPENDIX F
SCORING SYSTEM OF PART I
UTILIZED BY THE RESEARCHER

FACULTY'S PARTICIPATION IN A UNIVERSITY WELLNESS PROGRAM
OKLAHOMA STATE UNIVERSITY
Department of Nutrition Sciences, HES
Healthstyle Survey

Part I: Personal Health Habits: Directions: For each of the following questions, mark your answer with an X in the appropriate column.

	Almost Always	Sometimes	Almost Never
If you <u>never</u> smoke, go to question (4).			
1. I avoid smoking cigarettes.	<u>5</u>	<u>1</u>	<u>0</u>
2. I smoke only low tar and nicotine cigarettes or I smoke a pipe or cigars.	<u>5</u>	<u>1</u>	<u>0</u>
3. I avoid smoking in bed.	<u>2</u>	<u>1</u>	<u>0</u>
4. I avoid drinking alcoholic beverages or I drink no more than 1 or 2 drinks a day.	<u>4</u>	<u>1</u>	<u>0</u>
5. I am careful not to drink alcohol when taking certain medicines (for example, medicine for sleeping, pain, colds, and allergies), or when pregnant.	<u>2</u>	<u>1</u>	<u>0</u>
6. I avoid using alcohol or other drugs (especially illegal drugs) as a way of handling stressful situations or the problems in my life.	<u>2</u>	<u>1</u>	<u>0</u>
7. I read and follow the label directions when using prescribed and over-the-counter drugs.	<u>2</u>	<u>1</u>	<u>0</u>
8. I eat a variety of foods each day, such as fruits and vegetables, whole grain breads and cereals, lean meats, dairy products, dry peas and beans, and nuts and seeds.	<u>4</u>	<u>1</u>	<u>0</u>
9. I limit the amount of fat, saturated fat, and cholesterol I eat (including fat on meats, eggs, butter, cream, shortenings, and organ meats such as liver).	<u>2</u>	<u>1</u>	<u>0</u>
10. I limit the amount of salt I eat by cooking with only small amounts, not adding salt at the table, and avoiding salty snacks.	<u>2</u>	<u>1</u>	<u>0</u>

	Almost Always	Sometimes	Almost Never
11. I avoid eating too much sugar (especially frequent snacks of sticky candy or soft drinks).	<u>2</u>	<u>1</u>	<u>0</u>
12. I maintain a desired weight, avoiding overweight and underweight.	<u>3</u>	<u>1</u>	<u>0</u>
13. I do vigorous exercise for 15-30 minutes at least 3 times a week (examples include running, swimming, brisk walking).	<u>3</u>	<u>1</u>	<u>0</u>
14. I do exercises that enhance my muscle tone for 15-30 minutes at least 3 times a week (examples: aerobics, yoga, calisthenics).	<u>2</u>	<u>1</u>	<u>0</u>
15. I use part of my leisure time participating in individual, family, or team activities that increase my level of fitness (such as gardening, bowling, golf, and baseball).	<u>2</u>	<u>1</u>	<u>0</u>
16. I have a job or do other work that I enjoy.	<u>2</u>	<u>1</u>	<u>0</u>
17. I find it easy to relax and express my feelings freely.	<u>2</u>	<u>1</u>	<u>0</u>
18. I recognize early, and prepare for, events or situations likely to be stressful for me.	<u>2</u>	<u>1</u>	<u>0</u>
19. I have close friends, relatives, or others whom I can talk to about personal matters and call on for help when needed.	<u>2</u>	<u>1</u>	<u>0</u>
20. I participate in group activities (such as church and community organizations) or hobbies that I enjoy.	<u>2</u>	<u>1</u>	<u>0</u>
21. I wear a seat belt while riding in a car.	<u>2</u>	<u>1</u>	<u>0</u>
22. I avoid driving while under the influence of alcohol and other drugs.	<u>2</u>	<u>1</u>	<u>0</u>
23. I obey traffic rules and the speed limit when driving.	<u>2</u>	<u>1</u>	<u>0</u>
24. I am careful when using potentially harmful products or substances (such as household cleaners, poisons, and electrical devices).	<u>2</u>	<u>1</u>	<u>0</u>

APPENDIX G
ANOVA TABLES AND DUNCAN'S
MULTIPLE RANGE TESTS

Hypothesis 1 analyses.

Analysis of Variance Procedure

Dependent Variable: EATING

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	51.73500688	25.86750344	4.30	0.0141
Error	439	2638.53874877	6.01033884		
Corrected Total	441	2690.27375566			

R-Square	C.V.	Root MSE	EATING Mean
0.019230	32.78689	2.451599	7.47737557

Source	DF	Anova SS	Mean Square	F Value	Pr > F
RELWT	2	51.73500688	25.86750344	4.30	0.0141

Hypothesis 1 analyses.

Analysis of Variance Procedure

Duncan's Multiple Range Test for variable: EATING

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 439 MSE= 6.010339

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 37.1404

Number of Means 2 3

Critical Range 1.130 1.188

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	RELWT
A	7.831	213	DESR
A			
A	7.158	215	HIGH
A			
A	7.000	14	BELO

Hypothesis 3 analyses.

Analysis of Variance Procedure

Dependent Variable: EATING

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	6	164.1134588	27.3522431	4.70	0.0001
Error	433	2517.4410867	5.8139517		
Corrected Total	439	2681.5545455			

R-Square	C.V.	Root MSE	EATING Mean
0.061201	32.28649	2.411214	7.46818182

Source	DF	Anova SS	Mean Square	F Value	Pr > F
MEALS	6	164.1134588	27.3522431	4.70	0.0001

Hypothesis 3 analyses.

Analysis of Variance Procedure

Duncan's Multiple Range Test for variable: EATING

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 433 MSE= 5.813952

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 2.577321

Number of Means	2	3	4	5	6	7
Critical Range	4.220	4.437	4.577	4.682	4.771	4.843

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	MEALS	
A	10.000	1	6	
A				
A	9.000	2	5	
A				
A	8.500	8	4	
A				
A	7.731	324	3	
A				
A	6.670	91	2	
A				
B	A	5.846	13	1
B				
B	2.000	1	0	

Hypothesis 3 analyses.

Analysis of Variance Procedure

Dependent Variable: EATING

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	91.04095470	22.76023867	3.86	0.0043
Error	432	2547.79199725	5.89766666		
Corrected Total	436	2638.83295195			

R-Square	C.V.	Root MSE	EATING Mean
0.034500	32.51407	2.428511	7.46910755

Source	DF	Anova SS	Mean Square	F Value	Pr > F
MEALAWAY	4	91.04095470	22.76023867	3.86	0.0043

Hypothesis 3 analyses.

Analysis of Variance Procedure

Duncan's Multiple Range Test for variable: EATING

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 432 MSE= 5.897667

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 5.591407

Number of Means	2	3	4	5
Critical Range	2.885	3.034	3.130	3.202

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	MEALAWAY
A	7.715	274	1
A			
A	7.500	2	5
A			
A	7.268	138	2
A			
A	5.750	20	3
A			
A	5.667	3	4

Hypothesis 1 analyses.

Analysis of Variance Procedure

Dependent Variable: EXERFIT

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	335.4301483	167.7150742	22.77	0.0001
Error	438	3225.6764276	7.3645581		
Corrected Total	440	3561.1065760			
	R-Square	C.V.	Root MSE	EXERFIT Mean	
	0.094193	44.24301	2.713772	6.13378685	

Source	DF	Anova SS	Mean Square	F Value	Pr > F
RELWT	2	335.4301483	167.7150742	22.77	0.0001

Hypothesis 1 analyses.

Analysis of Variance Procedure

Duncan's Multiple Range Test for variable: EXERFIT

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 438 MSE= 7.364558

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 37.13022

Number of Means 2 3

Critical Range 1.251 1.316

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	RELWT
A	7.024	212	DESR
A			
B	6.214	14	BELO
B			
B	5.251	215	HIGH

Hypothesis 1 analyses.

Analysis of Variance Procedure

Dependent Variable: STRESS

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	37.29440139	9.32360035	2.75	0.0280
Error	436	1479.52646029	3.39340931		
Corrected Total	440	1516.82086168			

R-Square	C.V.	Root MSE	STRESS Mean
0.024587	23.47227	1.842121	7.84807256

Source	DF	Anova SS	Mean Square	F Value	Pr > F
AGEGP	4	37.29440139	9.32360035	2.75	0.0280

Hypothesis 1 analyses.

Analysis of Variance Procedure

Duncan's Multiple Range Test for variable: STRESS

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 436 MSE= 3.393409

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 45.1154

Number of Means	2	3	4	5
Critical Range	0.770	0.810	0.836	0.855

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	AGEGP
A	8.950	20	5
B	7.977	130	4
B	7.890	100	2
B	7.652	164	3
B	7.444	27	1

Hypothesis 1 analyses.

Analysis of Variance Procedure

Dependent Variable: STRESS

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	25.62445975	12.81222987	3.76	0.0240
Error	438	1491.19640193	3.40455800		
Corrected Total	440	1516.82086168			

R-Square	C.V.	Root MSE	STRESS Mean
0.016894	23.51080	1.845144	7.84807256

Source	DF	Anova SS	Mean Square	F Value	Pr > F
RELWT	2	25.62445975	12.81222987	3.76	0.0240

Hypothesis 1 analyses.

Analysis of Variance Procedure

Duncan's Multiple Range Test for variable: STRESS

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 438 MSE= 3.404558

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 37.13022

Number of Means	2	3
Critical Range	0.851	0.895

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	RELWT
A	8.066	212	DESR
A			
B A	7.688	215	HIGH
B			
B	7.000	14	BELO

Hypothesis 1 analyses.

Analysis of Variance Procedure

Dependent Variable: SAFETY

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	4.88269384	2.44134692	3.35	0.0358
Error	439	319.50644643	0.72780512		
Corrected Total	441	324.38914027			

R-Square	C.V.	Root MSE	SAFETY Mean
0.015052	8.965212	0.853115	9.51583710

Source	DF	Anova SS	Mean Square	F Value	Pr > F
RELWT	2	4.88269384	2.44134692	3.35	0.0358

Hypothesis 1 analyses.

Analysis of Variance Procedure

Duncan's Multiple Range Test for variable: SAFETY

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 439 MSE= 0.727805

WARNING: Cell sizes are not equal.

Harmonic Mean of cell sizes= 37.1404

Number of Means 2 3

Critical Range 0.393 0.414

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	RELWT
A	9.610	213	DESR
A			
B A	9.447	215	HIGH
B			
B	9.143	14	BELO

APPENDIX H
T-TEST TABLES

TTEST PROCEDURE

Variable: ALCDRUG

CVEXAM	N	Mean	Std Dev	Std Error
n	220	9.43181818	1.24228629	0.08375492
y	219	9.31506849	1.55519295	0.10509020

Variances	T	DF	Prob> T
Unequal	0.8688	415.9	0.3855
Equal	0.8692	437.0	0.3852

For H0: Variances are equal, $F' = 1.57$ DF = (218,219) Prob>F' = 0.0010

Variable: SMOKING

CVEXAM2	N	Mean	Std Dev	Std Error
n	62	9.77419355	1.01495950	0.12889999
y	142	9.33098592	1.91567565	0.16075993

Variances	T	DF	Prob> T
Unequal	2.1509	194.6	0.0327
Equal	1.7179	202.0	0.0874

For H0: Variances are equal, $F' = 3.56$ DF = (141,61) Prob>F' = 0.0000

Variable: ALCDRUG

CVEXAM2	N	Mean	Std Dev	Std Error
n	62	9.50000000	1.18390850	0.15035653
y	142	9.25352113	1.66071257	0.13936390

Variances	T	DF	Prob> T
Unequal	1.2023	159.8	0.2310
Equal	1.0566	202.0	0.2919

For H0: Variances are equal, $F' = 1.97$ DF = (141,61) Prob>F' = 0.0034

TTEST PROCEDURE

Variable: EATING

BREAKFST	N	Mean	Std Dev	Std Error
n	89	6.35955056	2.78489102	0.29519786
y	351	7.74928775	2.30647370	0.12311046

Variances	T	DF	Prob> T
Unequal	-4.3451	120.4	0.0001
Equal	-4.8584	438.0	0.0000

For H0: Variances are equal, $F' = 1.46$ DF = (88,350) Prob>F' = 0.0189*****
Variable: EATING

PHYSICAL	N	Mean	Std Dev	Std Error
n	129	6.68992248	2.73803776	0.24107078
y	312	7.79487179	2.27729729	0.12892657

Variances	T	DF	Prob> T
Unequal	-4.0418	204.8	0.0001
Equal	-4.3607	439.0	0.0000

For H0: Variances are equal, $F' = 1.45$ DF = (128,311) Prob>F' = 0.0105
Hypothesis 2 analyses.*****
Variable: EXERFIT

DOUEXER	N	Mean	Std Dev	Std Error
n	267	5.27340824	2.80643809	0.17175122
y	172	7.47674419	2.36557545	0.18037344

Variances	T	DF	Prob> T
Unequal	-8.8465	406.7	0.0001
Equal	-8.5275	437.0	0.0000

For H0: Variances are equal, $F' = 1.41$ DF = (266,171) Prob>F' = 0.0156

TTEST PROCEDURE

Variable: STRESS

HLTHPROB	N	Mean	Std Dev	Std Error
n	325	7.8400000	1.94180774	0.10771211
y	115	7.85217391	1.59628669	0.14885450

Variances	T	DF	Prob> T
Unequal	-0.0663	241.4	0.9472
Equal	-0.0604	438.0	0.9519

For H0: Variances are equal, $F^* = 1.48$ DF = (324,114) Prob>F* = 0.0149

Variable: SAFETY

HLTHPROB	N	Mean	Std Dev	Std Error
n	326	9.47239264	0.93356477	0.05170537
y	115	9.63478261	0.58234907	0.05430433

Variances	T	DF	Prob> T
Unequal	-2.1657	321.7	0.0311
Equal	-1.7485	439.0	0.0811

For H0: Variances are equal, $F^* = 2.57$ DF = (325,114) Prob>F* = 0.0000

Variable: SAFETY

PHYSICAL	N	Mean	Std Dev	Std Error
n	129	9.31782946	1.03065889	0.09074446
y	312	9.59615385	0.76312815	0.04320362

Variances	T	DF	Prob> T
Unequal	-2.7693	188.6	0.0062
Equal	-3.1286	439.0	0.0019

For H0: Variances are equal, $F^* = 1.82$ DF = (128,311) Prob>F* = 0.0000

TTEST PROCEDURE

Variable: SAFETY

GENDER	N	Mean	Std Dev	Std Error
f	109	9.58715596	0.65561689	0.06279671
m	314	9.47452229	0.93271423	0.05263611

Variances	T	DF	Prob> T
Unequal	1.3746	267.5	0.1704
Equal	1.1644	421.0	0.2449

For H0: Variances are equal, F' = 2.02 DF = (313,108) Prob>F' = 0.0000

Variable: SAFETY

MEDICATE	N	Mean	Std Dev	Std Error
n	272	9.43382353	0.96966693	0.05879469
y	169	9.64497041	0.62057109	0.04773624

Variances	T	DF	Prob> T
Unequal	-2.7880	438.6	0.0055
Equal	-2.5269	439.0	0.0119

For H0: Variances are equal, F' = 2.44 DF = (271,168) Prob>F' = 0.0000

Variable: SAFETY

CVEXAM2	N	Mean	Std Dev	Std Error
n	62	9.64516129	0.57536230	0.07307109
y	142	9.61267606	0.74232328	0.06229439

Variances	T	DF	Prob> T
Unequal	0.3383	148.1	0.7356
Equal	0.3066	202.0	0.7595

For H0: Variances are equal, F' = 1.66 DF = (141,61) Prob>F' = 0.0257

APPENDIX I
CHI-SQUARE TABLES

TABLE OF CURRENTLY USING TOBACCO BY PERSONAL HEALTH HABITS QUESTION 1

TOBACCO		PHH1			
Frequency					
Percent	0	1	5	Total	
n	2	2	394	398	
	0.45	0.45	89.55	90.45	
y	8	11	23	42	
	1.82	2.50	5.23	9.55	
Total	10	13	417	440	
	2.27	2.95	94.77	100.00	

Statistic	DF	Value	Prob
Chi-Square	2	150.182	0.000

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF CURRENTLY SMOKING CIGARETTES BY PERSONAL HEALTH HABITS QUESTION 1

TOB1		PHH1			
Frequency					
Percent	0	1	5	Total	
n	0	2	17	19	
	0.00	5.26	44.74	50.00	
y	8	9	2	19	
	21.05	23.68	5.26	50.00	
Total	8	11	19	38	
	21.05	28.95	50.00	100.00	

Statistic	DF	Value	Prob
Chi-Square	2	24.297	0.000

WARNING: 91% of the data are missing.
 WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF CURRENTLY USING SMOKLESS TOBACCO BY PERSONAL HEALTH HABITS QUESTION 1

TOB4	PHH1			
Frequency	0	1	5	Total
Percent				
n	7	11	8	26
	18.42	28.95	21.05	68.42
y	1	0	11	12
	2.63	0.00	28.95	31.58
Total	8	11	19	38
	21.05	28.95	50.00	100.00

Statistic	DF	Value	Prob
Chi-Square	2	12.514	0.002
WARNING: 91% of the data are missing.			
WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test.			

TABLE OF EVER USED TOBACCO BY PERSONAL HEALTH HABIT QUESTION 1

EV_TOB	PHH1			
Frequency	0	1	5	Total
Percent				
n	2	0	243	245
	0.45	0.00	55.10	55.56
y	8	13	175	196
	1.81	2.95	39.68	44.44
Total	10	13	418	441
	2.27	2.95	94.78	100.00

Statistic	DF	Value	Prob
Chi-Square	2	22.495	0.000

TABLE OF EVER USED CIGARETTES BY PERSONAL HEALTH HABITS QUESTION 1

EV_TOB1		PHH1			
Frequency					
Percent	0	1	5	Total	
n	0	0	45	45	
	0.00	0.00	23.32	23.32	
y	8	13	127	148	
	4.15	6.74	65.80	76.68	
Total	8	13	172	193	
	4.15	6.74	89.12	100.00	

Statistic	DF	Value	Prob
-----------	----	-------	------

Chi-Square	2	7.165	0.028
------------	---	-------	-------

WARNING: 56% of the data are missing.

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF CURRENTLY USING TOBACCO BY PERSONAL HEALTH HABITS QUESTION 2

TOBACCO		PHH2			
Frequency					
Percent	0	1	5	Total	
n	20	1	377	398	
	4.55	0.23	85.68	90.45	
y	5	5	32	42	
	1.14	1.14	7.27	9.55	
Total	25	6	409	440	
	5.68	1.36	92.95	100.00	

Statistic	DF	Value	Prob
-----------	----	-------	------

Chi-Square	2	42.403	0.000
------------	---	--------	-------

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF EVER USED TOBACCO BY PERSONAL HEALTH HABITS
QUESTION 2

EV_TOB	PHH2			Total
Frequency	0	1	5	Total
Percent				
n	14	0	231	245
	3.17	0.00	52.38	55.56
y	11	6	179	196
	2.49	1.36	40.59	44.44
Total	25	6	410	441
	5.67	1.36	92.97	100.00

Statistic	DF	Value	Prob
Chi-Square	2	7.605	0.022

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF SAMPLE BY SMOKING

SAMPLE	SMOKING					Total
	0	1	5	6	10	
Frequency						
Percent						
Danielle	4	1	30	10	397	442
	0.43	0.11	3.24	1.08	42.87	47.73
Gale	3	10	47	14	410	484
	0.32	1.08	5.08	1.51	44.28	52.27
Total	7	11	77	24	807	926
	0.76	1.19	8.32	2.59	87.15	100.00

STATISTICS FOR TABLE OF SAMPLE BY SMOKING

Statistic	DF	Value	Prob
Chi-Square	4	10.252	0.036

TABLE OF SAMPLE BY SAFETY

SAMPLE	SAFETY				Total
	7	8	9	10	
Frequency					
Percent					
Danielle	9	28	106	294	442
	0.97	3.02	11.45	31.75	47.73
Gale	57	106	125	157	484
	6.16	11.45	13.50	16.95	52.27
Total	66	134	231	451	926
	7.13	14.47	24.95	48.70	100.00

STATISTICS FOR TABLE OF SAMPLE BY SAFETY

Statistic	DF	Value	Prob
Chi-Square	8	148.664	0.000

WARNING: 39% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF COOKING CLASSES BY AGE GROUP

PROG4	AGEGP					Total
Frequency Percent	1	2	3	4	5	
0	17	79	137	118	19	370
	3.85	17.91	31.07	26.76	4.31	83.90
1	11	21	26	12	1	71
	2.49	4.76	5.90	2.72	0.23	16.10
Total	28	100	163	130	20	441
	6.35	22.68	36.96	29.48	4.54	100.00

STATISTICS FOR TABLE OF COOKING CLASSES BY AGEGP

Statistic	DF	Value	Prob
Chi-Square	4	19.289	0.001

TABLE OF COOKING CLASSES BY GENDER

PROG4	GENDER		Total
Frequency Percent	f	m	
0	80	275	355
	18.96	65.17	84.12
-1	29	38	67
	6.87	9.00	15.88
Total	109	313	422
	25.83	74.17	100.00

STATISTICS FOR TABLE OF COOKING CLASSES BY GENDER

Statistic	DF	Value	Prob
Chi-Square	1	12.665	0.000

TABLE OF COOKING CLASSES BY RANK

PROG4	RANK					Total
Frequency	a	b	c	d	e	
Percent						
0	8	75	99	150	35	367
	1.83	17.20	22.71	34.40	8.03	84.17
1	4	15	22	15	13	69
	0.92	3.44	5.05	3.44	2.98	15.83
Total	12	90	121	165	48	436
	2.75	20.64	27.75	37.84	11.01	100.00

STATISTICS FOR TABLE OF COOKING CLASSES BY RANK

Statistic	DF	Value	Prob
Chi-Square	4	13.498	0.009

TABLE OF INTEREST IN THE OSU WELLNESS PROGRAM BY COLLEGE

INTOSUPG	COLLEGE				Total
	a	b	c	d	
Frequency	24	15	6	36	115
Percent	5.63	3.52	1.41	8.45	27.00
n	82	25	23	88	311
y	19.25	5.87	5.40	20.66	73.00
Total	106	40	29	124	426
	24.88	9.39	6.81	29.11	100.00

(CONTINUED)

INTOSUPG	COLLEGE				Total
	e	f	g	h	
Frequency	6	6	15	7	115
Percent	1.41	1.41	3.52	1.64	27.00
n	31	30	16	16	311
y	7.28	7.04	3.76	3.76	73.00
Total	37	36	31	23	426
	8.69	8.45	7.28	5.40	100.00

STATISTICS FOR TABLE OF INTEREST IN THE OSU WELLNESS PROGRAM BY COLLEGE

Statistic	DF	Value	Prob
Chi-Square	7	15.572	0.029

TABLE OF PREFERRING SAFETY CLASSES BY COLLEGE

PROG6	COLLEGE				Total
Frequency					
Percent					
	a	b	c	d	
0	108	40	28	125	427
	24.71	9.15	6.41	28.60	97.71
1	1	0	2	3	10
	0.23	0.00	0.46	0.69	2.29
Total	109	40	30	128	437
	24.94	9.15	6.86	29.29	100.00

(CONTINUED)

PROG6	COLLEGE				Total
Frequency					
Percent					
	e	f	g	h	
0	36	38	32	20	427
	8.24	8.70	7.32	4.58	97.71
1	1	0	0	3	10
	0.23	0.00	0.00	0.69	2.29
Total	37	38	32	23	437
	8.47	8.70	7.32	5.26	100.00

STATISTICS FOR TABLE OF PREFERRING SAFETY CLASSES BY COLLEGE

Statistic	DF	Value	Prob
Chi-Square	7	17.993	0.012

WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF PREFERRING TIME MANAGEMENT CLASSES BY COLLEGE

PROG11	COLLEGE				Total
Frequency Percent	a	b	c	d	
0	95 21.74	40 9.15	24 5.49	116 26.54	381 87.19
1	14 3.20	0 0.00	6 1.37	12 2.75	56 12.81
Total	109 24.94	40 9.15	30 6.86	128 29.29	437 100.00

(Continued)

Frequency Percent	e	f	g	h	Total
0	32 7.32	27 6.18	30 6.86	17 3.89	381 87.19
1	5 1.14	11 2.52	2 0.46	6 1.37	56 12.81
Total	37 8.47	38 8.70	32 7.32	23 5.26	437 100.00

STATISTICS FOR TABLE OF PREFERRING TIME MANAGEMENT CLASSES BY COLLEGE

Statistic	DF	Value	Prob
Chi-Square	7	22.350	0.002
WARNING: 31% of the cells have expected counts less than 5. Chi-Square may not be a valid test.			

TABLE OF PREFERRING WEIGHT MANAGEMENT CLASSES BY GENDER

PROG2	GENDER		Total
Frequency Percent	f	m	
0	76	258	334
	18.01	61.14	79.15
1	33	55	88
	7.82	13.03	20.85
Total	109	313	422
	25.83	74.17	100.00

STATISTICS FOR TABLE OF PREFERRING WEIGHT MANAGEMENT CLASSES BY GENDER

Statistic	DF	Value	Prob
Chi-Square	1	7.905	0.005

TABLE OF PREFERRING WEIGHT MANAGEMENT CLASSES BY RELATIVE WEIGHT

PROG2	RELWT			Total
Frequency Percent	BELO	DESR	HIGH	
0	13	193	144	350
	2.95	43.76	32.65	79.37
1	1	20	70	91
	0.23	4.54	15.87	20.63
Total	14	213	214	441
	3.17	48.30	48.53	100.00

STATISTICS FOR TABLE OF PREFERRING WEIGHT MANAGEMENT CLASSES BY RELWT

Statistic	DF	Value	Prob
Chi-Square	2	37.057	0.000

TABLE OF PREFERRING STRESS MANAGEMENT CLASSES BY RELATIVE WEIGHT

PROG9	RELWT			
Frequency Percent	BELO	DESR	HIGH	Total
0	7	179	167	353
	1.59	40.59	37.87	80.05
1	7	34	47	88
	1.59	7.71	10.66	19.95
Total	14	213	214	441
	3.17	48.30	48.53	100.00

STATISTICS FOR TABLE OF PREFERRING STRESS MANAGEMENT CLASSES BY RELWT

Statistic	DF	Value	Prob
Chi-Square	2	10.578	0.005

TABLE OF PREFERRING HEALTH SCREENING BY RELATIVE WEIGHT

PROG10	RELWT			
Frequency Percent	BELO	DESR	HIGH	Total
0	8	128	160	296
	1.81	29.02	36.28	67.12
1	6	85	54	145
	1.36	19.27	12.24	32.88
Total	14	213	214	441
	3.17	48.30	48.53	100.00

STATISTICS FOR TABLE OF PREFERRING HEALTH SCREENING BY RELATIVE WEIGHT

Statistic	DF	Value	Prob
Chi-Square	2	11.066	0.004

2
VITA

Danielle Genee' Duncan

Candidate for the Degree of

Master of Science

Thesis: FACULTY'S PARTICIPATION IN A UNIVERSITY WELLNESS PROGRAM

Major Field: Nutritional Sciences

Biographical:

Personal Data: Born in Riverside, California, May 20, 1969, the daughter of Bill Duncan and Marsha Poplin.

Education: Graduated from Allen High School, Allen, Oklahoma, in May, 1987; received Associate of Science degree in General Studies from Seminole Junior College, Seminole, Oklahoma in December, 1991; received Bachelor of Science degree in Dietetics from Oklahoma State University in May, 1994; completed an Approved Pre-professional Practice Program at Oklahoma State University in May, 1995; attained Registered Dietitian Status in October, 1995; enrolled in masters program at Oklahoma State University, 1994-1996; completed requirements for the Master of Science degree at Oklahoma State University in July, 1996.

Professional Experience: Caregiver and monitored diets of a elderly man and a woman with Parkinson's Disease, Dr. A.B. Smith, Stillwater, Oklahoma, August, 1992 to May 1993; Restaurant Manager and Caterer, University Buying Group, Stillwater, Oklahoma, July, 1993 to November, 1993; Financial Computer Operator, State Beauty Supply, Shawnee, Oklahoma, September, 1992 to November, 1994; Dietetic Intern, Valley View Regional Hospital, Ada, Oklahoma, August, 1994 to May, 1995; Nutrition Graduate Research Assistant, Oklahoma State University Wellness Center, Stillwater, Oklahoma, August, 1995 to July, 1996; Registered/Licensed Dietitian, Oklahoma State University Wellness Center, Stillwater, Oklahoma, Beginning July, 1996.

Professional Organizations: The American and Oklahoma Dietetic Associations.