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**Life satisfaction of elderly females who are overweight as
compared to elderly females of ideal weight**

Rosenquist, Lawrence Karl, M.S.

The University of Arizona, 1989

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LIFE SATISFACTION OF ELDERLY FEMALES WHO ARE
OVERWEIGHT AS COMPARED TO ELDERLY FEMALES OF
IDEAL WEIGHT

by

Lawrence Karl Rosenquist

A Thesis Submitted to the Faculty of the
COLLEGE OF NURSING

In Partial Fulfillment of the Requirements
For the Degree of

MASTER OF SCIENCE

In the Graduate College

THE UNIVERSITY OF ARIZONA

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STATEMENT BY AUTHOR

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SIGNED: Lawrence Karl Rosenquist

APPROVAL BY THESIS DIRECTOR

This thesis has been approved on the date shown below:

Jessie V. Pergrin
Jessie V. Pergrin
Associate Professor of Nursing

September 13, 1989
Date

DEDICATION

To my grandmother, Ellen Regina Robbins.

ACKNOWLEDGEMENTS

The assistance, patience, and direction of my thesis committee: Suzanne Van Ort, Evelyn DeWalt and Jessie V. Pergrin, chairperson, are truly appreciated.

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ABSTRACT

A descriptive study was done to determine the difference in life satisfaction of elderly females who were overweight as compared to elderly females of ideal weight. The sample consisted of 30 females, aged 60 to 80, who were living in the community.

No differences in life satisfaction scores were found between the overweight and ideal weight elderly females. The elderly females who were identified as being overweight had a mean life satisfaction score of 14.8 with a standard deviation of 2.45. Elderly females of ideal weight had a mean life satisfaction score of 15.9 with a standard deviation of 2.12. Major differences in summated results of selected demographic variables were not found for the elderly females who were overweight as compared to the elderly females of ideal weight.

Findings from the study and implications for nursing are discussed. Recommendations for further research are included.

CHAPTER I

INTRODUCTION

Regardless of the setting, gerontological health care providers are concerned not only with the physical needs, but also the psychosocial needs of their elderly clients. Nurses represent the largest group of health care professionals in the United States and can influence the quality of care for the elderly as well as contribute valuable information about the older adult. It is important, therefore, to learn as much as possible about the elderly and the various factors that may have an effect on the well-being of older adults.

Human aging can be considered the sum of social, economical, biological, and psychological changes that occur with advancing age. The health status of older adults is affected by the changes that accompany the aging process. Research has found that self-assessed health status has a consistent affect on life satisfaction in the elderly (Miller & Russel, 1980; Toseland & Rasch, 1979, 1980; Larson, 1979).

Body weight may have an impact on the physiological and psychosocial well-being of the older person. Current literature, although limited on overweight in the elderly population, is plentiful on mind/body interrelatedness and psychosocial factors associated with excessive body weight (Price & Pritts, 1982; Cozens, 1982). Increases in body weight may affect the older person's health status, perception

of self, and life satisfaction. Stunkard (1980) and Stewart and Brook (1984) have suggested that above "normal" weight affects the older person's physical, mental and emotional well-being as well as his general outlook on life. Excess weight in the elderly has been reported as an important factor in various physical diseases and in the decreased activity and socialization of the aged person (Hsu & Davis, 1981; Cozens, 1982).

The aging process involves many changes which take a variety of forms for the older adult. Therefore, it is important that both older adults and health care professionals understand the effects of increased body weight on the physiological and psychosocial well-being of the aging adult.

Statement of the Problem

Excess body weight may not only affect the person's physical health, but also the emotional/mental health of the aged individual. Body weight may be a contributing factor in the psychosocial status of women.

The classic research done by Larson (1979) indicated that health was a major determinant in life satisfaction of the aged person. There has been a lack of research concerning the concepts of life satisfaction and varying body weights in elderly females. Thus, any differences in life satisfaction of elderly females who are overweight as compared to elderly females of ideal weight are not known.

The research questions under investigation in this study were:

1. Are there differences in life satisfaction scores of elderly females of ideal weight as compared to elderly females who are overweight (15% or greater than "normal" limits)?
2. Are there differences in summated results of selected demographic variables (age, marital status, perceived income, perceived health status, activity level and education) for elderly females of ideal weight as compared to elderly females who are overweight?

Purpose of Study

The purpose of this study was to determine if there were differences in life satisfaction of elderly females who were overweight as compared to elderly females of ideal weight.

Significance of Study

Negative attitudes concerning the aged and the overweight individual are often reinforced by Western society. Early research findings have either influenced or added to these negative attitudes by focusing on and reporting the deficiencies, losses and declines that come with aging (Dangott & Lakish, 1979).

Overweight has been reported as a significant problem in aging populations (Cozens, 1982). However, research has been limited regarding the important issue of excess body weight and the older adult.

Several authors have stated that the overweight person is predisposed to physiological and/or psychosocial risks (Bray, 1985; Stewart

& Brook, 1983; Stunkard, 1983). Physiologically, the overweight person has an increased risk of heart disease, hypertension and diabetes mellitus. Psychosocial risks associated with overweight include a disturbance in body image, a decrease in role and personal functioning and a negative or poor self-esteem.

Deviations in body weight above "normal" standards have been associated with increases in mortality. The causes of increased mortality related to excess weight include heart disease, hypertension, certain types of cancer and diabetes mellitus (Bray, 1985).

Excess body weight of an older adult may not just be a case of overeating. The aging process as well as psychological and social pressures may play a role in the problem of overweight for the elderly individual. Excessive weight in the elderly can have an affect on their mobility, agility, and balance as well as their role, personal and social functioning.

Life satisfaction of the older adult may be affected by excess weight. Research directed at investigating the relationship between life satisfaction and varying body weights of older persons may contribute to a better understanding of more accurate information about the overweight elderly individual.

Theoretical Framework of the Study

The theoretical framework for this study was based on Roy's Adaptation Model (Roy, 1984). The Roy Adaptation Model can be viewed as a systems model, which includes the human being and the environment.

According to Roy, the person is viewed as a bio-psycho-social being who is in constant interaction with his environment (Riehl & Roy, 1980).

Roy (1984) indicated that the person, as an adaptive system, has inputs and outputs. Inputs are identified as stimuli which come internally from oneself and externally from the environment. Outputs are either adaptive responses that promote the integrity of the person or ineffective responses that do not support that same goal.

According to Janelli (1980), Roy's model can act as an umbrella to gather the components of the nursing process and facilitate the understanding of man. The first step in the nursing process is assessment. When determining whether an individual is coping with his own system and the environment, a first level assessment of the individual is required. During the first level assessment, information is gathered with the person's four adaptive modes in mind. The four adaptive modes are: physiological function, self-concept, role function, and interdependence. Roy and Roberts (1981) have indicated that the four adaptive modes can be organized within two primary or functional subsystems; the regulator (physiological function) and the cognator (self-concept, role function and interdependence).

The regulator subsystem or physiological function can include those factors necessary to regulate the balance of circulation, oxygen, appetite, elimination, sleep and activity (Janelli, 1980). Outputs or adaptive responses of a person promote the optimal regulation of physiological functions which includes maintaining optimal weight and health. However, ineffective responses of a person may result in an

imbalance of physiological functions which can cause a change in body weight and state of health. Larson (1979) reported that among all the elements of an older person's life situation, health was the most strongly related to life satisfaction. Therefore, the concepts of life satisfaction and body weight of elderly females can be related to the adaptive or ineffective responses of a person to one's physiological function (regulator subsystem) in Roy's model.

The cognator subsystem has been identified as the self-concept, role function and interdependence of the person (Roy & Roberts, 1981). The person's self-concept includes physical, self, self-consistency, self-ideal and expectancy and self-esteem. The self-concept, role function and interdependence of a person are determined by the relationships and interactions with others as well as the performance of duties based on given positions with society. A person's weight and life satisfaction could be linked to the self-concept, role function and interdependence (cognator subsystem) in Roy's model.

Roy utilizes second level assessment in order to determine any influencing factors affecting one's adaptation and the adequacy of the individual's adaptation. Second level assessment involves examining three types of stimuli. The first type is focal stimuli, or the stimuli that immediately confronts the individual. Secondly, there is the contextual stimuli that involves the environment. The third type is residual stimuli which is related to beliefs and attitudes that have an effect on the present situation (Janelli, 1980; Roy, 1984). Through

the two levels of assessment, the goal of nursing is the promotion and facilitation of adaptation in the four adaptive modes.

The dynamic force of Roy's model rests in man's ability to adapt to an ever changing environment (Janelli, 1980). In man's attempt to adapt, optimal well-being may be maintained. However, the process of adaptation may result in physiological or psychosocial disturbances for the overweight individual. The overweight person is predisposed to a number of physiological (biological) risks, including: increased cardiac output, stroke volume and heart rate which are associated with hypertension and cardiovascular disease (Schemmel, 1980). Psychosocial disturbances associated with the overweight person can include a loss of social contacts, a decrease in activities and an increase in social isolation, depression and loneliness, feelings of dissatisfaction and a poor body image (Price & Pritts, 1980).

The concepts of life satisfaction and body weight of an elderly person can be related to the regulator or cognator subsystems of Roy's Adaptation Model. Adaptation can be described as both a physiological and psychosocial process. Thus, the physiological and psychosocial factors related to body weight and life satisfaction of elderly females can be incorporated within Roy's model.

Definition of Terms

Life Satisfaction: The well-being of an individual as measured by a scale of 20 items representing five components associated with life satisfaction. The five components that are associated with life

satisfaction include: zest for life, resolution and fortitude, congruence between desired and achieved goals, self-concept and mood tone (Neugarten, Havighurst & Tobin, 1961).

Overweight: Body weight of 15% or greater than "normal" limits based on the 1983 Metropolitan Life Insurance Company Height and Weight Tables (Yen, 1983).

Ideal Weight: Body weight within "normal" limits based on the 1983 Metropolitan Life Insurance Company Height and Weight Tables (Yen, 1983).

Summary

In this chapter, the statement of the problem, purpose and significance are presented. The theoretical framework, using Roy's adaptation model, and study definitions are included.

CHAPTER II

REVIEW OF THE LITERATURE

A selected review of the literature presented in this chapter addresses life satisfaction and the factors associated with life satisfaction. Factors identified were: health, age, sex, marital status, income, education and activity. The review of literature also included overweight and the physiological and psychosocial risks associated with excess body weight.

Life Satisfaction

Perceptions of well-being or life satisfaction in the elderly have been the subject of various scientific studies since 1933 (Johnson, Cloyd & Wer, 1982). According to Baur and Okun (1983), life satisfaction is a long-term cognitive assessment of the progress toward and/or attainment of desired goals. Likewise, Campbell and Mutran (1982) and George (1979) indicated that life satisfaction was a person's assessment of the overall conditions of his life, as derived from a comparison of personal aspirations with actual achievements.

A review of 30 years of research on subjective well-being by Larson (1979) reported that among all the elements of an older person's life situation, health was the most strongly related to subjective well-being. Other studies indicated that the most important determinant of life satisfaction in the elderly was perceived health status (Miller

& Russell, 1980; Lohmann, 1980). Markides and Luikart (1979) noted that strong predictors of life satisfaction were health, and to a much less extent, activity.

Health and Life Satisfaction

Investigators who have studied life satisfaction among the elderly have reported that older persons' perceptions of their health is one of the strongest predictors of how satisfied they are with life in general (Lohmann, 1980; Toseland & Rasch, 1979, 1980; George, 1979). According to Larson (1979), health is strongly related to their subjective well-being and people who are sick or physically disabled are less likely to express contentment about their lives.

In a longitudinal study of life satisfaction among persons 46 to 70 years old ($n = 378$) by Palmore and Luikart (1977), found self-rated health was a significant predictor of life satisfaction ($p < .05$). Baur and Okun (1983) studied 105 adults aged 66 to 94 and reported that self-perceived health was significantly related to life satisfaction ($p < .001$).

Some studies that addressed the relationship between life satisfaction and indicators of health, assessed self-rated health by a single question asking respondents to indicate whether their health was excellent, good, fair or poor (Spreitzer & Snyder, 1974; Edwards & Klemmack, 1973; Larson, 1979). These investigators reported correlation coefficients that ranged from $r = .2$ to $.5$; indicating a positive relationship between life satisfaction and indicators of health.

Age and Life Satisfaction

Neugarten, Havighurst and Tobin (1961) reported that there was a negative relationship between life satisfaction and age ($r = -.07$). Likewise, Baur and Okun (1983) and Palmore and Kivett (1977) found no significant changes in mean life satisfaction scores for any age when examined longitudinally. However, two earlier studies showed a slight decline in well-being scores with an increase in age for cross-sectional samples of older adults (Edwards & Lemmack, 1973; Palmore & Luikart, 1972).

Sex and Life Satisfaction

A longitudinal analysis of life satisfaction among persons 46 to 70 years old, Palmore and Kivett (1977) found no significant changes in mean life satisfaction scores between men and women for any age group, indicating basic stability in life satisfaction throughout the age range for both sexes. Baur and Okun (1983) reported that there were no changes in mean life satisfaction scores for either men or women in their three year study of life satisfaction scores of 105 participants aged 66 to 94.

Marital Status and Life Satisfaction

When studying the relationship between marital status and life satisfaction of older persons, researchers have indicated that married people had higher average well-being scores than non-married older persons (Larson, 1979; Markides & Martin, 1979; Baur & Okun, 1983). Neugarten, et al. (1961) reported lower life satisfaction ratings by

people who were single, divorced, separated or widowed in both sexes and in both older and younger subgroups within the elderly population (n = 177).

Income and Life Satisfaction

Edwards and Klemmack (1973) examined the relationship of 22 variables to life satisfaction in an attempt to isolate the most efficient predictors of satisfaction. The sample (n = 507) consisted of males and females 45 years of age and older living in the community. Pearson product-moment correlations were computed in order to establish general relationships between independent variables and life satisfaction. The researchers reported that income had a positive correlation to life satisfaction ($r = .3$) indicating that the level of income may influence life satisfaction results. Baur and Okun (1983) reported correlations between income and life satisfaction in their study of 105 participants aged 66 to 94 ($r = .11$).

Education and Life Satisfaction

When in-depth interviews were used to assess life satisfaction in the classic study by Neugarten, et al. (1961), a correlation ($r = .39$) was found with income, occupational status and education. According to Baur and Okun (1983), the correlation between life satisfaction and education was found to be small ($r = .09$) indicating a weak or nonsignificant relationship between life satisfaction and education.

Activity and Life Satisfaction

According to several investigators, various levels of activity may have an affect on or be a predictor of life satisfaction for older adults (Larson, 1979; Campbell & Mutran, 1982; Baur & Okun, 1983). Havighurst (1968) indicated that the older person who was satisfied with life stayed active and managed to resist the reductions of his social world by maintaining activities of middle age as long as possible, finding substitutes for work when forced to retire and finding substitutes for lost friends and loved ones who had died.

Lemon, Bengston and Peterson (1977) defined activity as any regular or patterned action or pursuit which can be regarded as beyond routine physical or personal maintenance. In their study of the relationship of activity to life satisfaction (n = 411), three activities were identified. The three types of activities were: informal (social interaction with relatives, friends and neighbors); formal (participation in formal voluntary organizations, e.g. clubs); and solitary (involvement in solitary activities, e.g. reading). Subjects were to indicate the frequency or number of times involved with each type of activity. Increased frequency or number of times indicated increased activity. Only informal activity was identified as being associated with life satisfaction.

Bull and Aucion (1975), Cutler (1978) and George (1978) reported that the relationship between levels of activity and well-being had only a weak and non-significant relationship to life satisfaction when health and socioeconomic status were held constant.

Overweight

The absence of a concrete definition for overweight has created an enigma toward the condition. For the purposes of this study, overweight has been defined as body weight 15% or greater than "normal" limits based on the 1983 Metropolitan Life Insurance Company Height and Weight Tables. Bray (1985) stated that overweight is an increase in body weight above the standard in relation to height, whereas obesity is an abnormally high proportion of body fat. However, many investigators agree that an excess in body weight above the standard in relation to height usually indicates an excess of body fat (Cozens, 1982; White, 1982; Stewart & Brook, 1983).

Stewart and Brook (1983) have reported that 20 to 50 percent of adults in the United States are overweight. According to Bray (1985) excess weight is a major health problem confronting the United States and other affluent nations.

Food is associated with social events and often indicates affluence and success. Cues urging consumption of food are given by society, the media and fastfood restaurants. Eating behaviors are learned through social pressures and familial habits. These behaviors are initiated in childhood when parents reward their children with food or admonish them for not eating all of the food on their plates (Cozens, 1982; White, 1982; Stewart & Brook, 1983).

Food also represents love, security, satisfaction or ways of relieving an everpresent nervous tension for the overweight person (Cozens, 1982). Overweight individuals may eat to sublimate a perceived

stress or to satisfy an inner need. Poor diet habits or overeating may be a result of loneliness, fear, depression or boredom (White, 1982; Cozens, 1982; Bray, 1979).

The normal aging process causes some general muscle and tissue mass loss which is replaced with fat. This predisposes the aged to health problems, such as arteriosclerotic related diseases and diabetes mellitus.

Physiological Risks of Overweight

A study examining at the effect of weight on mortality among 750,000 subjects showed a high incidence of mortality from heart disease, cancer and diabetes in overweight persons (Lew & Garfinkel, 1979). This is of great significance to the elderly since the body becomes more prone to acute and chronic illnesses with advanced age.

Hubert, Feinleib, McNamara and Castelli (1983) reported that the data from a 26 year follow-up study of the 5,209 participants in the Framingham Heart Study indicated that overweight can be an independent predictor of cardiovascular disease. Other health consequences of excess weight that have been reported include increased risk of hypertension, atherosclerosis and hyperlipidemia; increased risk of cancer of the colon and rectum in males and of the breast and uterus in females; and increased risk of respiratory diseases (Cleave, 1977; Stunkard, 1983; Bray, 1985).

Psychosocial Risks of Overweight

Based on cross-sectional data from a general population study of 5,817 people aged 14 to 61, Stewart and Brook (1983) reported that

overweight persons had more limitations in role and personal functioning and had more pain, worry, and restricted activity than people of "normal" weight ($p < .001$). Studying obese persons 18 to 70 years old ($n = 74$), Stunkard and Mendelson (1977) reported that persons who became obese during childhood or adolescence were subjected to a disturbance in body image which was characterized by a negative view as compared to subjects with adult-onset obesity ($p < .001$). The investigators indicated that the disturbance in body image was associated with self-consciousness and impaired social functioning.

According to Buss (1980), self-views expressed by the elderly corresponded closely to the stereotyped views of aging held by society. Preston (1979) reported that the devaluations of self can be manifested where the social stereotyping of a group is stigmatizing.

Summary

Life satisfaction of the older person was found to be a long-term assessment of the overall conditions of his life. The literature showed only one variable, health, as being significantly related to or a strong predictor of life satisfaction of the older adult.

Research has indicated that overweight people are at risk for physiological and psychosocial disturbances. Thus, an older person's health can be affected by an increase in body weight which may influence the life satisfaction of the aging adult.

CHAPTER III

METHODOLOGY

Described in this chapter are the research design, population sample, study setting and protection of human subjects. The data collection instruments, data collection procedures and the method for analyzing data are also discussed.

Design

A descriptive design was used for this study. The primary purpose of the study was to determine if there were differences in the life satisfaction of elderly females who were 15% or more overweight as compared to elderly females of ideal weight.

Population Sample

A convenience sample consisted of 30 females who lived in the community. Subjects who were asked to participate in the study met the following criteria:

1. Females, 60 to 80 years of age.
2. Able to comprehend written and spoken English.
3. Oriented to time, place and person.
4. Able to stand for a period of no more than three minutes without the assistance of another person.

The following rationale was used in determining selection criteria:

1. Beyond the age of 80 would place subjects in a different age category which was not desired.
2. Subjects were required to read and respond in writing to two separate questionnaires as well as understand verbal instructions.
3. Confused or psychologically impaired persons may have had difficulty participating in this study.
4. All subjects had to stand on a height-weight scale without assistance in order to obtain accurate measurements.

Study Setting

This study was conducted at a senior citizen's center located in a city in the southwestern part of the United States. The center is a facility where older adults congregate and may participate in recreational, social, educational and/or health screening programs. Permission was obtained to use the senior center from the manager of the facility. An explanation of the study and copies of the instruments were given to the manager of the facility prior to data collection.

Protection of Human Subjects

Potential subjects who met selection criteria were informed that their participation was voluntary and that they were free to decline or discontinue participation at any time. Subjects were given a Disclaimer Statement (Appendix B) which stated that participation in the study indicated their consent. The proposal for this study

was submitted to the University of Arizona College of Nursing Ethical Review Committee. The proposal was reviewed and approved as exempt from University review by the College of Nursing Ethical Review Subcommittee of the Research Committee and the Director of Research (Appendix A).

Data Collection Instruments

Four instruments were used in this study. Two of these, a Demographic Data Sheet (Appendix C) and the Life Satisfaction Index A (Appendix D) were pencil and paper instruments. Calipers were used to measure elbow breadth (frame size) and a weight-height scale was used to measure actual weight and height of participants.

Demographic Data Sheet: The format of the demographic data sheet was developed by the investigator. It was designed to obtain demographic information about the population sample. Twelve questions were asked in order to gain information about the following variables: age, marital status, perceived income, perceived health status, health problems, recent weight change and reason(s) for weight change, activity level and education. These variables were selected based on factors reported in the literature as well as through input of three nurse educators. A pilot study was implemented with four participants to detect any unforeseen problems with this instrument. The response of each of the four participants were found to produce consistent results. Data collected from the pilot study were not used in the final analysis in data collection.

Life Satisfaction Index A (LSIA): The LSIA is a 20 item instrument developed by Neugarten, Havighurst and Tobin (1961). It has been used to measure the psychological well-being of elderly individuals.

The LSIA was developed from in-depth analyses of extensive interviews taken during the Kansas City Study of Adult Life. A relatively healthy, middle-class, urban Kansas City sample of 177 men and women, aged 50 to 90, participated in the study. The goal of the investigators was to devise a measure of successful aging in both an interview form (Life Satisfaction Rating Scale/LSR) and in a short self-administered form (Life Satisfaction Index A/LSIA).

Over a four year period of interviews and analysis, Life Satisfaction Ratings (LSR) were devised (Neugarten, Havighurst & Tobin, 1961). Items that comprised this scale were grouped into five components: 1) zest versus apathy; 2) resolution and fortitude; 3) congruence between desired and achieved goals; 4) self-concept and 5) mood tone. The reliability of this test was determined by 14 paired judges working independently and rating the 177 cases. Reliability testing resulted in a correlation coefficient of .78. Content validity of the instrument was determined by a comparison done by a panel of three experts and validity testing resulted in a correlation of .64 (Neugarten, Havighurst & Tobin, 1961).

The self-administered style instrument, LSIA, was formed from the open-ended questions of the LSR. It was tested on 92 of the subjects utilized in the LSR development. The correlation coefficient of subjects' scores on both instruments was .55. Validity testing of the

LSIA achieved a correlation coefficient of .59 for persons over 65 years of age (Neugarten, Havighurst & Tobin, 1961).

Adams (1969) analyzed the LSIA and concluded that the instrument did tap the concept of life satisfaction. In his study of 508 subjects, he reported a mean life satisfaction score of 12.5, out of a possible score of 20, with a standard deviation of 3.6 as compared to a mean life satisfaction score of 12.4 with a standard deviation of 4.4 for the original LSIA sample.

According to Neugarten, et al. (1961), an individual is considered as being at the positive end of the continuum of psychological well-being if he:

Takes pleasure from the round of activities that constitutes his everyday life, regards his life as meaningful and accepts resolutely that which life has been, feels that he has succeeded in achieving his major goals, holds a positive image of self and maintains happy and optimistic attitudes and mood (Neugarten, et al., 1961, p. 137).

The LSIA scale contains 20 questions and the participant answers these questions by placing a checkmark in the space under one of the following columns: "Agree", "Disagree", "?". For the 20 item LSIA scale, one point is scored for every response indicating a positive answer. Negative items to which the participant disagrees are scored one point. Items to which the participant responds "?" receive no points. The range of scores is one to 20, with higher scores indicating increased life satisfaction (Appendix E).

The Life Satisfaction Index A has been widely used since its introduction, and continues to be used by gerontologists (Guy, 1982;

Nehrke, et al., 1980; Walsh & Kiracofe, 1979, 1980). For the purpose of this study the LSIA was selected as the appropriate instrument for measuring the well-being of elderly females of various body weights. The LSIA is a simple, efficient and easily administered tool.

Calipers: A metal, straight-arm sliding device calibrated in inches was used to measure elbow breadth (frame size). Yen (1983) indicated that the use of calipers was more accurate and precise when measuring elbow breadth. The measuring of frame size was performed by the investigator using the following procedure: extending the subject's arm and bending the forearm at a 90 degree angle, turning the inside of the wrist toward the body with fingers straight, and placing each arm of the calipers on the prominent bones on either side of the subject's elbow. The number of inches between the prominent bones was recorded and compared to the measurements listed on the 1980 Metropolitan Life Insurance Company Height and Weight Tables (Appendix F). A small frame was considered any measurement that was below those listed, medium frame size were those measurements listed and large size frame were measurements above those listed (Appendix F).

Weight-Height Scale: A standard upright scale manufactured by Detecto was used to measure subjects' weights in pounds. It had a sliding vertical measuring rod which measured subjects' heights in inches. The 1983 Metropolitan Life Insurance Company Height and Weight Tables (Yen, 1983) were used for this study in order to determine "normal" weights-for-heights (Appendix F). All subjects' weights were recorded in pounds and heights were recorded in inches. The weight

scale was calibrated prior to the start of data collection and between each group of ten subjects to assure accuracy of the instrument. Calibration of the scale required a return of the two separate balance weights to zero and a readjustment of a screw in the arm of the balance bar, thereby leveling the balance bar which indicated that the scale was accurately balanced and calibrated. All subjects were weighed and measured for height in ordinary indoor clothing and without shoes.

The Metropolitan Life Insurance Company Height and Weight Tables were used in the Framingham Heart Study (Huber, et al., 1983). The utilization of these tables have also been reported by various investigators (Bray, 1985; Cozens, 1982; Stewart & Brook, 1983).

Data Collection Procedures

One week prior to data collection, ten posters with a description of the nature and intent of the study were placed in different locations throughout the senior center in order to recruit volunteers. The morning of data collection an announcement was made over the public address system at the center to remind potential participants of the study. The investigator met with all subjects who had agreed to participate in the study, in a designated area within the center. One visit was required to complete data collection.

Data collection began after each subject read the Disclaimer Statement. The Demographic Data Sheet and the Life Satisfaction Index A were administered to all subjects in the main dining room of the senior center. As each subject completed the pencil and paper instruments, she was weighed, measured for height and measured for elbow

breadth in a private clinic room in the senior center. When weight-for-height was determined for each subject, an "O" (overweight - 15% or greater than "normal" limits) or an "I" (ideal weight - within "normal" limits) were placed on each subject's Demographic Data Sheet. Percent of overweight for each subject was determined by the total number of pounds overweight as derived from the mean "normal" weight and then dividing it by the actual weight of the overweight subject. For the subjects who were determined to be overweight, the percent overweight was also written on the Demographic Data Sheet. No names were used in collecting data to assure that subjects' identities were kept confidential. All data were collected by the investigator at the senior citizen's center.

Method of Data Analysis

The data were compiled, coded, a frequency distribution constructed and a content analysis was performed to determine if any patterns or differences existed. A t-test of significance was also used to determine the differences in mean life satisfaction index scores for comparison of the overweight and ideal weight subjects. A preset criterion of ≤ 0.05 was used for level of significance. Results of selected demographic variables (age, marital status, perceived income, perceived health status, activity level and education) were also analyzed in order to compare differences or similarities of the ideal weight and overweight subjects.

Summary

The research design and methods for data collection and data analysis are included in Chapter Three. This was a descriptive study comparing life satisfaction of elderly females who were overweight to elderly females of ideal weight. A convenience sample of 30 females participated in the study. Data were collected by the investigator at a senior citizen's center, located in a southwestern state. The data were compiled, coded and frequency distributions were made. A t-test of significance was used to determine the differences in the mean life satisfaction index scores of elderly females who were overweight and elderly females of ideal weight.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The results of the data analyses for the study are presented in this chapter. Characteristics of the sample population are described and analyses of the data from the t-test of significance of mean life satisfaction scores are included. Statistical results of the variables relevant to the research questions are also presented.

Characteristics of the Sample

Descriptive statistics were used to analyze the characteristics of the sample ($n = 30$). The demographic data included: age, marital status, perceived income, perceived physical and psychological health status, physical and/or psychological health problems, recent weight change, percent of weight change, reason(s) for weight change, activity level and education. These characteristics are identified as follows:

Age. The age range of the sample was 60 to 80 years with a mean age of 68 and standard deviation of six. The frequency distribution of subjects by age is presented in Table 1.

Marital Status. The frequency distribution of subjects by marital status is presented in Table 2. Fourteen subjects (47%) were married, three (10%) were divorced, 12 (40%) were widowed and one (3%) was never married.

Table 1. Frequency Distribution of Subjects by Age (n = 30)

Age	Number	Percent
60 - 64	9	30
65 - 69	10	34
70 - 74	3	10
75 - 80	8	26
	—	—
TOTAL	30	100

$$\bar{x} = 68$$

$$sd = 6$$

Table 2. Frequency Distribution of Subjects by Marital Status
(n = 30)

Marital Status	Number	Percent
Married	14	47
Divorced	3	10
Widowed	12	40
Separated	0	0
Never Married	1	3
	—	—
TOTAL	30	100

Perceived Income. Subjects were requested to report their perceived income as noted in Table 3. Two subjects (7%) rated their income as poor, 19 subjects (63%) rated their income as fair and nine subjects (30%) rated their income as good.

Perceived Health Status. Subjects were asked to rate their physical and psychological health as excellent, good, fair or poor. The data analysis for perceived health status is presented in Table 4. Twenty-eight subjects (93%) rated their physical health as either good or excellent and two subjects (7%) indicated that their physical health was fair. Nine subjects (30%) rated their psychological health as excellent and 21 subjects (70%) indicated that their psychological health was good.

Health Problems. While 12 subjects (40%) reported having physical health problems, none of the subjects identified having psychological health problems. The physical health problems that were identified included: hypertension (seven participants), heart disease (five participants), diabetes (two participants), sensory loss (one participant) and arthritis (seven participants).

Recent Weight Change. As noted in Table 5, seven subjects (23%) indicated they had gained weight and six subjects (20%) indicated they had lost weight in the past five years. The range in weight change was from six to 40 pounds with a mean of 7.50 and standard deviation of 11.18.

Table 3. Frequency Distribution of Subjects by Perceived Income
(n = 30)

Perceived Income	Number	Percent
Poor	2	7
Fair	19	63
Good	9	30
	—	—
TOTAL	30	100

Table 4. Frequency Distribution of Subjects by Perceived Physical and Psychological Health Status (n = 30)

Perceived Health	Health Status			
	Physical Number	Physical Percent	Psychological Number	Psychological Percent
Excellent	10	33	9	30
Good	18	60	21	70
Fair	2	7	0	0
Poor	0	0	0	0
	—	—	—	—
TOTAL	30	100	30	100

Table 5. Frequency Distribution of Subjects by Weight Change Within Past Five Years (n = 30)

Weight Changes	Number	Subjects	Percent
Gained Weight	7		23
Lost Weight	6		20
No Weight Change	17		57
	—		—
TOTAL	30		100

Reason(s) for Weight Change. The reason(s) given by subjects for their weight change are presented in Table 6. Loneliness and depression were each cited by one subject, diet changes by ten subjects and illness and decrease or lack of exercise by three subjects.

Activity Level. Subjects were requested to indicate the number of hours per week they spent in three separate types of activity as noted in Table 7. The mean number of hours subjects participated in informal activity was 31.9. The range was from zero (one participant) to 84 (one participant). The mean number of hours spent in formal activity was 8.9 and the mean number of hours spent in solitary activity was 25.1.

Education. The number of years subjects spent in school are presented in Table 8. The level of education ranged from nine to 20 years with a mean of 14 years of education. Twenty-five participants had completed high school and 18 of them had post high school education.

Percent Overweight. Fifteen of the sample (50%) were identified as being overweight (15% or greater than "normal" limits). The percent overweight for these 15 subjects ranged from 15% (five subjects) to 28% (two subjects) as noted in Table 9.

Research Question 1. Are there differences in life satisfaction scores of elderly females of ideal weight as compared to elderly females who are overweight (15% or greater than "normal" limits)?

Life satisfaction was measured by using the Life Satisfaction Index A scale (Neugarten, et al., 1961). The possible range of scores is from one to 20 with higher scores indicating increased life satisfaction.

Table 6. Number of Subjects by Self-Identified Reason(s) for Weight Change (n = 13)

Reason for Weight Change	Number*
Loneliness	1
Depression	1
Diet Changes	10
Illness	3
Decrease in or Lack of Exercise	3

*Subjects were asked to list any or all reasons for weight change and, as a result of request, some subjects may have listed one or more reasons for weight changes within past five years.

Table 7. Frequency Distribution of Hours Subjects Spent in Informal, Formal and Solitary Activity per Average Week and the Mean of Each Activity (n = 30)

Hours Spent in Activity	Number	Subjects	Percent
<u>Informal Activity</u>			
0 - 21	15		50
22 - 42	4		12
43 - 63	7		26
64 - 84	4		12
	<hr/>		<hr/>
TOTAL	30		100
Mean 31.9			
<hr/>			
<u>Formal Activity</u>			
0 - 15	24		80
16 - 30	4		14
31 - 45	1		3
46 - 60	1		3
	<hr/>		<hr/>
TOTAL	30		100
Mean 8.9			
<hr/>			
<u>Solitary Activity</u>			
0 - 16	14		49
17 - 33	8		25
34 - 47	4		13
48 - 66	4		13
	<hr/>		<hr/>
TOTAL	30		100
Mean 25.1			

Table 8. Frequency Distribution of Subjects by Years of Schooling
(n = 30)

Years of Schooling	Number	Subjects	Percent
9	1		3
10	2		7
11	2		7
12	7		23
13	2		7
14	3		10
15	1		3
16	7		23
17	2		7
18	1		3
20	2		7
TOTAL	30		100

Table 9. Frequency Distribution of Subjects Who Were Overweight by Percent* (n = 15)

Percent Overweight	Number	Subjects	Percent**
15	5		36
17	2		13
19	2		13
21	2		13
22	1		6
25	1		6
28	2		13
	15		100
TOTAL			

* Overweight was defined as body weight of 15% or greater than "normal" limits

** Percent was rounded up to equal 100

The distribution of the summated scores of the LSIA are shown in Table 10. The mean for the sample was 15.36 with a standard deviation of 2.32. Twenty-nine participants (97%) scored 12 or higher.

A t-test was performed to determine differences in mean life satisfaction scores of subjects identified as overweight (15 participants) and ideal weight (15 participants). Ideal weight subjects had a mean life satisfaction score of 15.9 with a standard deviation of 2.12. The subjects who were identified as being overweight had a mean life satisfaction score of 14.8 with a standard deviation of 2.45. The t-test value was 2.041 with a significance level of ≥ 0.05 . The mean life satisfaction scores of the overweight and ideal weight elderly females were not statistically significant.

Research Question 2. Are there differences in summated results of selected demographic variables (age, marital status, perceived income, perceived health status, activity level and education) for elderly females of ideal weight as compared to elderly females who are overweight?

Data analyses of selected demographic variables (age, marital status, perceived income, perceived health status, activity level and education) for elderly females who were overweight as compared to elderly females of ideal weight were performed. A discussion of these findings is presented.

Age. The mean age for the ideal weight subjects was 68 and the mean age for the overweight subjects was 69. Data suggest no difference in mean ages when comparing overweight and ideal weight subjects.

Table 10. Frequency Distribution of Subjects by Life Satisfaction Index A (LSIA) Scores (n = 30)

LSIA Scores	Subjects	
	Number	Percent
8	1	3
12	2	7
13	2	7
14	5	17
15	4	13
16	5	17
17	6	20
18	4	13
19	1	3
TOTAL	30	100

$$\bar{x} = 15.36$$

$$sd = 2.32$$

Possible range: 1 to 20

Marital Status. The ideal weight group had eight subjects who were married, two subjects were divorced and five subjects were widowed. The overweight group had six subjects who were married, one subject was divorced, seven subjects were widowed and one subject was never married. These data are presented in Table 11.

Perceived Income. The perceived income of ideal weight subjects revealed that two subjects rated their income as poor, eight subjects rated their income as fair and five subjects rated their income as good. The overweight subjects rated their income at either fair (11 subjects) or good (four subjects). The overweight group had slightly higher perceived incomes than the ideal weight group as noted in Table 12.

Perceived Health Status. Participants were to report on their physical and psychological health by responding to one of the following choices: excellent, good, fair or poor. There were no differences in self-rated physical health of overweight and ideal weight subjects. Both ideal weight and overweight subjects indicated that their psychological health was either excellent or good as noted in Table 13. However, the overweight group had a greater number of excellent than the ideal weight group when comparing perceived psychological health.

Activity Level. Subjects in both ideal weight and overweight groups indicated they spent more of their time in informal activities as compared to formal and solitary activities. The mean number of hours the ideal weight subjects spent in activities were 33.9 hours in informal activities, 8.5 hours in formal activities and 19.3 hours in solitary activities. The mean number of hours the overweight subjects

Table 11. Frequency Distribution of Elderly Females of Ideal Weight and Elderly Females Who Were Overweight by Marital Status (n = 30)

Marital Status	Ideal Weight		Overweight		Total	
	Number	Percent	Number	Percent	Number	Percent
Married	8	53	6	41	14	47
Divorced	2	14	1	6	3	10
Widowed	5	33	7	47	12	40
Separated	0	0	0	0	0	0
Never Married	0	0	1	6	1	3
TOTAL	15	100	15	100	30	100

Table 12. Frequency Distribution of Elderly Females of Ideal Weight and Elderly Females Who Were Overweight by Perceived Income (n = 30)

Income Ratings	Ideal Weight		Overweight		Total	
	Number	Percent	Number	Percent	Number	Percent
Poor	2	13	0	0	2	7
Fair	8	54	11	73	19	63
Good	5	33	4	27	9	30
	—	—	—	—	—	—
TOTAL	15	100	15	100	30	100

Table 13. Frequency Distribution of Elderly Females of Ideal Weight and Elderly Females Who Were Overweight by Perceived Physical and Psychological Health Status (n = 30)

Perceived Physical Health Status	Ideal Weight		Overweight		Total	
	Number	Percent	Number	Percent	Number	Percent
Excellent	5	33	5	33	10	33
Good	9	60	9	60	18	60
Fair	1	7	1	7	2	7
Poor	0	0	0	0	0	0
TOTAL	15	100	15	100	30	100

Perceived Psychological Health Status	Ideal Weight		Overweight		Total	
	Number	Percent	Number	Percent	Number	Percent
Excellent	1	7	8	53	9	30
Good	14	93	7	47	21	70
Fair	0	0	0	0	0	0
Poor	0	0	0	0	0	0
TOTAL	15	100	15	100	30	100

spent in activities were 29.8 hours in informal activities, 9.2 hours in formal activities and 20.9 hours in solitary activities. The mean number of hours spent in activities by both groups of subjects suggest no essential differences in activity level.

Education. Each subject indicated the total number of years of formal education. The range was from ten to 18 years with a mean of 13.2 for the ideal weight subjects and nine to 20 years of education with a mean of 15.4 for the overweight subjects. Data suggests no distinctive difference in mean educational levels for both groups.

Summary

In this chapter, data regarding characteristics of sample, life satisfaction scores and demographic variables revealed no distinctive differences between elderly females of ideal weight and elderly females who were overweight. Further analysis was not performed since there were no essential differences in specific demographic variables between the two groups.

CHAPTER V

FINDINGS, IMPLICATIONS AND RECOMMENDATIONS

This chapter includes a discussion of the findings as well as implications for nursing. Recommendations for further research are also discussed.

Discussion of Findings

The purpose of this study was to determine if there were any differences in the life satisfaction scores of elderly females who were overweight as compared to elderly females of ideal weight. A convenience sample of 30 females aged 60 to 80 participated in the study. Fifteen subjects were identified as being overweight and 15 subjects were considered to be of ideal weight.

Each subject responded to questions on two separate questionnaires, a Demographic Data Sheet and the Life Satisfaction Index A scale. All subjects were weighed, measured for height and elbow breadth in order to identify overweight and ideal weight individuals.

Analyses of data obtained from the questionnaires, weight, height and elbow breath measurements yielded results that were similar for both the ideal weight and overweight elderly females. A t-test for differences in mean life satisfaction scores for elderly females of ideal weight ($\bar{x} = 15.93$) and for elderly females who were overweight ($\bar{x} = 14.80$) indicated no significant differences in life satisfaction between the two groups.

Past research has shown that health was a strong predictor of life satisfaction (Larson, 1979; Lohman, 1980; Toseland & Rasch, 1979, 1980). Ninety-three percent of the ideal weight subjects and ninety-three percent of the overweight subjects reported either excellent or good health. Mean life satisfaction scores were very similar for overweight and ideal weight subjects ($\bar{x} = 15.9$ and $\bar{x} = 14.8$). Therefore, these findings may provide additional support to earlier studies which showed the relative strength of self-reported health as a predictor of life satisfaction.

Baur and Okun (1983), Larson (1979) and Neugarten, et al. (1961) have reported that age, marital status, income and education were either weak predictors or no predictors of life satisfaction. No differences in these demographic variables were found between the overweight and ideal weight subjects which supports the data of Baur and Okun (1983), Larson (1979) and Neugarten, et al. (1961).

Both overweight and ideal weight subjects reported they spent more of their time in informal activities. This result is similar to the findings of Lemon, et al. (1972) whose study showed that informal activity was identified as being associated with life satisfaction.

Health risks associated with increased weight, such as hypertension and heart disease were reported by various researchers (Bray, 1985; Cozens, 1982; Stunkard, 1983). Although ideal weight and overweight subjects reported some physical health problems, the majority of subjects (93%) indicated their physical health was either excellent or good. No psychological health problems were reported and all subjects reported excellent or good psychological health.

Limitations of this study included: lack of randomization, setting, sample size and homogeneity of sample. The setting and sample were wellness oriented.

The dynamic force of Roy's Adaptation Model rests in man's ability to adapt to an ever changing environment (Janelli, 1980). Both the overweight and ideal weight subjects perceived themselves as relatively healthy and active persons who had adequate incomes. There were no distinctive differences in mean life satisfaction scores of the two groups of subjects which may indicate similarities in the ability to adapt to the internal and external stimuli within their ever changing environment. It was difficult to relate findings to Roy's theory.

Implications for Nursing

The findings from this study indicated that elderly females who were overweight did not differ from elderly females of ideal weight in their satisfaction with life. Larson (1979) and Baur and Okun (1983) reported that health was a strong predictor of life satisfaction. Overweight and ideal weight subjects reported their health as either excellent or good. However, physiological and/or psychosocial health risks associated with excess weight have been reported (Bray, 1985; Stewart & Brook, 1983; Cozens, 1982). Therefore, it is extremely important for nurses to understand not only the physiological risks, but also the psychosocial risks associated with overweight in order to promote wellness. Nurses also need to be aware of their clients' perception of their health so that effective patient teaching can be

accomplished. Although life satisfaction scores did not differ between overweight and ideal weight subjects, it should not alter the nurse's responsibility in carefully evaluating and educating elderly clients with or without weight problems.

Nurses, as the largest group of health care professionals, have various opportunities to improve quality of care and promote understanding for and by their elderly clients. The literature suggests that overweight is a risk to optimal health; therefore, each elderly person should be made aware of the risks associated with excess weight. This can be accomplished, in part, through education provided by nurses.

Recommendations

Based on the findings of this study, the following recommendations are offered:

1. Repeat study using a more heterogeneous sample and a different setting.
2. Utilize a different measurement tool for weight in conjunction with or in place of the 1983 Metropolitan Life Insurance Height and Weight Tables.
3. Differentiate between adult onset or childhood weight gain.

Summary

The present study provided an insight relating to the life satisfaction of a convenience sample of elderly females of ideal weight as compared to elderly females who were overweight. The data were not statistically different in life satisfaction scores, age, marital

status, income, health status, education and activity levels for the ideal weight and overweight elderly female subjects. However, due to study designs and limitations, these findings may not be generalizable to populations other than the elderly sample as described in this study. Therefore nurses need to recognize that being overweight is a potential risk factor for elderly females.

APPENDIX A

HUMAN SUBJECTS APPROVAL FORM

**THE UNIVERSITY OF ARIZONA**

TUCSON, ARIZONA 85721

COLLEGE OF NURSING

MEMORANDUM

TO: Lawrence K. Rosenquist
Graduate Student

FROM: Ada Sue Hinshaw, PhD, RN ^{ASH} Merle Mishel, PhD, RN
Director of Research Chairman, Research Committee

DATE: November 6, 1985

RE: Human Subjects Review: Life Satisfaction of Elderly Females
Who are Overweight as compared to Elderly Females of Ideal Weight

Your project has been reviewed and approved as exempt from University review by the College of Nursing Ethical Review Subcommittee of the Research Committee and the Director of Research. A consent form with subject signature is not required for projects exempt from full University review. Please use only a disclaimer format for subjects to read before giving their oral consent to the research. The Human Subjects Project Approval Form is filed in the office of the Director of Research if you need access to it.

We wish you a valuable and stimulating experience with your research.

ASH/fp

APPENDIX B

DISCLAIMER STATEMENT

DISCLAIMER STATEMENT

YOU ARE BEING ASKED TO PARTICIPATE IN A STUDY ENTITLED "LIFE SATISFACTION OF ELDERLY FEMALES WITH VARYING BODY WEIGHTS". THE PURPOSE OF THE STUDY IS TO DETERMINE DIFFERENCES IN THE LIFE SATISFACTION OF OLDER ADULT WOMEN WITH VARIOUS BODY WEIGHTS.

YOU ARE BEING ASKED TO VOLUNTARILY ANSWER QUESTIONS ON TWO SEPARATE QUESTIONNAIRES. YOU WILL ALSO BE ASKED TO PARTICIPATE IN WEIGHT, HEIGHT AND ELBOW BREADTH (FRAME SIZE) MEASUREMENTS (WHICH WILL BE DONE INDIVIDUALLY AND PRIVATELY). THE ENTIRE TIME NEEDED TO COMPLETE THE STUDY IS 40 MINUTES. THERE ARE NO KNOWN RISKS ASSOCIATED WITH THE STUDY. YOUR NAME WILL NOT BE REQUIRED AND YOUR IDENTITY WILL BE KEPT CONFIDENTIAL. ONLY MEMBERS OF THE THESIS COMMITTEE AND THE INVESTIGATOR WILL HAVE ACCESS TO DATA.

YOU ARE FREE TO ASK QUESTIONS REGARDING THE STUDY AT ANY TIME. YOU MAY WITHDRAW FROM THE STUDY AT ANY POINT WITHOUT INCURRING ILL WILL.

YOU ARE GIVING YOUR CONSENT TO PARTICIPATE IN THE STUDY BY ANSWERING THE QUESTIONS ON THE TWO SEPARATE QUESTIONNAIRES AND BY PERMITTING WEIGHT, HEIGHT AND ELBOW BREADTH MEASUREMENTS.

APPENDIX C

DEMOGRAPHIC DATA SHEET

THE FOLLOWING QUESTIONS HAVE BEEN DESIGNED TO OBTAIN GENERAL INFORMATION ABOUT YOU. PLEASE ANSWER THESE QUESTIONS.

1. What is your age at the present time? _____ years

FOR THE FOLLOWING QUESTIONS, PLEASE PLACE A CHECKMARK (✓) WHERE IT APPLIES.

2. What is your marital status? Are you now...

Married?	_____
Divorced?	_____
Widowed?	_____
Separated?	_____
Never Married?	_____

3. Do you consider your present income to be...

Poor: barely enough to provide for necessities? _____

Fair: provides for necessities, some luxuries, and occasional unforeseen emergencies? _____

Good: provides for necessities, luxuries, and unforeseen emergencies? _____

4. Do you consider your physical health at the present time to be...

Excellent?	_____
Good?	_____
Fair?	_____
Poor?	_____

5. Do you have any physical health problems at the present time?

Yes _____

No _____

If yes, please list them.

6. Do you consider your psychological health at the present time to be...

- Excellent? _____
- Good? _____
- Fair? _____
- Poor? _____

7. Do you have any psychological health problems at the present time?

Yes _____
No _____

If yes, please list them.

8. In the past five years, have you either gained or lost weight?

Gained weight _____
Lost weight _____
No change _____

IF YOU HAVE EITHER GAINED OR LOST WEIGHT IN THE PAST FIVE YEARS, PLEASE ANSWER THE FOLLOWING QUESTIONS.

9. How much weight have you lost or gained? _____ pounds
10. What do you consider the reason(s) for your weight loss or gain? (Please specify)

PLEASE WRITE THE NUMBER OF HOURS PER WEEK THAT YOU SPEND PARTICIPATING IN THE FOLLOWING ACTIVITIES (OR SIMILAR ACTIVITIES).*

11. In an average week, how many hours per week do you spend participating in each of the following activities?

Informal Activity: e.g. interaction with relatives, friends, or neighbors.

_____ hours/week

Formal Activity: e.g. volunteer work, church related work, or involvement in clubs.

_____ hours/week

Solitary Activity: e.g. reading, watching television, or listening to the radio.

_____ hours/week

PLEASE CIRCLE THE HIGHEST NUMBER OF YEARS OF FORMAL EDUCATION THAT YOU HAVE COMPLETED.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

*Source: Lemon, et al., 1972

APPENDIX D

LIFE SATISFACTION INDEX A

15. Compared to other people my age, I've made a lot of foolish decisions in my life.
16. I have made plans for things I'll be doing a month or a year from now.
17. When I think back over my life, I didn't get most of the important things I wanted.
18. Compared to other people, I get down in the dumps too often.
19. I've gotten pretty much what I expected out of life.
20. In spite of what people say, the lot of the average man is getting worse, not better.

AGREE	DISAGREE	?

Neugarten, B. L., Havighurst, R. J. and Tobin, S. S. (1961) "The Measurement of Life Satisfaction", Journal of Gerontology, 16, p. 141.

APPENDIX E

LIFE SATISFACTION INDEX A - KEY

Here are some statements about life in general that people feel differently about. Would you read each statement on the list and if you agree with it, put a checkmark (✓) in the space under "AGREE". If you do not agree with a statement, put a checkmark (✓) in the space under "DISAGREE". If you are not sure one way or the other, put a checkmark (✓) in the space under "?".

	AGREE	DISAGREE	?
1. As I grow older, things seem better than I thought they would be.	X		
2. I have gotten more of the breaks in life than most of the people I know.	X		
3. This is the dreariest time of my life.		X	
4. I am just as happy as when I was younger.	X		
5. My life could be happier than it is now.		X	
6. These are the best years of my life.	X		
7. Most of the things I do are boring and monotonous.		X	
8. I expect some interesting and pleasant things to happen to me in the future.	X		
9. The things I do are as interesting to me as they ever were.	X		
10. I feel old and somewhat tired.		X	
11. I feel my age, but it does not bother me.	X		
12. As I look back on my life, I am fairly well satisfied.	X		
13. I would not change my past life even if I could.	X		
14. Compared to other people my age, I make a good appearance.	X		

15. Compared to other people my age, I've made a lot of foolish decisions in my life.
16. I have made plans for things I'll be doing a month or a year from now.
17. When I think back over my life, I didn't get most of the important things I wanted.
18. Compared to other people, I get down in the dumps too often.
19. I've gotten pretty much what I expected out of life.
20. In spite of what people say, the lot of the average man is getting worse, not better.

AGREE	DISAGREE	?
	X	
X		
	X	
	X	
X		
	X	

Neugarten, B. L., Havighurst, R. J. and Tobin, S. S. (1961) "The Measurement of Life Satisfaction", Journal of Gerontology, 16, p. 141.

APPENDIX F
METROPOLITAN LIFE INSURANCE COMPANY
HEIGHT AND WEIGHT TABLES

FRAME SIZE*

Measurements lower than those listed indicate small frame.
Higher measurements indicate a large frame.

<u>WOMEN</u>	<u>ELBOW BREADTH</u>
4'10" - 4'11"	2 1/4" - 2 1/2"
5'0" - 5'3"	2 1/4" - 2 1/2"
5'4" - 5'7"	2 3/8" - 2 5/8"
5'8" - 5'11"	2 3/8" - 2 5/8"
6'0"	2 1/2" - 2 3/4"

HEIGHT AND WEIGHT*

<u>HEIGHT</u>	<u>SMALL FRAME</u>	<u>MEDIUM FRAME</u>	<u>LARGE FRAME</u>
4'10"	102 - 111	109 - 121	118 - 131
4'11"	103 - 113	111 - 123	120 - 134
5'0"	104 - 115	113 - 126	122 - 137
5'1"	106 - 118	115 - 129	125 - 140
5'2"	108 - 121	118 - 132	128 - 143
5'3"	111 - 124	121 - 135	131 - 147
5'4"	114 - 127	124 - 138	134 - 151
5'5"	117 - 130	127 - 141	137 - 155
5'6"	120 - 133	130 - 144	140 - 159
5'7"	123 - 136	133 - 147	143 - 163
5'8"	126 - 139	136 - 150	146 - 167
5'9"	129 - 142	139 - 153	149 - 170
5'10"	132 - 145	142 - 156	152 - 173
5'11"	135 - 148	145 - 159	155 - 176
6'0"	138 - 151	148 - 162	158 - 179

*Metropolitan Life Insurance Company Height and Weight Tables. Yen, P. K. (1983). A new look at obesity. Geriatric Nursing, 4(3), 184 and 187.

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