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The effects of pre-professional and professional socialization and intergenerational solidarity on podiatric medical students’ negative stereotypes and attitudes toward treating the elderly

Chumbler, Neale R., Ph.D.
Case Western Reserve University, 1994

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THE EFFECTS OF PRE PROFESSIONAL AND PROFESSIONAL 
SOCIALIZATION AND INTERGENERATIONAL SOLIDARITY 
ON PODIATRIC MEDICAL STUDENTS' NEGATIVE STEREOTYPES 
AND ATTITUDES TOWARD TREATING THE ELDERLY

by

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Submitted in partial fulfillment of the requirements 
for the degree of Doctor of Philosophy

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August, 1994
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GRADUATE STUDIES

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THE EFFECTS OF PRE-PROFESSIONAL AND PROFESSIONAL
SOCIALIZATION AND INTERGENERATIONAL SOLIDARITY
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AND ATTITUDES TOWARD TREATING ELDERLY PATIENTS

Abstract

by

NEALE R. CHUMBLER

Doctors of Podiatric Medicine (or podiatrists) play a decisive role in the
disease prevention and health maintenance of older Americans. As health care
professionals who examine, diagnose, and treat the human foot, podiatrists aid in
alleviating pain and maintaining the mobility of geriatric patients. No
sociological studies have examined podiatrists’ or podiatry students’ orientations
toward the elderly in general and as patients in particular.

Accordingly, this dissertation examines precursors of two dependent
variables--podiatry students’ stereotypes of older people and attitudes toward
treating elderly patients. Among the set of predictor variables, this dissertation
examines podiatry students’ social background traits, intergenerational solidarity
with grandparents, motivations for entering podiatry, and professional
socialization. Moreover, four theoretical perspectives--socialization theory,
cognitive dissonance theory, Allport’s theory of prejudice, and social exchange
theory--provide frameworks for interpreting the effects of the predictor
variables.

The data included a random and nationally representative sample of
podiatry students. One-third of the total population of podiatry students were
used as the sampling frame. Of the questionnaires distributed to the students, 533 were returned, yielding a total response rate of 77.5 percent.

Multiple regression analysis indicated that entering podiatry for extrinsic rewards was a strong predictor of negative stereotypes of the elderly. That is, extrinsic rewards has a statistically significant direct effect on two of the four outcome variables representing negative stereotypes of the elderly—specifically, older people's personality and health behavior.

Similarly, there are two strong predictors of negative attitudes toward treating elderly patients: entering podiatry for intrinsic rewards and close bonds with grandparents. That is, podiatry students who reported close relationships with their grandparents and who entered podiatry for intrinsic rewards were less likely to have both negative stereotypes toward older people and negative attitudes toward treating elderly patients. Implications of the findings are discussed in regards to podiatric medical education, such as recruitment and criteria in admitting prospective students.
ACKNOWLEDGEMENTS

To Kyle Kercher I owe a special debt, for the example of that his range of knowledge constantly provides, as well as for the line-by-line attention he paid to each draft of the dissertation. I am also obliged for his advice, confidence and encouragement given to me throughout this past academic year. Without his abundant assistance, this dissertation could not have developed to its present status.

The other three members of my committee, Gary Deimling, Kurt Stange, and J. Randall Johnson are also due special thanks, for each contributed something unique yet important to this dissertation. Thanks, also, belongs to Jeff Brooks for his valuable time and assistance in taking care of technicalities related to the dissertation.

Finally, and most significantly, I want to thank my wife, Janice. By her love, support and exhortation, she has as much to do with the appearance of this dissertation as I do. Only male graduate students and their wives fully understand and appreciate the sacrifices of those fearless women who are married to would-be Ph.D.s. She interrupted her busy and stressful schedule to do much more her share of the household duties so that my research and writing schedules were set and kept. Janice will never fully know how important she was in the writing of this dissertation. In a pitifully small way, this study is partial payment of the enormous debt of love I owe. Janice, thanks for going all the "extra miles" with me.
# TABLE OF CONTENTS

**CHAPTER I: Introduction and Statement of the Problem**
- Outline of Dissertation and Introduction  
- Statement of the Research Problem  
- Focus of the Dissertation  
- Theoretical Background  

**CHAPTER II: Theory, Conceptualization and Review of Literature**
- Conceptualization of "Ageism" and "the Elderly"  
- Theoretical Perspectives  
- Pre-Professional Socialization  
- Professional Socialization  
- Social Exchange Theory  

**CHAPTER III: Methods and Measurements**
- Introduction and Sampling Procedures  
- Measures  
- Analytic Procedures for Testing Hypotheses of Dissertation  

**CHAPTER IV: Results**
- Introduction and Bivariate Results  
- Multivariate Results  

**CHAPTER V: Discussion of the Theoretical and Policy Implications of the Results**
- Summary of Theoretical Perspectives and Model Specification  
- Implications of Findings  
- Possible Directions for Future Research  
- Possible Methodological Directions for Future Research  

**LITERATURE CITED**  

**APPENDIX A**
LIST OF FIGURES

FIGURE 1: Conceptual Model Representing Predictors of Podiatry Students' Stereotypes of Older People and Attitudes toward treating Elderly Patients 13

FIGURE 2: Path Model for Podiatry Students' Stereotypes of Older People and Attitudes toward treating Elderly Patients, and Antecedent Variables 138
LIST OF TABLES

TABLE 3.1. Total Enrollments by College and Class Year of Podiatry Students for the Academic Year 1992-93 59

TABLE 3.2. Distribution of the Total Population and the Number and Percentage of Respondents who returned Questionnaires 64

TABLE 3.3. Means, Standard Deviations, Coding Algorithms, and Psychometric Properties of Variables and Scales used in the Dissertation 71

TABLE 3.4. Exploratory Factor Analysis Results of the random sub-sample of undergraduate students (N = 146) used to develop STOPs 80

TABLE 3.5. Confirmatory Factor Analysis results of the random sub-sample of undergraduate students used to develop STOPs 82

TABLE 3.6. Zero-Order Correlations and Univariate Statistics for STOPs' Sub-scales 85

TABLE 3.7. Confirmatory Factor Analysis Results of STOPs on the national sample of Podiatry Students (N = 533) 89

TABLE 3.8. Exploratory Factor Analysis Results of the random sub-sample of undergraduate students used to develop ATEPS (N = 146) 99

TABLE 3.9. Confirmatory Factor Analysis Results of the random sub-sample of undergraduate students used to develop ATEPS (N = 146) 101

TABLE 3.10. Confirmatory Factor Analysis Results of ATEPS on the national sample of Podiatry Students (N = 533) for both the Initial Test and for the Final Test (with all paths added) 104

TABLE 3.11. Exploratory Factor Analysis and Confirmatory Factor Analysis Results for Maxwell and Sullivan's (1980) Geriatric Education Preparation Scale 110

TABLE 3.12. Exploratory Factor Analysis and Confirmatory Factor Analysis Results for Bengston and Mangen's (1988) Affectual Solidarity Scale 113

TABLE 3.13. Exploratory Factor Analysis Results of the random sub-sample of podiatry students on political party preference, political thinking, and Colombotos and Kirchner's (1986) Economic-Welfare Liberalism (ECOWELF) Scale Item (N = 267) 118
**LIST OF TABLES (CONTINUED)**

**TABLE 3.14. Confirmatory Factor Analysis Results of a second random sub-sample of podiatry students on political party preference, political thinking, and Colombotos and Kirchner’s (1986) Economic-Welfare Liberalism (ECOWELF) Scale Items (N = 266)**

**TABLE 3.15. Exploratory Factor Analysis Results of a random sub-sample of podiatry students for Rosenberg’s Extrinsic and Intrinsic Gratification Scale (N = 267)**

**TABLE 3.16. Frequency Distributions of Podiatry Students’ Social Background Variables**

**TABLE 4.1. Zero-order Correlations of the Independent and Dependent Variables**

**TABLE 4.2. Findings from the Tolerance Test for Multicollinearity within the independent variables**

**TABLE 4.3. Ordinary Least Squares Regression Results for the Direct Effects of Predictor Variables on Negative Stereotypes of Elderly**
CHAPTER ONE

Introduction and Statement of the Problem
Outline of Dissertation

Chapter one presents the general introduction and statement of the research problem. Chapter two conceptualizes the variables employed in the dissertation. In particular, it reviews the sociological perspectives, the empirical research that support the hypothesized causal links among the predictor variables and respondents’ stereotypes of the elderly and attitudes towards treating elderly patients. Chapter three presents the sample design and the measures of the independent and dependent variables, including the psychometric properties of the scales. In particular, a substantial proportion of chapter three addresses the development of both a stereotypes toward older people scale and an attitudes toward treating elderly patients scale. Chapter four presents the results that test the hypotheses of the study. Finally, Chapter five discusses the findings and limitations of the study, the theoretical and policy implications of the results, and plausible directions for future research.

Introduction

Outline of this Chapter

This chapter addresses the importance of studying podiatry students’ stereotypes toward older people and the attitudes they have toward treating elderly patients. The chapter first outlines the research problem, followed by an overview of the profession of podiatry. Second, the chapter discusses the role that podiatry performs in treating older individuals. Third, the chapter summarizes the inconsistencies and narrow scope of the existing literature, and how the present dissertation could contribute to the literature. Fourth, the
chapter describes the sociological importance of studying podiatry students' orientations toward older individuals. Finally, the chapter summarizes the sociological perspectives that support the hypothesized determinants of predictors of podiatry students' attitudes toward the elderly.

Statement of the Research Problem

Due to the increasing cost of health care services and the inaccessibility of health care to certain populations (e.g., older people) a modification of the existing health care system is imminent (Iglehart, 1993; The Nation's Health, 1994). Some research (e.g., see Aguirre, Wolinsky, Niederauer, Keith, and Fann, 1989; Bloom, 1988; Chumbley, 1994; Chumbley & Brooks, 1993; Chumbley & Grimm, 1993; Ferraro & Southerland, 1988; Light, 1983, 1988) claims that non-physician health care professionals will expand their professional roles, thus, rendering more services to patients. Some recent empirical research demonstrates that one non-physician health care profession, podiatry, plays an active role in providing primary health care to a segment of the population (i.e., the elderly) that uses a significant proportion of health care resources (see for example, Chumbley & Brooks, 1993; Chumbley & Grimm, 1992, 1993; Helfand, 1987a; Levy 1992; Skipper and Hughes, 1983, 1984).

Podiatry is the health science profession which examines, diagnoses, treats, and prevents diseases, conditions and problems affecting the human foot (Skipper & Hughes, 1983, 1984; USDHHS, 1988). As a profession, podiatry is growing rapidly. From 1983 to 1988 there was a 15.8% increase in the proportion of active American podiatrists, and in 1991, there were 12,500 practicing
podiatriists (Doctors of Podiatric Medicine or DPMs). While the proportion of podiatrists has increased, so has the volume of patients seen and treated by DPMs. For instance, from 1979 to 1989, the number of patients seen and treated by American DPMs increased from 10 million to 15 million (American Podiatric Medical Association, 1991; Skipper & Hughes, 1983). This 33% increase is due, in large part, to an aging population (Helfand, 1987b; Levy, 1992; Skipper & Hughes, 1983).

Foot problems become more acute and potentially fatal for the aged than any other demographic sub-group (Skipper & Hughes, 1983). Moreover, foot problems can become life threatening for older people who are afflicted with diseases such as diabetes and vascular insufficiencies. Therefore, as the U.S. population continues to age, foot problems and the subsequent need for podiatric services will increase (Levy, 1992; USDHHS, 1990). Hence, it is likely that DPMs will increasingly have more patient contact with older individuals.

From its inception in 1912 as an organized American profession, podiatry has performed a significant role for older persons. Presently, painful feet is the fourth common cause of discomfort reported by the elderly (Helfand, 1987a). In the most recent national survey of practicing podiatrists, 81.4% of the respondents report that over one-half of their patients are over 50 years of age and almost 93% indicate that more than one-half are female (USDHHS, 1990).

In spite of podiatry's increasing importance to the health of the nation, especially for older patients, no studies address either podiatrists' or podiatric medical (podiatry) students' stereotypes of older people and the attitudes they exhibit toward treating elderly patients. The present dissertation attempts to fill this gap in our knowledge. In particular, this study examines podiatry students'
pre-professional and professional socialization experiences and motivations for entering podiatry to determine if these variables predict both negative stereotypes toward older people and attitudes toward treating elderly patients. This study extends the work of Colombotos and Kirchner (1986) and Sudit (1987, 1988), who have analyzed the interplay between early socialization and medical students' attitudes toward national health insurance.

Medical sociologists (e.g., see Bloom, 1988; Colombotos, 1988; Light, 1988) argue that analyzing the determinants of negative stereotypes and attitudes of medical students toward patients is an important area of research. Thus, by understanding the causes of negative attitudes toward the elderly among podiatry students, podiatric medical educators may be in a better position to reduce biases toward older patients before the students become podiatrists.

The Profession of Podiatry

Podiatry students progress through a four-year Podiatric Medicine curriculum to become a Doctor of Podiatric Medicine (DPM or podiatrist). Podiatry students can obtain the DPM degree from one of six accredited colleges of podiatric medicine. The licensure and limits of practicing podiatry vary from state to state, however most include minor foot surgeries and the prescription of pharmaceuticals (Helfand, 1987a; Skipper & Hughes, 1983; 1984).

Presently, 74% of all practicing DPMs are under the age of 50; 60.7% have completed accredited podiatric medical residencies; 58.5% have some type of hospital surgical privileges; and, 43% have full surgical privileges (APMA, 1991). Recently, in both national and regional samples of podiatrists, a significant proportion of them report having professional contacts with physicians,
especially family physicians and general internists, through the means of patient referrals (see for example, APMA, 1985; Chumbler, 1994). In sum, the profession of podiatry in the United States has a significant proportion of younger practitioners who tend to practice in similar professional domains as physicians.

A majority of patients seen by podiatrists provide payment for their services through self-pay (USDHHS, 1990; Wardwell, 1979). According to a national survey of podiatrists, service to others is the most commonly listed reason why they chose a career in podiatry (APMA, 1985). Consistent with this service orientation, 73.4% of United States DPMs spend 90% of their time in "hands on" patient care (APMA, 1985).

Podiatrists typically treat foot conditions that require non-surgical procedures. For instance, podiatrists treat 59% of all patients who seek help for bunion conditions, 75% with corns and callouses, and 54% with ingrown toenail conditions, but only five percent with foot fractures (Weiner, Steinwachs, Frank, & Schwartz, 1987).\(^1\) Approximately half of podiatrists’ total income comes from self-pay, 30% from non-Government third-party payers, 15% from Medicare and less than five percent from Medicaid (USDHHS, 1988).

Furthermore, Weiner and his associates, point out that most of the surgeries that podiatrists perform are elective (e.g., bunionectomies) instead of emergency or traumatic procedures (e.g., amputations). Foot conditions that are not treated by podiatrists are usually treated by orthopedic surgeons and family

\(^{1}\) A bunion is an inflamed swelling at the bursa (i.e., saclike cavity located between the joints) of the big toe, which can be extremely painful (Weiner et al., 1987).
physicians (USDHHS, 1990).\(^2\) Elderly individuals in addition to younger ones are more likely to need professional treatment for corns, callouses and ingrown toenails (Levy, 1992; Skipper & Hughes, 1984). Thus, podiatrists play a significant role in alleviating pain and maintaining mobility for geriatric patients (Helfand, 1987b).

**Podiatry's Role in Treating Older Individuals**

Podiatrists treat a significant proportion of older patients for several reasons. First, the profession of podiatry treats abnormalities of the foot (e.g., clipping toenails, cutting corns and callouses) which allopathic medicine regards as too trivial (Skipper & Hughes, 1983, 1984). Allopathic medicine's disregard for podiatric medical care has been evident for several decades. For instance, a former president of the New York State Medical Society made the following statement about the professional role of podiatrists:

"The foot care podiatrists typically treat is too minor a subject thus to dignify it. We haven't the time to give it in the face of our manifold tasks in teaching the conditions on which life or death depend" (Lewi, 1954).

In addition to performing roles that allopathic medicine neglects, podiatry also practices in professional worksites (e.g., nursing homes) that most physicians neglect and decline to work (Skipper and Hughes 1983, 1984). For example, over

\(^2\) However, some recent trends from national data (cf. USDHHS, 1990) suggest that podiatrists provide more extensive surgical services and make greater use of third-party payments than podiatrists have in the past.
60% of podiatrists who practice in the United States report that they see 31% of their patients in nursing homes.

Second, by the age of 65, approximately 95% of all individuals have one or more foot problems that induce some level of ambulatory and/or functional disability (Helfand, 1987a). Since one motivation for an older person is to remain active and productive, thus yielding a proactive quality of life (cf. Fontana, 1977; Havighurst, 1963), the ability to walk and remain ambulatory could be a key catalyst to life satisfaction and high morale.

A third reason podiatrists treat a substantial number of older patients is due to the prevalence of diabetes mellitus (or diabetes) in the older population. Diabetes is one of the most common chronic diseases affecting individuals over the age of 65 (Helfand, 1987b; Levy, 1992). Specifically, a majority of the 14 million diabetics in the United States are older (Helfand, 1987b; Levy, 1992), and twenty five percent of these patients develop foot problems that many times lead to amputations (Duffy & Patout, 1990; Veves, Van Ross & Boulton, 1992). Amputations are an expensive surgical procedure. For instance, in 1990, the total hospitalization cost for lower extremity amputations was $302 million (Duffy & Patout, 1990); although, this cost does not include rehabilitation or disability costs.

Fortunately, however, 50 to 75% of amputations of older diabetics can be reduced with adequate foot health interventions performed by DPMs (Helfand, 1987b; Levy, 1992). Consequently, the prevention of amputations reduces (or prevents) unnecessary costs of hospitalization, medical and surgical care, and rehabilitation (Helfand, 1987b). Despite its importance for providing foot care
to a significant proportion of older individuals, no studies have examined podiatry students' orientations toward this demographic sub-group.

Medical Students' Orientations toward Older People

Although no studies address podiatry students' orientations toward the elderly, some research (e.g., see Anderson, Rakowski & Hickey, 1988; Beland & Maheux, 1990; Green, Keith, & Pawlson, 1983; Maxwell & Sullivan, 1980; Linn & Zeppa, 1987) examines medical students perceptions toward the elderly in general and as patients in particular. Most of the previous studies on medical students demonstrate that they are uncomfortable with older individuals as patients or with the chronic problems they usually present (Adelman & Albert, 1987; Beland & Maheux, 1990; Fitzpatrick, O'Donnell, Getson, Sahler, Goldberg, & Greenberg, 1993).

Additionally, there are some methodological shortcomings from the past studies. For example, most studies of health care professionals' attitudes toward the elderly use a small number of variables and the sample size is small. In fact, most studies use regional samples from a single medical school, and the response rates are typically low (40% to 50%). In sum, shortcomings in previous studies include limited generalizability, reduced power to detect relationships among variables, limited control variables, and a less than comprehensive causal model (see Adelman & Albert, 1987 for a critical review of the methodological weaknesses).

To overcome the methodological shortcomings in the previous studies, this dissertation obtains a large national sample, achieves a high response rate of podiatric medical students, and employs numerous major predictors (see Chapter
Three). Furthermore, the present study develops a more comprehensive causal model by including major predictors identified in other research, but which few studies, if any, have examined simultaneously.

**Sociological Relevance of this Study**

Predictors of podiatry students' orientations toward older individuals are germane to sociological, gerontological and medical fields. It is plausible that podiatry students develop their orientations toward older people during their pre-professional and professional socialization. Socialization is the preparation of people to perform social roles (Simpson 1979, p.17). This study views podiatric medical institutions as the entry level into the profession, which could also serve as a professional socialization agent (Light, 1983; Mechanic, 1983; Simpson, 1979). Podiatry students proceed through their programs in well-identified and often cohesive cohorts. While they are being socialized, podiatry students' roles could be structurally tied to future roles in occupational systems. The social role that this dissertation examines pertains to podiatry students' stereotypes toward older individuals and to their negative attitudes toward treating elderly patients. If negative stereotypes and attitudes toward the treatment of older individuals are detected in podiatry school, then podiatric medical educators can alter the program to alleviate these unfavorable orientations.

Due to the structure (i.e., emphasis on sub-specializations such as plastic surgery that are not oriented to health-care preventions) and incentives in medical institutions (i.e., economic and professional rewards for receiving external funds for biomedical research), medical education often fails to respond to the preventive health care needs of older individuals (Adelman & Albert, 1987;
Beland & Maheux, 1990; Bloom, 1988; Cockerham, 1991; Colombotos, 1988; Helfand, 1987a; Fitzpatrick et al., 1993). In other words, older individuals are more likely to require primary medical care instead of surgical care (Cockerham, 1991; Fitzpatrick et al., 1993; Helfand, 1987a).

As compared to surgical procedures, primary medical care procedures yield less income for health care professionals. Therefore, due to the present structure of medical education, primary medical care and the concomitant preventive health care for the elderly is not emphasized. For preventive medical care of elderly patients to receive greater emphasis, medical schools must change their curriculums. Such change is likely to have long term effects on student orientations. Sociologists studying occupations and professions (e.g., Mechanic, 1983; Merton, 1957; Light, 1980, 1983; Simpson, 1979) have shown that attitudes and stereotypes learned during professional school have persistent effects on the orientations of students when they become practitioners.

Since the medical training institutions fail to respond to the health care needs of older individuals (cf. Adelman & Albert, 1987; Beland & Maheux, 1990; Bloom, 1988; Colombotos, 1988; Fitzpatrick et al., 1993) and in view of the dominant influence that podiatrists have in the treatment of elderly patients, it is important to understand how the stereotypes toward older people and attitudes toward treating elderly patients are formed.

**Focus of the Dissertation**

The purpose of this dissertation is to examine factors that may influence podiatric medical (or podiatry) students' stereotypes toward older individuals.
and their attitudes toward treating older patients. In other words, this
dissertation examines some potential predictors of podiatry students' disdain for
the elderly, both human beings and as patients.

Figure 1 displays a conceptual model of the variables tested in the current
study. The pre-professional socialization of podiatry students contains three
dimensions. First, the ethnicity, gender and socioeconomic background of the
podiatry students represent Social Background variables. Intergenerational
solidarity (or close bonds between the students and their grandparents) includes
the frequency that podiatry students visited their grandparents when they were
younger (referred to as associational solidarity) and the closeness that podiatry
students experienced with their grandparents during their childhood and
adolescence (referred to as affectual solidarity). Political socialization assesses
the political affiliation and political ideology (i.e., the students' level of
acquiescence toward government) of the students. Entering podiatry for
extrinsic or intrinsic rewards, collectively, represent the concept of motivations
for entering podiatry.

[Insert Figure 1 about here]

The concept of professional socialization encompasses three dimensions:
1) the academic class status (or year in school) of podiatry students; 2) the
students' attitudes toward the geriatric education they received in podiatry
school (coded to present positive attitudes, and hereafter referred to as geriatric
education); and 3) the days per week that the students spend in clinical contact
with older people. In sum, Figure 1 presents three concepts—pre-professional
Figure 1. Conceptual Model Representing Predictors of Podiatry Students’ Stereotypes of Older People and Attitudes toward treating Elderly Patients.

**PRE-PROFESSIONAL SOCIALIZATION**

- **Social Background Variables**
  - Ethnicity (Non-White) (-)
  - Sex (Female) (-)
  - Socioeconomic Background (-)

- **Intergenerational Solidarity**
  - Associational Solidarity (-)
  - Affectual Solidarity (-)

- **Political Socialization**
  - Political Affiliation
    - Liberal (-)
  - Political Ideology
    - Liberal (-)

**NEGATIVE STEREOTYPES OF OLDER PEOPLE**

**MOTIVATIONS FOR ENTERING PODIATRY**

- Extrinsic Rewards (+)
- Intrinsic Rewards (-)

**NEGATIVE ATTITUDES TOWARD TREATING ELDERLY PATIENTS**

**PROFESSIONAL SOCIALIZATION**

- Year in School (+)
- Positive Attitudes toward Geriatric Education (-)
- Clinical Contact with the Elderly (Days per week) (+)

*Note.* "+" indicates a predicted positive effect; "-" indicates a predicted negative effect.
socialization of podiatry students, professional socialization of podiatry students, and motivations for entering podiatry—-as predictors of both negative stereotypes of older people and negative attitudes toward treating elderly patients.

More specifically, the model suggests that non-white, female and lower socioeconomic background, associational and affectual solidarity between podiatry students and their grandparents, liberal political affiliations, liberal political ideologies, entering podiatry for intrinsic rewards, and positive attitudes toward geriatric education will reduce both negative stereotypes of the elderly and negative attitudes towards treating elderly patients. Conversely, however, entering the podiatric medical profession for extrinsic rewards will increase both negative stereotypes toward older people and negative attitudes toward treating elderly patients. The model also suggests that students more advanced in podiatry school and who spend more days per week spent in clinical contact with the elderly will increase both negative stereotypes of the elderly in general and negative attitudes towards elderly patients specifically.

**Theoretical Background**

A goal of social and behavioral sciences is the explanation of what causes individuals to develop certain attitudes and stereotypes (McBroom & Reed, 1992). This dissertation attempts to demonstrate that the development of stereotypes and attitudes of podiatry students are a product of the socialization received both before they enter school, and while they are in podiatry school, and motivations for becoming a podiatrist. The concepts and relationships depicted in Figure 1 are derived from four sociological perspectives--socialization theory,
cognitive dissonance theory, Allport's theory of prejudice and social exchange theory. These four theoretical perspectives are presented in detail in Chapter Two. However, this chapter concludes with a brief introduction and description of these four perspectives.

Socialization Theory

Socialization is defined as "a process of learning to participate in social life" (Mortimer & Simmons, 1978, p.422). Medical sociologists (e.g., see Colombotos, 1988; Colombotos & Kirchner, 1986; Simpson, 1979) divide socialization into pre-professional and professional facets. Research on medical students (cf. Colombotos 1969; Colombotos & Kirchner, 1986) suggests that stereotypes are formed by one's earlier experiences (i.e., pre-professional socialization) and through experiences learned during formal training (i.e., professional socialization).

Pre-Professional Socialization. Pre-professional socialization encompasses both childhood and adolescent socialization. Childhood and adolescent socialization theory point to the potential influence that podiatry students' gender, ethnic background, socio-economic background status, political affiliation, political ideology, and the bonds between respondents and their grandparents have on stereotypes toward older people and the attitudes they display towards elderly patients. The family as a socializing agent is responsible for the initial transmission of culture to the child (Erickson, 1950; Parsons & Bales, 1955). Moreover, the family can also socialize the children into certain gender (or sex) roles. Research on parental attitudes toward children suggests that both fathers
and mothers tend to emphasize aggressiveness and achievement in sons, while expecting daughters to be more delicate, weaker, and less assertive (Witkin-Lanoil, 1984, p.66-71). Therefore, appropriate beliefs, behavioral intentions and behaviors are typically learned within the family (Acock & Bengston, 1978; Glass, Bengston & Dunham, 1986).

In addition, the dissertation employs the McChesney and Bengston's (1988) intergenerational solidarity perspective to further explain the pre-professional socialization influence. Including an intergenerational solidarity perspective signifies the potential importance that bonds with grandparents can have on podiatry students' stereotypes and attitudes toward older people. Intergenerational solidarity refers to the cohesive bonds between individuals within the family group (e.g., between children and grandparents) (Bengston, Rosenthal & Burton, 1990; Jansen, 1952; McChesney & Bengston, 1988; Nye & Rushing 1969, p.134; Roberts & Bengston, 1990; Silverstein & Bengston, 1991).

Research on intergenerational solidarity posits six "distinct but interrelated" (Bengston & Schrader 1982, p.116) constructs. Two of these constructs-associational and affectual solidarity—are most relevant for examining the cohesion between podiatry students and their grandparents. Associational solidarity is "the frequency and patterns of interaction in various types of activities" and affectual solidarity is "the type and degree of positive sentiments held about family members, and the degree of reciprocity of these sentiments" (McChesney & Bengston 1988, p.23).

There is evidence that the amount of contact and the quality of the relationship between grandparents and their grandchildren affects the impact that grandparents have on their grandchildren. That is, grandchildren who have
more contact and a close relationship with their grandparents are more likely to be influenced by them (cf. Cherlin & Furstenberg, 1986; Matthews & Sprey, 1985; Roberto & Stroes, 1992). Furthermore, it seems reasonable to assume that grandparents who are more influential are likely to be perceived less negatively by their grandchildren. If true, then it would also logically follow that podiatry students who reported positive sentiments toward their grandparents and who visited their grandparents often when they were younger are less likely to display negative stereotypes toward the elderly or toward older patients.

Professional Socialization. Whereas pre-professional socialization focuses on the process of learning by the respondents before they enter professional school, professional socialization centers on the work-related, adult socialization, which takes place as people prepare to and actually enter the work force (Hall, 1994, p.92). A major sociological approach to professional socialization is the Mertonian school (Merton, Reader, & Kendall, 1957), which stresses education and training as primary determinants of socialization. Therefore, the dissertation examines the following three dimensions of professional socialization as potential predictors of negative stereotypes toward older people and negative attitudes toward treating elderly patients: 1) days per week spent in clinical contact with elderly patients; 2) the students’ attitudes toward the geriatric education received in podiatry school; and, 3) academic class status (i.e., first-year, second-year, third-year or fourth-year).

In addition to using Merton et al.’s (1957) conceptual framework, the dissertation also employs Festinger’s (1957) cognitive dissonance theory and Allport’s (1954) theory of prejudice to derive the hypotheses concerning the
effects of professional socialization. Cognitive dissonance theory describes a situation in which either some of the facts that someone faces are inconsistent with others, or someone's experiences are incongruent with what should be happening (Wallace & Wolf, 1991, p.217). The dissertation uses cognitive dissonance theory because studies on professional schools have found that students suffer a great deal of anxiety as they confront the large amounts of information to be learned, and uncertainty about how to apply their limited knowledge in dealing with clients or patients (see Hall, 1994, p.91-93; Light, 1980).

Allport's (1954) theory of prejudice claims that intergroup interaction increases prejudice when the following three events occur: 1) the groups have unequal status; 2) the interaction between the group members is not sanctioned by authorities; and 3) the groups have different goals and attitudes. The dissertation employs Allport's theory because podiatry students and elderly individuals have different statuses, goals and attitudes. These differences could, in turn, cause podiatry students to have negative stereotypes and attitudes toward older people.

**Social Exchange Theory**

A primary tenet of social exchange theory is that people are rational and base their actions on what they perceive to be the most effective means to their goals (Emerson, 1987; Homans, 1961; Maris, 1970). People choose whether to participate in an activity after they have examined the costs and the rewards of alternative courses of action, and have chosen the most attractive (Wallace & Wolf, 1991); or in Simmel's (1966) assertion, "all contacts among men rest on the
schema of giving and returning the equivalence*. In other words, social exchange theory attempts to explain the attitudes and behaviors of individuals in terms of self-interest.

Social exchange theory provides a useful framework for predicting why podiatry students enter podiatry (i.e., for extrinsic versus intrinsic rewards), which in turn can affect their orientations toward the elderly and elderly patients. Hall (1994, p.88-93) claims that individuals are motivated to enter professions for both extrinsic and intrinsic rewards. Extrinsic rewards come from outside of the professional domain, such as money. Intrinsic rewards are those which derive from an inner desire for self-expression, such as service to others (Hall, 1994, p.88-89).

The professional ideology of podiatry, which is very pertinent to the health care needs of elderly patients, is to help people overcome pain or discomfort in their feet with the least amount of invasive and expensive surgical procedures (i.e., clipping toenails) (Chumbler & Robbins, 1994; Helfand, 1987a, 1987b). For podiatrists, performing surgery as compared to clipping toenails renders more extrinsic rewards such as prestige and income (Chumbler & Robbins, 1994). Thus, it is plausible that podiatry students who enter the profession to earn a high income, rather than to help others, could be preoccupied with performing expensive foot procedures (e.g., surgeries). However, those who enter for the intrinsic rewards could be more in line with the ideology of the profession, and not so preoccupied in earning money. In sum, this dissertation uses some tenets of social exchange theory as a theoretical basis for podiatry students’ entrance into the profession. In fact, the dissertation uses motivations for entering podiatry for extrinsic and intrinsic rewards to
determine if it influences podiatry students' stereotypes and attitudes toward older individuals.

In sum, this chapter presented the research problem and the important health care function that podiatry performs for older Americans. Moreover, this chapter introduced the variables that are used as potential predictors of podiatry students' negative stereotypes toward older people and negative attitudes toward treating elderly patients. This chapter concluded with an introduction to the concepts and theoretical perspectives. However, the next chapter examines, in further detail, these concepts and theoretical perspectives.
CHAPTER TWO

Theory, Conceptualization and Review of Literature
This chapter has five purposes. First, it clarifies some of the dissertation's salient concepts (e.g., "stereotypes toward the elderly" and "the elderly"). Second, the chapter examines, in detail, socialization theory, cognitive dissonance theory, Allport's theory of prejudice, and social exchange theory. These perspectives are employed to explain the relationships among the concepts displayed in Figure 1 (please see Chapter One). Third, following the discussion of each of these perspectives, the chapter conceptualizes each of the independent variables. Fourth, it introduces and reviews literature that deals with medical students' stereotypes and/or attitudes toward elderly patients. Fifth, based upon the theoretical perspectives and a critical review of the literature, the chapter derives hypotheses regarding the pre-professional socialization and professional socialization of podiatry students and their motivations for entering podiatry as potential predictors of negative stereotypes toward older people and negative attitudes toward treating elderly patients.

**Conceptualization of "Ageism" and "the Elderly"**

Palmore (1990, p.4) defines ageism as "any prejudice or discrimination against or in favor of an age group". "Prejudice against an age group" is a negative stereotype about that group (e.g., all old people are grouchy), or a negative attitude toward that group (e.g., the treatment of old people is too time consuming) (Palmore, 1990, p.4). "Discrimination against an age group" is the

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1 This dissertation uses "older people", "the elderly" and "the aged" interchangeably. This is consistent with the way many sociologists of aging have handled these concepts (e.g., see Cockerham, 1991; Kart, Metress & Metress, 1988; Palmore, 1990).
consuming) (Palmore, 1990, p.4). "Discrimination against an age group" is the inappropriate negative treatment of members of that age group (e.g., health care professionals providing inadequate care to elderly patients because of their age). This dissertation focuses on negative stereotypes and negative attitudes and not discrimination. Thus, the present study does not directly assess the ageism of podiatry students. Negative stereotypes are derogatory beliefs about a group that is based upon mistaken or exaggerated perceptions (Palmore, 1990, p.18). Moreover, negative attitudes are "negative feelings about a group" (Palmore, 1990, p.18).

The Elderly

As a concept, "the elderly" has a rather ambiguous definition, use, and purpose (e.g., see Binstock, 1992; Cook, 1992, and Ferraro, 1992 for polemics about "ageism" and "the elderly"). In general, the controversies concern making generalizations that treat the elderly as a homogeneous group when they are in fact a very heterogeneous demographic sub-group. As Cook (1992, p.292) notes: "Yet, intellectually we know that the most powerful fact on which all gerontologists agree is that the elderly are heterogeneous" (Cook, 1992, p.292). Irrespective of this claim, recent research on the attitudes and stereotypes toward older people treat "the elderly" as a single age group (e.g., Beland & Maheux, 1990; Ferraro, 1992).

Researchers which treat "the elderly" as a heterogeneous group (e.g., see Cook, 1992; Neugarten & Hagestad, 1976; Sanders, Montgomery, Pittman, & Balkwell, 1984) divide them into one of two classifications: 1) young-old and old-old; and, 2) young-old, old-old, and oldest old. Across these classifications,
generally, the young-old represents people 65-74 years of age, old-old 75-84 years of age, and oldest-old 85 years of age and older. In the present study, the podiatry students rate stereotypes about older people who are 65-74 years of age and then for older people 75-99 years of age. The dissertation employs these two, rather than the three age classifications suggested by Montgomery et al. (1984) because virtually no patients seen by podiatrists are 100 years of age or older (e.g., see USDHHS, 1990).²

Conceptualization of Stereotypes and Attitudes

Stereotypes are a subset of attitudes. In fact, both are separate, but correlated concepts (Hooyman & Kiyak, 1988, p.525; Palmore, 1990, p.18-19; Stephan, Stephan, Stefanenko, Ageyev, Abalakina & Coates-Shrider, 1993). In other words, negative stereotypes can lead to negative attitudes (Palmore, 1990, p.18). Contemporary definitions of attitudes refer to a cognitive and affective organization of beliefs, evaluations or values held about a particular object or group of objects (Hooyman & Kiyak, 1988, p.525; McBroom & Reed, 1992).

Stereotypes are mistaken or exaggerated beliefs about a group (e.g., the elderly) (Hooyman & Kiyak, 1988, p.525; Palmore, 1990, p.18).

Moreover, stereotypes affect intergroup relations. At the individual level, they bias information processing concerning in-group and out-group members and facilitate the creation of self-fulfilling prophecies (Stephan, 1985, 1989;

² A convenient sample of 34 podiatry students, who were not in the study sample, completed a stereotypes toward older people scale for all three age classifications. Seven or (21%) indicated they had difficulties making distinctions between people 75-99 and ones who are 100 years of age and older. The means for each items were virtually identical. Therefore, the dissertation employs two age classifications (i.e., 65-74 and 75-99) of older people.
Stephan & Rosenfield, 1982; Stephan & Stephan, 1993; Stephan et al., 1993). At the group level, stereotypes often serve to differentiate the in-group from the out-group. Members of an in-group have common backgrounds and resemble the other members (i.e., they have common goals and pursuits). The out-group consists of individuals that in-group members do not identify or affiliate, and who treat with indifference (Stephan & Stephan, 1993; Stephan et al., 1993). Typically, members of in-groups treat members of out-groups with dislike (Stephan & Stephan, 1993; Stephan et al., 1993). Therefore, if podiatry students have negative stereotypes toward older individuals, then they would discriminate themselves from older people. In fact, the podiatry students would probably feel superior towards them.

Since it is plausible that podiatry students could separate themselves from older individuals, stereotypes may be incorporated into the in-group’s ideology (i.e., podiatry students) and used to justify and explain behavior toward the out-group (i.e., elderly patients) (Stephan et al., 1993; Stroebe & Insko, 1989). This suggests that if podiatry students believe that older people are irritable, useless, inactive, and that no satisfaction can be received from treating them, then they could rationalize their dubious attitudes, behavioral intentions and/or behavior towards older patients (cf. Beland & Maheux, 1990; Palmore, 1988; Stephan et al., 1993). If these traits are not detected, and consequently diminished or eradicated, then podiatry students could continue to have negative stereotypes. This in turn, could lead to an unfavorable treatment of elderly patients by practicing podiatrists.
Conceptualization of Attitudes toward Treating Elderly Patients

Drawing on the previous discussions, this study combines the conceptualization of both "attitudes" and "the elderly", to form "attitudes toward treating elderly patients". In a study of medical students' attitudes toward treating elderly patients, Beland and Maheux (1990) conceptualize "attitudes toward treating elderly patients" by the following two dimensions: 1) technical aspects of medical care (i.e., the efficacy of rendering medical care to elderly patients); and 2) psychosocial aspects (i.e., the level of satisfaction that medical students receive from treating elderly patients). Adapted from this conceptual framework, the present study employs the following conceptualization for possible types of podiatry students' negative attitudes toward treating elderly patients: 1) uselessness of treating elderly patients; and 2) dissatisfaction from treating elderly patients.

An important focus of this dissertation is to examine what variables influence both the negative attitudes toward treating elderly patients and negative stereotypes toward older people. The dissertation derives the predictor variables from "pooling" predictors from prior studies. However, the dissertation obtains the hypothesized direct effects for each of the variables from four sociological theories—socialization theory, cognitive dissonance theory, Allport's (1954) theory of prejudice, and social exchange theory.
Theoretical Perspectives

Socialization Theory

Sociologists have an enduring interest in studying the influence of socialization on individuals (e.g., see Glass et al., 1986; Merton, 1957; Parsons, 1951; Wentworth, 1980). Socialization "involves the acquisition of attitudes and values, of skills and behavior patterns making up social roles established in the social structure" (Merton, 1957, p.41). Or, in other words, socialization is a process through which individuals are inducted into their culture.

Scholars of socialization (e.g., see Brim, 1960; Brim & Wheeler, 1966; Copp, 1992; Glass et al., 1986; Parsons, 1951; Merton, 1957; Simpson, 1979; Wentworth, 1980) show that the manner in which individuals are socialized affects their future attitudes and behaviors. Socialization theory is very eclectic in its focus. For instance, it focuses on different stages of the life cycle from political views and behavior (Renshon, 1977) to professional values and performance (Light, 1983; Merton et al., 1957; Simpson, 1979). Researchers bifurcate socialization into two typologies: 1) childhood (primary or pre-professional); and 2) adult (secondary or professional).³ Scholars use the terms within each typology interchangeably.

³ Some sociological research (e.g., see Parsons & Bales, 1955; Wentworth, 1980) suggests that secondary socialization could be divided into two entities: 1) secondary, and 2) adult. Secondary socialization occurs in late childhood and adolescence, when the child is influenced by adults and peers outside of the family. Adult socialization arises when the person leaves the traditional norms and enters new statuses. According to Brim (1968), the main thrust of adult socialization is the acquisition of social roles. Thus, in the context of this study, the respondents leave a previous role (i.e., as an undergraduate college student), and acquire a new role (i.e., as a podiatry student) to become a podiatrist.
Sociological Perspectives on Socialization

Parsons (1951) and Merton (1957) are among the first contemporary sociologists to develop and extend the sociological understanding of socialization. In fact, both use medical students as their unit of analysis in their research on socialization. Specifically, Parsons focuses on medical students' pre-professional and professional socialization, whereas Merton primarily focuses on the professional socialization of medical students. More recent research also emphasizes the influence of both pre-professional and professional socialization on medical students' attitudes (Beland & Maheux, 1990; Colombotos, 1988; Colombotos & Kirchner, 1986; Mechanic, 1983).

Likewise, both mid- (i.e., Parsons and Merton) and late-twentieth century sociologists (e.g., Colombotos, 1988; Conrad, 1988) conceptualize pre-professional and professional socialization, similarly. Simply put, sociologists generally perceive pre-professional socialization experiences as reflecting students' social backgrounds, such as their socioeconomic, ethnic and political backgrounds, and their gender. Additionally, sociologists generally perceive professional socialization as representing the influence of geriatric education and training on their attitudes—an orientation that focuses research on medical students' clinical and classroom education.

Pre-Professional Socialization

Pre-professional socialization refers to an individuals' internalization of values, attitudes, and beliefs in the early years of their life cycle (Bengston, 1975; Bengston & Troll, 1978; Glass et al., 1986). Typically, families provide systematic
socialization through which children are taught the norms of the social order (Glass et al., 1986). In fact, recent research on the intergenerational transmission of attitudes reveals that parents' and grandparents' attitudes are significant positive predictors of children's attitudes in adulthood (Acock & Bengston, 1980; Bengston, 1975; Dalton, 1980; Smith, 1983).

**Parsonian View of Pre-Professional Socialization**

According to the Parsonian view of pre-professional socialization (e.g., see Parsons, 1951, p.205), for individuals to become socialized--thus becoming a functioning element in the social system--they must learn proper role expectations. More specifically, children learn their parent's values, beliefs and attitudes through both direct teaching and indirect observation and are passive actors as they maneuver their way through their childhood and adolescence (Glass et al., 1986; Parsons, 1951). Thus, "socialization brings actors into existence, or that is, constitutes them according to socially sanctioned expectations and need dispositions" (Wentworth, 1980, p.33-34). Overall, Parsons believes that childhood socialization is the basis for transition to the roles that are to be encountered later in life (Parsons & Bales, 1955, p.17; Wentworth, 1980, p.36).

Based upon the Parsonian framework, females, ethnic minorities such as Black Americans, those who are politically liberal and those who have lower socioeconomic backgrounds are socialized into distinct roles vis-a-vis males, White Americans, political conservatives and wealthy people (Lindermith, Strauss & Denzin, 1989; Wentworth, 1980). For instance, research demonstrates that Black youths as compared to White youths are socialized in American society to
hold older people in high regard, which can lead to less ageist attitudes (Lucas & Roy, 1992; Tate, 1983; Taylor & Chatters, 1986).

Likewise, Beland and Maheux (1990) and Weiler, Orgren and Olafson (1989) show that women medical students compared to male students are less likely to exhibit negative stereotypes toward the elderly in general and as patients in particular. However, neither of these studies prove that the findings are due to socialization. Additionally, Willie (1988) demonstrates that both middle and upper class families are more individualistic than lower class families (i.e., middle and upper classes tend to strive to fulfill him/herself) and show little concern or assistance for older individuals. Furthermore, Colombotos (1969) and Colombotos and Kirchner (1986) find that physicians who are socialized in politically liberal families vis-a-vis politically conservative families are more inclined to have affective and expressive attitudes toward their patients. In a similar light, liberal attitudes has a negative association with proposals to ration health care for the elderly (Cockerham, 1991, p.70-105).

In sum, research suggests the socialization that individuals receive before entering a professional school can influence their beliefs and attitudes toward older individuals. This socialization process appears to vary across social status variables such as gender, ethnic background, political ideology and socioeconomic status. The empirical findings on the social status variables are consistent with the Parsonian framework (please see Parsons & Bales, 1955). Therefore, childhood and adolescent socialization can be viewed as an impetus for the transition to the roles that are to be encountered in later life (Parsons, 1951, p.205; Parsons & Bales, 1955, p.17). Overall, contemporary sociologists, such as Parsons and Merton, note the influence that the family, in general, can have
on the attitudes and personality of their children. However, since this
dissertation focuses on young adults’ stereotypes and attitudes toward older
people, relationships with grandparents could influence the respondents’ view
toward elders. Thus, the next section explores the potential socialization
influences that grandparents have on podiatry students’ stereotypes and attitudes
toward older people.

**Intergenerational Solidarity Perspective of Pre-Professional Socialization**

This dissertation examines the cross generational contacts and feelings
between podiatry students and their grandparents. Sociologists refer to the cross
generational contacts and integrative bonds between family members as
intergenerational solidarity (e.g., see Acock, 1984; McChesney & Bengston, 1988;
Roberts et al., 1991). Alternatively, intergenerational solidarity focuses on the
bonds or relationships between children and parents, and children and
grandparents. However, some studies (e.g., see McChesney & Bengston, 1988;
Roberts et al., 1991) theorize that intergenerational solidarity emerges from the
works of Durkheim and Tonnies. In the following section of this chapter, the
dissertation briefly examines these theorists’ works, and how it relates to
intergenerational solidarity between family members.⁴

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⁴ When Durkheim and Tonnies were formulating their works on "solidarity", it
was not normative to have grandparents. This dissertation is not attempting to
claim that Durkheim and Tonnies intended for their works on solidarity to refer to
linkages between grandparents and grandchildren. Instead, the dissertation
incorporates their works to show that the concept can be traced to, and borrows
much from classical sociological theorists (cf. McChesney & Bengston, 1988; Roberts
et al., 1991).
Classical Sociological Perspectives on Intergenerational Solidarity

Durkheim’s and Tonnies’ Influence. Plausibly, the first sociological precursor to intergenerational family solidarity is Durkheim’s (1893/1933) *The Division of Labor in Society*. In this book, Durkheim proposes that certain societal forces, such as pre-industrialization and industrialization influence individuals’ ties to one another. A pre-industrial society reflects mechanical solidarity. In mechanical solidarity individual ties (or bonds) to the collectivity are maintained by internalization and endorsement of traditional norms and customs (Durkheim, 1893/1933, p.109).

However, as society becomes more industrialized, tradition as a cohesive social force weakens and the subsequent allocation of laborers fall into distinct yet interdependent functions (Durkheim, 1893/1933, p.63). The form of solidarity that emerges in an industrial society is known as “organic”. In organic solidarity, members of society are interdependent, complementary or mutually dependent upon one another.

Like Durkheim, Tonnies (1957) observes the differing basis of solidarity in human relations. He asserts that stronger bonds are likely to develop between individuals who have extensive, normatively prescribed obligations (Gemeinschaft) to one another (e.g., family members). Conversely, Tonnies claims that reciprocal exchange relations (Gesellschaft) are characterized by weaker bonds due to the restrictedness of obligations. In sum, both Durkheim and Tonnies claim that normative commitments and obligations are powerful bases for group solidarity. The following section shows how McChesney and Beagston
(1988) extend the theoretical development of Durkheim and Tonnies to contemporary intergenerational relations between family members.

**Contemporary Perspectives on Intergenerational Solidarity**

Some recent research (cf. Bengston & Schrader, 1982; McChesney & Bengston, 1988) proposes that similarities among family members reflect Durkheim's mechanical solidarity (or shared norms among members of society). Thus, family members who share similar interests, goals, values, orientations and viewpoints would have stronger bonds (see McChesney & Bengston, 1988). Alternatively, family members can also be interconnected due to the different roles they perform, which is similar to Durkheims' organic solidarity (cf. Bengston & Schrader, 1982; McChesney & Bengston, 1988). Recall that organic solidarity refers to a society that has a division of labor, where work is specialized and people are highly interdependent. Therefore, male adult children who take care of their elderly parents could perform instrumental activities of daily living tasks such as mowing the lawn, doing heavy housework, while the female children could assist in performing activities of daily living tasks such as preparing meals and bathing/showering.

Inspired by these Durkheimian perspectives, Bengston and Schrader (1982) develop six concepts to measure intergenerational solidarity. This dissertation employs two of these concepts, associational solidarity and affectual solidarity, as independent variables to examine the intergenerational relationships between podiatry students and their grandparents. In other words, the dissertation determines if both affectual and associational solidarity have statistically
significant direct effects on podiatry students' stereotypes toward older people and attitudes toward treating older patients.  

Solidarity between Grandparents and Grandchildren

No longer are grandparents a scarce entity in the life of a child (Franks, Hughes, Phelps & Williams, 1993). Today, 94% of all older adults with children are grandparents and nearly 50% are great grandparents (Roberto & Stroes, 1992). There is only a small amount of research that focuses on grandchildren's perceptions of the role grandparents play or have played in their lives (Dellman-Jenkins, Papalia, & Lopez, 1987; Roberto & Stroes, 1992). These studies indicate that the relationship between grandchildren and grandparents are very important in the formation of the former's attitudes and values.

Most of the past research on grandparents and grandchildren suggest that grandparents possess knowledge and experiences that are transmitted to their grandchildren (e.g., see Acock, 1984; Acock & Bengston, 1978; Bengston, 1975; Franks et al., 1993; Robertson et al., 1985; Roberto & Stroes, 1992). Thus, it is plausible that a close relationship with grandparents can give students a sense of self, family history, and tradition that may reduce negative stereotypes towards older people as a group (cf. Corbin, Kagan & Metal-Corbin, 1987; Franks et al., 1993; Peacock & Talley, 1984; Tice, 1985; Roberto & Stroes, 1992).

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5 The reader should refer to McChesney and Bengston (1988) for further explications of the four concepts that are not used in this dissertation.
Associational Solidarity. Mangen and Miller (1988, p.99) defines associational solidarity as "the degree to which family members share activities with other family members". Associational solidarity emerges from the functionalist tradition within sociology (i.e., more contact implies a greater degree of solidarity). In particular, Aldous and Hill (1965) claim that associational solidarity draws from the work of Durkheim's mechanical solidarity, claiming that activity leads to shared interests and, thus, transmitting more elements in the family's cultural heritage.

Therefore, following Durkheim's mechanical solidarity and logic, those podiatry students who visited their grandparents frequently during childhood and adolescence should have less stereotypical views towards older people. In other words, respondents who had more interpersonal exposure and interaction with their grandparents (or a great deal of associational solidarity) could see them as human beings just like themselves. This experience, in turn, could cause podiatry students to not hold mistaken and exaggerated beliefs about the elderly (cf. Acock, 1984; Roberto & Stroes, 1992; Glass et al., 1986).

Research in the sociology of the family shows that intergenerational contact is a common and longstanding feature of American family life (Brody, 1981; Shanias, 1980; Silverstein & Bengston, 1991; Glass et al., 1986). Such intergenerational interaction may be face-to-face or at a distance (e.g., letter writing, telephone conversations) (Acock, 1984; Bengston & Mangen, 1988). More recent research on the intergenerational interaction between grandparents and grandchildren suggests that they have developed a consistent pattern of contact (Kennedy, 1989; 1992; Roberto & Stroes, 1992). For instance, in a recent sample of college students, Roberto & Stroes (1992) find that, on average, grandchildren
interacted with their grandparents once a month or less when they were growing up. Similarly, Kennedy (1989) reports that when college students were younger, 29% saw their grandparents once or twice a month, while 47% visited them several times a year or less, when they were younger. Across both studies, college students do not visit their grandparents for a very long time, but perceive that the time with them is important.

Similarly, the frequency of contact grandchildren had with their grandparents during their childhood directly affects the type (i.e., closeness) of relationship they develop and maintain (Kennedy, 1989; 1992). In particular, Kennedy (1992) finds that grandchildren who visited their grandparents more often are more likely to feel intimately close to them. Following Kennedy’s and Roberto and Stroes’ recent studies, logic would suggest that podiatry students who frequently visited their grandparents during their childhood and adolescence would be more aware of older individuals and appreciate their existence; this, in turn, would cause them to be less likely to have negative stereotypes toward older people and less likely to display negative attitudes towards treating them as patients.

Affectual Solidarity. Affectual solidarity is the "type and degree of positive sentiments held about family members, and the degree of reciprocity of these sentiments" (Bengston & Schrader, 1982, p.116). Affect is a pivotal factor of attitudinal congruence in intergenerational relationships (Acock, 1984). For instance, some research (e.g., Acock, 1984; Bengston, 1985; Franks et al., 1993; 6 Kennedy (1992) measures "frequency of seeing grandparent" by one item where 1 = less than once a year to 5 = once a week.
Roberto & Stroes, 1992) claims that the stronger the bonds between grandparents and children, the more central the grandparents will be as significant others. If grandparents are viewed as significant others to their grandchildren, then the latter should be less likely to possess negative stereotypes toward older people (cf. Franks et al., 1993; Roberto & Stroes, 1992; Kennedy, 1989; 1992)

A recent study of high school students finds that grandparents are often viewed as confidants and companions by their grandchildren (Dellman-Jenkins et al., 1987). In addition, Kennedy (1989) finds that college students maintain a relationship with their grandparents because they enjoy being with their grandparents. Research (for example see Franks et al., 1993; Roberto & Stroes, 1992) also finds that respondents who report strong affection towards their grandparents are less likely to display negative stereotypes toward older people. In short, the previous research suggests that as grandchildren mature, they form voluntary relationships that emerge in strong affection for older individuals, in general. The grandparents’ affection for their grandchildren can have positive outcomes for the grandchildren’s future values, goals, life choices and religiosity (Franks et al., 1993). Accordingly, grandchildren who have close affection towards their grandparents are less likely to display negative stereotypes toward older people.

In sum, this section presents evidence that podiatry students can be socialized to view elderly individuals in either a positive or negative way before they enter podiatry school. More specifically, this section argues that due to their gender, ethnicity, socioeconomic background, political affiliation and ideology, and relationships with grandparents, respondents could be socialized to
view older individuals in such a way that can influence their stereotypes and attitudes.

Therefore, based upon the above discussion of pre-professional socialization theory, the intergenerational solidarity perspective, and findings from previous studies, this dissertation hypothesizes the following:

**H1:** Non-white podiatry students are less likely to have negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically.

**H2:** Female podiatry students are less likely to display negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically.

**H3:** Podiatry students who are from lower socioeconomic backgrounds are less likely to have negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically.

**H4:** Podiatry students who have liberal political affiliations are less likely to have negative stereotypes of older people in general and negative attitudes toward elderly patients specifically.

**H5:** Podiatry students who have liberal political ideologies are less likely to have negative stereotypes of older people in general and negative stereotypes toward elderly patients specifically.

**H6:** The more frequently that podiatry students visited their grandparents when they were growing up (associational solidarity), the less likely they are to

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7 Hereafter, the dissertation uses an "H" to signify "Hypothesis".
display negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically.

H7: Podiatry students who had closer bonds with their grandparents when they were growing up (affectual solidarity) are less likely to demonstrate negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically.

In addition to the potential influences of pre-professional socialization, podiatry students could be affected by professional socialization variables: academic class status, attitudes toward their geriatric education and days per week spent in clinical contact with elderly patients. Therefore, the following section discusses professional socialization.

**Professional Socialization**

The dissertation employs Merton et al.'s (1957) conceptual model of professional socialization of medical education. It also employs two theoretical perspectives—Festinger's (1957) cognitive dissonance theory, and Allport's (1954) theory of discrimination—to ascertain whether podiatry students' clinical contact with elderly patients, podiatry students' attitudes toward their geriatric education, and their present academic status (i.e., first-year, second-year, third-year or fourth-year) impact negative stereotypes toward older people and negative attitudes toward treating elderly patients. Before Merton et al.'s conceptual model is presented, the dissertation conceptualizes professional socialization.
Professional socialization is defined as the process of accommodating one's identity to career and organizational demands (Simpson, 1979, p.3-16). The process of professional socialization occurs during professional education and conforms students to specific situations salient to the institutions' particular expectations and contexts (Simpson, 1979, p.6). In short, professional socialization pertains to specific learning of professional roles.

This specific expert role-oriented learning takes place in professional schools, and can have functional utility for that particular profession (Mortimer and Simmons, 1978, p.434). Therefore, an ultimate goal of professional socialization in medical and podiatry schools should be on developing the professional role of treating patients (Light, 1983). In their comprehensive examination of Cornell University medical students, Merton et al. (1957) argue that medical education socializes medical students to develop a professional role of treating patients.

**Merton et al.'s Model of Professional Socialization of Medical Education**

Merton et al. (1957, p.287) define professional socialization as the process "by which people selectively acquire the values and attitudes, the interests, skills, and knowledge---in short, the culture---current in the groups of which they are, or seek to become, a member". Merton and his associates' model focuses on the acquisition of the professional role by students during professional education. A major objective of the model is to assess how the skills and knowledge related to
a professional role affect attitudes (also see Merton, 1957, p.40; Merton, 1957, p.287-8). 

Thus, social learning occurs during professional education where norms are imparted and attitudes are formed to concur with the norms, which in turn, develop a professional self. As podiatry students are socialized by podiatric medical institutions and instructors, they should learn the role of how to view older people and how to treat them as patients. If the podiatric medical institutions and instructors are not effectively imparting the appropriate (education) and skills (training) regarding older people in general and as patients, in particular (Merton, 1957, p.41), then the students could carry negative stereotypes and attitudes toward older people into podiatric medical practice (cf. Simpson, 1979, p.9-13). In sum, the dissertation conceptualizes the professional socialization of podiatry students' negative stereotypes and negative attitudes toward treating elderly patients in the following two ways: 1) didactic teaching of geriatrics by podiatric medical educators; and 2) professional training through the means of clinical contact with elderly patients.

**Medical Education**

Professional school programs such as colleges of podiatric medicine are pivotal structures that transform the novice from lay culture to the status of

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8 Merton and his associates' account of professional socialization, with phrases such as "selectively acquire" and "seek to become", suggest that the individuals have some autonomy; however, one researcher claims that this is a fraudulent assumption. Wentworth (1980, p.37) asserts the following: "Merton presents the actor as helplessly driven by needs to conform and belong. Consequently, while socialization may be 'selective', what is acquired in the process is limited (by definition) to potentially functional role characteristics that become fused to the role self". Thus, Wentworth would argue that Merton et al. view medical students as passive actors.
practitioner (Hughes, 1958; Simpson, 1979). In particular, professional schools create and transmit the skills from which the profession is based. Weber (1954, p.180-95) observes that professional skills are a form of property on which one can collect "rent" and develop new markets. Thus, medical and podiatry educators disproportionately influence the way professional work is organized and carried out (cf. Light, 1983). In the context of this dissertation, colleges of podiatric medicine should develop the technical abilities of podiatry students so they can perform the appropriate duties of effectively treating elderly patients. Simpson (1979) and Kadushin (1969) claim that professional students see how the role is intended to be carried out through both classroom and clinical education. As noted in Chapter 3 and shown in Figure 1, the dissertation employs three variables to test professional socialization: academic class status; attitudes toward the geriatric education received in podiatry school (referred to hereafter as attitudes toward geriatric education); and, days per week spent in clinical contact with the elderly.

**Academic Class Status.** Academic class status is a measure of knowledge and skill (cf. Simpson, 1979, p.29). Passing from one academic year to the next indicates that students want to remain in the program and "have acquired the qualifying knowledge and skills" (Simpson, 1979, p.29). This arrangement allows students to drop out and the school to "weed them out". Academic class status, as a measure, can be attributed to Simpson’s (1979) theoretical development of and extension of Merton et al.’s (1957) professional socialization model, which is described below.
Attitudes toward Geriatric Education and Clinical Contact
with the Elderly. Students' impressions of their geriatric education and the
number of days per week that podiatry students have clinical contact with the
elderly is an extension of Merton's (1957, p.41-42) model:

"Students learn not only from precept, or even from deliberate
example; they also learn from sustained involvement in that society
of medical staff, fellow-students, and patients which makes up the
medical school as a social organization".

Some research (e.g., see Colditz, 1983; Fitzpatrick, O'Donnell, Getson, Sahler,
Goldberg, & Greenberg, 1993; Kutner, 1978) demonstrates that medical educators
have trouble developing and implementing curricula and training which keeps
pace with the health-care needs of the chronically ill. Traditionally, medical
educators assign students to in-patient settings during their clerkships, resulting
in little opportunity to observe the principles of long-term care such as
continuity and adherence (Fitzpatrick et al., 1993; Kutner, 1978). Fitzpatrick et
al., (1993) conclude that the context in which the medical students have clinical
contact with elderly patients (i.e., ambulatory as compared to long-term care
situations) affects medical students' stereotypes toward older people and their
attitudes toward treating elderly patients. That is, medical students who have
clinical contact with chronically ill old patients are more likely to have negative
stereotypes and attitudes.

As proposed in Chapter One, the rationale for the direct effects from
academic class status, attitudes toward geriatric education and clinical contact
with the elderly on negative stereotypes toward older individuals and negative
attitudes toward treating elderly patients is guided by Festinger's cognitive
dissonance theory, Allport's theory of prejudice, and findings from previous studies.

**Festinger's Cognitive Dissonance Theory**

Among others, social psychological theories have an interest in examining individuals' inconsistency in their cognitive structures (Wallace & Wolf, 1991). Heider (1946) first postulated that when an individual's cognitions did not exist in a balanced state, change would likely occur that would result in balance. If such change does not occur, then psychological tension will occur (Wilcox, Linzey & Jelen, 1991). One cognitive consistency theory which grew out of Heider's (1946) work is Festinger's (1957) cognitive dissonance theory.

Festinger posits that when people have in mind two or more inconsistent (or dissonant) beliefs (or cognitions), they experience a state of arousal which is unpleasant. In other words, cognitive dissonance occurs when "someone's experiences are not in line with what 'ought' to be happening" (Wallace & Wolf, 1991, p.217). Individuals try to reduce their unpleasantness by reducing one or more of their beliefs (Fishbein and Ajzen, 1975). However, the "magnitude of the dissonance would be reduced if additional cognitions were added or if certain existing cognitions were bolstered in their salience" (Wilcox et al., 1991, p.248).

Cognitive dissonance theory would predict that those podiatry students who have negative attitudes and stereotypes toward older individuals should experience some dissonance. As stated in Chapter One, podiatry is the health care profession that treats a high proportion of elderly individuals. Since elderly patients are so salient for the podiatry profession, the magnitude of this dissonance could be large for those students with negative views toward older
individuals (cf. Wilcox et al., 1991). Dissonance could occur more often for those who enter podiatry to specialize in surgery, sports medicine, or pediatrics. That is, older individuals as compared to younger or middle-aged individuals are less likely to be athletes (see Holloway, 1987). Moreover, as stated in Chapter One, older individuals are more likely to need primary foot care, while middle-aged women and men are more likely to have foot surgeries (Holloway, 1987; Weiner et al., 1987; USDHHS, 1990).

Podiatry students might reduce their cognitive dissonance in several ways. First, they might change their cognitions about older individuals. Second, during their clinical training, podiatry students might choose to remain uninterested in or disregard them, thereby reducing the salience of elderly patients and the subsequent dissonance it might cause. Therefore, it is plausible that the longer podiatry students remain in school, they could align their negative stereotypes and attitudes with other students who also hold negative views toward older people to resolve their dissonance. More specifically, as podiatry students progress through their four years of school they could seek out and subsequently be influenced by those peers who also have negative stereotypes and attitudes toward older people.

One route toward dissonance reduction would be to emphasize, through geriatric education in podiatry school, the salience of cognitions that justify the elderly in general and as patients in particular. Podiatric medical educators create their geriatric curriculums so that appropriate facts about older individuals are presented (cf. Helfand, 1987a), which in turn diminishes negative attitudes and stereotypes toward older people (Palmore, 1990). Furthermore, if older individuals are regarded--through geriatric instruction or through other
educational experiences—as necessary to pediatric medical practices, then
dissonance might be reduced. However, Festinger’s theory suggests that this type
of dissonance reduction cannot fully succeed, and that only those who completely
change a cognition (e.g., change their minds about older individuals) will
experience diminished cognitive dissonance.

Allport's Theory of Prejudice

The dissertation employs Allport’s (1954) theory of prejudice to help
explain podiatry students’ negative stereotypes toward older people and their
negative attitudes toward treating elderly patients. More specifically, this theory
is used in regards to the predictor variable, days per week spent in clinical
contact with the elderly, which represents professional socialization. In The
Nature of Prejudice, Allport (1954) notes that intergroup interaction increases
prejudice when the following occur: 1) the groups have unequal status; 2) the
groups have different goals and attitudes.

As advanced in Chapter One, it is plausible that podiatry students
perceive that they are in the in-group, with older people being in the out-group.
Accordingly, in-group members tend to stereotype out-group members (Stephan &
Stephan, 1993; Stephan et al., 1993). Following Allport’s theory and research on
the differences between out-groups and in-groups, podiatry students should
perceive their status as different than that of the elderly in general and as
patients in particular.

Second, it is also likely that podiatry students would have different goals
than that of elderly patients. For instance, when an older individual enters a
foot clinic logic would suggest that their primary goal is to have their feet treated. However, podiatry students who are treating these patients may see it as an educational "rite of passage" that they have to perform in order to progress through podiatry school. In fact, podiatry students have numerous other educational responsibilities (Chumbler & Robbins, 1994). Therefore, the podiatry students may not feel that treating elderly patients is a top priority.

Logic could suggest that the more contact an individual has with one in another group, the more likely the prejudice will diminish. However, Allport (1954, p.250-267) claims the converse. Specifically, he concludes that by increasing contact with individuals, prejudice will increase. It may be that most people have some degree of prejudice, before they have contact with individuals from another group (Allport, 1954, p.267). Therefore, podiatry students' negative stereotypes and attitudes could worsen, even if they come into more contact with older individuals.

Findings from Previous Studies specific to Professional Socialization. Linn and Zeppa (1987), Warren et al. (1983) and Weiler et al. (1989) find that medical students who have favorable attitudes toward their geriatric education are less likely to have negative stereotypes toward older people and to have negative attitudes toward treating the elderly. Furthermore, Gale and Livesley (1974) and Weiler et al. (1989) find that medical students who have had more clinical exposure to the elderly had a greater desire not to treat elderly patients and were more likely to have negative stereotypes toward them as a group. Beland and Maheux (1990) and Linn and Zeppa (1987) conclude that as medical students
advance through their four years in school, they develop a set of attitudes toward the elderly that are more biased.

Following the above theoretical discussion on professional socialization as well as the findings from previous studies, the present study hypothesizes the following:

H8: Podiatry students who are more advanced in podiatry school (i.e., more years in school) are more likely to have negative stereotypes of older people in general and negative attitudes toward elderly patients specifically.

H9: Podiatry students who have positive affirmations toward their geriatric education are less likely to have negative stereotypes of older people in general and negative attitudes toward elderly patients specifically.

H10: Podiatry students who have completed more clinical contact with the elderly are more likely to display negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically.

**Social Exchange Theory**

This study uses certain components of social exchange theory to explain the underlying motivations (i.e., extrinsic and/or intrinsic rewards) for podiatry students entering a career in podiatric medicine. In particular, this dissertation uses podiatry students entering podiatry for extrinsic and intrinsic rewards as exogenous variables to test their direct effects on stereotypes toward older people and attitudes toward treating elderly patients (see Figure 1).

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9 Since this dissertation treats extrinsic and intrinsic rewards as distinct variables, respondents can be high on both or low on both (i.e., being high on one does not mean being low on the other).
Sociologists’ development of Social Exchange Theory

Simmel (1950) was one of the few early sociological thinkers who showed interest in the exchange perspective. His foremost concern was how and why individuals move from isolation to different forms of contact with each other; and secondly, he argued that their motive was to satisfy needs and pursue individual goals (Levine, Carter, & Miller, 1977).

In a more recent sociological work on the motivation of individuals’ action as well as the implications of it, Parsons (1978) in *Action Theory and the Human Condition*, attempts to amalgamate both the utilitarian (i.e., motivations are directed by self interest) and idealistic (i.e., motivations are governed by norms and values) theory of action. As a result, he develops the voluntaristic theory of action which alleges that an actor is motivated to reach a desirable goal (such as becoming a podiatrist); the action takes place in a situation which includes *means* (i.e., facilities or resources) and *conditions* (i.e., obstacle to overcome in order to purse the goal) (Parsons, 1978; also see Wallace & Wolf, 1991, p.30). Overall, all of the above elements in Parsons’ theory is regulated by the normative standards of the social system.

In addition to Parsons’ (1951) Action theory, he also analyzes the role of self-interest in the professions. For instance, he claims that the medical profession sets itself apart from others through its collectivity orientation. Parsons discusses the “ideology” of the medical profession, which could be applied to podiatry. He argues that the obligation of the physician is to put the welfare of the patient above his/her personal interests. Similar to clergyman, physicians’ profit motive is supposed to be “drastically excluded” (Parsons, 1951,
Parsons' work in unifying the utilitarian and idealistic theory of action, shows relevance to this study. That is, podiatry students face the challenge of either aligning with the ideology of podiatry (i.e., preventing diseases and promoting health of the foot) or viewing the profession of podiatry with extrinsic motivations (e.g., economic rewards).

**Principles of Social Exchange Theory**

Social exchange theory explores the motivation for social action. In its simplest form, social exchange theory contends that people choose to behave in ways that they anticipate will be the most rewarding, and avoid those that were punishing in the past (Homans, 1961).

Plausibly, Homans' "the Value Proposition"—the more valuable to a person is the result of his/her action, the more likely s/he is to perform the action—could be looked as a reason why podiatry students enter podiatry. This proposition introduces the size of the reward as a variable in causing behavior. Homans (1961) did make it clear that this aspect of the theory is not simply hedonistic; rewards can be either extrinsic (e.g., money) or altruistic (e.g., helping others).

This proposition is scrutinized by some sociologists for being a tautology, or, as a matter of fact, untestable (see for example, Emerson, 1987; Wallace & Wolf, 1991, p.191). However, this does not mean it is useless, not applicable for this dissertation. Sociologists in the social exchange tradition can plausibly assume that people value approval, profit, and prestige (cf. Maris, 1970; Turner, 1971). From this social exchange perspective, podiatry students could value the income and prestige that arises from being a podiatrist; in addition, they could value helping their patients.
However, the value proposition of social exchange theory provides less accurate predictions when people have uncertainty about their motivations to perform an act. Thus Wallace and Wolf (1991, p.192) develop a "rationality proposition" which is based on Homans' first three propositions: "people will multiply the value of an action's possible reward by the probability of it actually materializing and then choose on the basis of those results". This study presumes that when podiatry students make decisions to become podiatrists, they estimate its extrinsic and intrinsic rewards.

**Conceptualization of Extrinsic and Intrinsic Rewards**

Ivancevich and Matteson (1990, p.180) claim that professions—such as podiatry—have two main objectives for their rewards structure: 1) to attract highly qualified and talented people to enter their profession; and 2) motivate employees to achieve high levels of performance. The rewards are perceived and evaluated by the students before they enter the profession, and contain both extrinsic and intrinsic components as specified below (Ivancevich & Matteson, 1990).

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The individual reward structure mirrors Davis and Moore's (1945) functional theory of stratification which claims that social positions having the greatest importance for society and requiring the greatest training (i.e., education) are more likely to have a high occupational prestige and have greater subjectively evaluated rewards. Following this perspective in a regional sample of podiatrists (N = 168), Chumbler and Brooks (1993) find support for Davis and Moore's theory. In particular, they find that for podiatrists, importance to society rather than training (e.g., post-graduate residency training) is a better predictor of professional rewards for both physicians and limited-medical professionals (e.g., dentists and optometrists). Following Chumbler and Brooks (1993) and Davis and Moore (1945), one could believe that the unequal distribution of rewards is essential so that complex societies can function effectively.
Extrinsic Rewards. Mechanic (1983) claims that both the status (or prestige) and income earned by physicians are important symbols of success and satisfaction. Mechanic (1983, p.439) conceptualizes extrinsic rewards for physicians as the economic (e.g., income) and professional benefits (e.g., prestige) received from performing the role of a physician: "Medicine, thus, is attractive to recruits who value status and income".

Mechanic (1983, p.439) points out that some research on medical students claim that they rate high on the need for economic achievement, and consequently, some medical educators worry that medical schools attract students who may be more committed to economic incentives than to social concerns. Physicians who enter medicine for extrinsic rewards are more economically driven in their professional activities (Colombotos & Kirchner, 1986; Mechanic, 1983). For instance, physicians may perform procedures that are remunerative, preferring those for which payments are made through private health insurance (Mechanic, 1983).\(^{11}\)

Intrinsic Rewards. Entering a profession for intrinsic rewards usually signifies that people feel a sense of completing an important or difficult task and it includes elements of achievement (Argyle, 1989, p.100; Herzberg, Mausner, & Snyderman, 1959, p.235), which all, in turn, lead to performing better quality work (Argyle, 1989, p.101). Furthermore, Hackman and Oldham (1980) find that individuals will enter a profession for its intrinsic rewards if they perceive that

\(^{11}\) On the other hand, Mechanic (1983, p.438) asserts that Medicare can increase physicians' income. That is, Medicare pays for services that physicians are already providing without remuneration.
the profession can be characterized by the following: 1) skill variety; 2) task variety; 3) tasks significance; 4) autonomy (i.e., responsibility for work outcomes); and 5) feedback (i.e., knowledge of results). Helfand (1987a) argues that similar traits characterize the profession of podiatry.

Similarly, Mechanic (1983) conceptualizes intrinsic rewards for entering the medical profession as human and social concerns and the holistic view of the patient (i.e., seeing the patient as a multifaceted human-being). Ideally, medicine is a profession that is intended to treat the "whole patient" rather than symptoms (Mechanic, 1983, p.445). Thus, physicians are expected to make time to have interpersonal interaction with their patients in order to hear their complaints and problems: "They [physicians] are to be warm, compassionate, responsive, and personally concerned" (Mechanic, 1983, p.444). Other research on professional organizations (e.g., see Ivancevich & Matteson, 1990, p.185) claim that autonomy and personal growth are representations of intrinsic rewards.

**Implementation of Extrinsic and Intrinsic Rewards**

Therefore, following the conceptualizations of both extrinsic and intrinsic rewards discussed above, the dissertation employs these concepts in the following ways. Podiatry students who enter their profession for extrinsic rewards refer to rewards that podiatry students perceive to be external to the job (e.g., prestige, stable future and high pay). On the other hand, intrinsic rewards are associated with doing the job (e.g., responsibility, challenge and meaningful work) (cf. Ivancevich & Matteson, 1990, p.197). In the context of podiatric medicine, intrinsic rewards in podiatric medicine could include the following: 1) helping patients; 2) enjoying the work with elderly patients; and 3) believing that
podiatrists' role is very important in the health care system (cf. Helfand, 1987a; Holloway, 1987).

There is a paucity of studies that examine the effects of extrinsic and intrinsic rewards on either stereotypes toward older people and/or attitudes toward treating elderly patients. However, a few have been done which require a brief review. The review will provide a rationale for the way the current study has distinguished between extrinsic and intrinsic rewards. Additionally, the review will indicate shortcomings that the present study will attempt to address.

Beland and Maheux (1990) find that entering medicine for extrinsic rewards (e.g., to earn a good income, to achieve a high prestige, and to ensure a stable future) is associated with greater negative attitudes toward treating elderly patients, for first-year medical students. However, for third-year students the opposite is true. Third-year students who enter medicine for extrinsic rewards are less likely to display negative attitudes toward treating elderly patients.

While it appears that Beland and Maheux find some intriguing findings regarding academic class status, extrinsic rewards, and attitudes toward treating elderly patients, they fail to provide an explicit test for a statistical interaction between academic class status and extrinsic rewards. Therefore, the present study tests for the statistical interaction between academic class status and extrinsic rewards to determine if the effect of extrinsic rewards varies by year in school.

Additionally, Beland and Maheux fail to examine if intrinsic rewards influence attitudes toward treating older patients. However, Belgrave, Lavin, Breslau, and Haug (1982) have compared the effects of intrinsic and extrinsic
rewards on attitudes toward the elderly. Using a sample of medical students (N = 120) at two medical schools in Ohio, Belgrave et al. (1982) find that those students who entered medicine for intrinsic rewards were less likely to report negative stereotypes toward older people. Belgrave et al. found no association between extrinsic rewards and stereotypes toward older people.\textsuperscript{12}

In sum, the findings regarding intrinsic rewards suggest that medical students who enter medicine because of a service orientation or because of their affection for human beings are less likely to regard older individuals with negative stereotypes (cf. Mechanic, 1983). Moreover, those podiatry students who entered the profession for extrinsic rewards could be more concerned with their prestige and money, which in turn could cause them to have stronger negative stereotypes and attitudes toward older individuals. Finally, Beland and Maheux's (1990) findings suggest that the effects of extrinsic rewards vary by year in school.

Following the above theoretical discussion on social exchange theory and the findings and implications from previous studies, the dissertation hypothesizes the following:

\textit{H11: Podiatry students who entered podiatry for intrinsic rewards are less likely to report negative stereotypes of older people in general and negative attitudes toward treating older patients specifically.}

\textsuperscript{12} But note that they did not test for an interaction with year in school. Given that extrinsic rewards may have opposite effects depending on year, ignoring the year and just analyzing average effects of extrinsic rewards could lead researchers to falsely conclude that extrinsic rewards has no effects.
H12: Podiatry students who entered podiatry for extrinsic rewards are more likely to have negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically.

H13: The effect on entering podiatry school for extrinsic rewards will vary by year in school (i.e., extrinsic rewards and year in school will display a statistical interaction). More specifically, as podiatry students progress through school, the initial positive effect of entering school for extrinsic rewards on negative stereotypes of the elderly and negative attitudes towards treating the elderly as patients will change to a negative effect.
CHAPTER THREE

Methods and Measurements
Introduction

This chapter presents the sampling procedures that are employed to derive the nationally representative sample of podiatry students. Second, it discusses how the concepts displayed in Figure 1 and conceptualized in Chapter two are operationalized. Most of the measures explained below are derived from pre-existing established scales. However, two measures represent newly developed scales: 1) stereotypes toward older individuals; and 2) attitudes toward treating elderly patients. This chapter describes the psychometric characteristics of both these newly developed and pre-existing scales. Finally, the chapter describes the analytic procedures used to test the proposed hypotheses.

Sampling Procedures

Study Population

The study population is podiatric medical (or podiatry) students attending all accredited colleges of podiatric medicine. Presently, there are six accredited colleges of podiatric medicine in the United States: 1) Barry University of Podiatric Medicine (Miami, FL); 2) California College of Podiatric Medicine (San Francisco, CA); 3) College of Podiatric Medicine and Surgery (Des Moines, IA); 4) Dr. William M. Scholl College of Podiatric Medicine (Chicago, IL); 5) Ohio College of Podiatric Medicine (Cleveland, OH); 6) Pennsylvania College of Podiatric Medicine (Philadelphia, PA) (American Association of Colleges of Podiatric Medicine, 1993). All of these six institutions participated in the study. The Dean of Academic Affairs at each institution assisted in deriving the sample of podiatry students.
For the 1992-93 academic year there were 2065 students attending the colleges of podiatric medicine (cf. American Association of Colleges of Podiatric Medicine, 1993). Table 3.1 shows the distribution of the total enrollments by college and class year of podiatry students enrolled for the 1992-93 academic year. As shown in Table 3.1, there is not an equal proportion of podiatry students represented in each of the colleges of podiatric medicine. For instance, both the Ohio and Pennsylvania Colleges of Podiatric Medicine had a total of over 400 students enrolled for the 1992-93 academic year. Conversely, the podiatry school in Miami, FL and Des Moines, IA have 213 and 266 students enrolled, respectively.¹

[Insert Table 3.1 about here]

Due to budget and time limitations, questionnaires were not sent to the total population of 2065. Limited resources restricted the present study to a sample of one-third of the total population (i.e., 688). Accordingly, a sample of 688 podiatry students was randomly selected from updated school censuses in each of the six podiatric medical institutions (the representativeness of the sample and the outcomes are found under data collection).

¹ This disparity could be due to the fact that both the Ohio and Pennsylvania Colleges of Podiatric Medicine are two of the oldest podiatric medical institutions and the Miami and Iowa schools were established in the 1980's.
Table 3.1  Total Enrollments by College and Class Year of Podiatry Students for the Academic Year 1992-1993.

<table>
<thead>
<tr>
<th>Class Year</th>
<th>Total</th>
<th>BUSPM</th>
<th>CCPM</th>
<th>CPMS</th>
<th>SCPM</th>
<th>OCPM</th>
<th>PCPM</th>
</tr>
</thead>
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<tr>
<td>First</td>
<td>643</td>
<td>57</td>
<td>118</td>
<td>81</td>
<td>125</td>
<td>136</td>
<td>126</td>
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<tr>
<td>Second</td>
<td>623</td>
<td>80</td>
<td>83</td>
<td>81</td>
<td>119</td>
<td>131</td>
<td>129</td>
</tr>
<tr>
<td>Third</td>
<td>399</td>
<td>35</td>
<td>75</td>
<td>67</td>
<td>70</td>
<td>69</td>
<td>83</td>
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<tr>
<td>Fourth</td>
<td>400</td>
<td>41</td>
<td>85</td>
<td>37</td>
<td>83</td>
<td>71</td>
<td>83</td>
</tr>
<tr>
<td>Total</td>
<td>2065</td>
<td>213</td>
<td>361</td>
<td>266</td>
<td>397</td>
<td>407</td>
<td>421</td>
</tr>
</tbody>
</table>


BUSPM = Barry University School of Podiatric Medicine, Miami, FL.
CCPM = California College of Podiatric Medicine, San Francisco, CA.
CPMS = College of Podiatric Medicine and Surgery, Des Moines, IA.
SCPM = Dr. William M. Scholl College of Podiatric Medicine, Chicago, IL.
OCPM = Ohio College of Podiatric Medicine, Cleveland, OH.
PCPM = Pennsylvania College of Podiatric Medicine, Philadelphia, PA.
Constructing the Podiatric Medical Student Questionnaire².

The development of the questionnaire began in the Spring of 1992. As a preliminary step, the study contacted 15 podiatrists, who were instructors at three different colleges of podiatric medicine, to help prepare some items appropriate for podiatry students. These podiatrists as well as two podiatric medical educators affiliated at the American Association of Colleges of Podiatric Medicine were asked to generate factual information about the science and practice of podiatric medicine. Moreover, these educators were asked to provide some information regarding the roles that podiatrists perform in treating elderly patients. More specifically, they assisted in creating a preliminary set of items that were used to assess the attitudes that podiatry students have toward treating elderly patients, and attitudes toward geriatric education (see Appendix A).

This preliminary set of measures was subjected to critical review by a group comprised of sociologists, psychologists, podiatrists and physicians. The purpose of the critical review was to improve the wording of the questions so that they were as simple and direct as possible and to make sure that there was a rationale for including any particular item. Following each of these discussions, some questions already drafted but not considered entirely satisfactory, were revised and others were deleted from that particular draft.³

² This questionnaire follows the format delineated by Merton, Reader & Kendall (1957). Merton et al., examined the socialization of Cornell University Medical Students (please see Merton et al., 1957, p.307-313).

³ For example, the initial draft of the questionnaire failed to include a "not appropriate" (NA) category for questions regarding the respondent's relationships with their grandparents. The group of experts surmised that "NA" should be added in order to accommodate those individuals whose grandparents died before they were born, or for other reasons, were unable to spend time with them. The response format was further modified, after this first administration, to include
Moreover, a pilot version of the questionnaire was distributed to seven primary-care residents and a convenience sample of podiatry students (N = 34) at the Ohio College of Podiatric Medicine. This convenience sample of Ohio College of Podiatric Medicine students was used for pretesting only, and these subjects were not included in the study sample that completed the final draft of the questionnaire. The pretest was performed so that the items can be clear and concise.

In addition, to assess the reliability of the instrument, the convenience sample of 34 completed the questionnaire on two different occasions, two months apart. Test-retest reliability was performed on all items. According to Fitzpatrick et al. (1993), correlation values from .40 to .75 are considered fair to good, and those above .75 indicate strong agreement. The test-retest correlations for the items ranged from .41 to .92 with an overall mean of .69.

In all, the questionnaire went through two drafts, and consequent revisions, before it was presented to the national sample of podiatry students.

a "NA" option. Please see Question 25, Appendix A.

In addition, the first draft included a question which was adapted from Beland and Maheux's (1990) Psychosocial dimension of Medical Care Scale. The scale was measured on a seven-point Likert scale where 1 = strongly agree and 7 = strongly disagree. The Scale consists of the following: "When the same patient returns for follow-up visits, how frequently should the DPM adopt the following behavior?"

a. Ask the patient how s/he is coping with his/her health problem.
b. Ask the patient whether s/he is having trouble following his/her treatment.
c. Let the patient express his/her feelings about his/her problems and worries concerning his/her illness.
d. Ask the patient if s/he has any questions regarding their illness.

The panel believed that these items would have very little if any variation because these questions pertain to obvious duties that all patients do in their practice, irrespective of the treatment of elderly patients.
The refined and final version of the questionnaire, which was completed by the national sample of podiatric medical students, is found in Appendix A.

**Data Collection**

The Dean of Academic Affairs at each institution obtained an updated and complete listing of all students enrolled in the colleges of podiatric medicine for the 1992-93 academic year. From the list of students, each Dean was instructed to go through the list and randomly select the students for the study.⁴

The questionnaires were distributed to the podiatric medical students at each college during the Spring of 1993. A cover letter accompanied each questionnaire which described the purpose of the study, stressed the confidentiality of their responses, and requested their participation in the study. In the cover letter, the students were instructed to send the questionnaires back to the Department of Academic Affairs.

Two weeks after the initial distribution 442 questionnaires were returned (or 64.2% of the sample). One week later (or three weeks after the initial distribution of the questionnaires), the Department of Academic Affairs placed a short note in the form of a memorandum reminding students of the importance

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⁴ Since the sampling frame in this study is 688, the Deans at each school randomly selected approximately 115 students (i.e., 688 divided by the six institutions) from each podiatric medical institution. It is plausible that a selection bias could have resulted. That is, since very little research has been conducted on podiatry students, the Dean of Academic Affairs could be inclined to select their most motivated students. Therefore, I stressed to the Dean of Academic Affairs not to select the most motivated students. Fortunately, I was able to monitor the selection of students at the Ohio College of Podiatric Medicine and found no selection biases on the part of the Department of Academic Affairs. However, at the other five podiatry colleges I was unable to supervise the data collection.
of the study, asking them both to complete the questionnaires and deliver it to their department. This follow-up procedure yielded an additional 91 (or 15%) returned questionnaires for a total sample size of 533. Thus, the final response rate is 77.5% (533 of 688). The sample size of 533 represents 25.8% of the total population of podiatry students (i.e., 2065) enrolled in the colleges of podiatric medicine for the 1992-93 academic year.

Table 3.2 shows the specific breakdown of the number and percent of the students who returned their questionnaires. The total population column corresponds to Table 3.1, which indicates the number of podiatry students classified in each class. Table 3.2 also shows the number and percent received for each class year. For instance, 174 questionnaires were returned by second-year students, which represents 32.6% of the study sample of 533.

Please note that Table 3.2 shows that there is an over-sample of first- and second-year podiatry students as compared to third-year and fourth-year students. This could be due to the fact that third-year students receive their training in local clinics and fourth-year students are located in off-campus clinics several miles away from their respective podiatric medical institution (USDHHS, 1988). Therefore, it is plausible that third-year and fourth-year podiatry students may not check their mailboxes at the podiatry schools as often as the first-year and second-year students.

[Insert Table 3.2 about here]
Table 3.2. Distribution of the Total Population and the Number and Percentage of Respondents who returned questionnaires.

<table>
<thead>
<tr>
<th>Class</th>
<th>Total</th>
<th>Number Received</th>
<th>% of Sample Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Population</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First</td>
<td>643</td>
<td>191</td>
<td>35.8</td>
</tr>
<tr>
<td>Second</td>
<td>623</td>
<td>174</td>
<td>32.6</td>
</tr>
<tr>
<td>Third</td>
<td>399</td>
<td>88</td>
<td>16.5</td>
</tr>
<tr>
<td>Fourth</td>
<td>400</td>
<td>80</td>
<td>15.0</td>
</tr>
</tbody>
</table>

Note. The study sample is 688.
Measures

This section on measures discusses the manner in which all of the study's measures are developed and/or adapted. Prior to providing detail on each measure, this section provides an overview of data analytic procedures used to validate the measures, specifically exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). In particular, this overview describes the criteria used in EFA and CFA for selecting the number of factors and corresponding indicators that comprise each scale included in the present study. Additionally, this overview notes the criteria used for developing the reliability of the study’s instruments.

Overview

SPSS/PC provided the basis for the EFA procedure. The present study uses principal axis factoring (PAF) procedure as the method for extracting the factors. The PAF procedure is similar to principal component analysis, except that the diagonals of the correlation matrix are replaced by estimates of the communalities (Kim & Mueller, 1978, p.13). The varimax method is used as the rotation method. In EFA, one purpose of rotation is to achieve a simple factor structure, which aids in interpreting the factors (Norusis, 1990, p.B138). In other words, each factor should have non-zero loadings for only some of the variables. The varimax method is the most appropriate method to minimize the number of variables that have high loadings on a factor (Norusis, 1990, p.B138).

The study employs Kaiser's (1974) K1 method of retaining components (otherwise known as eigenvalue greater than 1.0). An eigenvalue is a
mathematical property of a matrix, which is used in relation the decomposition of a covariance matrix (cf. Kim & Mueller, 1978, p.43-44). The eigenvalue is used as a criterion to determine the number of factors to extract. Those factors greater than 1.0 are extracted. Items were retained if their primary loadings were approximately .40 or higher (cf. Bollen, 1989; Krause, 1993). Items with secondary loadings exceeding .30 were considered problematic.

EQS (Bentler, 1989) is selected as the CFA analytic procedure. EQS is based on analysis of structural equations with multiple indicators (Bollen, 1989). For each CFA procedure, the study tested for multivariate normality and outliers. The EQS analysis used maximum likelihood (ML) procedures. Mardia's measure of multivariate kurtosis as well as the normalized estimate were used to test for multivariate normality of data (Bentler, 1989, p.85-86). The dissertation used a 5:1 ratio of subjects to individual items as the minimum acceptable level (Kercher, 1994). EQS also prints out the five case numbers that contribute most heavily to multivariate nonnormality. If EQS indicates that the value is an outlier, then their raw scores should be further examined. If any gross errors appear, the cases should be dropped (Bentler, 1989).

Since the traditional chi-square fit index and its associated probability are sensitive to departures from the assumption of multivariate normality and also are distorted upward by large sample sizes (Bentler & Bonnett, 1980; Mulaik, James, Van Alstine, Bennet, Lind, & Stilwell, 1989), three additional fit indices are presented. The normed fit index (NFI) assesses the degree to which the hypothesized model can reproduce the observed variance/covariance matrix with

---

5 EQS is selected instead of the more popular LISREL program (Joreskog & Sorbom, 1989) because the former's ease of use (cf. Kercher, 1992).
respect to the null model.\footnote{The null model hypothesizes that all correlations among the variables are equal to zero (cf. Byrne, 1994, p.54).} The nonnormed fit index (NNFI) and comparative fit index (CFI) also compare the null model to the hypothesized model.

Of the three fit indices, the CFI is the most preferred because it does a better job of considering the sample size and degrees of freedom (Bentler, 1990b). The values for these three indices range from zero to one, with values close to one reflecting a good fit (Bentler, 1990a). More specifically, values in excess of .90 are considered acceptable for confirmation of the model (Byrne, 1994, p.55). In order to improve the overall fit of the models discussed below, the Lagrange Multiplier (LM) test was used. The LM test is used to "determine whether, in a subsequent EQS run, the specification of certain parameters free rather than fixed would this lead to a model that better represented the data" (Byrne, 1994, p.47). If the fixed parameters were set free based upon the LM test, then it should lead to a better fit of the model (Byrne, 1994, p.47).

The factor loadings of the CFA are examined as a preliminary guide to the validity and reliability of the scales (Bollen, 1989; Krause, 1993). Similar to the factor loading cut-off points used for EFA, factor loadings in CFA in excess of .40 are acceptable (see Krause, 1993, p.187).

All the measures in the current study were subjected to factor analysis of two samples extracted from the national sample of podiatry students ($N = 533$). More specifically, this national sample is randomly divided into two samples: one sub-sample ($N = 267$) is used to examine the exploratory factor analysis; and the other random sub-sample ($N = 266$) is used to cross-validate (or replicate) through confirmatory factor analysis (Cudeck & Browne, 1983). Some of the scales
examined in this dissertation were derived from scales that were previously published (i.e., Colombotos and Kirchner's *Political Ideology scale* and Rosenberg's *Occupational Extrinsic/Intrinsic Gratification scale*). However, these standardized scales have generally received very little, if any, psychometric work.

In addition to examining the psychometric properties of previously used scales, this dissertation develops two new scales—Stereotypes toward Older People Scale (STOPS) and Attitudes toward Treating Elderly Patients Scale (ATEPS). The present study provides more rigorous psychometric criteria for these newly developed scales. For these two newly developed scales, two rather than one populations were selected.

Initially, a convenience sample of undergraduate sociology students is used to develop both measures ($N = 292$). Specifically, this sample of 292 is split into two random sub-samples: a derivation sample ($N = 146$), and a cross-validation sample ($N = 146$). The first sample is used to develop the model through EFA. The second sample is employed to cross-validate the derived model through CFA (Cudeck & Browne, 1983).

In addition to these two samples taken from the convenience sample of college students, both STOPS and ATEPS are implemented on the entire national sample of podiatry students ($N = 533$). The scales that are adapted from previously established studies use the same criteria for item selection and fit index estimation as that of STOPS and ATEPS.

In sum, the present study developed two new scales—STOPS and ATEPS (discussed below). For these two scales, two populations are used. First, a
convenience sample of undergraduate students are split into two random sub-samples, where one is a derivation and the other is a cross-validation. Then STOPS and ATEPS are tested on the entire national sample of podiatry students. Additionally, this dissertation examined the psychometric properties of some previously published scales. Here, the national sample of podiatry students were randomly divided into both a derivation and cross-validation sample.

In addition to establishing the number of dimensions underlying each scale, the study also calculated Cronbach's alpha coefficients to assess the reliability of each scale. In particular, the study employs the alpha item deleted procedure from SPSS/PC (see Norusis, 1990, p.B191). In general, this procedure shows how each of the items affects the reliability of the scales. This procedure calculates a Cronbach's alpha when each of the items is removed from the scale (Norusis, 1990, p.B191). For example, if one of the items has a low correlation as compared to its counterparts, this procedure may suggest deleting the item, which in turn increases the alpha coefficient. After establishing the number of dimensions and reliabilities of the dimensions underlying each scale, composites of items tapping each dimension were created. These scales were constructed using equal weighting of Z-scored items. The items are transposed to Z-scores because some of the items that constitute the scales could have more variance than the remaining items in the scale. It is possible that those items that "dominate" the variance could reduce the reliability coefficient.

As a final overview of measurement procedures, Table 3.3 presents the means, standard deviations, coding algorithms and psychometric properties of the study variables. The entire survey instrument is located in Appendix A. In
particular, all of the specific items that constitute the scales are found in Appendix A.

[Insert Table 3.3 about here]

Operationalization of Stereotypes Toward Older People

A survey of the relevant literature suggests that there are at least ten standardized instruments that measure stereotypes toward older people. The items that make up the instruments range from a few to many (i.e., 16 to 137) and, for those few studies reporting reliabilities, the coefficients range from poor to good (e.g., .36 to .85). These ten scales include the following: 1) Tuckman-Lorge's Questionnaire (1953); 2) Axelrod and Eis dorfer's (1961) revised and shortened version of Tuckman and Lorge's (1953) questionnaire; 3) Kogan's (1961) Old People Scale; 4) Eis dorfer and Altrocchi's (1961) semantic differential scale; 5) Kogan and Shelton's (1962) sentence completion scale; 6) Oberleder's (1962) Attitude toward Aging Scale; 7) Wilensky and Barmack's (1966) behavior preference list; 8) Rosencranz and McNevin's (1969) Aging Semantic Differential (1969); 9) Kafer et al.'s (1980) Aging Opinion Survey; and 10) Dillard and Feather's (1989) shortened version of Oberleder's (1962) Attitude toward Aging Scale.

Recent reviews and research on the stereotypes toward older people have called attention to the lack of psychometric adequacy of these standardized instruments (cf. Adelman & Albert, 1987; Green, 1981; Hicks, Rogers & Shemberg, 1976; Wingard, 1980). For example, reliability estimates, which assess the degree to which an instrument is susceptible to random error, were conducted
Table 3.3 Means, Standard Deviations, Coding Algorithms, and Psychometric Properties of Variables and Scales used in the Dissertation.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Coding Algorithms</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Negative Stereotypes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of Older People</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intolerance</td>
<td>20.850</td>
<td>4.630</td>
<td>6-item scale assessing irritability of older people, where 1=strongly disagree, 7=strongly agree; (higher is negative stereotypes).</td>
<td>.87</td>
</tr>
<tr>
<td>Negative</td>
<td>27.780</td>
<td>5.221</td>
<td>6-item scale assessing the peculiarity of older people, where 1=strongly disagree to 7=strongly agree; (higher is negative stereotypes).</td>
<td>.85</td>
</tr>
<tr>
<td>Personality Characteristics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unhealthy Behavior</td>
<td>26.091</td>
<td>4.449</td>
<td>6-item scale measuring the feebleness and infirmity of older people, where 1=strongly disagree to 7=strongly agree; (higher is negative stereotypes).</td>
<td>.80</td>
</tr>
<tr>
<td>Inactivity</td>
<td>23.960</td>
<td>4.320</td>
<td>6-item scale measuring the apathy of older people, where 1=strongly disagree to 7=strongly agree; (higher is negative stereotypes).</td>
<td>.79</td>
</tr>
</tbody>
</table>
Table 3.3 (Continued).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Coding Algorithms</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Attitudes</td>
<td></td>
<td></td>
<td>4-item scale assessing the futility of treating elderly patients, where 1=strongly agree to 7=strongly disagree; (higher refers to more negative attitudes).</td>
<td>.71</td>
</tr>
<tr>
<td>Toward Treating Elderly Patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uselessness of Treating Elderly Patients</td>
<td>4.460</td>
<td>2.978</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissatisfaction</td>
<td>4.291</td>
<td>2.310</td>
<td>2-item scale assessing the dissatisfaction, where 1=strongly agree to 7=strongly disagree. (higher refers to more negative attitudes).</td>
<td>.69</td>
</tr>
</tbody>
</table>
Table 3.3 (Continued).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Coding Algorithms</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Socialization</td>
<td></td>
<td></td>
<td>0=zero days to 7=seven days per week</td>
<td>n/a</td>
</tr>
<tr>
<td>Clinical Contact with Elderly</td>
<td>1.563</td>
<td>2.109</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes toward Geriatric Education</td>
<td>11.221</td>
<td>2.270</td>
<td>3-item scale, assessing the extent of &quot;problem cases frequently presented&quot;: &quot;professors do not avoid instruction&quot;; and &quot;exposure is adequate&quot;: where 1=strongly disagree to 7=strongly agree (higher is positive attitudes).</td>
<td>0.69</td>
</tr>
<tr>
<td>Year in School</td>
<td>2.020</td>
<td>1.119</td>
<td>1 = first-year to 4 = fourth-year</td>
<td>n/a</td>
</tr>
<tr>
<td>Intergenerational Solidarity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associational Solidarity</td>
<td>3.951</td>
<td>1.253</td>
<td>A single item assessing how frequent podiatry students visited grandparents when they were younger, where 1=less than once per year to 5=at least once per week.</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Table 3.3 (Continued).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Coding Algorithms</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affectual Solidarity</td>
<td>50.440</td>
<td>10.260</td>
<td>10-item scale assessing the closeness of bonds between pediatrics students and their grandparents (1=not at all to 6=extremely much); (higher indicates closer bonds).</td>
<td>.96</td>
</tr>
<tr>
<td>Political Socialization</td>
<td></td>
<td></td>
<td>2-item scale rating the respondent's political party preference (1=strong republican to 7=strong democrat) and political thinking (1=radical right to 5=radical left); (higher is more liberal).</td>
<td>.69</td>
</tr>
<tr>
<td>Political Affiliation</td>
<td>6.263</td>
<td>2.332</td>
<td>4-item scale measuring government activity in unemployment, poverty, restructuring and income (higher is more liberal).</td>
<td>.77</td>
</tr>
<tr>
<td>Political Ideology</td>
<td>14.257</td>
<td>5.505</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivations for Entering Podiatry</td>
<td></td>
<td></td>
<td>3-item scale evaluating &quot;good income&quot;, &quot;ensure a stable future&quot;, and &quot;respected position in society&quot;. where 1=strongly disagree to 7=strongly agree.</td>
<td>.83</td>
</tr>
</tbody>
</table>
Table 3.3 (Continued).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Coding Algorithms</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic Rewards</td>
<td>17.857</td>
<td>2.581</td>
<td>3-item scale evaluating &quot;help others&quot;, &quot;enjoy working with people&quot;, and &quot;its importance to society&quot;; where 1=strongly disagree to 7=strongly agree.</td>
<td>.83</td>
</tr>
</tbody>
</table>

Social Background

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>l=yes: 0=no</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>.654</td>
<td>.477</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>.720</td>
<td>1.389</td>
<td></td>
<td>n/a</td>
</tr>
</tbody>
</table>

Socioeconomic

<table>
<thead>
<tr>
<th>Background (SEB)</th>
<th>Mean</th>
<th>SD</th>
<th>2-item scale assessing father’s education (1=some high school, 5=completion of graduate school); and social class (1=lower class, 5=upper class); (Higher indicates high SEB).</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.728</td>
<td>1.964</td>
<td></td>
<td></td>
<td>.64</td>
</tr>
</tbody>
</table>

Note. The entire instrument can be found in Appendix A.
on only a few of the ten scales listed above. Additionally, Kilty and Feld (1976) reported item-total correlations on the Kogan Old People Scale ranging from .09 to .70, suggesting that the internal consistency of this measure is questionable. Scales that are not internally consistent produce results that are susceptible to measurement error and thus may undermine conclusions regarding their relationship with other variables (Green, 1981; Nunnally, 1978).

The validity of these scales have also been questioned by researchers (cf. Adelman & Albert, 1987; Finnerty-Fried, 1982; Hicks et al., 1976; Wingard, 1980). The determination of convergent validity (whether or not instruments that claim to measure the same phenomenon are highly correlated) has been neglected in the work on attitudes and perceptions of older people (Adelman & Albert, 1987; Green, 1981). For example, Tuckman and Lorge, (1953) divided their scale into thirteen categories or dimensions without ever reporting an analyses indicating whether the items in each category were actually unidimensional.

Due to shortcomings in the reliability and validity of the ten pre-established scales, this dissertation developed an alternative scale: Stereotype Toward Old People Scale (STOPS). The current study employed the 14 item STOPS to measure podiatry students' perceptions toward individuals 65 years of age and older.

Initial Test. The sample used to create and validate the STOPS included 302 introductory sociology students at a large urban university in the industrial Midwest. The participation of respondents was voluntary and their responses remained anonymous. Due to item non-response or incompleteness of
questionnaires, ten questionnaires were deleted. Hence, the final sample size was 292 (i.e., all of the 302 participants minus the ten deleted questionnaires).

Of the 292 subjects who participated in the study, approximately two-thirds are female and one-third are male. The age range is from 17 to 60 years, \( M = 25.26, \ SD = 8.9 \). The racial distribution is 58.9\%, 37.0\%, 4.1\% for white, black, and other, respectively. Over two-thirds of the respondents are classified as either freshman or sophomores. The average family income is $25,292 and the median is $15,000, with a standard deviation of $36,912.

Stereotypes of Elderly. Stereotypes Toward Older People Scale (STOPS) measures stereotypes of the elderly. The newly developed STOPS includes 14 items designed to measure college students’ positive and negative stereotypes (i.e., favorability/unfavorability) of individuals 65 years of age and older. In order to remain consistent with the previous popular instruments that measures stereotypes toward older people, this study uses the stem of individuals 65 years of age and older. STOPS uses a 7 point scale of frequency rating format (never, rarely, occasionally, some of the time, most of the time, almost always, always). A seven-point response category permits the generation of a more or less continuous distribution instead of a point distribution. Alternatively, three- and four-category response scales do not permit the generation of sufficient variance, which can cause distortions in the correlations computed (Comrey, 1988).

This dissertation developed the STOPS based on an initial content analysis of the ten most popular scales measuring stereotypes toward elderly. Only those items that appeared in each scale were selected. The items were altered only by changing their respective rating options to a seven-point scale. For
instance, the Tuckman and Lorge (1953) and Axelrod and Eisdorfer (1961) scales used a yes-no format and the Kafer et al. (1980) scale used a five point scale. Based on a careful examination of the conceptual dimensions and items tapping stereotypes toward older individuals, the present study hypothesized four factors consisting of a total of 28 items. In other words, these were 28 items that everyone of the 10 scales contained.

Item Selection. The study divided the convenience sample of 292 into two groups. Each group contains 146 cases; the first group is used for exploratory factor analysis, while the second group is used for confirmatory factor analysis. The four hypothesized factors consisting of 28 items were subjected to an exploratory factor analysis. The resulting factor structure is examined with two purposes in mind: 1) to identify factors that are consistent with the literature and theoretically meaningful; and, 2) to identify simple structure (i.e., where the majority of the items load most strongly on a single factor).

Exploratory Factor Analysis (EFA). The items were eliminated based upon their communalities and their item-total correlations. This criteria for item elimination has been used in two recent attitude scale developments (cf. Lather & Faulkender, 1993; Stuckless & Goranson, 1992). Items loading at the .30 level or greater were retained, as well as items that appeared to have face validity within the factor structure. This criteria suggested eliminating 14 of the original 28 items. Consistent with the results from the content analysis, the exploratory factor analysis reveals four factors captured by the 14 items retained. Four factors were found that accounted 49.5% of the variance; factor 1 (Intolerance)
explains 27.3%; factor 2 (health behavior) explains 9.0%; factor 3 (negative personality characteristics) explains 7.5%; and factor 4 (activity) explains 5.7%.

Table 3.4 presents the primary and secondary loadings for the EFA analysis. Overall, the items load distinctly on each factor. That is, all of the expected primary loadings exceeded the minimum level of acceptability set at .40 (Bollen, 1989). Moreover, none of the secondary loadings were considered problematic (i.e., none exceeded .30).

[Insert Table 3.4 about here]

**Confirmatory Factor Analysis (CFA).** Confirmatory approaches are most appropriate where logic, theory, or previous empirical evidence supports a specific structure for a given measurement model (Bollen, 1989). In the present case, a hypothesized four factor measurement model was supported by a careful content analysis of ten previously used attitudes/stereotypes toward elderly scales, and an exploratory factor analysis of one of two randomly split sub-samples.

Accordingly, to further support the hypothesized measurement model, CFA procedures were applied to the second random sub-sample (N = 146). Prior to this confirmatory analysis, underlying assumptions of CFA were tested. EQS produces multivariate sample statistics, which are variants of Mardia’s (1970) coefficient. Mardia’s (1970) coefficient assesses whether or not the sample is normally distributed (Byrne, 1994, p.82). Based upon Mardia’s (1970) coefficient, it appears that the sample is normally distributed (cf. Bentler, 1989; Byrne, 1994, p.82).
Table 3.4. Exploratory Factor Analysis Results of the random sub-sample of undergraduate students (N = 146) used to develop STOPs.

**Old people (65 years of age and older)....**

<table>
<thead>
<tr>
<th></th>
<th>Factor</th>
<th>Factor</th>
<th>Factor</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Factor 1: Intolerance**

- get upset easily       \( .73 \)  \( .10 \)  \( .25 \)  \( -.06 \)
- are grouchy (cranky)    \( .59 \)  \( .09 \)  \( .24 \)  \( .15 \)
- talk to themselves      \( .57 \)  \( .20 \)  \( .12 \)  \( .26 \)
- are impatient           \( .53 \)  \( .19 \)  \( .19 \)  \( .26 \)

**Factor 2: Health Behavior**

- have health problems    \( .23 \)  \( .78 \)  \( .28 \)  \( .05 \)
- never fully recover from illness \( .15 \)  \( .58 \)  \( .15 \)  \( .04 \)
- walk slowly             \( .20 \)  \( .52 \)  \( .13 \)  \( .18 \)

**Factor 3: Negative Personality Characteristics**

- are set in their ways   \( .15 \)  \( .16 \)  \( .62 \)  \( .11 \)
- are meddlesome          \( .23 \)  \( .08 \)  \( .62 \)  \( .08 \)
- are old-fashioned       \( .14 \)  \( .12 \)  \( .57 \)  \( .10 \)
- think about the good old days \( .20 \)  \( .08 \)  \( .45 \)  \( .02 \)

**Factor 4: Inactivity**

- are productive          \( .11 \)  \( .07 \)  \( .18 \)  \( .87 \)
- are optimistic           \( .10 \)  \( .05 \)  \( .04 \)  \( .60 \)
- are physically active    \( .11 \)  \( .18 \)  \( .17 \)  \( .41 \)

**Note.** Entries are based upon list-wise deletion. Those factor loadings that are bold-faced and underlined are significant.
The multivariate kurtosis test also provides information regarding potential outliers. According to Byrne (1994, p.82), "identification of an outlier is based on the estimate presented for one case relative to those for the other four cases". The five case numbers that EQS printed out suggested no outliers. That is, all five estimates fall approximately within the same range of values regarding their contribution to multivariate non-normality (Byrne, 1994, p.82). Therefore, the data did not seriously violate the assumption of multivariate normality important to structural equation modeling (Bentler, 1989; Joreskog & Sorbom, 1989). Additionally, Goodness of fit tests based on robust statistics also supported the ML results. Specifically, the Satorra-Bentler scaled test statistic displays a similar value to the ML chi-square statistic (cf. Bentler, 1989; Byrne, 1994).

The CFA results are presented in Table 3.5. The findings reveal a statistically significant difference between the specified measurement model and the data, chi-square = 69.21, d.f. = 47, p < .001. Please note that the chi-square statistic is sensitive to sample size (Bentler, 1989). Consequently, additional fit indices, such as the CFI, NFI, and the NNFI are presented.

[Insert Table 3.5 about here]

The goodness of fit summary demonstrates that the model fits the data very well (CFI = .98; NFI = .94; NNFI = .97). Table 3.5 also presents the factor loadings. These data reveal that the factor loadings range from .51 to .82. This range is well above the cut-off point of .40. The factor loadings are similar to the EFA results. For instance, both the EFA and CFA items correspond to the
Table 3.5. Confirmatory Factor Analysis results of the random sub-sample of undergraduate students used to develop STOPs (N = 146).

**Hypothesized Factors**

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Health Behavior</th>
<th>Activity</th>
<th>Intolerance</th>
<th>Negative Personality Characteristics</th>
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<tr>
<td></td>
<td>(F₁)</td>
<td>(F₂)</td>
<td>(F₃)</td>
<td>(F₄)</td>
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<tr>
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Table 3.5 (Continued).

**Inter-Factor Correlations**

<table>
<thead>
<tr>
<th></th>
<th>(F₁)</th>
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<tbody>
<tr>
<td>(F₂)</td>
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</tr>
<tr>
<td>(F₃)</td>
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<td>0.38</td>
</tr>
<tr>
<td>(F₄)</td>
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<td>0.33</td>
</tr>
</tbody>
</table>

**Goodness-of-fit Statistics**

Chi square = 69.21; df = 47; N = 146;

NFI = 0.938; NNFI = 0.973; CFI = 0.979.

**Note.** Factor loadings from Confirmatory Factor Analysis of STOPS items.

All loadings are standard coefficients obtained from the ML procedure in EQS. Those factor loadings that are bold-faced and underlined are significant.
same factors. However, the factor loadings in the CFA are slightly higher than the EFA (compare both Table 3.4 and 3.5). The inter-factor correlations range from .33 to .63 and demonstrate moderate to strong interrelations among the four factors. Overall, the findings suggest that the hypothesized four-factor model is confirmed by the data.

**Reliability.** Cronbach's alpha coefficients are used to test the internal consistency of the four STOPS sub-scales. The intolerance sub-scale (four items) has an alpha = .77; the health behavior sub-scale (three items) has an alpha = .70; the negative personality characteristics sub-scale (four items) has an alpha = .72; the activity sub-scale (three items) has an alpha = .71. Reliabilities for whites and non-whites, and male and female undergraduates are statistically compared using Feldt's (1969) F-test of equality. No significant differences in alpha coefficients are found due to race or gender (all $p > .05$). In general, reliabilities are high and comparable across these sub-samples.

**Descriptive Statistics for STOPS.** Means, standard deviations and correlations for the four sub-scales representing STOPS are presented in Table 3.6. Two of the sub-scales—"intolerance" and "personality"—contain four items. The other two sub-scales (i.e., "health behavior" and "activity") contain three items. The range of possible scores on each item was from 1 to 7. For the "intolerance" and "personality" sub-scales, the scores could range from 1 to 28; for the "health behavior" and "activity" sub-scales the scores could range from 1 to 21. In both cases, a high score indicates that more negative stereotypes toward old people are
Table 3.6. Zero-Order Correlations and Univariate Statistics for STOPS' subscales.

<table>
<thead>
<tr>
<th>Intolerance</th>
<th>Health Behavior</th>
<th>Negative Personality</th>
<th>Inactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>S2</td>
<td>S3</td>
<td>S4</td>
</tr>
<tr>
<td>S1</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S2</td>
<td>.46</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>S3</td>
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<td>1.00</td>
</tr>
<tr>
<td>S4</td>
<td>.29</td>
<td>.26</td>
<td>.23</td>
</tr>
</tbody>
</table>

Mean 14.20\(^a\)  12.56\(^b\)  19.20\(^a\)  11.92\(^b\)
SD 3.48  2.86  3.36  2.40

**Note.**  S = Scale; N = 292.

\(^a\) Four item composite subscale; range = 1-28 (coded so that higher number indicates more negative stereotypes toward older people).

\(^b\) Three item composite subscale; range = 1-21 (coded so that higher number indicates more negative stereotypes toward older people).
present in the respondents. Within the four sub-scales, the means ranged from 11.92 to 19.20 and the standard deviations ranged from 2.40 to 3.48.

[Insert Table 3.6 about here]

Test-Retest Reliability. Fifty-four college students from the sample were administered the STOPS twice in order to investigate the test-retest reliability of the scales. The time interval was two weeks. Stability coefficients for the irritability, health behavior, personality and activity sub-scales were .77, .79, .71, .74, respectively. Furthermore, mean difference scores for each factor for the two administrations were tested using a paired t-test. The four sub-scales did not display significant changes between the two administrations (p > .05).

Summary and General Discussion of STOPS. A primary goal in developing STOPS is to provide a valid and reliable instrument that could be effectively used to measure podiatry students' stereotypes toward older individuals. Another important purpose is to develop a relatively short self-report instrument that could be easily used in evaluations of podiatry students' stereotypes of older individuals. There is evidence for content validity of the STOPS, since it is developed through a careful content analysis of all pre-existing instruments. STOPS also appears to have internal consistency (relatively high Cronbach's alpha) and test-retest reliability for the convenience sample of undergraduate students. Furthermore, both exploratory and confirmatory factor analysis support a four factor structure reflecting intolerance, health behavior, negative personality characteristics and activity of older individuals.
Implementing STOPS on the national sample of Podiatric Medical Students. Chapter two noted that the elderly are a heterogeneous group. Researchers propose that scales should be modified to assess older people across the different age categories (see Cook, 1992; Neugarten & Hagestad, 1976; Sanders et al., 1984). Accordingly, the current study attempts to evaluate the need for different measurement models for different elderly age groups. First, a four-factor model is hypothesized and tested by CFA. The study implements those items which survived the earlier EFA and CFA results, and then modifies the stems so the target groups would be of two ages (i.e., it incorporates STOPS for both a 65-74 year age stem and a 75-99 year stem). For instance, the hypothesized intolerance factor consists of those items from both the 65-74 and 75-99 year old stems. At issue is whether a four-factor model will still apply even when two different elderly target groups (old-old versus young-old) are considered. The order of the individual items are changed so that respondents would not be inclined to answer in a response set.\(^7\)

Confirmatory Factor Analysis of STOPS for Podiatry Students. CFA is applied to the entire sample of podiatry students (N = 533). Overall, there are 28 items (i.e., 14 each reflecting individuals 65-74 years old and those 75-99 years old).

Robust statistics suggest that no problem exists with the ML tests (i.e., the Satorra-Bentler scaled statistic was within the cut-off limits) (Byrne, 1994, p.27). EQS indicates that no case made an extreme contribution to multivariate kurtosis (i.e., no outliers). The means for each of the 28 STOPS items ranged from 3.1 to

\(^7\) It is plausible that by changing the order of items, one methodological flaw, response sets, could be reduced but it could introduce another (i.e., order effects).
4.9. With the possible range of values being 1 to 7, the mean values are reasonable. Furthermore, the standard deviations of the STOPS indicators are unrestricted (e.g., the values range from .88 to 1.23).

Table 3.7 presents the CFA factor loadings for the hypothesized four factor model. Table 3.7 also shows the fit indices for the original four factor model, as well as for some revised versions. Additionally, Table 3.7 shows the inter-factor correlations.

[Insert Table 3.7 about here]

The original four-factor CFA model yields fit values of .82 for NFI, .83 for NNFI, and .86 for CFI; chi-square = 1195.785; df = 322). These findings suggest that the model does not attain acceptable levels of fit (i.e., .90 or higher; Bentler, 1989, 1990). Furthermore, the Lagrange Multiplier (LM) test suggests that the model can be substantially modified. Specifically, the LM tests offers support that the indicators "older people 65-74 years of age are meddlesome" and "older people 75-99 years of age are meddlesome" are misrepresented by the model.

Recall that in the development of STOPS, both EFA and CFA results suggested that the "meddlesome" indicator reflected the "personality" dimension of the stereotypes of the elderly. The LM test indicates that when the two items reflecting "meddlesome" of the elderly--"older people 65-74 years of age are meddlesome" and "older people 75-99 years of age are meddlesome"--are allowed to load on the intolerance factor, as well as the personality dimension, the chi-square would reduce 225 and 170, (p < .001), respectively. On the grounds of
Table 3.7. Confirmatory Factor Analysis Results of STOPS on the national sample of Podiatry Students (N = 533).

**HYPOTHESIZED FACTORS**

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Intolerance Behavior ($F_1$)</th>
<th>Health Characteristics ($F_2$)</th>
<th>Negative Personality Characteristics ($F_3$)</th>
<th>Inactivity Characteristics ($F_4$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get Upset$^a$</td>
<td>.63</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Get Upset$^b$</td>
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<td>.00</td>
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<tr>
<td>Grouchy$^a$</td>
<td>.71</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Grouchy$^b$</td>
<td>.52</td>
<td>.00</td>
<td>.00</td>
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</tr>
<tr>
<td>Talk to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Themselves$^a$</td>
<td>.26</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
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<tr>
<td>Talk to</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Themselves$^b$</td>
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<tr>
<td>Walk Slow$^b$</td>
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Table 3.7 (Continued).

<table>
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<tr>
<th>ITEMS</th>
<th>Intolerance (F₁)</th>
<th>Health (F₂)</th>
<th>Negative Personality (F₃)</th>
<th>Inactivity (F₄)</th>
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</thead>
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<tr>
<td>Meddlesomeᵃ</td>
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<td>0.00</td>
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</tr>
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<td>Meddlesomeᵇ</td>
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<td>0.75</td>
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<td>0.00</td>
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<td>0.00</td>
<td>0.84</td>
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</tr>
<tr>
<td>Good old daysᵃ</td>
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<td>0.00</td>
<td>0.57</td>
<td>0.00</td>
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<td>0.76</td>
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Table 3.7 (Continued).

**Inter-Factor Correlations**

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<td>0.01</td>
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</table>

**Goodness-of-fit Statistics**

1. Original (28-item) Four-factor model:

   Chi-square = 1195.79; df = 322; N = 533; NFI = .82; NNFI = .83;

   CFI = .86.

2. Revised (26-item) Four-factor model with both "meddlesome" items deleted:

   Chi-square = 800.39; df = 271; N = 533; NFI = .87; NNFI = .89;

   CFI = .91.

3. Revised (24-item) Four-factor model with both "meddlesome" and "talk to themselves" items deleted:

   Chi-square = 723.90; df = 220; N = 533; NFI = .89; NNFI = .91;

   CFI = .92.

**Note.** All loadings are standardized coefficients obtained from the ML procedure in EQS. Those loadings that are bold-faced and underlined are significant.

a65-74 year old stem.

b75-99 year old stem.
potential contamination, these two items were deleted.\textsuperscript{8} With both "meddlesome" items deleted, CFA analysis is performed on the remaining twenty-six items. This refinement substantially increased the fit indices (CFI = .91; NFI = .87; NNFI = .89; chi-square = 800.388, d.f. = 271).

Table 3.7 presents the factor loadings for the modified measurement model. With the exception of loadings on three items, the factor loadings of items are larger than the cut-off criteria of .400 or higher. Two of the three deviant items, "older people 65-74 years of age talk to themselves" and "older people 75-99 years of age talk to themselves" have values of .26 and .29, respectively. The third item "older people 65-74 years of age are productive" has a value .36. However, "older people 75-99 years of age are productive" has an acceptable factor loading of .58.

Both "talk to themselves" items were deleted and CFA was performed on twenty four items. This improved the overall fit of the model (CFI = .92; NFI = .89; NNFI = .91; chi-square = 723.900, d.f. = 220).\textsuperscript{9} The inter-factor correlations range from .00 to .63—the latter correlation representing the relationship between personality/activity stereotypes.

\textsuperscript{8} The ensuing factor loading on the personality factor for "older people 65-74 years of age are meddlesome" is .56. The resulting factor loading for "older people 75-99 years of age are meddlesome" is .73. The factor loading on the intolerance factor for "older people 65-74 years of age are meddlesome" is .57. Moreover, the succeeding factor loading for "older people 75-99 years of age are meddlesome" is .80.

\textsuperscript{9} The dissertation kept both productive items. Even though the "productive" item for the 65-74 year old stem had a factor loading just below the cut-off criteria, the "productive" item for the 75-99 year old stem had a factor loading well above the cut-off criteria. The LM test suggested that dropping both "productive" items would not improve the fit of the model. For the purposes of this dissertation, keeping one of the "productive" items, while dropping the other seemed illogical.
In sum, evidence from the LM test and the size of factor loadings indicated the initial model was inadequate. The subsequent revisions of the original measurement model consisted of deleting the two items that describe the elderly as "meddlesome" and the two items which describe the elderly as "talking to themselves". Therefore, the final model contained 24 items, 12 of which assessed stereotypes toward older people who were in the age category of 65-74 and, 12 in the 75-99 age category. The items are recoded to signify negative stereotypes toward older people.

Similar to the newly developed STOPS, the final model posits four factors. Factor one (Intolerance) contains six items which reflect elder's irritability. More specifically, the items consist of the following: Older people 65-74 years of age and 75-99 years of age: 1) are grouchy; 2) get upset easily; 3) are intolerant. This sub-scales has a mean = 20.85 (SD = 4.63), and a Cronbach's alpha scale = .87.

Factor two (Negative Personality Characteristics) contains six items that embodies distinctive traits of mind and behavior of elderly people, which have negative undertones. The specific items are: Older people 65-74 years of age and 75-99 years of age: 1) think about the 'good old days'; 2) are old fashioned; and 3) are set in their ways. The Negative Personality Characteristics sub-scale has a mean = 27.78 (SD = 5.22), and a Cronbach's alpha = .85.

Factor three (Unhealthy Behavior) contains six items that measures the feebleness and infirmity of older individuals. The items contain the following: Older people 65-74 years of age and 75-99 years of age: 1) have health problems; 2) walk slowly; 3) never fully recover from illness. This sub-scale has a mean = 26.09 (SD = 4.45), and a Cronbach's alpha = .80.
Factor four (Inactivity) contains six items that assesses the apathy and lethargy of older people. The particular items consist of the following: Older people 65-74 years of age and 75-99 years of age are: 1) optimistic; 2) productive; and 3) physically active. The Activity sub-scale has a mean = 23.96 (SD = 4.32), and a Cronbach's = .79.

Operationalization of Attitudes toward Treating Elderly Patients

There are three scales that have attempted to assess medical students' attitudes toward treating elderly patients: Maxwell and Sullivan's (1980) Attitudes toward Geriatric Patient Scale, Warren, Painter and Rudisill's (1983) Geriatric Patient Care Scale, and Beland and Maheux's (1990) Attitudes toward treating the Elderly Scale.

Maxwell and Sullivan's (1980) Attitudes toward Geriatric Patient Scale is a twenty-three item Likert-type questionnaire which contains questions about the cost effectiveness, time and energy and therapeutic potential of treating elderly patients. The study has two main shortcomings, however. First, the response rate is quite low (38 percent). Second, Maxwell and Sullivan report that their scale is multidimensional (i.e., they separated the items into distinct factors) without presenting results for either exploratory or confirmatory factor analysis. That is, Maxwell and Sullivan made no attempts to validate their scale (for a brief review of their instrument, see Adelman & Albert, 1987, p.144).

Warren et al.'s (1983) Geriatric Patient Care scale was an attempt to refine Maxwell and Sullivan's scale. The Warren et al. scale contained eight of the original 23 items from Maxwell and Sullivan's scale. They failed to report the basis for selecting eight of the 23 items. However, these eight items are well
representative of the three dimensions proposed by Maxwell and Sullivan. Warren et al.'s study has shortcomings that are similar to Maxwell and Sullivan's study. Their sample consisted of only 80 third-year medical students from one medical school in the Midwest. They did not report any tests for its validity (i.e., exploratory and/or confirmatory factor analysis). In addition, no tests for reliability were conducted.

The most recent attempt to assess attitudes toward treating elderly patients is Beland and Maheux's (1990) study of medical students in three provinces in Canada. Their study has a very large sample size (N = 1,470) and a high response rate 80.3%. The conceptualization of the items in their scale is clear and concise. Beland and Maheux conceptualize attitudes toward treating elderly patients as: 1) the technical aspects of medical care (i.e., the efficacy of care given by medical students to elderly patients); and 2) psychosocial aspects of the interaction process in clinical settings (i.e., the satisfaction that physicians derive from treating elderly patients). They develop a four-item scale to assess these two aspects of treating elderly patients.

Technical aspects of medical care is represented by two items which measure the efficacy of medical care given to the elderly patients. The psychosocial aspect is represented by two items that measures the satisfaction medical students derive from treating elderly patients. Specifically, the efficacy of medical interventions includes the following: 1) "A great number of elderly persons have health problems for which physicians cannot give much help"; and 2) "preventive medical care is less relevant for elderly persons, considering their chronic conditions". Items measuring satisfaction with treatment of the elderly were: 1) "Considering the typical health problems of the elderly, it is less
gratifying for a physician to treat them"; and 2) "with elderly patients, it is more satisfactory for physicians to undertake treatment of acute diseases than chronic conditions". Furthermore, they use a six-point scale, where 1 indicates complete disagreement and 6 complete agreement.

Beland and Maheux's (1990) four-item scale did present some methodological shortcomings. For instance, even though they selected the four items from a set that were pre-tested twice on samples of medical students, they fail to report how many items were in the original set. They also did not specify to what group of individuals the two pre-tests were conducted. Moreover, no information was presented on what type of items were deleted from the original pool. In fact, they did not report any rationale for deleting items. Beland and Maheux did report that the items were derived from either past studies or past research projects, but fail to report those studies. The authors did not report any exploratory or confirmatory factor analyses results to prove the instrument's validity, and they did not present any tests for its reliability such as a Cronbach's alpha. At any rate, Beland and Maheux point out that additional items should be incorporated in future psychometric work on attitudes toward giving medical care to the elderly.

Based upon the methodological shortcomings of these previous attempts to develop a measure of attitudes towards treating elderly patients, the present study developed a new scale. The details relating to the scale are discussed below.

**Attitudes toward Treating Elderly Patients.** Attitudes toward Treating Elderly Patients Scale (ATEPS) assesses the attitudes toward treating older people who
are patients. A content analysis was performed on the three most popular scales discussed above. After comparing the items from both Maxwell and Sullivan’s and Warren et al.’s instrument, all eight items from Warren et al.’s scale are selected as well as the four items from Beland and Maheux’s study. These 12 items had face validity, and they consisted of a wide range of items. Similar to the item selection criteria used to develop STOPS (discussed above), the present study attempted to identify factors that are consistent with the literature and theoretically meaningful.

After examining the conceptual dimensions and items tapping attitudes toward treating elderly patients, two factors were hypothesized—"Uselessness to treat Elderly Patients" and "Dissatisfaction from Treating Elderly Patients"—consisting of a total of 12 items. The wording of these items were not altered. The items were assessed along a seven-point Likert format (where 1 = strongly agree and 7 = strongly disagree). Similar to the development of STOPS, the study sample is divided into two groups, where one group (N = 146) is used for EFA and the other (N = 146) for CFA. This sample size exceeds the subject/item ratio of 5:1 that researchers have suggested is a minimum for EFA, as well as the subject to parameters criteria for CFA (cf. Byrne, 1994; Kercher, 1994; Nunnally, 1978; Tinsley & Tinsley, 1987). Thus, the two hypothesized factors consisting of 12 items were subjected to both exploratory and confirmatory factor analysis, which is discussed below.

**Exploratory Factor Analysis (EFA).** The EFA results suggest dropping six items. More specifically, two of the original 12 items are eliminated because of extremely low communalities (i.e., < .15); the other four are eliminated because
they loaded substantially (i.e., .30 or higher) on more that one factor (cf. Lasher & Faulkender, 1993; Stuckless & Goranson, 1992). In short, six items remain.

Table 3.8 presents the primary and secondary loadings of the items that remain. Consistent with the outcomes of the content analysis, the EFA reveals two factors captured by six items. Two factors were found that accounted for 59.9% of the variance. Factor 1 (Uselessness of treating elderly patients) explains 41.0% and factor two (dissatisfaction from treating elderly patients) explains 18.8%. The factor loadings range from .46 to .75, which exceeds the minimum level of acceptability set at .40 (cf. Bollen, 1989). For the most part, the items load strongly on their respective factors. The one exception involves the item which reflects that the treatment of elderly patients is hopeless. For instance, its primary loading is .54 and its secondary loading is .36.

[Insert Table 3.8 about here]

**Confirmatory Factor Analysis.** Based upon the outcomes of EFA, the same hypothesized two-factor measurement model is tested by means of CFA. Mardia's (1970) coefficient, suggests that the sample displays multi-variate normality (cf. Bentler, 1989; Byrne, 1994, p.82). Furthermore, based upon a given case's contribution to multi-variate normality, there appears to be no outliers. That is, the most extreme cases all fall approximately within the same range of values (Byrne, 1994, p.82). Furthermore, the Satorra-Bentler scaled statistic indicates values similar to the ML procedure, and thus also suggests no distortion of CFA results due to violations of multivariate normality assumptions.
Table 3.8. Exploratory Factor Analysis results of the random sub-sample of undergraduate students used to develop ATEPS (N = 146).

<table>
<thead>
<tr>
<th></th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1: Uselessness to treat Elderly Patients</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Considering the typical health problems of the elderly, it is less gratifying for a DPM to treat them</td>
<td>.75</td>
<td>.20</td>
</tr>
<tr>
<td>Treatment of old People is hopeless; they are operating with 'machinery that is worn out”</td>
<td>.54</td>
<td>.36</td>
</tr>
<tr>
<td>A great number of elderly persons have health problems for which DPMs cannot give much help</td>
<td>.50</td>
<td>.06</td>
</tr>
<tr>
<td>Preventive medical care is less relevant for elderly persons, considering their chronic conditions</td>
<td>.46</td>
<td>.18</td>
</tr>
</tbody>
</table>

**Factor 2: Dissatisfaction from Treating Elderly Patients**

<table>
<thead>
<tr>
<th></th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is wearisome and unglamorous to care for chronically ill old people</td>
<td>.18</td>
<td>.74</td>
</tr>
<tr>
<td>The treatment of old people is too time consuming</td>
<td>.14</td>
<td>.65</td>
</tr>
</tbody>
</table>

*Note.* Those loadings that are bold-faced and underlined are significant.
Table 3.9 shows the CFA results of the second random sub-sample (N = 146), which is used to confirm the EFA results of ATEPS. Both the chi-square (chi-square = 7.909, d.f.= 8) and fit indices (CFI = .97; NFI = .96; NNFI = .95) attain acceptable levels. The factor loadings range from .41 to .72, which meets the cutoff point. The correlation between the two factors is .19, which suggests a weak interrelation among the two factors.

[Insert Table 3.9 about here]

Overall, the EFA and CFA results of ATEPS yield similar findings. That is, six items describing two factors, "Uselessness of treating elderly patients" and "Dissatisfaction from treating elderly patients", are both suggested by EFA and CFA results. Moreover, the CFA results provide strong support for the hypothesized two factor model.

Descriptive Statistics for ATEPS. The items constituting ATEPS range from 1 to 7. The Uselessness of Treating Elderly Patients sub-scale (four items) ranges from 1 to 28, with a mean = 12.76 and a standard deviation (SD) = 1.99. The Cronbach’s alpha for this scale is .73. The Dissatisfaction from Treating Elderly Patients subscale (two items) ranges from 1 to 14, with a mean = 5.19 (SD = 2.86), and a Cronbach’s alpha = .70. For both scales, higher scores indicate more negative attitudes toward treating elderly patients.

These reliability coefficients are quite good for short scales (cf.Carmines & Zeller, 1979; Kercher, 1992). Feldt’s (1969) F-test of equality found no statistically significant differences (p > .05) due to race or gender across the
Table 3.9. Confirmatory Factor Analysis results of the random sub-sample of undergraduate students used to develop ATEPS (N = 146).

**HYPOTHESES FACTORS**

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Uselessness to treat Elderly Patients</th>
<th>Dissatisfaction from treating elderly patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less gratifying to treat</td>
<td>( F_1 )</td>
<td>( F_2 )</td>
</tr>
<tr>
<td>Treatment is hopeless</td>
<td>.67</td>
<td>.00</td>
</tr>
<tr>
<td>Not much help</td>
<td>.65</td>
<td>.00</td>
</tr>
<tr>
<td>Preventive less relevant</td>
<td>.56</td>
<td>.00</td>
</tr>
<tr>
<td>Wearisome and unglamorous</td>
<td>.41</td>
<td>.00</td>
</tr>
<tr>
<td>Too time consuming</td>
<td>.00</td>
<td>.72</td>
</tr>
</tbody>
</table>

**Inter-Factor Correlation** = .19

**Goodness-of-fit Statistics**

Chi-square = 7.91; df = 8; \( N = 146; \)

NFI = .951; NNFI = .968; CFI = .979.

**Note.** Factor loadings from Confirmatory Analysis of ATEPS items. All loadings are standardized coefficients obtained from the ML procedure in EQS. Those loadings that are bold-faced and underlined are significant.
The intercorrelation between the Uselessness of Treating Elderly Patients sub-scale and the Dissatisfaction from treating Elderly Patients is .23.

Summary and General Discussion of ATEPS. ATEPS was developed because the three most popular scales used to assess medical students’ attitudes toward treating elderly patients lacked psychometric adequacy. Even though the pre-existing scales had some insufficiencies, the items comprising these scales appeared to display content validity. Therefore, the items that constitute ATEPS are original items taken from the three most popular instruments that attempted to measure attitudes toward treating elderly patients.

A primary goal in developing ATEPS is to produce a valid and reliable instrument that correctly assesses podiatry students’ attitudes toward treating elderly patients. A related expectation is that ATEPS can be administered and evaluated in a short amount of time. Both EFA and CFA analyses support a two factor measure that assesses how useless it is for podiatry students to treat elderly patients and how dissatisfied podiatry students feel when they treat elderly patients. With appropriate support for a two factor model, ATEPS was administered to the national sample of podiatry students (N = 533).

Confirmatory Factor Analysis (CFA) of ATEPS for the National Sample of Podiatry Students. CFA is performed on the entire set of ATEPS items. In general the indicators demonstrate reasonable mean scores, unrestricted standard deviations, and normal distributions. For instance, with the possible range of

---

10 The present study administered these tests on the combination of the two sub-samples (i.e., the entire sample).
values being 1 to 7, the means ranged from 5.05 to 6.45, and the standard deviations range from .94 to 1.86. Mardia’s (1970) coefficient suggests that the sample has a multivariate normal distribution. Furthermore, no cases in the sample made an extreme contribution to multivariate kurtosis (i.e., no outliers). Additionally, the findings from the robust procedure indicate no inconsistencies with the ML tests.

Table 3.10 shows the CFA results for ATEPS. The goodness of fit indices attain acceptable levels in this initial model (CFI = .93; NFI = .92; NNFI = .87; chi-square = 47.34, d.f. = 8). On the basis of a Lagrange Multiplier (LM) model modification indices (cf. Chou & Bentler, 1990), the model can be modified. More specifically, the LM test indicates that the fit of the model can be substantially improved by allowing the item, “Treatment of old people is hopeless”, to load on factor two, Dissatisfaction from treating elderly patients.

[Insert Table 3.10 about here]

The overall fit of the modified model (CFI = .96; NFI = .95; NNFI = .89; chi-square = 31.51, d.f. = 7), is clearly better than the initial model, though not by a large amount. Table 3.10 presents the results for the final test, with all paths added. This is intended to show how much the added path affects substantive results (i.e., factor loadings). Table 3.10 shows that the added path displays a strong secondary loading of .46. However, other factor loadings change very little. Furthermore, all factor loadings retain values of .43 or larger. The correlation between the two factors is = .44, for the initial test, and .47 for the final test. In sum, CFA confirms that ATEPS is a two-factor model. Moreover,
Table 3.10. Confirmatory Factor Analysis Results of ATEPS on the national sample of Podiatry Students (N = 533) for both the Initial Test and for the Final Test (with all paths added).

**HYPOTHESIZED FACTORS**

I. **INITIAL MODEL**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Uselessness to treat Elderly Patients $(F_1)$</th>
<th>Dissatisfaction from treating Elderly Patients $(F_2)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less gratifying to treat</td>
<td>.69</td>
<td>.00</td>
</tr>
<tr>
<td>Treatment is hopeless</td>
<td>.69</td>
<td>.00</td>
</tr>
<tr>
<td>Not much help</td>
<td>.52</td>
<td>.00</td>
</tr>
<tr>
<td>Preventive less relevant</td>
<td>.47</td>
<td>.00</td>
</tr>
<tr>
<td>Wearisome and unglamorous</td>
<td>.00</td>
<td>.79</td>
</tr>
<tr>
<td>Too time consuming</td>
<td>.00</td>
<td>.62</td>
</tr>
</tbody>
</table>

II. **MODIFIED MODEL**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Uselessness to treat Elderly Patients $(F_1)$</th>
<th>Dissatisfaction from treating Elderly Patients $(F_2)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less gratifying to treat</td>
<td>.76</td>
<td>.00</td>
</tr>
<tr>
<td>Treatment is hopeless</td>
<td>.72</td>
<td>.46</td>
</tr>
<tr>
<td>Not much help</td>
<td>.50</td>
<td>.00</td>
</tr>
<tr>
<td>Preventive less relevant</td>
<td>.43</td>
<td>.00</td>
</tr>
<tr>
<td>Wearisome and unglamorous</td>
<td>.00</td>
<td>.81</td>
</tr>
<tr>
<td>Too time consuming</td>
<td>.00</td>
<td>.60</td>
</tr>
</tbody>
</table>
Table 3.10 (Continued).

Inter-Factor Correlation = .44.

Goodness-of-fit Statistics

1. Initial Two-factor (6-item) model:
   
   Chi-square = 47.342; df = 8; N = 533; NFI = .92; NNFI = .87; CFI = .93.

2. Two-factor (6-item) model with secondary loading of "Treatment is hopeless" on "Dissatisfaction from treating elderly patients":
   
   Chi-square = 31.51; df = 7; N = 533; NFI = .55; NNFI = .90; CFI = .96.

Note. All loadings are standardized coefficients obtained from the ML procedure in EQS.
by adding the suggested path from the LM test, the fit of the model improves, but the factor loadings of most items and the correlations among factors are not substantially affected.

Given the pattern of the above results, one possible solution would be to simply delete the item with two substantial factor loadings, i.e., delete the item, "treatment is hopeless". However, the present study retains the item, because when it is deleted from the factor, the Cronbach's alpha decreases substantially (i.e., from .71 to .60). Accordingly, factor one, Uselessness of treating elderly patients, consists of four items and reflects the meaningless and futility of treating elderly patients. The items are recoded so that higher numbers signify negative attitudes. Factor one contains the following four items: 1) "Preventive medical care is less relevant for elderly persons, considering their chronic conditions"; 2) "A great number of elderly persons have health problems for which podiatrists cannot give much help"; 3) "Considering the typical health problems of the elderly, it is less gratifying for a podiatrist to treat them; and 4) "Treatment of old people is hopeless; they are operating with "machinery that is worn out". The scale ranges from 4 to 28, with a mean = 4.46 (SD = 2.98), and a Cronbach's alpha = .71.

Factor 2 (Dissatisfaction from treating elderly patients) contains two items which reflect the discontentment from treating elderly patients. Dissatisfaction from treating elderly patients sub-scale contains the following: 1) "The treatment of elderly patients is too time consuming"; and 2) "It wearsome and unglamorous to care for chronically ill old people". This sub-scale ranges from 2 to 14. It has a mean = 4.29 (SD = 2.31) and a Cronbach's alpha = .69.
Overall, the reliabilities are quite good for short four- and two-item sub-scales, respectively (cf. Carmines & Zeller, 1979).

Operationalization of Professional Socialization

Clinical Contact. Clinical contact with the elderly is measured by one open-ended item. Podiatry students were asked to list the number of days per week that they have clinical contact with elderly patients. The mean days per week the podiatry students spent in clinical contact with the elderly is 1.56 (SD = 2.11). Slightly over one-half (54%) of the respondents indicate they spend zero days per week, while 44% spend between 1 to 5 days per week in clinical contact with the elderly.

Attitudes toward Geriatric Education. Four of the six Maxwell and Sullivan's (1980) Geriatric Educational Preparation scale items are selected to assess podiatry students' attitudes toward the geriatric education received in podiatry school. These four items are found in Appendix A (questions #15-18). Maxwell and Sullivan did not report any psychometric properties on their original scale. For the present study four items are selected by their face validity. The items are the most pertinent for podiatry students' attitudes toward their geriatric education. For instance, the two items that were not chosen were the following: 1) "My training will enable me to use and coordinate community agencies"; and 2) "Medical education that fails to prepare the physician to care for the growing elderly clientele is unrealistic" (Maxwell & Sullivan, 1980, p.342). The former
item was not chosen because it is irrelevant to podiatric medical education; the latter item was too verbose, and had a double negative undertone.

The four items used in the dissertation are slightly altered from the original. "Podiatry school" is substituted for "medical school". Additionally, one of the items, "podogeriatrics" (which is a narrow sub-specialty within podiatric medicine that exclusively examines foot ailments of the elderly), is substituted for "geriatric medicine" to better clarify the context of geriatric education. For question #16, "The majority of my professors", is substituted for "my professor" as an attempt to assess a greater number of respondents' faculty members (see Appendix A). Moreover, it is plausible that the podiatry students will have contact with numerous faculty members. Maxwell and Sullivan's original item that contains "my professor" suggests that the student may only have one professor.

A final alteration involves the response categories. Maxwell and Sullivan (1980) used a five-point Likert-type scale, where 1 = most positive (strongly agree) and 5 = most negative (strongly disagree). Analogously, this dissertation uses a Likert-type scale, however it assesses the attitudes along a seven-point scale, where 1 = most negative (strongly disagree) and 7 = most positive (strongly agree). A seven-point response category vis-a-vis a five-point response category allows the items to generate more variance (Comrey, 1988).

Table 3.11 suggests that the EFA results form an unidimensional construct, containing the following three items: "In my podiatry school training, problem cases in geriatrics are frequently presented"; "The majority of my professors avoid instruction in podogeriatrics; and "My exposure to geriatric (podiatric) medicine has been adequate". In other words, these three items load
strongly on one factor, with factor loadings ranging from .45 to .74. The fourth item, "More training is needed to provide better care to elderly patients", failed to load substantially on this dimension. It has a factor loading of .15.

[Insert Table 3.11 about here]

Likewise, the CFA results, shown in Table 3.11, support the EFA results. The second random sub-sample (N = 266), has a good overall fit (CFI = .93; NFI = .91; NNFI = .88); chi-square = 8.143, d.f. = 2). Turning to the parameter estimates, the three items have factor loadings above .40: "Problem cases frequently presented" has a loading of .70; "professors avoid instruction" has a value of .56; and "exposure as adequate" has a loading of .47. Similar to the EFA results, CFA indicates that the "more training is needed" item should be deleted. It has a factor loading of .12.

The items for the resulting composite scale are coded so that a higher number indicates positive attitudes toward their podogeriatric education. The Attitudes toward Podogeriatric Education index ranges from 3 to 21, with a mean of 11.22 (SD = 2.27), and a Cronbach’s alpha = .69.

Operationalization of Intergenerational Solidarity

Associational Solidarity. The research strategy for measuring associational solidarity emphasizes contact between generations at the level of role relationships (for example see Bengston et al., 1990; Mangen & Miller, 1988). As discussed in Chapter two, a focus of this dissertation is to assess the associational
Table 3.11. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) results for Maxwell and Sullivan's (1980's) Geriatric Education Preparation Scale.

**HYPOTHESIZED FACTOR**

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>EFA loading (N = 267)</th>
<th>CFA loading (N = 266)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem Cases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequently Presented</td>
<td>.74</td>
<td>.70</td>
</tr>
<tr>
<td>Professors Avoid Instruction</td>
<td>.54</td>
<td>.56</td>
</tr>
<tr>
<td>More Training is Needed</td>
<td>.15</td>
<td>.12</td>
</tr>
<tr>
<td>Exposure to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geriatrics Adequate</td>
<td>.45</td>
<td>.47</td>
</tr>
</tbody>
</table>

**Goodness-of-fit Statistics for CFA**

Chi-square = 8.143; df = 2; N = 266; NFI = .91; NNFI = .88; CFI = .93.

**Note.** Confirmatory Factor Analysis loadings are standardized coefficients obtained from the ML procedure in EQS. Those loadings that are bold-faced and underlined are significant.
solidarity between the podiatry students and their grandparents (both as one dyad), when the former was growing up.

A single-item adapted from Mangen and Miller (1988) is used to measure the associational solidarity between the podiatry students and their grandparents. Mangen and Miller's (1988, p.124) item stated the following: 1) "How often did you visit these grandparents while growing up?; "grandfather___; grandmother___. Similarly, the item used in this dissertation is the following: "How often did you visit your grandparents while growing up?. Rather than using Mangen and Miller's open-ended format, the frequency ratings are made on a five point scale, where 1 = from less than once per year to 5 = at least once per week. This item has a mean of 3.95 (SD = 1.26). Nearly one-half (46%) of the sample visited their grandparents at least once per week, whereas 11% visited their grandparents once per year or less.

**Measure of Affectual Solidarity.** Mangen (1988, p.46) declares that the purpose of measuring affectual solidarity is to capture a "descriptive summary of the degree of closeness present in each intergenerational role relationship as perceived by that individual". To measure affectual solidarity between podiatry students and their grandparents, the present study uses a standardized scale in which podiatry students respond to a series of ten questions about the affective component of their relationship with their grandparents.

Bengston and Mangen (1988) originally developed this standardized scale and it has recently been used by Silverstein and Bengston (1991). In its original development, Bengston and Mangen (1988, p.226) were vague in reporting the psychometric results for their scale: "Factor analyses indicate that one
underlying construct explains most of the variance in the ten items". Alpha reliabilities are high. However, a recent study provides more solid evidence of the scale's strong psychometric properties. Silverstein and Bengston (1991) found this scale to have a unidimensional structure, with a Cronbach's alpha = .93.

Bengston and Mangen's affectual solidarity scale contains five items that measure podiatry students' feeling of affection for their grandparents and five questions on the podiatry students' perceptions of their grandparents' feelings of affection for them. Ratings of affection are made on a six-point scale, ranging from none to extremely high (please see question #25 in Appendix A for the listing of these items). The scale has a range from 6 to 60. In the present study, it has a mean of 50.44 (SD = 10.26), and a Cronbach's alpha = .96. Similarly, Silverstein and Bengston (1991) reported an overall mean of 51.88 (SD = 6.83), and a Cronbach's alpha = .93 for this scale.

To assess the validity of Bengston and Mangen's (1988) Affectual Solidarity Scale, exploratory factor analysis (EFA) was performed on a random sub-sample (N = 267) of the national sample of podiatry students. Table 3.12 presents these findings. Similar to Silverstein and Bengston (1991) a unidimensional construct emerged, explaining 58.8% of the variance. The factor loadings ranged from .73 to .90.

[Insert Table 3.12 about here]

Confirmatory factor analysis (CFA) was conducted on a second random sub-sample (N = 266) of the national sample of podiatry students. Table 3.12 presents these findings. Table 3.12 indicates that Bengston and Mangen's (1988)
Table 3.12. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) results for Bengston and Mangen’s (1988) Affectual Solidarity scale.

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>EFA loadings (N = 267)</th>
<th>CFA loadings (N = 266)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How well do/did you feel your grandparents understand/understood you?</td>
<td>.73</td>
<td>.71</td>
</tr>
<tr>
<td>How much affection do/did you feel your grandparents have/had for you?</td>
<td>.89</td>
<td>.85</td>
</tr>
<tr>
<td>How much respect do/did you feel from your grandparents?</td>
<td>.90</td>
<td>.87</td>
</tr>
<tr>
<td>How well do/did you feel you understand/understood your grandparents?</td>
<td>.75</td>
<td>.72</td>
</tr>
<tr>
<td>How much affection do/did you feel toward your grandparents?</td>
<td>.81</td>
<td>.84</td>
</tr>
<tr>
<td>How fair do/did you feel your grandparents are/were toward(s) you?</td>
<td>.92</td>
<td>.89</td>
</tr>
<tr>
<td>How fair do/did you feel you are/were toward your grandparents?</td>
<td>.84</td>
<td>.80</td>
</tr>
</tbody>
</table>
Table 3.12. (Continued).

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>HYPOTHESESIZED FACTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EFA Loadings (N = 267)</td>
</tr>
<tr>
<td>How well do/did you feel your grandparents trusted you?</td>
<td>.85</td>
</tr>
<tr>
<td>How well do/did you trust your grandparents?</td>
<td>.90</td>
</tr>
</tbody>
</table>

Goodness-of-fit Statistics for CFA

Chi-square = 299.620; df = 35; N = 266; NFI = .99; NNFI = .97;
CFI = .99.

Note. CFA loadings are standardized coefficients obtained from the ML procedure in EQS. Those loadings that are bold-faced and underlined are significant.
Affectual Solidarity Scale fits the data quite well (CFI = .99; NFI = .99; NNFI = .97; chi-square = 299.620, d.f. 35, p < .001). Consistent with the EFA findings, the ten items in the CFA model have consistently high factor loadings. All values are .71 or higher. The inter-item correlations are high, ranging from .60 to .88 (results not shown).

Operationalization of Political Behavior

Colombotos and Kirchner's (1986) Political Ideology Scale is used to measure podiatry students' political behavior. Several recent studies on medical students' attitudes have used this scale (e.g., Colombotos and Kirchner, 1986; Sudit, 1987, 1988).

Colombotos and Kirchner's (1986) Political Ideology scale consists of the following components: 1) Podiatry student's present political party preference (five-point scale ranging from Strong Republican to Strong Democrat); 2) Podiatry student's political thinking (a five-point scale measuring political thinking on a continuum from "radical left" through "middle-of-the-road" to "radical right"; and 3) Podiatry student's position on an economic-welfare liberalism (ECOWELF) scale. The ECOWELF scale consists of the following four items (measured along a five-point Likert scale, where 1 = strongly agree and 7 = strongly disagree): 1) It is the responsibility of society, through its government to guarantee full employment; 2) Poverty could almost be done away with if we made certain basic changes in our social and economic system; 3) The United States needs a complete restructuring of its basic institutions; and 4) The
government should play a bigger part in the economic life of the nation in order to distribute income more equally.

The dissertation uses these same items; however, a seven-point Likert-type (where 1 = strongly agree and 7 = strongly disagree) instead of a five-point scale is used (these items are found in Appendix A, question numbers 19-22, 28 and 29). This slight emendation is done so that the variables can have more freedom to vary (cf. Comrey, 1988; Nunnally, 1978).

Colombotos and Kirchner (1986) found a Cronbach's alpha = .73 for the ECOWELF scale. Moreover, the four-items comprising ECOWELF, combined with medical students' political party identification and present political party preference, form the "Political Ideology Super-Scale" and has a Cronbach's alpha = .78 (cf. Colombotos & Kirchner, 1986, p.216-217). Colombotos and Kirchner (1986) report that the unidimensionality of the scale is tested by exploratory factor analysis (with varimax rotation and eigenvalue = 1), however they do not report any more information on the validity of the scale. In particular, they did not demonstrate that the items comprising ECOWELF coalesce into a single factor separate from political party preference and political thinking. Furthermore, they fail to report the reliability of the political party and political thinking items. In short, Colombotos and Kirchner (1986) created and implemented a "Political Ideology Super-Scale" without establishing its validity.

In an attempt to overcome the psychometric insufficiencies of Colombotos and Kirchner (1986), the national sample of podiatry students is randomly divided into two groups. Group 1 (N = 267) is used for exploratory factor analysis (EFA), while Group 2 (N = 266) is used for confirmatory factor analysis.
(CFA). Both of these tests are performed to assess the validity of Colombotos and Kirchner's measure (i.e., to determine if it is an unidimensional construct).

Table 3.13 demonstrates that two distinct factors emerged, with the four ECOWELF items forming one factor (referred to hereafter as political ideology) and the political party and identification items forming a second factor (referred to hereafter as political affiliation). Political Ideology (four items) explains 46% of the variance. The primary loadings for these items range from .59 to .72, while its secondary loadings range from .11 to .24. Political Affiliation (two items) explains 20% of the variance, and has primary loadings of .70 and .71. The secondary loadings for these two items are .15 to .19.

[Insert Table 3.13 about here]

To confirm the EFA results, and to make a better assessment of the scales' validity, CFA is used on Group 2 (N = 266). The CFA analyses is performed on the two-factor model, as suggested by the EFA results. Table 3.14 shows that the two-factor model has a nearly perfect fit of the data (CFI = .99; NFI = .97; NNFI = .98; chi-square = 11.958, d.f. = 8, p < .001). The standardized factor loadings for the two factor model ranges from .56 to .95. There is no association between the factors, r = .00, p > .05.

[Insert Table 3.14 about here]

Thus, both EFA and CFA indicate that Colombotos and Kirchner's Political Ideology Super Scale has two rather than one dimension. Therefore, to

<table>
<thead>
<tr>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>.72</td>
<td>.12</td>
</tr>
</tbody>
</table>

**Factor 1: Political Ideology**

Poverty could almost be done away with if we made certain basic changes in our social and economic system.

The government should play a bigger part in the economic life of the nation in order to distribute income more equally.

The United States needs a complete restructuring of its basic institutions.

It is the responsibility of society, through its government to guarantee full employment.

**Factor 2: Political Affiliation**

How do you consider yourself politically.

In your political thinking, do you consider yourself as...

Note. Those loadings that are bold-faced and underlined are significant.
Table 3.14. Confirmatory Factor Analysis Results of a second random subsample of podiatry students on the political party preference, political thinking, and Colombotos and Kirchner's (1986) Economic-Welfare Liberalism (ECOWELF) scale items (N = 266).

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Political Ideology (F₁)</th>
<th>Political Affiliation (F₂)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty done away with</td>
<td>.71</td>
<td>.00</td>
</tr>
<tr>
<td>Government play bigger role</td>
<td>.73</td>
<td>.00</td>
</tr>
<tr>
<td>U.S. needs restructuring</td>
<td>.63</td>
<td>.00</td>
</tr>
<tr>
<td>Guarantee full employment</td>
<td>.66</td>
<td>.00</td>
</tr>
<tr>
<td>Consider yourself politically</td>
<td>.00</td>
<td>.95</td>
</tr>
<tr>
<td>Political Thinking</td>
<td>.00</td>
<td>.56</td>
</tr>
</tbody>
</table>

**Inter-Factor Correlation** = .00

**Goodness-of-fit Statistics**

Two-factor model (six-items), that is freely estimated:

Chi-square = 11.958; df = 8; N = 266; NFI = .97; NNFI = .98; CFI = .99.

**Note.** The items' labels are abbreviated. All loadings are standardized coefficients obtained from the ML procedure in EQS. Those loadings that are bold-faced and underlined are significant.
assess the political behavior of podiatry students, two sub-scales (i.e., the political ideology and the political affiliation) are used.

The political affiliation sub-scale ranges from 2 through 12 (where high indicates a liberal political affiliation). The scale has a mean = 6.26 (SD = 2.33), and a Cronbach's alpha = .69. For the most part, the distribution of the two items that represent political affiliation tend to be slightly conservative. In reference to the political thinking item, 38% are conservative, 39% middle-of-the road, and 20% as liberal. This item is measured along a five-point scale, where 1 = radical right and 5 = radical left, and has a mean of 2.80 (SD = .82).

The "consider yourself politically" item is measured along a seven point continuum where 1 = strong republican and 7 = strong democrat. Accordingly, it has a mean = 3.47 (SD = 1.80) and contains the following characteristics: 18% consider themselves as politically independent; 20% consider themselves as independents who identify more with the republican party; and 12% as independents who align themselves more with the independent party. In short, 51% of the respondents regard themselves in one of three independent categories, and one-third consider themselves republicans.

The political ideology sub-scale ranges from 4 through 28 (recoded so that high indicates a liberal political ideology; see Appendix A). The scale has a mean of 14.26 (SD = 5.51), and a Cronbach's alpha = .77. A sizable proportion (38%) disagree or strongly disagree that it is the responsibility of society through its government to guarantee full employment for Americans (mean = 4.78, SD = 1.73). Similarly, 42% either disagree or strongly disagree that government should play a bigger part in the economic life of the nation in order to distribute income more equally (mean = 4.82, SD = 1.80).
Motivation for Entering Podiatric Medicine

The present study uses Rosenberg's (1957, 1979) Occupational Extrinsic/Intrinsic Gratification scale to assess podiatry students' motivation for entering podiatric medicine. This scale, which is measured on a seven-point scale where 1 = strongly disagree and 7 = strongly agree, consists of the following six items: I entered podiatry 1) to help others; 2) because it insures me a stable future; 3) because it allows me to earn a good income; 4) because of its importance to the American health-care system; 5) because I enjoy working with people; 6) because it will give me a respected position in society.

Rosenberg developed this scale to assess value endorsements towards careers of female college students (N = 750) (cf. Rosenberg, 1957, p.49). However, in recent studies Simpson (1979, p.75-76) and Beland and Maheux (1990) use Rosenberg's scale on nursing and medical student samples, respectively.\textsuperscript{11} Rosenberg and Simpson divided the scale into two dimensions (i.e., extrinsic reward values and people-oriented values)\textsuperscript{12} without reporting factor analysis or other similar analytic procedures. In addition, Rosenberg, Simpson, and Beland and Maheux did not report the reliability of the scales.

Accordingly, to assess the validity of Rosenberg's six items, the dissertation runs EFA on one random sub-sample of podiatry students, and then runs a CFA on the second random (cross-validation) sub-sample of podiatry students. Table 3.15 indicates that two dimensions emerge. The first dimension

\textsuperscript{11} Beland and Maheux used only the extrinsic gratification scale.

\textsuperscript{12} For the purposes of this dissertation, "people-oriented values" was changed to "Intrinsic".
(Extrinsic Rewards) contains the following items with its respective primary factor loadings: "allows me to earn a good income" (.90); "ensures me a stable future" (.78); and "it will give me a respected position in society" (.51). The second dimension (Intrinsic Rewards) reveals the following items with its primary factor loadings: "to help others" (.87); "I enjoy working with people" (.82); and "its importance to the American health-care system" (.54).

[Insert Table 3.15 about here]

To confirm these EFA findings, CFA is performed on the cross-validation sample (N = 266). CFA results (not shown) suggest that the data has an excellent overall fit of the model (CFI = 1.00; NFI = .99; NNFI = .99; chi-square = 7.629, d.f. = 8). Another good indicator of the model's excellent fit is that all six of the variables have high factor loadings. All values are .54 or larger. In addition, the correlation between extrinsic and intrinsic rewards is .49 (p < .01).

The Extrinsic Rewards sub-scale contains three items with values that range from 3 to 21 (where high indicates strong agreement), has a mean = 16.87 (SD = 3.20), and a Cronbach's alpha = .83. Turning to the particular items, 79% agree or strongly agree that they entered podiatry in order to ensure themselves a stable future (mean = 5.95, SD = 1.14); 74% agree or strongly agree they entered podiatry to earn a good income (mean = 5.84, SD = 1.17); and, 47% agree or strongly agree they entered podiatry because of its respected position in society (mean = 5.09, SD = 1.44).

The Intrinsic Rewards sub-scale contains three items measured along a scale where 3 = strong disagreement and 21 = strong agreement. This sub-scale
Table 3.15. Exploratory Factor Analysis results of a random sub-sample of podiatry students for Rosenberg’s Extrinsic and Intrinsic Gratification scale (N = 267).

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Allows me to earn a good income</td>
<td>.90</td>
<td>.28</td>
</tr>
<tr>
<td></td>
<td>Ensures me a stable future</td>
<td>.78</td>
<td>.39</td>
</tr>
<tr>
<td></td>
<td>It will give me a respected position in society</td>
<td>.51</td>
<td>.18</td>
</tr>
<tr>
<td></td>
<td><strong>To help others</strong></td>
<td>.27</td>
<td><strong>.88</strong></td>
</tr>
<tr>
<td></td>
<td>I enjoy working with people</td>
<td>.31</td>
<td><strong>.83</strong></td>
</tr>
<tr>
<td></td>
<td>Its importance to the American health-care system</td>
<td>.24</td>
<td>.51</td>
</tr>
</tbody>
</table>

*Note.* Those loadings that are bold-faced and underlined are significant.
has a mean = 17.86, SD = 2.58), and a Cronbach’s alpha = .83. The scale consists of the following attributes: 87% percent agree or strongly agree they entered podiatry because they enjoy working with people (mean = 6.29, SD = 1.14); 86% agree or strongly agree they entered podiatry to help others (mean = 6.14, SD = 1.21); and, 57% agree or strongly agree they entered podiatry because of its importance to society (mean = 5.44, SD = 1.4). In sum, these findings suggest that a significant proportion of podiatry students enter podiatric medicine for both its extrinsic and intrinsic rewards.

Operationalization of Social Background Variables

Year in School. To assess the year in school of the podiatry students, respondents checked whether their current year in school is first-year, second-year, third-year and fourth-year.

Gender. Respondents indicated their gender by checking either “male” or “female”. For the purposes of the dissertation, “male” is coded as “1” and “female” is coded as “0”.

Ethnic Background. To remain consistent with previous studies on medical students (e.g., see Belgrave et al., 1982; Green et al., 1983; Holtzman et al., 1981), this dissertation distinguishes between whites and non-whites. Thus, “White American” is coded as “1”, while “Non-Whites” is coded as “0”.

Socioeconomic Status. Colombotos and Kirchner’s (1986) Socioeconomic Background index provided a measure of the socioeconomic status of podiatry students. This index contains two items: 1) respondent’s father’s education (1 = some high school; 5 = completion of graduate school); and 2) respondent’s
perceived social class background (1 = lower class; 5 = upper class). Thus, this index ranges from 1 to 10, where 1 = low socioeconomic background and 10 = high socioeconomic background. It has a mean of 6.73 (SD = 1.96), and a Cronbach's alpha = .64.

Summary of Social Background Variables. Table 3.16 presents the distributions of the social background characteristics of podiatry students. The national sample of podiatry students have the following social background characteristics: 68% are first-year and second-year students; 65% are male; 72% are White Americans; 6% are African Americans; 5% are Hispanics; 8% are Asian Americans; and 7% indicated that they are in some other type of ethnic category.

[Insert Table 3.16 about here]

These findings are very similar to the national data on podiatry students. That is, 61% of all podiatry students are either first- or second-year students (cf. American Association of Colleges of Podiatric Medicine, 1993; also see Table 3.1 and Table 3.2). According to the most recent data on the gender distribution of podiatry students, the dissertation collected a slight over-representation of women. In the national sample of podiatry students, the proportion who are female is 35%, whereas 25% of the 1987-88 graduating class from all colleges of podiatric medicine are female (USDHHS, 1990). Likewise, it appears that the current findings yield an over-representation of minorities. Of the 1987-88 graduating classes nationwide, 14% were minorities, while the present sample found 28% to be minorities (USDHHS, 1990).
Table 3.16. Frequency Distributions of Podiatry Students' Social Background Variables.

<table>
<thead>
<tr>
<th>RESPONDENT CHARACTERISTIC</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year in School</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-Year</td>
<td>191</td>
<td>35.8</td>
</tr>
<tr>
<td>Second-Year</td>
<td>174</td>
<td>32.6</td>
</tr>
<tr>
<td>Third-Year</td>
<td>87</td>
<td>16.3</td>
</tr>
<tr>
<td>Fourth-Year</td>
<td>79</td>
<td>14.8</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>531</td>
<td>99.5</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>348</td>
<td>65.4</td>
</tr>
<tr>
<td>Female</td>
<td>184</td>
<td>34.6</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>532</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Ethnic Background</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White American</td>
<td>384</td>
<td>72.0</td>
</tr>
<tr>
<td>African American</td>
<td>33</td>
<td>6.2</td>
</tr>
<tr>
<td>Hispanic</td>
<td>27</td>
<td>5.1</td>
</tr>
<tr>
<td>Asian American</td>
<td>45</td>
<td>8.4</td>
</tr>
<tr>
<td>Other</td>
<td>39</td>
<td>7.3</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>528</td>
<td>99.0</td>
</tr>
</tbody>
</table>
Table 3.16. (Continued).

<table>
<thead>
<tr>
<th>RESPONDENT CHARACTERISTIC</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father’s Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some High School</td>
<td>41</td>
<td>7.7</td>
</tr>
<tr>
<td>High School</td>
<td>148</td>
<td>27.8</td>
</tr>
<tr>
<td>Junior College</td>
<td>77</td>
<td>14.4</td>
</tr>
<tr>
<td>Bachelor</td>
<td>105</td>
<td>19.7</td>
</tr>
<tr>
<td>Graduate</td>
<td>162</td>
<td>30.4</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>533</td>
<td>100.0</td>
</tr>
<tr>
<td>Social Class Background</td>
<td></td>
<td></td>
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<tr>
<td>Lower Class</td>
<td>11</td>
<td>2.1</td>
</tr>
<tr>
<td>Working Class</td>
<td>104</td>
<td>19.5</td>
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<tr>
<td>Lower Middle Class</td>
<td>127</td>
<td>23.8</td>
</tr>
<tr>
<td>Upper Middle Class</td>
<td>267</td>
<td>50.1</td>
</tr>
<tr>
<td>Upper Class</td>
<td>24</td>
<td>4.5</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>533</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Note.* Some of the totals vary due to missing cases.
Podiatry students have the following socioeconomic background characteristics: 50% indicate that their father's education is a bachelor's degree or higher (mean = 3.37, SD = 1.37); 20% define their social class background as working class; 24% as lower-middle class, and 50% as upper-middle (mean = 3.36, SD = .91). In sum, the national sample of podiatry students are more likely to be in either their first-year or second-year of podiatry school, male and White American. Moreover, the respondents have a somewhat high socioeconomic background.

Analytic Procedures for Testing Hypotheses of Dissertation

This dissertation used ordinary least squares (OLS) regression to test the proposed hypotheses. The OLS regression analysis used simultaneous entry of predictor variables in order to determine the direct effects of each predictor variable on stereotypes toward older people and the attitudes toward treating elderly patients. Furthermore, the present study tested for possible nonlinear interaction effects by considering polynomial terms for the product transformation.

In the present sample, the largest percent missing from any single variable is 1% (for ethnic background), which is well within tolerable limits (Anderson, Basilensky, & Hum, 1980). Accordingly, the regression analysis used listwise deletion of cases to handle missing data—the preferred method when the procedures does not produce a final sample that is substantially smaller than the original sample (Kim & Curry, 1977). After using listwise deletion, the sample size is reduced from 533 to 528.
CHAPTER FOUR

Results
Introduction

This chapter first presents the bivariate results (zero order correlations) for the study's set of independent and dependent variables. Second, the chapter presents the multivariate results using ordinary least squares multiple regression. This latter section includes a restatement of hypotheses from Chapter Two and examines the degree to which the regression results support the hypotheses.

This dissertation used six dependent variables that were developed and validated by both exploratory and confirmatory factor analytic procedures. Exploratory and confirmatory factor analysis of the STOPS validates four distinct dimensions of stereotypes of older people: older people are (a) intolerant; (b) unhealthy; (c) negative personality characteristics; and (d) are inactive. Moreover, exploratory and confirmatory factor analysis found strong support for two dimensions of attitudes toward treating elderly patients: (a) uselessness of treating elderly patients; and (b) dissatisfaction from treating elderly patients. Identification of these six dimensions sets the stage for the subsequent bivariate and multivariate analyses.

Bivariate Results

Table 4.1 shows the bivariate results of both the exogenous and endogenous variables for the sample of podiatry students. Bivariate results indicate that the strongest zero-order correlations occur between both year in school and days per week in clinical contact with the elderly (r=.64) and the Extrinsic Rewards scale and the Intrinsic Rewards scale (r=.55). Similarly, a
rather strong correlation occurs between the intolerant and negative personality characteristic sub-scale of STOPS (r=.44).

Additionally, there is a very strong association between negative personality characteristics and unhealthy sub-scales of STOPS. Likewise, the two scales used to measure attitudes toward treating elderly patients (i.e., uselessness to treat elderly patients and the dissatisfaction from treating elderly patients) has a strong positive association (r=.52). Also, a moderate positive association exists between political affiliation and political ideology (r=.35). A majority of the remaining correlations, however, indicate weak or non-existent associations.

Overall, findings in Table 4.1 suggest the following: 1) the more advanced podiatry students have had more clinical contact with the elderly; 2) those who have a liberal political affiliation are more likely to have a liberal political ideology; 3) those podiatry students who view older people as intolerant are more likely to view them as having negative personality characteristics; and 4) those who view older people with negative personality characteristics are more likely to view them as having health problems.

[Insert Table 4.1 about here]

**Multivariate Results**

Tests for Outliers, Collinearity, and Nonlinearity

Statistical tests are performed to assure that outliers, multicollinearity, and nonlinearity did not distort regression results. SPSS/PC+ provides regression diagnostics that yield tests for outliers (cf. Norušis, 1990, p.B84-88). The current
Table 4.1  Zero-order correlations of the Independent and Dependent Variables.

<table>
<thead>
<tr>
<th></th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>V4</th>
<th>V5</th>
<th>V6</th>
<th>V7</th>
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<th>V13</th>
<th>V14</th>
<th>V15</th>
<th>V16</th>
<th>V17</th>
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<tbody>
<tr>
<td>V1</td>
<td></td>
<td>.03</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>V2</td>
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<td>.06</td>
<td></td>
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<td>V3</td>
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Table 4.1 (Continued)

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<td>Year in School</td>
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<tr>
<td>V2</td>
<td>Gender (1=Male)</td>
</tr>
<tr>
<td>V3</td>
<td>Ethnicity (1=White)</td>
</tr>
<tr>
<td>V4</td>
<td>Socioeconomic Background</td>
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<td>Affectual Solidarity with Grandparents</td>
</tr>
<tr>
<td>V7</td>
<td>Political Affiliation (Liberal)</td>
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<td>V8</td>
<td>Political Ideology (Liberal)</td>
</tr>
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<td>Extrinsic Rewards Scale</td>
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<td>Intrinsic Rewards Scale</td>
</tr>
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<td>Clinical Contact with the Elderly</td>
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<tr>
<td>V12</td>
<td>Positive Attitudes toward Podogeriatric Education</td>
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<tr>
<td>V13</td>
<td>Intolerance Scale-Negative Stereotypes</td>
</tr>
<tr>
<td>V14</td>
<td>Personality Scale-Negative Stereotypes</td>
</tr>
<tr>
<td>V15</td>
<td>Unhealthy Scale-Negative Stereotypes</td>
</tr>
<tr>
<td>V16</td>
<td>Inactivity Scale-Negative Stereotypes</td>
</tr>
<tr>
<td>V17</td>
<td>Useless to treat Elderly Patients-Attitudes toward treating Elderly Patients</td>
</tr>
<tr>
<td>V18</td>
<td>Dissatisfied to treat Elderly Patients-Attitudes toward treating Elderly Patients</td>
</tr>
</tbody>
</table>

**Note.** Those correlations that are bold-faced and underlined are statistically significant at the p < .05 level.
study uses the Weisberg test (with standardized residuals) to detect cases that are outliers on the dependent variables, and the hat elements (or the Mahalanobis distances) to detect cases that are outliers on the predictor variables. Such outlier cases do not necessarily influence the results of data analysis. In general, the above tests may indicate coding problems or the need to obtain additional information on the cases.

Additionally, the present dissertation uses Cook's D to test whether the cases that are outliers on the dependent or independent variables are also highly influential (i.e., have an excessive impact on parameter estimates). In particular, those points that have Cook's D values > 1.0 should be examined carefully to determine if they should be deleted from the analysis (Norušis, 1990, p.B86). For the data in this dissertation, the Cook's D values did not come close to 1.0. Another test used is COVRATIO. This measures the impact of an observation on the variance-covariance of the parameter (Belsely, Kuh, & Welsch, 1980). COVRATIO flags the ten most influential cases, and indicates what case has the most influence on standard errors. If the COVRATIO values are close to 1.00 then there are no problems. In the present dataset, the ten cases were on or around 1.00, thus, no cases should be deleted.

Tests for multicollinearity is very important in multiple regression (Knoke & Bohrnstedt, 1994). When multicollinearity is extreme, one or more variables are almost perfect linear combinations of other variables in the matrix (Knoke & Bohrnstedt, 1994). Under these circumstances, necessary matrix manipulations cannot take place or it results in considerable error in estimating regression coefficients, as reflected in much larger standard errors (cf. Lewis-Beck, 1980; Weisberg, 1985).
The tolerance test is used to assess multicollinearity. Table 4.2 shows the tolerance findings. A tolerance value ranges from .00 to 1.00, with a value of .20 or lower signifying collinearity problems (Norussis, 1990, p.B108). All but three of the independent variables have tolerance values above .80; one variable (political affiliation) has a value just under .80, and two other variables, entering podiatry for both intrinsic and extrinsic rewards have values of .604 and .624, respectively (see Table 4.2). Thus, all twelve study variables have low multicollinearity.

[Insert Table 4.2 about here]

The fact that the tolerance findings indicate that the multicollinearity problem is under control enhances the legitimacy of interpreting the beta coefficients as indicators of specific effects of each independent variable on stereotypes toward older people and attitudes toward treating elderly patients (Knoke & Bohnstedt, 1994). Low multicollinearity also increases the confidence in the precision of the beta coefficients.

For detecting linearity problems, scatterplots were created via SPSS/PC+. Scatterplots can assess whether partial \( r^2 \) significantly increases when non-linear terms (e.g., quadratic functions) are added. In short, regarding nonlinearity, the dissertation found that the amount of change in one concept caused by a change in another concept is constant across its range (cf. Knoke & Bohnstedt, 1994, p.11; 24-26). That is, a measured change in "X", the independent variable, creates a predictable change in "Y", the dependent variable.
Table 4.2. Findings from the Tolerance test for Multicollinearity within the independent variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Tolerance</th>
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<td>Gender</td>
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<td>Ethnic Background</td>
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<td>Socioeconomic Background</td>
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<td>Affectual Solidarity</td>
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<td>Attitudes toward Geriatric Education</td>
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<td>Extrinsic Rewards</td>
<td>.624</td>
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<tr>
<td>Intrinsic Rewards</td>
<td>.604</td>
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</table>

**Note.** Possible values range from 0 to 1.0.
Substantive Results

Figure 2 (see also Table 4.3) present the OLS multiple regression results for testing the set of hypotheses developed in Chapter Two and operationalized in Chapter Three. More specifically, Figure 2 displays statistically significant (p < .05) predictors of the four dimensions representing negative stereotypes toward older people, and the two dimensions of negative attitudes toward treating elderly patients. Subsequently, the hypotheses from Chapter Two are listed, followed by whether the hypotheses are supported by the statistically significant standardized beta coefficients.

[Insert Figure 2 about here]

As suggested above, Figure 2 provides a general overview of the findings. For the four outcome variables representing dimensions of negative stereotypes toward older people, there are no consistent patterns of statistically significant direct effects. One predictor variable, entering podiatry for extrinsic rewards, has statistically significant direct effects for at least two of the four dimensions of negative stereotypes toward older people. Specifically, podiatry students who entered podiatry school for extrinsic rewards are more likely to feel that elderly people have negative personality characteristics and engage in unhealthy behaviors. As a whole, the set of predictor variables did not explain much variance in stereotyping of the elderly. The outcome variable, Inactive, had the highest explained variance (i.e., .06, p < .001). The Intolerant stereotype had the least explained variance (i.e., .01 > .05).
Figure 2. Path Model for Podiatry Students’ Stereotypes of Older People and Attitudes toward treating Elderly Patients, and Antecedent Variables.

PRE-PROFESSIONAL SOCIALIZATION

Social Background Variables
Ethnicity (Non-White)
Sex (Female)
Socioeconomic Background

Intergenerational Solidarity
Associational Solidarity
Affectual Solidarity

Political Socialization
Political Affiliation (Liberal)
Political Ideology (Liberal)

NEGATIVE STEREOTYPES OF OLDER PEOPLE
Intokrant
Negative Personality Characteristics
Unhealthy Behavior
Inactive

MOTIVATIONS FOR ENTERING PODIATRY
Extrinsic Rewards
Intrinsic Rewards

NEGATIVE ATTITUDES TOWARD TREATING ELDERLY PATIENTS
Useless Treating Elderly Patients

PROFESSIONAL SOCIALIZATION
Year in School
Positive Attitudes toward Geriatric Education
Clinical Contact with the Elderly

Note. All Path Coefficients are Standardized Regression Coefficients, and statistically significant at p < .05 level.
Like the preceding overview of results for stereotypes of the elderly, an overview of the findings for the two outcome variables measuring negative attitudes toward treating the elderly as patients also reveals few consistent predictors. Only two independent variables have statistically significant effects across both dimensions of negative attitudes towards treating the elderly as patients: affectual solidarity and intrinsic rewards. That is, podiatry students who had close bonds with their grandparents when they were younger and who entered podiatric medicine for intrinsic rewards are less likely to feel that it is useless to treat elderly patients and feel dissatisfaction from treating elderly patients. Furthermore, those who spend more days per week in clinical contact with elderly patients are more likely to be dissatisfied from treating them, and those who report positive attitudes toward the geriatric education received are less likely to be dissatisfied from treating elderly patients.

The set of predictors as a whole explain more variance in treating the elderly as patients than negative stereotypes toward the elderly in general. However, the total explained variance for treating the elderly as patients is still modest. For example, the uselessness of treating elderly patients dimension explains .06 (p < .001), while the dissatisfaction from treating patients dimension explains .08 (p < .001). Furthermore, the explained variance for the intolerant dimension is not statistically significant at the p < .05. Therefore, one should interpret with caution the statistically significance of predictors of this outcome variable. The next sub-sections provide results to test specific hypotheses (H).

[Insert Table 4.3 about here]
Table 4.3. OLS Regression results for the Direct Effects of Predictor Variables on Negative Stereotypes of Elderly.

<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLES</th>
<th>NEGATIVE STEREOTYPES TOWARD ELDERLY IN GENERAL</th>
<th>NEGATIVE ATTITUDES TOWARD ELDERLY AS PATIENTS</th>
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<tr>
<td></td>
<td>Intolerant</td>
<td>Negative Personality</td>
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<td>Clinical Contact with elderly</td>
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<td>Attitudes toward Geriatric Education</td>
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<td>.06</td>
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<tr>
<td>Year in School</td>
<td>.07</td>
<td>.05</td>
</tr>
<tr>
<td>MOTIVATIONS FOR ENTERING PODIATRY</td>
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<td></td>
</tr>
<tr>
<td>Extrinsic Rewards</td>
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<td>.15**</td>
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<td>Intrinsic Rewards</td>
<td>-.12*</td>
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<td>Associational Solidarity</td>
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<tr>
<td>Political Ideology</td>
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<td>.06</td>
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Table 4.3 (Continued).

<table>
<thead>
<tr>
<th>SOCIAL BACKGROUND</th>
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<th>Negative Personality</th>
<th>Unhealthy Behavior</th>
<th>Inactive</th>
<th>Useless Treating Elderly Patients</th>
<th>Dissatisfaction Treating Elderly Patients</th>
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<tr>
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<td>.05</td>
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</table>

Note. The standardized beta coefficients are presented (N = 528). The total explained variance for the six dimensions are as follows:

1) Intolerant, .01;
2) Negative Personality Characteristics, .03**;
3) Unhealthy Behavior, .03**;
4) Inactive, .06***;
5) Useless Treating, .06***;
6) Dissatisfaction Treating, .08***.

Since the explained variance for the Intolerant dimension is not statistically significant, none of the predictors for this dependent variable should be interpreted.

* p < .05. ** p < .01. *** p < .001.
PRE-PROFESSIONAL SOCIALIZATION

Social Background Variables.

H1: Non-white podiatry students are less likely to have negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically. Table 4.3 shows that non-white podiatry students are less likely to feel that older people have negative personality characteristics (beta = -.10, p < .05); or alternatively, white podiatry students are more likely to have negative stereotypes about elderly people's personality characteristics. However, the ethnic background of podiatry students has no statistically significant direct effect on the remaining three stereotypic dimensions and the two dimensions of attitudes toward treating elderly patients.

H2: Female podiatry students are less likely to display negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically. Table 4.3 indicates that female podiatry students are less likely to report that older people are inactive (beta = -.16, p < .001). However, gender has no statistically significant direct effects on the remaining dimensions of stereotypes toward older people, or the two dimensions representing attitudes toward treating elderly patients.

H3: Podiatry students who are from lower socioeconomic backgrounds are less likely to have negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically. Table 4.3 shows that podiatry students' socioeconomic background has no direct effect (p > .05) on any
of the dimensions of stereotypes toward older people and negative attitudes treating elderly patients.

Political Socialization.

\( H4: \) Podiatry students who have liberal political affiliations are less likely to have negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically. Table 4.3 provides no statistical support for these hypotheses across the four dimensions of negative stereotypes toward older people and two dimensions of negative attitudes toward treating elderly patients.

\( H5: \) Podiatry students who have liberal political ideologies are less likely to have negative stereotypes of older people in general and negative attitudes toward elderly patients specifically. Table 4.3 shows a statistically significant direct effect contrary to \( H5 \). That is, podiatry students who exhibit liberal political ideologies are more likely to report the elderly as intolerant (beta = -.12, \( p < .05 \)). Note that this single, barely significant beta occurs in the context of a statistically insignificant overall MR\(^2\). Therefore, a reasonable supposition is that the single statistically significant beta is due to chance (i.e., sampling error). Nevertheless, consistent with the findings for political affiliation (see \( H4 \)), political ideologies showed no effects on the remaining dimensions of negative stereotypes toward older people and towards negative attitudes toward treating elderly patients.
Intergenerational Solidarity.

H6: The more frequently that podiatry students visited their grandparents when they were growing up (associational solidarity), the less likely they are to display negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically. Table 4.3 shows that there are no statistically significant direct effects of frequency of visiting grandparents (associational solidarity) on either stereotypes toward older people or attitudes toward treating elderly patients.

H7: Podiatry students who had closer bonds with their grandparents when they were growing up (affectual solidarity) are less likely to demonstrate negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically. Table 4.3 presents no statistical support for the effects of affectual solidarity on any of the four dimensions of stereotypes toward older people. Conversely, however, the results indicate support for the direct effects of affectual solidarity on the two factors representing attitudes toward treating elderly patients. In other words, podiatry students who had close bonds with their grandparents when they were growing up are significantly less likely to believe that it is useless to treat elderly patients (beta = -.09, p < .05) and to feel dissatisfied from treating elderly patients (beta = -.09, p < .05).

Professional Socialization.

H8: Podiatry students who are more advanced in podiatry school (i.e., more years in school) are more likely to have negative stereotypes of older people in general and negative attitudes toward elderly patients specifically. Table 4.3 shows
that podiatry students more advanced in podiatry school are more likely to
categorize the elderly as inactive (beta = .09, p < .05). This finding is in the
expected direction of the hypothesis. The year in school of the podiatry student
does not have statistically significant direct effects on the remaining three
dimensions of negative stereotypes toward older people, or the two dimensions of
negative attitudes toward treating elderly patients.

**H9:** Podiatry students who have positive affirmations toward their geriatric
education are less likely to have negative stereotypes of older people in general and
negative attitudes toward elderly patients specifically. Consistent with H9, Table
4.3 shows that respondents who hold positive attitudes toward geriatric education
are less likely to have negative stereotypes about older people's health behavior
(beta = -.14, p < .001). Also consistent with H9, Table 4.3 indicates that podiatry
students who hold positive attitudes toward their geriatric education are less
likely to be dissatisfied from treating elderly patients (beta = -.09, p < .05).
Conversely, Table 4.3 reveals statistically insignificant direct effects of attitudes
toward geriatric education and the remaining three outcome variables
representing negative stereotypes toward older people: intolerant, negative
personality characteristics, and inactive. Likewise, geriatric education displays
no statistically significant direct effect on the remaining dimension of negative
attitudes toward treating elderly patients: useless to treat elderly patients.

**H10:** Podiatry students who have completed more clinical contact with the
elderly are more likely to display negative stereotypes of older people in general and
negative attitudes toward treating elderly patients specifically. Findings in Table
4.3 suggest some statistically significant direct effects that are consistent with
H10. That is, findings for one of the four dimensions of stereotypes of older people (i.e., inactive) and one of the two dimensions of attitudes toward treating elderly patients (i.e., dissatisfaction from treating elderly patients) indicate that more clinical contact leads to increased negative stereotypes and attitudes. Specifically, podiatry students who spend more days per week in clinical contact with the elderly are more likely to regard older people as inactive (beta = .11, p < .05) and feel dissatisfied from treating elderly patients (beta = .15, p < .001). None of the other outcome variables indicate a statistically significant (p < .05) relationship with clinical contact.

**Motivations for Entering Podiatry.**

*H11: Podiatry students who entered podiatry for intrinsic rewards are less likely to report negative stereotypes of older people in general and negative attitudes toward treating older patients specifically.* Consistent with this hypothesis, Table 4.3 shows that intrinsic rewards has a statistically significant direct effect on one of the four dimensions of negative stereotypes toward older people, and across both dimensions of negative attitudes toward treating elderly patients. More specifically, podiatry students who entered podiatry for the profession's intrinsic rewards are less likely to view the elderly as intolerant (beta = -.12, p < .05). Similarly, podiatry students who entered podiatry for intrinsic rewards are less likely to report that treating elderly patients is useless (beta = -.24, p < .001), and that they are dissatisfied from treating elderly patients (beta = -.24, p < .001). These latter two beta's are the strongest effects displayed by any of the predictor variables across the six outcome variables. Conversely, intrinsic rewards does not
display a statistically significant direct effect on negative personality characteristics, unhealthy behavior and inactive, all of which are dimensions of negative stereotypes toward older people.

**H12:** Podiatry students who entered podiatry for extrinsic rewards are more likely to have negative stereotypes of older people in general and negative attitudes toward treating elderly patients specifically. Consistent with this hypothesis, Table 4.3 shows that entering podiatry for extrinsic rewards has statistically significant direct effects on two of the dimensions—negative personality characteristics and unhealthy behavior—of negative stereotypes toward older people. That is, podiatry students who entered podiatry for extrinsic rewards are more likely to feel that the elderly have both negative personality characteristics (beta = .15, p < .01), and unhealthy behaviors (beta = .17, p < .001). Conversely, extrinsic rewards does not have statistically significant direct effects on the remaining dimensions of negatives stereotypes toward older people and negative attitudes toward treating elderly patients.

**H13:** The effect on entering podiatry school for extrinsic rewards will vary by year in school (i.e., extrinsic rewards and year in school will display a statistical interaction). More specifically, as podiatry students progress through school, the initial positive effect of entering school for extrinsic rewards on negative stereotypes of the elderly and negative attitudes towards treating the elderly as patients will change to a negative effect. Results (not shown) indicate that this interaction term is statistically insignificant for the four dimensions representing negative stereotypes toward older people and the two dimensions reflecting negative attitudes toward treating elderly patients.
SUMMARY.

Figure 2 and Table 4.3 indicate that podiatry students entering podiatry for intrinsic rewards is a significant predictor of negative attitudes toward treating elderly patients, and entering podiatry for extrinsic rewards is the strongest predictor of negative stereotypes toward older people. Intrinsic rewards had a statistically significant direct effect on both dimensions of negative attitudes toward treating elderly patients (uselessness of treating elderly patients and dissatisfaction from treating elderly patients). Extrinsic rewards demonstrated statistical significance on two of the four stereotypes toward older people dimensions—negative personality characteristics and unhealthy behavior.

Likewise, affectual solidarity between podiatry students and their grandparents is a good predictor on both dimensions of attitudes toward treating elderly patients, but it has no effect on the four dimensions representing stereotypes toward older people. Additionally, two other predictor variables—attitudes toward geriatric education and clinical contact with the elderly—also predict two outcomes each.

Thus, these findings suggest that the motivations for entering podiatry (i.e., both extrinsic and intrinsic rewards), the students’ cohesive bonds with their grandparents, attitudes toward geriatric education, and days per week spent in clinical contact with the elderly are the exogenous variables which best explain podiatric medical students’ stereotypes toward older people and attitudes toward treating elderly patients.

Turning to a comparison of the total effects of the set of 12 predictors on each of the six outcome variables, dissatisfaction with treating the elderly as patients is the outcome with the most explained variance (adjusted $R^2 = .08$, $p <$
.0001). The set of 12 predictor variables account for less variance for the five remaining outcomes, with adjusted $R^2$ ranging from .01 ($p > .05$) for the stereotype of the elderly as intolerant, to .06 ($p < .001$) for both the inactive stereotype and the attitude that it is uselessness to treat elderly patients.
CHAPTER FIVE

Discussion of the Theoretical and Policy Implications of the Results
This chapter begins with a restatement of theoretical perspectives that guided the causal model proposed in this dissertation. Next, the chapter discusses the implications of the findings in the current study with regard to theory, previous empirical research and policy. Finally, the chapter discusses the shortcomings of this dissertation and suggests avenues for future research.

**Summary of Theoretical Perspectives and Model Specification**

Sociologists have coined the term "socialization" to describe the ways in which people learn to conform to their society's norms, values and roles. Moreover, socialization is regarded as the processes whereby individuals learn to behave according to cultural norms (cf. Merton, 1957; Wentworth, 1980). In general, sociologists have divided socialization into childhood (primary or pre-professional) and secondary (adult-role oriented or professional). In the present study, pre-professional socialization referred to the socialization of podiatry students before they enter podiatry school—as represented by the dimensions of social background variables (gender, ethnic background, and socioeconomic background), intergenerational solidarity (associational solidarity and affectual solidarity), and political socialization (political affiliation and political ideology). Additionally, in the present study, professional socialization referred to the socialization experienced by students while they are in podiatry school—represented through the dimensions of year in school, attitudes toward geriatric education, and clinical contact with the elderly. Finally, the present study also
examined dimensions of Motivation for entering podiatry (extrinsic and intrinsic rewards).

Pre-Professional Socialization

Social Background Variables. Ascribed statuses such as gender, ethnic background and socioeconomic background are examined to ascertain their impact on stereotypes and attitudes toward the elderly. In the medical student literature, these variables have yielded inconclusive findings for the causal impact on stereotypes and attitudes toward the elderly (please see Adelman & Albert, 1987; Beland & Maheux, 1990; Holtzman et al., 1978; Warren et al., 1983; Weiler et al. 1989). For instance, Beland and Maheux (1990) found that gender and father's level of education were significant predictors of attitudes toward treating elderly patients for first-year students, but not for third-year medical students. Accordingly, based upon the notion that podiatry students who are female, non-white and from lower socio-economic backgrounds are socialized into social roles when they were younger disparate from males, whites and individuals from higher socio-economic backgrounds, the present study explored these socio-demographic variables' impact on stereotypes toward older people. That is, some literature reports that females, non-whites, and individuals from lower socio-economic backgrounds tend to regard older individuals in higher regard than males, whites and individuals from higher socio-economic backgrounds (e.g., see Chumbler & Robbins, 1994; Colombotos, 1969; Colombotos
& Kirchner, 1986; Lucas & Roy, 1992; Tate, 1983; Taylor & Chatters, 1986; Willie, 1988).

**Intergenerational Solidarity.** As an additional measure of the effects of pre-professional socialization on stereotypes of the elderly, the current study analyzed measures of the intergenerational solidarity between podiatry students and their grandparents. The proposed effects of intergenerational solidarity are based, in part, on Durkheim’s (1893/1964) *Division of Labor in Society*, which claimed that the strength of tradition as a cohesive social force (e.g., relationships between grandparents and their grandchildren) was weakened by the progress of industrialization. Durkheim purported two bases of solidarity—mechanical and organic. Mechanical solidarity refers to the normative prescriptions toward cohesion, and organic solidarity represents the functional interdependency between group members. This dissertation used two dimensions of intergenerational solidarity—associational and affectual—to represent Durkheim’s mechanical solidarity.

**Political Socialization.** Not only are individuals socialized into specific roles based upon social background variables, but also through their political affiliation and political ideology. For the purposes of this dissertation, political affiliation and political ideology are dimensions of political socialization. For instance, research (cf. Chumbler & Robbins, 1994; Colombotos & Kirchner, 1986) indicates that podiatry and medical students who have liberal political affiliations (e.g., Strong Democrats) and political ideologies (e.g., those who are
more humanistic) are less likely to hold prejudice toward individuals in the out-group, such as the elderly. Therefore, the present study examined if podiatry students' political socialization affected their stereotypes and attitudes toward older people.

**Professional Socialization**

The three dimensions of professional socialization—year in school, attitudes toward geriatric education, and days per week spent in clinical contact with the elderly—are logical extensions of Merton et al.'s (1957) conceptual model of professional socialization of medical education. Additionally, the present study used Festinger's (1957) cognitive dissonance theory and Allport's theory of prejudice to derive the hypotheses regarding the three dimensions of professional socialization.

**Year in School.** As Chapter Two pointed out, Festinger (1957) posited that cognitive dissonance occurs when someone's experiences are contradictory to what should be happening. Research on medical students (e.g., see Adelman & Albert, 1987; Holtzman, Beck, & Ettinger, 1981; Holtzman, Toewe, & Beck, 1979) claimed that as they progressed through medical school, they increased knowledge of the elderly. Therefore, logic would suggest that as podiatry students progress through their podiatric medical education, they would gain factual knowledge about older people in general and as patients specifically; and, the consequences of gaining this knowledge should lead to reduced stereotyping and negative attitudes toward treating elderly patients. However, cognitive dissonance theory would predict that podiatry students who have negative
attitudes and stereotypes toward older individuals would experience dissonance, because what is occurring (i.e., increased bias toward the elderly) is contradictory to what should be happening.

Positive Attitudes toward Geriatric Education. Research on both podiatry (e.g., see Chumbler & Robbins, 1994) and medical (cf. Beland & Maheux, 1990; Linn & Zeppa, 1987; Warren et al., 1987; Weiler et al., 1983) students find that those who have favorable attitudes toward their geriatric education are less likely to have negative stereotypes toward older people and negative attitudes toward treating elderly patients. Therefore, the present study hypothesized that podiatry students who had positive attitudes toward their geriatric education should be less likely to have negative stereotypes and attitudes toward the elderly.

Clinical Contact. The present study employed Allport's (1954) theory of prejudice to help explain the relationship between podiatry students' days per week spent in clinical contact with the elderly and their negative stereotypes and attitudes toward the elderly. Allport claimed that when individuals--of unequal statuses, such as podiatry students and elderly individuals--engage in more social contact with one another, then prejudice increases (see Chapter Two for further details of his theory). Thus, it is plausible that podiatry students who have had more clinical contact with the elderly could have negative stereotypes and attitudes toward older people. Therefore, the dissertation hypothesized that podiatry students who spent more days in clinical contact with elderly patients are more likely to have negative stereotypes toward older individuals and negative attitudes toward treating elderly patients.
Motivations for Entering Podiatry

Additionally, the current study used social exchange theory as a conceptual framework to help explain the development of podiatry students' motivations for entering podiatry. Social exchange theory stresses the individual, psychological, and economic self-interest in social exchange behavior. According to this perspective, podiatry students' perceptive desires, interests, and needs or wants from a career in podiatric medicine are central to the conceptual framework proposed in this dissertation. More specifically, the present studied employed two concepts, extrinsic rewards and intrinsic rewards, to represent podiatry students' motivations for entering podiatry. Extrinsic rewards referred to the economic (e.g., income) and professional benefits (e.g., prestige) of the profession, while intrinsic rewards referred to the humanitarian and social benefits of the profession.

Summary

In short, this dissertation used pre-professional socialization, professional socialization, and social exchange theory as conceptual frameworks to guide selection of variables that could potentially influence stereotypes toward older people and attitudes toward treating elderly patients. If pre-professional socialization produces negative stereotypes and attitudes toward the elderly amongst the entering podiatry students, then professional socialization fostered by podiatric medical personnel could alter these pre-existing biases. Reducing podiatry students' negative stereotypes of older people is potentially important, given that negative orientations carried into a medical practice could render substandard care to older people.
Implications of Findings

Pre-Professional Socialization

Among dimensions of pre-professional socialization, the dissertation examined the impact of social background, intergenerational solidarity, and political socialization. The results showed limited support for the hypothesized effects of pre-professional socialization on negative stereotypes toward older people and negative attitudes toward treating elderly patients.

Ethnic Background. The ethnic background of podiatry students displayed the expected effect for only one of the four dimensions of negative stereotypes of old people (negative personality characteristics) and for neither of the two dimensions of attitudes toward treating elderly patients. The single statistically significant effect suggested that non-whites were less likely to believe that older people have negative personality characteristics. The fact that non-white podiatry students view older people as having less negative personality characteristics corresponds to some other studies (e.g., see Lucas & Roy, 1992; Tate, 1983; Taylor, 1986) which have found that young-adult blacks vis-a-vis whites are more likely to regard older people with more respect and display less ageist attitudes. Since only one of the six dimensions had statistically significant effects, the link between ethnic background and negative stereotypes and attitudes is weak. Therefore, future research should explore these or similar dimensions to firmly establish the conditions under which this link may vary in strength.
Gender. Gender displayed the hypothesized effect for one of the four dimensions of negative stereotypes toward older people (inactive), and none of the two dimensions reflecting negative attitudes toward treating elderly patients. More specifically, the study found that females were less likely to view older people as inactive. Accordingly, the present study finds only limited support for the thesis that females hold less ageist attitudes than males and are more favorable than males toward desiring older individuals as patients.

Consequently, the present findings only partially support the results of Weiler and his associates who found that women medical students were less likely to possess ageist stereotypes toward older people. However, overall, Beland and Maheux (1990) point out that the effect of gender on attitudes toward the elderly has been inconsistent because previous studies find no effect for gender.

Socioeconomic Background. Socioeconomic background of podiatry students displayed none of the hypothesized effects on negative stereotypes toward older people and negative attitudes toward treating elderly patients. The failure to find an affect for socioeconomic background is inconsistent with the results from Beland and Maheux's (1990) study of Canadian medical students. Beland and Maheux found that medical students from higher socioeconomic backgrounds believed that it was more useful to treat elderly patients and were more satisfied with treating elderly patients.

A possible reason that Beland and Maheux found a statistically significant effect as compared to the non-significant effect in the present study could be attributed to the different way in which the concept was measured. For instance, Beland and Maheux used a single-item, father's level of education, as a proxy for
socioeconomic background. Recall that the present study employed Colombotos and Kirchner's (1986) Socioeconomic index. This measure consisted of respondent's father's education as well as respondent's perceived social class background, and is a more extensive measure of an individual's socioeconomic background (see Colombotos & Kirchner, 1986).¹ Thus, one could argue that Beland and Maheux do not measure medical students' socioeconomic background, but, in fact, only one of several dimensions. Future research should separate SES into two discrete components (i.e., father's level of education and perceived social class) and examine the effects that each has on the outcome variables.

**Intergenerational Solidarity.** The current results exhibited no support for the hypothesized effects of either associational or affectual solidarity on negative stereotypes toward older people. Furthermore, no support was found for the expected effect of associational solidarity on negative attitudes toward treating elderly patients. However, the current results did indicate support for the hypothesized effect of affectual solidarity on negative attitudes toward treating elderly patients. That is, podiatry students who had close affectual bonds with their grandparents were less likely to believe that it is useless to treat elderly patients and have dissatisfaction from treating elderly patients.

The findings on affectual solidarity are similar to some recent empirical findings on intergenerational relations between grandparents and their

¹ In contemporary American society, it is not uncommon for females to attain levels of education that is comparable to males. Thus, only examining the level of education of a respondent's father's education could be too incomplete of a measure to assess an individuals' socioeconomic background.
grandchildren (cf. Franks et al., 1993; Glass et al., 1986; Marx & Solomon, 1993; Roberto & Stroes, 1992). In particular, Roberto and Stroes (1992) found that the college students in their sample who had close bonds with their grandparents were more likely to have positive attitudes towards older people. These past and present findings would seem to suggest, therefore, that to hold positive attitudes toward older people, podiatry students should have built close bonds with their grandparents, instead of only visiting them. Moreover, these findings suggest that the scores on these questions could be used as one of the screening devices for selecting prospective candidates for podiatry school.

**Political Socialization.** Political affiliation and political ideology did not display the hypothesized effects for negative attitudes toward treating elderly patients. Similarly, political affiliation and political ideology did not present the hypothesized effects on any of the dimensions reflecting negative stereotypes toward older people, with one minor exception. That is, podiatry students who have liberal political ideologies are less likely to view older people as intolerant. However, this weak effect was in the context of a statistically insignificant $\text{MR}^2$, and therefore should be interpreted with caution. The general lack of significant findings for political socialization cannot be attributed to weak measures. The two dimensions of political socialization that the dissertation constructed were based on the background of solid psychometric work, including a Cronbach's alpha suggesting reliable measurement.

These lack of findings suggest that the political socialization that podiatry students receive before they enter podiatry school does not affect their
negative stereotypes and attitudes toward older people. Thus, both political liberals and conservatives do not differ in their views toward the elderly.

**Professional Socialization**

The results showed partial support for the hypothesized effects of professional socialization on negative attitudes toward the elderly. These effects are examined below by specific dimensions of professional socialization.

**Year in School.** Year in podiatry school, did not have an expected statistically significant direct effect on either of the two dimensions representing negative attitudes toward treating elderly patients. However, year in podiatry school did exhibit a statistically significant, albeit weak, direct effect on one of the four dimensions of negative stereotypes of older people (Inactive). The effect was consistent with the hypothesis, and found that students more advanced in the podiatric medical curriculum displayed negative stereotypes regarding how active older people are. This study's findings on year in podiatry school is similar to other studies on medical students, which found that medical students more advanced in school are more likely to have negative attitudes toward the elderly (cf. Spence, Feigenbaum, Fitzgerald, & Roth, 1968; Solomon & Vickers, 1979). In other words, findings from these studies suggest that an increase in knowledge of the elderly increases negative stereotypes. However, based on current results, the effect does not appear to be very strong.

**Positive Attitudes toward Geriatric Education.** Positive attitudes toward geriatric education received in podiatry school, a second measure of professional
socialization, displayed the hypothesized effects on one of the four dimensions of negative stereotypes (unhealthy behavior), and one of the two dimensions of negative attitudes toward treating elderly patients (dissatisfaction from treating elderly patients). In other words, podiatry students who have positive attitudes toward their geriatric training are somewhat less likely to regard older people with negative stereotypes and attitudes. Consequently, these results for podiatry students are at least partially consistent with findings from the medical student literature which showed that medical students who had positive attitudes toward their geriatric education were less likely to possess negative stereotypes toward older people (Warren et al., 1983; Weiler et al., 1989). These findings suggest that it is imperative for podiatric medical institutions to establish an effective, stimulating and interesting geriatric education curriculum.

**Clinical Contact.** Clinical contact with the elderly displayed effects consistent with the hypothesized effects on one of four dimensions of negative stereotypes (Inactive), and one of the two dimensions representing negative attitudes toward treating elderly patients (Dissatisfaction from treating elderly patients). In other words, the study found that podiatry students who spend more days per week in clinical contact with the elderly are more likely to view them as inactive and be dissatisfied with treating them. Accordingly, the effects of clinical contact in the current study of podiatric medical students are at least partially consistent with the results obtained in other studies using medical students (cf. Solomon & Vickers, 1979; Spence et al., 1968). These researchers found that those medical students who spent more time with the elderly were more likely to display negative stereotypes toward older people.
Research indicates that the context of the clinical setting and the type of elderly patient treated should be examined in addition to the quantity of time (e.g., see Adelman & Albert, 1987; Becker et al., 1961; Fitzpatrick et al., 1993; Kutner, 1978). The single-item used in the present study to assess clinical contact with the elderly failed to account for the context of the clinical contact (e.g., individuals in ambulatory settings versus long-term care facilities), the types of older individuals seen (e.g., the gender, ethnicity or socioeconomic background of the patients), or the type of foot ailments that the students treated. In a recent article that reviewed the literature of medical students’ negative attitudes and stereotypes toward older people, Adelman and Albert (1987) claim that when assessing the influence of clinical contact, one should examine the context in which it occurs:

"the quality of the medical students’ exposure to geriatric patients is more important than the number of interactions with geriatric patients...Positive attitude formation is dependent on the students’ first-hand experience with a variety of elderly individuals" (Adelman & Albert, 1987, p.152).

Thus, it is plausible that podiatry students who receive their clinical contact in settings where most of the elderly are immobile, frail and demented could develop negative stereotypes and attitudes toward them. On the contrary, if podiatry students receive their clinical contact in settings where older individuals are active and vibrant, then the students could enjoy the time spent with them; this, in turn, could lead to less negative stereotypes and attitudes toward the elderly.
Summary of Findings for Professional Socialization.

Overall, the findings for professional socialization variables suggest that the more students are educated (in the present study, represented by year in school) and the more contact with older individuals they have, the worse their stereotypes. Accordingly, podiatric medical institutions may want to consider changing the context in which clinical contact occurs. Podiatric medical institutions could alter their curriculums so that the students perform their clinical contact in contexts that present a more favorable image of the elderly. For instance, the students could spend some of their time in ambulatory settings, while the other time could be spent in long-term facilities. It is plausible that in ambulatory settings, the students could receive a positive view towards older individuals because they should be more mobile and independent. On the other hand, podiatry students who spend time in long-term care institutions could receive a negative impression towards older people because they could be immobile and demented.

Podiatric medical institutions might also consider altering other aspects of students' education. Plausibly, educating students about facts of aging should include some training specific to countering negative stereotypes or to highlighting the value of elderly persons as patients.

Motivations for Entering Podiatry

In general the findings tended to support the hypothesized effects of motivations (extrinsic and intrinsic) for entering podiatry on negative stereotypes toward older people and negative attitudes toward treating elderly patients.
Intrinsic Rewards. The findings offered strong support for the hypothesized effects of intrinsic rewards on negative attitudes toward treating elderly patients, and meager support for the hypothesized effect of intrinsic rewards on negative stereotypes toward older people. That is, podiatry students who aspire to become a podiatrist to help others, because of the perceived societal importance of podiatry, and because they like working with people, were less likely to believe it is useless to treat elderly patients, and to feel dissatisfied from treating elderly patients. Moreover, persons oriented to intrinsic rewards were less likely to believe that older people are intolerant individuals. Please recall, however, that the MR² for the intolerant dimension is statistically insignificant and the effects of its predictor variables should therefore be interpreted with caution.

The findings from this dissertation regarding podiatry students who enter podiatry for intrinsic rewards are similar to results of research on medical students. Studies indicate that medical students who enter medicine for humanitarian reasons (e.g., the welfare of the patient) tend to treat patients with more care and precision (Bloom, 1979; Gallagher & Searle, 1989; Mechanic, 1983).

Extrinsic Rewards. Extrinsic rewards displayed the hypothesized direct effects for two of the four dimensions of negative stereotypes of older people (negative personality characteristics and unhealthy behavior); conversely, extrinsic rewards had no direct effects on the two dimensions and for none of the dimensions of negative attitudes toward treating elderly patients. In other words, podiatry students who entered podiatric medicine for its extrinsic rewards (e.g., for podiatry’s high income and prestige) are more likely to hold stereotypes
that older people have negative personality characteristics and unhealthy behaviors, but an orientation towards extrinsic rewards does not seem to affect student attitudes regarding the elderly as patients.

**Interaction of Extrinsic Rewards with Year in School.** The findings did not find support for the dissertation's expected hypothesis that there should be a statistically significant interaction between extrinsic rewards and year in school. In other words, the dissertation found no statistical support that as podiatry students progress through school, the initial positive effect of entering school for extrinsic rewards on negative stereotypes of the elderly and negative attitudes towards treating the elderly as patients will change to a negative effect.

Beland and Maheux (1990) divided their sample of medical students into first-year students and third-year students. They simply divided their sample up by year in school and then examined whether there was an effect for extrinsic rewards within each year. They compared the unstandardized beta solutions.

For first-year students Beland and Maheux found a statistically significant positive direct effect from extrinsic rewards to uselessness of treating elderly patients, but there was no statistically significant direct effect from extrinsic rewards to satisfaction from treating elderly patients. Conversely, for the sub-sample examining third-year medical students, explicitly, Beland and Maheux (1990) reported a unidimensional construct for attitudes toward treating
elderly patients, "giving care to elderly patients", and found a statistically significant direct effect from extrinsic rewards to this dimension.\(^2\)

**Summary of Motivations for Entering Podiatry.** Overall, one could conclude from these findings on motivations for entering podiatry that those respondents who entered the profession podiatry for intrinsic rewards report more favorable attitudes toward treating elderly patients, while those who entered for extrinsic rewards are less likely to have negative stereotypes of older people. The dissertation suggests that podiatry students who are more humanitarian would rather treat elderly patients; however, those economically driven podiatry students would view the elderly in general, and not as patients, with more biased stereotypes.

These findings of the present and past research have potential practical implications for podiatric medical educators when they are screening prospective students. If podiatric medical educators want to select prospective students who are more likely to have favorable attitudes toward elderly individuals in general and as patients in particular, then educators could query, in-depth, their motivations for entering the profession.

In addition, these findings could also have implications for pre-medical curricula. Presently, podiatry students take the same pre-medical curriculum

\(^2\) The authors did not indicate why the dependent variable for third-year students is unidimensional. For the first-year students there was a two-dimensional dependent variable, efficacy of medical interventions and satisfaction with treatment of the elderly. In light of Beland and Maheux's finding that this concept displayed a different factor structure by year, the present dissertation tested this possibility and found no difference.
as prospective medical students. Currently, the way in which colleges and universities structure their pre-medical curriculum fails to promote humanized medical care (Gallagher & Searle, 1989; Mechanic, 1983). However, a recent trend is that some medical schools have eliminated all specific pre-medical course requirements (i.e., two courses each in physics and biology and four chemistry courses). This could lead to more students applying to podiatry schools who majored in nonscientific subjects such as history, English, and philosophy. By doing this, Gallagher and Searle (1989) believe that medical schools would have more diverse individuals who have entered a career in medicine for humanitarian reasons, which in turn, could increase the pool of students who treat patients as a person and not as a financial commodity.

Entering podiatry for intrinsic rewards could also have implications for the Medical College Admissions Test (MCAT). Like medical schools, podiatry schools require MCAT scores as one admission procedure. The MCAT is a test, consisting of objective questions in chemistry, biology, and mathematics, (cf. Gallagher & Searle, 1989, p.443). Some research (e.g., see Gallagher & Searle, 1989; Jones, 1986) claims that those medical schools who put a high priority on MCAT scores have deleterious effects on the humanitarian orientation of students who enter the institution. In particular, those students who were very preoccupied with getting high MCAT scores were more likely to display a "depersonalized professional orientation, which ultimately neglects the patient as a person" (Gallagher & Searle, 1989, p.443).

Accordingly, Gallagher and Searle (1989) have proposed that medical schools should put a stronger emphasis on non-MCAT, "non-cognitive" areas such as "interpersonal acumen and empathy" when they evaluate prospective medical
students. The rationale for a de-emphasis on MCAT scores recommends a more eclectic selection of applicants who will function in the future as "whole podiatrists" (i.e., podiatrists who are able to deal with the needs, medical and nonmedical of the patient) (cf. Gallagher & Searle, 1989).

**Possible Directions for Future Research**

This study, which followed the conceptual framework of Colombotos and Kirchner (1986) and Sudit (1987, 1988), represented one of the first efforts to apply a theory-based multi-dimensional approach to the explanation of health care professional students' attitudes toward negative stereotypes and attitudes toward treating elderly patients. It would be interesting to replicate the analytical framework developed in this dissertation on practicing podiatrists who encounter the "real life" situations, daily, with older patients vis-a-vis podiatric medical students for whom the issues are of more hypothetical nature, as in the present study.

Moreover, the same analytical framework used here for podiatry students also can be applied to the study of attitude and stereotype formation of student professionals in other health care fields (e.g., optometry, dentistry, osteopathic medical; chiropractic medical, and nursing). Additionally, within the health professions, a mode of analysis, similar to the one presented here, could also be used to explain stereotypes and attitudes toward other types of patients (e.g., chronically ill children; racial minorities).
Please note that the present dissertation only assessed negative stereotypes and attitudes. One could also study positive dimensions of attitudes and stereotypes (cf. Palmore, 1990). The study exclusively examined the negative attitudes and stereotypes because the literature on medical students is clearer in its findings. That is, evidence shows that both negative attitudes and stereotypes toward the elderly results in an unwillingness to adequately meet the health care needs of this group of patients (Butler, 1978; Holtzman, Toewe, & Beck, 1979). On the other hand, research demonstrates that while positive stereotypes toward older people need to be detected, identifying and correcting negative stereotypes and attitudes are more crucial areas to pursue (see for example, Meulemen, Davidson, & Caranasos, 1988; Palmore, 1990).

Additionally, the findings and literature discussed above suggested that the location and context in which podiatry students receive their didactic and clinical education could affect the stereotypes and attitudes. Testing for and controlling for contextual influences was beyond the scope of the present dissertation. However, future studies should explore the different contexts that podiatry students perform their clinical contact with elderly patients.

**Possible Methodological Directions for Future Research**

The present study analyzed the direct effects of predictor variables only. Future research might also consider the potential indirect and mediating effects of these predictor variables on negative attitudes towards the elderly. In particular, the social background variables may have indirect effects through
intergenerational solidarity, political ideology, motivations for entering podiatry, and professional socialization.

Additionally, replacing cross-sectional with longitudinal data could inform one how the podiatry students' stereotypes and attitudes change over time, and could also provide a less ambiguous causal ordering of the potential links among some the predictor variables (e.g., year in podiatry school and clinical contact with the elderly). Since professional and adult socialization is a lifelong process, in which an individual learns what to expect and value and how to act in various professional contexts, collecting longitudinal data on podiatry students could be particularly important to better observe professional socialization. The findings from the present cross-sectional design do not indicate that the podiatric medical institution has much of an effect on stereotypes or attitudes. However, if researchers collected data on students over time, we could make firmer conclusions about the effects of curricula and clinical contact with the elderly on the stereotyping of older persons.
LITERATURE CITED


Appendix A

We are interested in learning more about your opinions toward older individuals. Please take the time to answer the following questions. Remember, there are no right or wrong answers. Your answers are strictly confidential and you will not be personally identified from your responses. For questions 1-2, circle your answer where 7 = always, 6 = almost always, 5 = most of the time, 4 = some of the time, 3 = occasionally, 2 = rarely, 1 = never.

1. Older people 65-74 years of age......

<table>
<thead>
<tr>
<th></th>
<th>a. are meddlesome</th>
<th>b. feel secure</th>
<th>c. are set in their ways</th>
<th>d. are intolerant (impatient)</th>
<th>e. think about the good old days</th>
<th>f. are productive</th>
<th>g. never fully recover from illness</th>
<th>h. walk slowly</th>
<th>i. talk to themselves</th>
<th>j. are financially independent</th>
<th>k. get upset easily</th>
<th>l. are optimistic</th>
<th>m. are physically active</th>
<th>n. have health problems</th>
<th>o. are grouchy (cranky)</th>
<th>p. are old-fashioned</th>
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</table>
2. Older people 75-99 years of age.....

a. are intolerant (impatient) 1 2 3 4 5 6 7
b. never fully recover from illness 1 2 3 4 5 6 7
c. get upset easily 1 2 3 4 5 6 7
d. are grouchy (cranky) 1 2 3 4 5 6 7
e. are meddlesome 1 2 3 4 5 6 7
f. are set in their ways 1 2 3 4 5 6 7
g. think about the good old days 1 2 3 4 5 6 7
h. walk slowly 1 2 3 4 5 6 7
i. are old-fashioned 1 2 3 4 5 6 7
j. have health problems 1 2 3 4 5 6 7
k. are financially independent 1 2 3 4 5 6 7
l. feel secure 1 2 3 4 5 6 7
m. are productive 1 2 3 4 5 6 7
n. talk to themselves 1 2 3 4 5 6 7
o. are optimistic 1 2 3 4 5 6 7
p. are physically active 1 2 3 4 5 6 7

3. How many days per week do you have clinical contact with the elderly? ___.

4. Please indicate what type of residency you prefer to enter___________________.

5. What do you expect your income to be 5 years after completion of residency/preceptorship? $__________________.
For questions 6-22, circle your answer where 7 = strongly disagree, 6 = disagree, 5 = slightly disagree, 4 = neutral, 3 = slightly agree, 2 = agree, 1 = strongly agree.

6. With elderly patients, it is more satisfying to undertake treatment of acute diseases than chronic conditions

   1  2  3  4  5  6  7

7. Preventive medical care is less relevant for elderly persons, considering their chronic conditions

   1  2  3  4  5  6  7

8. A great number of elderly persons have health problems for which DPM's cannot give much help

   1  2  3  4  5  6  7

9. Considering the typical health problems of the elderly, it is less gratifying for a DPM to treat them

   1  2  3  4  5  6  7

10. Treatment of old people is hopeless; they are operating with "machinery that is worn out"

    1  2  3  4  5  6  7

11. I would plan to make house calls to see elderly patients if adequate compensation were provided

    1  2  3  4  5  6  7

12. It is wearisome and unglamorous to care for chronically ill old people

    1  2  3  4  5  6  7

13. The treatment of elderly patients is too time consuming

    1  2  3  4  5  6  7

14. If handled properly, the elderly patient can be seen as quickly as any other patient

    1  2  3  4  5  6  7

15. In my podiatry school training, problem cases in geriatrics are frequently presented

    1  2  3  4  5  6  7

16. The majority of my professors avoid instruction in podogeriatrics

    1  2  3  4  5  6  7
17. More training is needed to provide better care to elderly patients
1 2 3 4 5 6 7

18. My exposure to geriatric medicine has been adequate
1 2 3 4 5 6 7

19. It is the responsibility of society, through its government to guarantee full employment
1 2 3 4 5 6 7

20. Poverty could almost be done away with if we made certain basic changes in our social and economic system
1 2 3 4 5 6 7

21. The United States needs a complete restructuring of its basic institutions
1 2 3 4 5 6 7

22. The government should play a bigger part in the economic life of the nation in order to distribute income more equally
1 2 3 4 5 6 7

23. When you become a DPM, what percent of your patients do you want to be 65 years of age or older? (check one)

[ ] none [ ] 1-24% [ ] 25-49%
[ ] 50-74% [ ] 75-99% [ ] 100%

Next, we would like to get some background information from you. All of the information we obtain from you will be kept confidential. It will not be shown to anyone except in the form of group results.

24. How frequently did you see your grandparents as you were growing up (check one)?

[ ] At least once per week [ ] once per month [ ] few times per year
[ ] Once per year [ ] less than once per year
25. For each of the following questions circle your answer where 6 = *extremely much*, 5 = *very much*, 4 = *pretty much*, 3 = *some*, 2 = *not much*, 1 = *not much at all*, NA = *not appropriate*.

a. How well do/did you feel your grandparents understand/understood you?  
   1  2  3  4  5  6  NA

b. How much affection do/did you feel your grandparents have/had for you?  
   1  2  3  4  5  6  NA

c. How much respect do/did you feel from your grandparents?  
   1  2  3  4  5  6  NA

d. How well do/did you feel you understand/understood your grandparents?  
   1  2  3  4  5  6  NA

e. How much do/did you respect your grandparents?  
   1  2  3  4  5  6  NA

f. How much affection do/did you feel toward your grandparents?  
   1  2  3  4  5  6  NA

g. How fair do/did you feel your grandparents are/were toward(s) you?  
   1  2  3  4  5  6  NA

h. How fair do/did you feel you are/were toward your grandparents?  
   1  2  3  4  5  6  NA

i. How well do/did you feel your grandparents trusted you?  
   1  2  3  4  5  6  NA

j. How well do/did you trust your grandparents?  
   1  2  3  4  5  6  NA
26. What was the last year in school your father, stepfather or male guardian completed? (check one)

[] Some High School  [] High School  [] Junior college

[] Bachelor  [] Graduate

27. Which of the following comes closest to describing the social class your parents belonged to when you were in your teens... (check one)

[] upper class  [] upper middle class  [] lower middle class

[] working class  [] lower class

28. In your political thinking, do you consider yourself as... (check one)

[] radical left  [] liberal  [] middle of the road

[] conservative  [] radical right

29. Do you consider yourself... (check one)

[] Strong Democrat  [] Strong Republican

[] Not very strong Democrat  [] Not very strong Republican

[] Independent--identify more with Democratic party

[] Independent--identify more closely with Republican party

[] Independent

30. What is your sex?  [] Female  [] Male

31. Which of the following best describes your ethnic background? (check one)

[] White American  [] Asian American

[] African American  [] Other, specify (example, German)_____

[] Hispanic  [] Don't Know
32. What is your current year in school? (check one)

[ ] first-year student  [ ] third-year student
[ ] second-year student  [ ] fourth-year student

33. What is your religious preference? (check one)

[ ] Protestant  [ ] Catholic  [ ] Other
[ ] Jewish  [ ] None

34. What role does religion play in your life? For each of the following questions circle your answer where 7 = always, 6 = almost always, 5 = most of the time, 4 = some of the time, 3 = occasionally, 2 = rarely, 1 = never.

   a. How often do you attend religious services?  
      1 2 3 4 5 6 7

   b. I feel close to God most of the time.  
      1 2 3 4 5 6 7

   c. About how often do you pray?  
      1 2 3 4 5 6 7

35. When you graduate from podiatry school how serious do you feel your financial indebtedness will be? (check one)

[ ] very serious  [ ] serious  [ ] pretty serious
[ ] somewhat serious  [ ] not too serious  [ ] not at all serious
36. Finally, we would like to ask some questions about why you entered podiatry.

For each of the following questions circle your answers where $7 = $strongly agree$, $6 = $agree$, $5 = $slightly agree$, $4 = $neutral$, $3 = $slightly disagree$, $2 = $disagree$, $1 = $strongly disagree$.

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. to help others</td>
<td></td>
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<td>b. ensures me a stable future</td>
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<td>c. allows me to earn a good income</td>
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<td>d. its importance to the American health-care system</td>
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<td>e. I enjoy working with people</td>
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<td>f. it will give me a respected position in society</td>
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