

CAREGIVING PREPAREDNESS, AND ATTITUDES TOWARDS THEIR OLDER
RELATIVES AMONG COLLEGE STUDENTS

By

GUNGEET JOSHI

A DISSERTATION PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

2014

© 2014 Gungeet Joshi

To my parents, husband, and beloved children
for their constant support and unconditional love.
I love you all dearly

ACKNOWLEDGMENTS

I would never have been able to finish my dissertation without the guidance of my committee members, help from friends, and support from my family and husband. I would like to express my special appreciation and thanks to my advisor and co-advisor Professor Christine Stopka and Dr. Morgan Pigg, they have been tremendous mentors for me. I would like to express my deepest gratitude to my advisor Dr. Stopka for corrective criticism, strengthening my writing and social skills and providing an opportunity to work in a community based participatory research with awesome Sidney Lanier school students. Her generosity and advice on both research as well as on my career have been priceless and her enthusiasm for my subject area was often the nudge I needed to push forward. I would like to thank Dr. Pigg for his guidance and unsurpassed knowledge of behavior theories and research. His valuable suggestions not only allowed me to grow as a research scientist but also become a better individual as well. I owe a lot to his patient listening and helpful suggestions. I also greatly appreciate the guidance and support given by Dr. Salvador Gezan; his expertise in statistical analyses and simple teaching made me adept in the subject which was once most intimidating to me. I could not have completed this research without the help and suggestions of Dr. Mark Tillman and Dr. Adam Barry. A special thank you goes to Dr. Jay Bernhardt and Dr. Thomas Clanton for providing the funding which allowed me to complete the degree, but also for giving me the opportunity to attend conferences and meet so many interesting people.

I am blessed not only professionally, but personally. I am thankful for my parents, Rabinderjit and Kanwal Mahindra, who motivated and encouraged to set goals and work hard. I am grateful for their consistent prayers, love, support, and words of

encouragement. I am also grateful to my brother, Bunny, for believing in what I did and said. Additionally, I am truly grateful for the prayers of my extended family as well. My Aunt Kamal, Uncle Baljit, and Cousins Sunny, Money, Kimmy, Kaku prayed for me daily. A special thank you to my brothers-in-law Vikas, Ankush, and Milind and sister-in-law Rakhee for being supportive and taking care of kids while I fulfilled my academic requirements.

I feel blessed to have Sunil, as my soul-mate, best friend and husband. He has been a true and great supporter and has unconditionally loved me during my good and bad times. He has been non-judgmental of me and instrumental in instilling confidence. He is the best father as he provided kids with love and affection while I worked. These past several years have not been an easy ride, both academically and personally. I truly thank Sunil for being by my side, even when I was irritable and depressed. I feel that what we both learned a lot about life and strengthened our commitment and determination to each other and live life to the fullest. I am also grateful for the sweetness of my daughters—Tvisha and Tavya, who filled my life with joy and unconditional love.

A good support system is important to surviving and staying sane in grad school. I would especially like to thank Sarah Deutschlander, and Sarah Napolitano, for assisting me when I recruited participants, and entered data. I am also thankful to my fellow students including Bethany Tenant, Julia Varnes, Holly Moses, Caroline Payne, and Zeerak Haider who were a great support system throughout my academic journey in Department of Health Education and Behavior. I am also thankful for the encouragement and support my friends; Preeti, Gurjit, Ankur, Pooja, Pulkit, Maninder

and Sameera provided. Special thank you for my friends from Sidney Lanier fitness program Mona, Jerelyne, Chelsea, Stephanie and Rebekha to introduce me to the amazing program and taught excellent editing and presentation skills.

Last, but most certainly not least, I am thankful for the support and suggestions I received from the Department of Health Education behavior faculty and staff to complete the dissertation. For any errors or inadequacies that may remain in this work, of course, the responsibility is entirely my own.

TABLE OF CONTENTS

ACKNOWLEDGMENTS.....	4
LIST OF FIGURES.....	12
LIST OF ABBREVIATIONS.....	13
ABSTRACT.....	14
CHAPTER	
1 INTRODUCTION	16
Research Problem	19
Rationale.....	23
Significance	24
Research Questions	25
Delimitations	25
Limitations.....	26
Assumptions	26
Definition of Terms.....	26
2 REVIEW OF THE LITERATURE	28
Role of Caregivers	28
Aging Population and Caregivers	28
Family Caregiving.....	29
College students/ Young adults as Caregivers.....	33
Factors affecting Caregivers	36
Costs of Caregiving	36
Health Risks of Caregiving	37
Cultural and Ethnic Factors in Caregiving	40
Preparedness of Caregiving	43
Attitude towards older population.....	45
Theory of Planned Behavior and Attitude towards older adults.	47
3 METHODS.....	54
Research Design	54
Research Variables	54
Participants	54
Instruments.....	55
Caregiving Preparedness Scale	56
Refined Aging Semantic Differential scale.....	57
General Profile Information.....	58
Expert Review (Face validity)	59
Pilot Study One.....	59

Participant Recruitment	59
Procedure	60
Pilot study Two	60
Participant Recruitment	60
Procedure	61
Data Analysis	61
Final Study	61
Participant Recruitment	62
Procedures	62
Data Analysis	63
Summary	65
4 RESULTS	68
Demographic Characteristics	68
Role as Caregivers	69
Quality of Experiences and Interactions with OR	71
Attitudes	72
Preparedness to Take Care Of Older Relatives In Future	74
Relationship between Attitudes towards OR and Preparedness for Caregiving	76
Theory of Planned Behavior Constructs	76
Perceived Behavioral Control	76
Subjective Norms	77
Intentions	77
Theory of Planned Behavior	77
5 DISCUSSION	99
Study Population and Previous Caregiving Activities	100
Attitudes towards Older Relatives	102
Preparedness to take care of older relatives in future	105
Constructs of Theory of Planned Behavior	106
Implications and Future Research	108
Recommendations	109
Conclusions	110
APPENDIX	
A RELIABILITY ANALYSIS TABLES	112
B INSTITUTIONAL REVIEW BOARD SUMMER 2013 SUBMISSION FORM	114
C CONSENT FORM	117
D SURVEY FORM	118
LIST OF REFERENCES	125

BIOGRAPHICAL SKETCH..... 140

LIST OF TABLES

<u>Table</u>	<u>page</u>
3-1 Demographic Distribution of Pilot test Sample Population.....	66
3-2 Pilot Survey Attitude towards Older Relatives Scores and distribution	66
3-3 Pilot Survey Attitude towards Older Adults Scores and distribution.....	67
3-4 Pilot Survey Preparedness Scores and distribution.....	67
3-5 Reliability analysis of sub-scales	67
4-1 Distribution of Participants by Class, Marriage, gender, SES and Major.	80
4-2 Age Variable.....	81
4-3 Frequency Analysis Results for Provided Unpaid Care in Past 12 Months	81
4-4 Frequency Analysis Results for Likely Responsible For Older Relatives.....	81
4-5 Frequency Analysis Results for Family Members Need to Take Care.....	81
4-6 Frequency Analysis Results for Providing Instrumental Activities of Daily Living	82
4-7 Frequency Analysis Results for Providing Activities of Daily Living.....	82
4-8 Frequency Analysis Results for Providing Other Activities	82
4-9 Frequency Analysis Results for Use of Technology for Caregiving.....	83
4-10 Frequency Analysis Results for Quality of experiences with Older Relatives	83
4-11 Frequency Analysis Results for Quality of experiences with Older Adults	84
4-12 Frequency Analysis Results for Interaction with older relatives	84
4-13 Summary of Multiple Regression Analysis of Independent Variables Predicting Quality of Experience with OR.....	84
4-14 Summary of Multiple Regression Analysis of Independent Variables Predicting Quality of Experience with OR.....	85
4-15 ANOVA of Quality of Experience with OR with different ethnic groups.....	85
4-16 Analysis Results for Attitudes towards Older Relatives and Older Adults.....	85

4-17	Summary of Multiple Regression Analysis of Independent Variables with Attitudes towards Older Relatives.....	86
4-18	Multiple Regression Analysis of Independent Variables with Attitudes towards Older Relatives.....	86
4-19	Analysis Results for Preparedness Score N=722.....	87
4-20	Frequency Analysis Results for Preparedness for Caregiving.....	88
4-21	Summary of One-way ANOVA of Preparedness Scores with previous caregiving activities	89
4-22	Summary of Multiple Regression Analysis of Independent Variables with Preparedness Scores	89
4-23	Hierarchical Regression Analysis of Independent Variables with Preparedness Scores	90
4-24	Summary of Linear Regression Analysis of Attitudes towards OR with Preparedness to take care (f=722)	90
4-25	Linear Regression Analysis of Attitude Scores with Preparedness Scores	90
4-26	Frequency Analysis Results for Perceived Behavioral Control for Caregiving....	91
4-27	Frequency Analysis Results for Subjective Norms about Caregiving	92
4-28	Frequency Analysis Results for Intentions about providing care to Older.....	92
4-29	Summary of Hierarchical Regression Analysis of Theory of Planned Behavior Constructs with Intentions to provide care.....	93
4-30	Hierarchical Regression Analysis of Theory of Planned Behavior Constructs with Intentions to Provide care.....	94

LIST OF FIGURES

<u>Figure</u>	<u>page</u>
2-1 Theory of Planned Behavior (Source: Aizen, 1991).....	53
4-1 Normal P-P Plot of Regression Standardized Residual of Attitude towards older adults Score.....	96
4-2 Normal P-P Plot of Regression Standardized Residual of Preparedness Score	96
4-3 Normal P-P Plot of Regression Standardized Residual of Intentions Score	97
4-4 Means Plot between Preparedness Mean and Provided IADL in past 12 months.....	97
4-5 Means Plot between Preparedness Mean and Provided ADL in past 12 months.....	98
4-6 Means Plot between Preparedness Mean and Provided Other Activities of Caregiving in past 12 months	98

LIST OF ABBREVIATIONS

OA	Any person 65 years and older
OR	Older Relative, any person 65 years and older who is related by blood or marriage
PCS	Preparedness For Caregiving scale is a caregiver self-rated instrument that consists of eight items that asks caregivers how well prepared they believe they are for multiple domains of caregiving
RASDS	Refined Aging Semantic Differential scale is used to measure attitude towards for older adults in general.

Abstract of Dissertation Presented to the Graduate School
of the University of Florida in Partial Fulfillment of the
Requirements for the Degree of Doctor of Philosophy

CAREGIVING PREPAREDNESS, AND ATTITUDES TOWARDS THEIR OLDER
RELATIVES AMONG COLLEGE STUDENTS

By

Gungeet Joshi

August 2014

Chair: Christine Stopka
Cochair: Morgan Pigg
Major: Health and Human Performance

The 2010 US census revealed a rapidly growing population of older adults, and predicted that the U.S population will include 88.5 million (more than 21 %) over age 65 by 2050. As more people live to the oldest ages, they suffer from multiple chronic conditions thus creating an extra ordinary demand for health care services. Due to the recent economic downturn and lack of professional caregivers, the burden of care tends to fall on family including young college going adults. The dependency of aged individuals cultivates different attitudes towards them among the young adults and influences general care, and services elderly receive. Thus, it is essential to understand their attitude towards older adults and their preparedness for the role of informal family caregivers.

A cross-sectional survey research method was used which included the Caregiving Preparedness Scale (CPS), Refined Aging Semantic Differential scale (RASD), and demographic profile information. Data from 720 university enrolled undergraduate and graduate students were entered into SPSS and analyzed using

descriptive and multivariate statistics. Most of the participants were females (74%), juniors (33.6%) and identified themselves as white/Caucasian (56.1%).

Mean scores revealed a positive attitude of the students towards their older relatives (56.195 ± 26.41 , CI at 95% = 53.19-57.17) and other older adults (66.72 ± 24.15 , CI at 95% = 64.45-68.06) but the mean scores from CPS reported the students were not too well prepared (1.85 ± 0.97 , CI at 95% = 1-78-1.93) to take care of their older relatives in future. The theory of planned behavior constructs including attitude, subjective norms, and perceived behavioral control contributed significantly towards the intentions to serve as informal caregivers by the college students.

Implications of the study are two-fold, for health care providers including geriatrics, health educators, and patient educators, to involve, educate, and develop strategies to assist this particular group of young adult population in providing care to older population. For academic professionals who may develop curriculum to improve caregiving preparedness levels. One of the salient findings of the study was identifying TPB to explore the intentions of informal caregiving and thus has implications of including broader population in terms of gender, age, and ethnicity.

CHAPTER 1 INTRODUCTION

The 2010 US census revealed a rapidly growing population of age 65 and older adults, representing 13% (40.3 million) of the total U.S population. The census also reported a faster growth rate for older population than the total population. The 65 and older population grew 15.1%, while the total US population grew 9.7%. The 85-94 years old group grew by 29.9%, increasing from 3.9 million to 5.1 million from 2000 to 2010 (US Census Bureau, 2011). The first “baby boomers” (adults born between 1946 and 1964) turned 65 in 2011. According to the US Census Bureau (2012), by 2050 the US population will include 88.5 million (more than 21%) over age 65. More than 37 million people in this group (60 %) will manage more than one chronic condition by 2030 (American Hospital Association [AHA], 2007), increasing the demand of health care facilities in the society.

Longevity of life may be attributed to the advancement of medical care and technology. On the other hand, as more people live to the oldest ages, they suffer from multiple chronic conditions. The percentage of adults aged 65 and over with both hypertension and diabetes increased from 9% to 15%; prevalence of hypertension and heart disease increased from 18% to 21%; and prevalence of hypertension and cancer increased from 8% to 11% from 2000 to 2010, in the respective age groups (Centers for Disease Control and Prevention [CDC], 2012). These conditions affect their performance of daily activities and in turn make them dependent on others for help. For instance, the Federal Interagency Forum on Aging-Related Statistics (2010) reported about 42 % of adults over age 65 have physical limitations or need assistance with activities of daily living, such as eating, bathing or dressing. The National Center for

Health Statistics in 2011 reported that 24.4% of non-institutionalized persons age 65 and over in fair or poor health and 7.3% need help with personal care from other persons. Over 1.3 million were nursing home residents and over 1 million utilize some kind of home care. This growing population will also create an extraordinary demand for aging related programs, policies and services (Sidell and Smiley, 2008).

Traditionally, families constitute the backbone of US community based health care system by substantially providing care to their aging members. Over the years, as a result of delayed marriage and childbirth, high rates of divorce and smaller family size the burden of care tends to fall on fewer people in a family. Children (41.3%), spouses (38.4%) or other relatives or friends (20.4%) provide care to the older adults at home (Wolff and Kasper, 2006). Thus, families acquire the role of informal caregiver, who assume responsibility for the physical and emotional needs of an impaired individual and provide unpaid care to family members or acquaintances (Miller and Keane, 1992., Department of Health and Human Services [DHHS], 1998). In 2004, 85% of 3.7 million of older people in the community received family care from their children and spouses (Houser, Gibson, Redfoot and American Association of Retired Persons [AARP], 2010). The National Alliance for Caregiving [NAC] and AARP, 2009 reported 51% of family caregivers between the ages 18 and 49.

The dependency of aged individuals cultivates different attitudes among the young adults towards them. An attitude represents a person's general feeling of favorableness or "unfavorableness" towards some stimulus object, behaviors and action (Ajzen and Fishbein, 1980; Ajzen, 2002). Attitudes towards older people influence the general care, and services they receive. Many assume the elderly as 'valuable symbols

of life and past history', experienced and others hold a contradictory image of the elderly as dependent, helpless and frail (O'Hanlon and Brookover, 2002 p.720. Laditka et al, 2004 p.418). Butler (1969) coined the term "ageist," referring the evaluative judgments towards persons based on their advanced age. Young adults and men are likely to conceive a significantly negative attitude towards older adults (Gellis, Sherman and Lawrance, 2003; Laditka et al, 2004; Rupp, Vodanovich and Crede, 2005). An extensive literature search reports a mixed response of positive and negative attitudes of young college students towards older adults. Students with positive attitudes towards older adults are likely to have favorable beliefs, feelings and behavior towards them (Lee, 2009). Experiences and direct contact with older adults has been associated with positive attitude among young adults (Funderburk et al, 2006; Chase, 2011) an implication for the informal caregiving activities thus resulting in satisfaction of both the caregiver and the care receiver. The negative attitudes towards older population can be a barrier to providing compassionate care by young adults to their older relatives. Thus it is important to understand the attitude of the youth towards aged.

Similarly, preparedness for caregiving (i.e., perceived readiness for multiple domains of caregiving and dealing with the associated stress) plays an important role for a satisfied and successful caregiving experience. Young family caregivers cater to a large domain of providing care to the elderly including providing assistance with daily activities of living, instrumental activities of daily living, management of resources and setting up the services available. The family members face the challenge of using complicated medical equipment and procedures, lack of training and little information for setting up health care services. A majority of them feel prepared to either spend time

with the older family members, or take them to doctor's visits and tests, but very few are prepared for the more complicated tasks of caregiving. The informal role of caregiver can be demanding as well as stressful, especially when the individual does not feel prepared for the tasks and stresses of caregiving. The preparedness of the caregiver not only contributes positively to the overall health of older adults but also the mental and physical well-being of the caregiver himself. A higher level of preparedness to provide care to older adults can inculcate positive attitude towards them or vice versa.

The literal evidence supports the contribution of attitude, social norms, and intentions towards behavior. The Theory of Planned Behavior establishes a relationship between intentions to and actually adopting a behavior. Predictors such as attitude, subjective norms and perceived behavior control influence the intentions to perform a behavior. A growing number of young adults sharing responsibilities as family caregivers make it essential to understand the attitude of young population towards the older adults and their preparedness for the role of informal family caregivers. This study attempts to understand the relationship between the attitude towards older generation and the preparedness for informal caregiving among the young adults enrolled as university students.

Research Problem

Society is experiencing an augmentation in the older adult population. Consequently, rapidly growing health care needs of the older adults pose an additional demand on health care professionals, who face a shortfall in the necessary numbers of physicians and other advanced medical professionals. The United States will face serious shortages in the combined workforce of physicians, advance practice nurses, and physician assistants over the next two decades (Sargen, Hooker, and Cooper,

2011). According to the Paraprofessional Healthcare Institute, Zywiak (2010) reported that the nation will need 1.1 million additional direct-care workers; and, the Association of Schools of Public Health (ASPH) projected a shortage of 250,000 public health workers by 2020. Furthermore, the American Geriatrics Society reported the increasing demand of geriatrician supply of 36,000 by 2030. Another area experiencing shortage of health professionals include 50,000 nurses and 124,000 physicians by 2025 (Zywiak, 2010). Without an adequate supply of advanced medical professionals and caregivers, it will be impossible to meet the goals of health care for older adults. Thus, the role of family as caregivers will expand to care for their older relatives at home.

Increasing at a rate of 2.3% per year during 2000-2030 (DHHS, 2011), older adults constitute the fastest growing population group; whereas, the number of family members available to provide care is expected to increase by only 25%, at a rate of 0.8% per year (Mack and Thompson, 2001). 57% of adult Americans either currently provide unpaid care to an adult family member or friend, or have provided this care in the past. Two-thirds of the population (66 %) expects to be caregivers in the future and report that it is very likely (43%), or somewhat likely (23%), that they will become a family caregiver at a future time. They are most likely to care for their mother (41 %), father (12 %), spouse or domestic partner (11 %), mother-in-law (7 %), sibling (6 %) or father-in-law (2 %) (Johnson and Johnson, 2013).

The average age of adult caregivers reported is 48 years; about 51% of caregivers are between the ages of 18 and 49 (NAC, 2009). Young adult caregivers make up between 12% and 18% of the total number of adult caregivers. Over half are male, and the average age is 21 (Levine et al, 2005). In US, Fifty-two million caregivers provide

care to adults (aged 18+) with a disability or illness. Over 43 million care for someone 50+ years of age and 14.9 million care for someone who has Alzheimer's disease or other dementia. Approximately 1.3 million people 65 and older, or 3.1% of this population, lived in skilled-nursing facilities in 2010. In, 2011 caregiver services were valued at \$450 billion per year, a 20% increase from \$375 billion in 2007 (AARP, 2009). Thus, family caregiving has an important implication in the current recession situation. As healthcare dollars shrink, the economic burden of the society can be eased by using family members as caregivers.

In the present economic downturn, unpaid family caregivers are likely to continue to be the largest source of long-term care services in the US and it is anticipated that a larger proportion of adult children will become caregivers. 44% of primary family caregivers were adult children, and caregivers of older adults (age 50+) are likely to be taking care of their mother (34%), grandmother (11%), or father (10%) (NAC and AARP, 2004). Thus, it will not be uncommon for some young informal caregivers to be enrolled as full time college or university students. Transition to a college is a vulnerable stage for most of the young adults (Pierceall and Keim, 2007). This young population struggles to balance between academic achievement, family responsibilities, and developing a college identity (Brougham, Zail, Mendoza, & Miller, 2009). Although caregiving can be rewarding, frequently it is associated with significant levels of physical, emotional, and financial strain. College students that reported being "frequently overwhelmed" increased from 16% in 1985 to 27% in 2002 (Sax 1997, 2003). During a typical college semester, 52% of the students have reported high levels

of stress (Hudd et al, 2000). Including an additional responsibility of providing care to their aged relatives might aggravate their already distressful situation.

Research has established that caregiving can be exacting and that informal caregivers are at high risk for adverse physical and psychological consequences associated with caregiving. NAC (2006) reported that approximately half (53%) of caregivers who reported their health had gotten worse due to caregiving also said the decline in their health has affected their ability to provide care. Similarly, NAC (2004) also reported caregivers having difficulty finding time for one's self (35%), managing emotional and physical stress (29%), and balancing work and family responsibilities (29%). These decisions become especially challenging when an individual feels unprepared to balance and fulfill the demanding task. Preparedness for caregiving has been reported to ameliorate some, but not all aspects of this strain and burden (Scherbring, 2002; Archbold et al, 2007).

In addition, "attitude" essentially, determines execution of behavior. A positive attitude towards the behavior tends to facilitate the adoption and accomplishment of the behavior including physical activity (Carter-Parker et al, 2012), healthy behaviors (Baiocchi-Wagner, and Talley, 2013) and, voting (Friese, Smith, Plischke, Bluemke, Nosek, & Krueger, 2012). The literature reports attitude as a predictor of risky behaviors including Driving under the Influence (Jornet-Gibert, Gallardo-Pujol, Suso, & Andrés-Pueyo, 2012); eating behavior-disorder (Filaire et al, 2012), and smoking (Han et al, 2012). Extensive evidence supports influence of attitude on adoption of behavior. There is a dearth of literature understanding the relationship between the attitude towards older adults and preparedness to execute caregiving behavior. Thus, having important

implications in a young society responsible for the older generation's physical as well as emotional needs. The combination of attitude, perceived norms and perceived behavioral control have been reported to impact the intentions or readiness to perform the behavior.

Rationale

The literature identifies attitude as a major predictor of behavior and behavioral intentions (Sample and Warland, 1973; Aizen and Madden, 1986). Aizen and Cote, 2008; as well as, Kim and Hunter, 2006 also reported strong relationship between attitude and behavior. Although an extensive literature review incorporated the attitude-behavior relationship in understanding the physical activity (Carter-Parker, Edwards & McCleary, 2012), smoking, and sexual behaviors none of the studies reported understanding the attitude towards older adults and the behavior of providing care to them in the general college student population. Researchers have extensively studied college students enrolled in health majors including medicine, dental, psychology, social work, and nursing to assess their attitude towards older adults. Similar studies conducted aimed at understanding the knowledge and course content of health majors that influenced the positive attitude towards and encouraged students work in geriatrics field. Similarly, an extensive literature search identified the role of caregivers and impact of their role on their own mental and physical health (Lee and Gramotnev, 2007; Schulz and Martire, 2004). The subpopulation of either young adult children, or adults over 40 years, have been studied extensively (Dew-Reeves and Athay, 2012; Jenkins, Blankemeyer, and Pinkard, 2005; Jenkins and Brittain, 2003) but there are few studies that have looked at young adults (Shifren and Chong, 2012).

To date, few studies have focused exclusively on the general population of college enrolled students to assess their attitude towards older relatives, and no study has reported preparedness to provide care to their older relatives among the population of young adult caregivers usually between the ages of 18-30 years. The issues and concerns of college going young adults make them a unique group to understand their attitudes and preparedness, to face future challenges, and strategies to cope and balance their academic and personal life. Addressing this gap in literature seems timely given the dearth of research studies (Levine et al, 2005).

Significance

This study will yield a better understanding about the attitudes of typical college students' toward older relatives and assess their preparedness levels for providing care to their older relatives. The exploratory research will assess if a relationship between the attitudes of college students towards older relatives and their perceived preparedness for a role as informal caregivers exists. The study will help guide academic institutions about how to best prepare students likely to assume these roles and to offer support to the students in the caregiver roles. Results from students will provide a clearer understanding in performing their roles as caregivers and in managing their academic tasks. With this work health care providers will become better informed about the attitudes and preparedness of this young population and can develop strategies to assist this particular group better.

Research Questions

The study addresses the following research questions:

1. What is the attitude of college students towards their older relatives?
2. What is the preparedness level of the college students to take care of their older relatives in the future?
3. Is there a relationship between age, Socio Economic Status (SES), gender, ethnicity, majors, amount of interaction, quality of experience with older relatives and attitude towards their older relatives among college population?
4. Is there a relationship between age, SES, gender, race, college majors, amount of interaction and quality of experience with older adults, perceived behavioral control for providing care to their older relatives in future and college students' preparedness to take care of their older relatives?
5. Does the quality of experiences between college students and their older relatives have any association with gender, age, ethnicity, class, college major and SES?
6. Does preparedness to take care of older relatives influence attitudes towards older relatives among college students?
7. How do constructs of theory of planned behavior explain the intentions of college students to provide informal caregiving to their older relatives?

Delimitations

The following delimitations are identified in the study:

1. Participants of this study include students enrolled in an on-campus large class which was representative of a general college population including age, gender, race, class, college major, and SES.
2. The study data were collected during summer and fall semesters of a year in order to include a representative college student population over the two semesters.
3. The data were collected within first two weeks of the semesters during the orientation classes and in-class exam periods which was mandatory for the students to attend.
4. Relatively large sample size was included in the study.
5. The standardized scales were used in their original format, responses were collected using paper-pencil survey method and not a popular online/internet method to overcome any discrepancy that might have affected the reliability of the scales and data collected.

6. The Refined Ageing Semantic Differential Scale for attitudes was included twice in the survey; one at the beginning identifying the attitudes towards their own older relatives and later at the end asking specifically their attitudes towards other older adults.

Limitations

The following limitations are present in this study:

1. The study was based on cross-sectional research design and hence reflects responses from the participants at a specific point in time. It did not follow respondents longitudinally to view any changes in their attitudes or preparedness for informal caregiving.
2. The data were collected only from the students present in the class on the particular day and does not account for students absent during data collection class.
3. Convenience sample including single university and a large class was chosen because of the survey method being used was paper-pencil. Convenience sampling limits the generalizability of study findings to other populations including the area used in this study.
4. Respondents in this study agreed to voluntarily participate and may not be representative of those who chose not to participate

Assumptions

Following assumptions were made for the study

1. Most of the students enrolled in the class completed the survey.
2. Students were able to distinguish their attitudes towards their own older relatives from other older adults.
3. The students who participated in the study answered the study questions honestly. The consent form assured participants of their anonymity and encouraged them to answer truthfully.

Definition of Terms

- **ATTITUDE.** An affective feeling of liking or disliking toward an object (which can be basically anything) that has an influence on behavior.
- **ACTIVITIES OF DAILY LIVING (ADL).** Assistance with bathing, eating, and medical needs provided by a caregiver.
- **CAREGIVER PREPAREDNESS.** Perceived readiness for providing physical care

and emotional support, such as, setting up in-home support services, and dealing with the stress of caregiving.

- **FORMAL CAREGIVERS.** Primary physicians, specialists, nurses, therapists, and counselors, who provide care for an individual in a hospital, private practice, or medical facility.
- **INFORMAL CAREGIVER.** An individual voluntarily caring for another person (care receiver including spouses, children, other family members, and friends in a home or other informal setting).
- **INSTRUMENTAL ACTIVITY OF DAILY LIVING (IADLS).** Managing finances and preparing meals provided by a caregiver.
- **INTENTIONS.** The cognitive representation of a person's readiness to perform a given behavior.
- **SUBJECTIVE NORMS.** An individual's beliefs regarding important others' approval or disapproval of the behavior.
- **PERCEIVED BEHAVIORAL CONTROL.** Ability to perform a behavior.
- **OLDER ADULTS.** Adults over the age of 65.
- **OLDER RELATIVES.** Adults related by blood or marriage, over the age of 65.

CHAPTER 2 REVIEW OF THE LITERATURE

The purpose of this section is to address to the dearth of research by identifying the attitudes of college students towards older adults, their level of preparedness to taking care of their older relatives. The study will explore the role of college students as informal caregivers enrolled at a large north central university of Florida. This chapter presents a review of literature related to these topics: role of caregivers, family caregivers; attitudes of college students towards older adults; and the Theory of Reasoned Action and Attitude.

Role of Caregivers

Aging Population and Caregivers

There are 40.4 million of 65 years or older persons as of 2010 in the US. They represent 13.1% of the US population, or over one in every eight Americans (DHHS, 2011). The aging populations (65+) will increase by 101% between 2000 and 2030, at a rate of 2.3% each year (Coughlin, 2010). Older adults are among the fastest growing age groups, and the first “baby boomers” (adults born between 1946 and 1964) turned 65 in 2011. More than 37 million people in this group (60%) will manage more than one chronic condition (AHA, 2007) and, an estimated 150 million people, or 48% of the population, will be living with a chronic condition by 2030 (US Department of Health and Human Services [USD.H.H.S] 2012; Administration on Aging, 2001; Partnership for Solutions, 2003). To help manage the health conditions demand for caregivers will increase in the society. In 2000, approximately 50 million individuals with terminal or chronic illnesses received some type of care from a family member or friend. Over the next 30-year period the number of family members who are available to provide care for

these older adults is expected to increase by only 25%, at a rate of 0.8% per year (Mack and Thompson, 2001). Florida has traditionally been known as a state with a large elderly population. Many elderly people retire to the state, thus requiring medical care and attention for end-of-life years. Florida ranks fourth in the nation for number of informal caregivers (more than 1.6 million), fourth for annual informal caregiver hours per billion, and fourth for annual dollar value of informal caregiver hours (about \$15 billion). California (first), Texas (second) and New York (third) are ranked above Florida in all three categories (National Family Caregivers Association and the Albert Einstein College of Medicine, 2002).

Family Caregiving

Family caregiving is an age-old practice, where members have been involved in taking care of their sick or older relatives. Family caregivers are the majority of available caregivers. They are the unpaid persons such as family members, friends, and neighbors of all ages who are providing care for a relative (Family Caregiver Alliance [FCA], 2005; Healthy People 2020). An estimate of 120 million adult Americans (57%) are either providing or have provided in the past, unpaid care to an adult family member or friend. In the opinion research corporation survey of 1018 adults conducted in 2005 reported (Johnson and Johnson, 2013), 22 % of the population currently providing care to an adult relative or friend and 34 % of the participants have talked with their families or friends about providing care to them in future. More than half (54%) of the respondents preferred a family member; spouse (37%) and adult child (23%) to provide care to them. The year 2011 was designated “The Year of the Family Caregiver” by the US Administration on Aging to commemorate the tenth anniversary of the National Family Caregiver Support Program (NFCSP) (US Administration on Aging, 2011).Two

out of three (66 %) older people with disabilities who receive Long Term Services and Support (LTSS) at home, while receiving all of their care exclusively from their family caregivers, mostly wives and adult daughters. Another quarter (26 %) receives some combination of family care and paid help; only 9% receive paid help alone (US Department of Commerce, 2009). In recent years there has been a shift in public policy toward more Home and Community Based Services(HCBS) and away from nursing home care, paradoxically contributing to an increasing reliance on potentially fewer family and friends with competing demands to provide care at home (AARP, 2011). Evidence suggests that more family caregivers are assisting older family members or friends with higher rates of disability than in the past, and are more likely to be providing hands-on and often physically demanding and intimate personal help with activities such as bathing or using the toilet (Doty, 2010; Houser, Gibson, & Redfoot, & AARP, 2011)

29% of the US population, more than 65 million people, provide care for a chronically ill, disabled or aged family member or friend during any given year and spend an average of 20 hours per week providing care for their loved one. Today 30 million families provide care for an adult over the age of 50 — a number expected to double in 25 years (AARP, 2012). Two-third of the population (66%) reported very likely (43%) or somewhat likely (23%) they will need to provide care to someone in the future (Johnson and Johnson, 2013).The family structure has changed over the years, due to delayed marriage and childbirth, high rates of divorce, and smaller family size and as a result the burden of care tends to fall on fewer people in a family. Families are now widely dispersed hence there is greater long-distance caregiving, and concomitant

shortage of direct care workers to help families. This may reduce the availability of caregivers for the growing numbers of older people in the future (Institute of Medicine, 2008; Jacobsen., Kent, Lee, and Mather, 2011; Pew Research Center, 2008). A major factor that has contributed to an additional caregiving burden on the family member is the fact that there is a scarcity of professional healthcare workforce (USDHHS, 2012). By 2020 there will be a shortage of up to 200,000 physicians and one million nurses (Auerbach, Buerhaus, & Staiger, 2007; Council on Graduate Medical Education, 2005). According to the eldercare workforce alliance, it is estimated that by 2030, 3.5 million additional health care professionals and direct-care workers will be needed. In 2006, only four in ten older adults received care from any physician they had seen at least once in a doctor's office in the prior year (Sharma, et al, 2009). Families are the main pipeline for managing continuity of care for their loved ones. They are viewed as the "continuity connectors" in their role as the "eyes and ears" for communication and coordination with a range of health professionals and community service providers. The presence of family members during physician visits has been shown to facilitate communication and increase patient satisfaction (Wolff and Roter, 2008). Family caregiving has also shown to help delay or prevent the use of nursing home care (Spillman and Long, 2010). Involving family caregivers in discharge planning during transitions from hospital to home may not only improve quality of care but also help to prevent hospital readmissions among Medicare beneficiaries (Arbaje, et al, 2008; Naylor, et al 2011).

The family caregivers usually provide a variety of companionship and emotional support such as help with household tasks (preparing meals, handle bills and deal with

insurance claims), carry out personal care (bathing and dressing). Also they are responsible for nursing procedures at home, administer and manage multiple medications, including injections, Identify arrange, and coordinate services and supports, hire and supervise direct care workers, arrange for, or provide transportation to medical appointments and community services. They communicate with health professionals, serve as an “advocate” for their loved one during medical appointments or hospitalizations, implements care plans and play a key role of “care coordinator” during transitions, especially from hospital to home (AARP, 2009; Levine, Halper, Peist, and Gould, 2010). Assisting with transportation needs is a major part of family caregiving. Wolf and Rotter (2008) reported that nearly four in ten (about 39 %) Medicare beneficiaries were accompanied to routine medical visits, most often by spouses or adult children. According to an AARP 2009 study, family and friends provide 1.4 billion trips per year for older relatives (age 70+) who do not drive, and adult children provide 33% of these trips. The proportion of family caregivers handling bandaging and wound care, preparing tube feedings, managing catheters, giving injections, or operating medical equipment in the home range from 23 % to more than 53 %. Two studies based in the United Kingdom assessed the needs of informal caregivers among a South Asian population caring for those with dementia (Adamson and Donovan, 2005) and a South Asian and African/Caribbean population caring for those with a variety of disabilities (Katbamna, Ahmad, Bhakta, Baker, & Parker, 2004). Adamson and Donovan, (2005) used qualitative methods and the other study used a combination of qualitative and quantitative methods to confirm that it is expected that adult sons and daughters, including daughters-in-law, take care for elderly family members.

Owing to a number of converging factors: the aging of the population, the increasing prevalence and costs of multiple chronic conditions, as well as critical shortages in the direct care workforce family caregiving is now recognized as a central part of health care and LTSS (AARP, 2011). The new health care law of 2010, the Affordable Care Act (P.L.111-148), promotes the central importance of person- and family-centered care in the design and delivery of new models of care, to improve the quality and efficiency of health care, including assessment of the family caregiver's experience of care. The law explicitly mentions the term "caregiver" 46 times and "family caregiver" 11 times (AARP, 2011).

College students/ Young adults as Caregivers

By fall 2012, it is estimated that a record number of 21.6 million students will attend American colleges and universities, constituting an increase of about 6.2 million since the Fall of 2000 (National Center for Education Statistics, 2012). The National Center for Education Statistics also projected that nearly 7.4 million students will attend public 2-year institutions, and half a million will attend private 2-year colleges. Some 8.1 million students are expected to attend public 4-year institutions, and about 5.6 million will attend private 4-year institutions. There are not many studies that include this growing and unique population as caregivers. An estimated 83 % of Americans say they would feel very obligated to provide assistance to their parent in a time of need (Pew Research Center, 2010). Young adults are an important population that provides care to their family members but not always identifies themselves as caregivers. A qualitative study from Australia (Smyth, Blaxland and Cass, 2011) demonstrates that many young people who provide care for family members with disability or illness do not identify or even recognize themselves as 'young carers' (caregiver). This corroborates other

Australian, UK and USA research on young carers (Becker, 2007; Warren, 2007). Most regard the tasks they perform as 'normal', 'routine', 'everyday' tasks and consider what they do as simply 'helping out' rather than 'caring'. They usually provide care to their family members so do not self-identify as caregivers but view the relationship as anything other than a 'normal' familial relationship. In a recent study (Hamill, 2012), participants between the ages 11-21 indicated their future intentions for serving as primary caregivers in their own home (59.3%), primary caregivers (22.2%) and secondary or auxiliary long distance caregivers (18.5%).

Technological advancements have contributed exponentially for better health care facilities. People are living longer, chronic diseases are better managed and more people are having children at a later age consequently, there are more instances of early caregiving than previous generations. A study reported mean age of 13.53 ± 4.64 years when the participants started taking care of their relative (Shifren, 2008). A qualitative study by Dellmann-Jenkins, Blankemeyer, & Pinkard (2000) reported that a majority of grandchildren between the ages of 18-35 years (76%) acquired the role of caregiving because they felt a sense of filial duty and were willing to help traditional caregivers (parents). In the same study young adult children reported taking on caregiving roles to parents by default because no one else was available.

Studies support that the college caregivers are differently challenged by the life stage of the person for whom they provide care. A qualitative study conducted by Sweden Ali, Ahlstrom, Rot, & Skarsater (2012) reported young adults (16-24 years) lived in constant readiness for something unexpected to happen to the person they cared for, and that their role in the relationship could change quickly from family

member or friend to guardian or supervisor. Supporting a friend was considered as large a personal responsibility as supporting a family member. Baus, Dysart-Gale, & Haven (2005) included 180 female students with a mean age of 21.6 ± 3.99 , and 86 male students with a mean age of 22.7 and examined the nature of care giving in college students' lives. The students were asked if they provided any of the caregiving behavior. They were asked to identify the age and race of the care recipient and whether the participant was caring for a friend or family member. The study reported the frequency of caregiving being provided to 266 participants, including companionship and emotional support (n=205), chores and meals (n=84), transportation (n=82), legal and financial matters (n=35), phone calls for medical matters (n=31), personal care and bathing (n=24), and "other" (n=24). They frequently reported providing care to friends other than to family but caregivers for family provided more caregiving behaviors than caregivers for friends.

Hamill (2012) reported that 65.5 % of adolescents helped their grandparents with some task of daily living such as eating (44.8%), walking (37.9%), grooming (31%) and that 62% reported helping their grandparents with Instrumental activities of daily living such as house work (48.3%), meal preparation (34.5%), getting places beyond walking distance (31%), shopping (27.6%) and taking medications (20.7%). Along similar lines, a study by Dellmann-Jenkins, Blankemeyer, & Pinkard (2000) showed that young adult caregivers are sometimes enlisted to assist elderly relatives in meeting needs related to transportation (43%), companionship (43%), household chores (40%), phone calls (33%), personal care (28%) and legal assistance (27%). The literature has consistently

reports that there are more females in caregiving roles than males (Baus, Dysart-Gale, & Haven, 2005).

Factors affecting Caregivers

Costs of Caregiving

There is an average of 42.1 million caregivers at any given time, and there were 61.6 million caregivers at the given time during the year 2009 in US, who worked for an average of 18.4 hours per week (AARP, 2011). Although difficult to assess, the monetary value of services provided by these caregivers is substantial and value of family caregiving will exceed that of nursing home care by a 2:1 margin in the new millennium (Arno, Levine, & Memmott, 1999). At any given time during the year 2009 in the state of Florida there were 4,060,000 caregivers who provided 2,660 million hours of total care with an economic value of \$10.88 per hour and had the total economic value of \$29,000 million. The total of 61,600,000 caregivers at a time in the year 2009 provided 40,300 hours of care thus estimating the national total economic value of \$ 450,000 million (AARP, 2011). The economic value of caregiving exceeded total Medicaid LTSS spending in all states, and was more than three times as high in 42 states including Florida (Eiken, Sredl, Burwell, and Gold, 2010; Kasten, Eiken, & Burwell, 2011). Some national estimates of the value of annual home care services provided by caregivers are close to \$200 billion (National Family Caregivers Association, 2004). Within the past few years, researchers have assessed benefits and costs of informal caregiving. Results showed that as time spent in the informal caregiver role increased, the “marginal benefits” decreased and the “marginal costs” increased.

More than half (58%) of family caregivers were employed and THE majority (74 %) of family caregivers have worked at a paying job at some point during their caregiving

experience, balancing their work with their caregiving role (NAC and AARP, 2009). There is evidence that the family caregivers can face financial hardships if they must leave the labor force owing to caregiving demands, midlife working women especially, who begin caring for aging parents, reduce paid work hours or leave the workplace entirely (Johnson and Sasso, 2006; Pavalko and Henderson, 2006) About 42 % of US workers have provided elder care in the past five years, and nearly one in five (17 %) is estimated to currently be providing care and assistance for older relatives or friends. Just under half (49 %) of the workforce expects to be providing elder care for a family member or friend in the coming five years (Aumann, Galinsky, Sakai, Brown, & Bond, 2010). Estimates are that US businesses lose up to \$33.6 billion per year in lost productivity from full-time caregiving employees. These costs include those associated with replacing employees, absenteeism, workday distractions, supervisory time, and reductions in hours from full-time to part-time. The average annual cost to employers per full-time employed caregiver is \$2,110 (Met Life and NAC, 2006). The healthcare cost of businesses is affected by the responsibilities of eldercare in the work force. Society generally underestimates and under-appreciates the value of caregiver time, lost wages, and medical costs for their own medical needs. If family caregivers were no longer available, the economic cost of health care would increase astronomically and, the health systems would be overwhelmed by the increasing need for supportive services (Gibson and Houser, 2007).

Health Risks of Caregiving

The health risks and financial hardships that may accompany the caregiving role are substantial and well documented. Erratic behavior of care receivers rather than the disease itself can be a cause of caregiver distress (Hebert et al, 2003; Small,

McDonnell, Brooks, & Papadopoulos, 2002; Gottlieb and Rooney, 2004). The needs of family caregivers as part of the older adult's care plan are rarely recognized and addressed in general clinical practice in health care. Yet ignoring family needs can place caregivers at risk for negative health consequences that can jeopardize their ability to provide care in the home. Strategies to strengthen and sustain caregiving families will enable them to continue as caregivers, and will reduce costs. An extensive body of research finds that providing care to a chronically ill family member or close friend can have profound negative effects on the caregiver's own physical and psychological health. Both younger employees (age 18 to 39) and older employees (age 50+) providing care for an older relative were more likely to report fair or poor health in general, and they were significantly more likely to report depression, diabetes, hypertension, or pulmonary disease than non-caregivers of the same age (MetLife Mature Market Institute, NAC, and University of Pittsburgh, 2010). More than two out of three (69%) family caregivers responding to an online survey by caring.com 2011, said that caring for a loved one was their number one source of stress and that their relationships had been negatively impacted by providing care. Caregivers commonly experience emotional strain and mental health problems, especially depression. A review of studies suggests that between 40 and 70 % of family caregivers of older adults have clinically significant symptoms of depression, with about one-fourth to one-half of these caregivers meeting the diagnostic criteria for major depression. However caring.com, 2011 reported 75 % of caregivers feeling a sense of pride because they're making a difference for their loved one. Anngela-Cole and Hilton, 2009 reported among Japanese caregivers, a lack of social support, greater health problems of the caregiver,

and a more negative attitude toward family care predicted higher levels of depression. Among the Caucasian caregivers, long hours of employment, lack of social services, more health problems, and a more negative attitude toward family care significantly predicted higher levels of depression.

Many factors influence the health behavior and health status of caregivers, including the type and severity of the care receiver's illness, and the physical and mental restrictions of both caregiver and care receiver. About one-third of caregivers of an elderly individual will suffer some physical or emotional distress, more than 10% will have some mental or health problems, and many will also experience chronic fatigue (Foster, Brown, Phillips, & Carlson, 2005; NAC and AARP, 2004). Research has shown that caregivers have poorer physical health than non-caregivers, and an estimated 17 to 35 % of family caregivers perceive their health as fair to poor (NAC and AARP, 2009; Pinquart and Sorensen, 2007). Family caregivers face chronic health problems of their own and health risks, such as heart disease, hypertension, stroke, poorer immune function, slower wound healing, impaired self-care, sleep problems and fatigue, increased use of psychotropic drugs, and even death among highly stressed spouse caregivers (Cannuscio, et al, 2004; Chritakis and Allison, 2006; Fredman, Cauley, Hochberg, Ensrud, & Doros, 2010; Norton et al, 2010; Haley, Roth, Howard, & Safford, 2010; Sparrengerger et al, 2009). Studies also noted that due to lack of time for friends and family caregivers feel socially isolated and experience higher levels of caregiving stress (Schubert et al, 2008; Miller, Allen, & Mor, 2009). Caregiving often compromises one's mental and physical health, including depression, all of which can be indicators of potential shift from caregivers to care receivers.

Cultural and Ethnic Factors in Caregiving

According to U.S Census, 2010 besides 64% of whites, there were 16% Hispanics, 12% Blacks and 5% Asians who were part of 308.7 million U.S population. According to NAC (2009), approximately one-fifth of both non-Hispanic White and African American populations are providing care to a loved one, while a slightly lower percentage of Asian Americans (18%) and Hispanic Americans (16%) are engaged in informal caregiving. The census points out the diversity of the U.S populations and the concept of cultural competency has received heightened attention in recent years because of the forecasted need for more service providers to care for an increasingly diverse aging population. New models of care that use principles of cultural competency suggest acknowledging race and ethnicity, sexual orientation, and regional variations in culture across the country.

Research on caregivers has traditionally focused on White (Caucasian) individuals. Minorities in US experience at least twice the rate of chronic illness, including dementia, possibly due to the lack of adequate health care, financial resources, medical choices, and information about their care (Neary and Mahoney, 2005). Minority caregivers are also more likely to be younger, single, an adult child, a cousin, a grandchild, provide longer care time in the home, and be female (Pinquart and Sorensen, 2005; Neary and Mahoney, 2005). African Americans historically have extended the caregiving role to relatives and friends outside the immediate family to survive “generations of racial oppression and economic hardships” (Hamilton and Sandelowski, 2003, p.659). Cultural rituals, religious experience, and traditions (i.e., subjective experience) affect those in the caregiver role and those who require care (Koffman and Higginson, 2003; Roff, et al, 2004).

When compared to their White counterparts, African Americans have a lower life expectancy and were more likely to be in poorer physical health (73.8 years for African Americans versus 78.9 years for Whites in 2010) (US Census Bureau, 2010). Cultural socialization in African American communities helps them better deal with stressors in the caregiver role, as well as extended exposure to caregiving as children, teenagers, and eventually as adults. Moreover, this socialization is more prevalent in the African American and Hispanic/Latino communities, when compared to Caucasians thereby presenting a higher propensity for family involvement (Dilworth-Anderson et al, 2005; Ayalong, 2004; Pinquart and Sorensen, 2005). Furthermore, different studies have reported Latina caregivers to be younger, less educated, have lower incomes, and to have provided more care on a daily basis than their Caucasian counterparts (Coon et al, 2004, Montoro-Rodriguez and Gallagher-Thompson, 2009; Min and Barrio, 2009). Therefore, how an individual is socialized to view caregiving, represents another important factor when studying race and ethnicity among caregivers (Roff et al, 2004). Research on the resources for Racial and Ethnic Approaches to Community health (REACH) program assessed differences in positive attitudes in the caregiver role and what contributed to these positive experiences among African Americans and Caucasians. As predicted, African American caregivers reported more positive aspects as caregivers ($p < .001$), were lower in SES, reported lower anxiety levels, and tended to be more religious than Caucasians (Roff et al, 2004).

Studying cultural values and beliefs among informal caregivers, researchers found no differences existed between African Americans and Whites in gender and education. However, African Americans reported adherence to cultural reasons for providing care

and females in this group were more likely to provide care (Dilworth-Anderson, et al, 2005). African American caregivers reported less stress in caring for an elder with dementia, although their White counterparts had higher family income and tended to be older (M=72.2 for Whites vs. M=55.2 for African Americans; $p < .0001$) (Stevens et al, 2004). In their study of Mexican-Americans and Whites Min and Barrion 2009, reported that 45% of the Mexican Americans would turn to informal caregivers or helper as compared to only 17% Whites who preferred either a spouse or children for future care needs. Montoro-Rodriguez and Gallagher-Thompson, 2009 reported ethnicity to exert a statistically significant direct influence on the lower level of burden reported by Latina caregivers than non-Hispanic white caregivers ($\beta -0.36$). Therefore, literature on African American and Hispanic caregivers suggests it is important to evaluate and assess how they cope with stress effectively in specific situations.

Few studies have examined Asian caregivers. Researchers conducting a multiethnic study of family caregivers (African American, Asian Americans, Latino, and Anglo European- American) studied how ethnically diverse populations view dementia (i.e., in medical versus non-medical terms) (Hinton, Franz, Yeo, & Levkoff, 2005). Picot's caregiver rewards scale (PCRS) assessed cross-cultural Chinese adult caregivers, who were born abroad but currently lived in the US (Hseueh, Phillips, Cheng, & Pico, 2005). Caregivers in the study who had lived in the US for a mean of 19 years (range from 2 to 58 years) were mostly women (70%) and had annual incomes that ranged from \$40,000 to \$149,000 (84%). Rewards in the caregiver role were the primary focus of the scale. Results showed that Chinese caregivers in the study felt that their role as caregivers achieved "personal growth, fulfilling payback and close bonds

with family members” (p. 768). In a qualitative study of Thai caregivers living in the US, several important aspects of caregiving emerged. Caregivers reported a considerable degree of social support, including family, friends and neighbors which helped with emotional and financial wellbeing (Limpanichkul and Magilvy, 2004).

Preparedness of Caregiving

Caregiver preparedness is defined as how ready caregivers believe they are for the tasks and stresses of caregiving (Archbold, Stewart, Greenlick, and Harvath, 1990, 1992; Rusinak and Murphy, 1995). Preparedness has an anticipatory connotation in that potential caregivers can assess their preparedness before taking on the caregiving role (Schumacher, Stewart, and Archbold, 2008). The research on the levels of preparedness of the caregivers is limited. Eight in ten respondents in Johnson and Johnson, 2013 survey of 1,018 adults reported being very prepared to either spend time with an adult family member and 7 in 10 were very prepared to take them for doctor’s visits and tests. 44% felt very prepared for the activities including bathing, dressing, and toileting but very few were prepared for more difficult tasks of caregiving. Grant (2012) reported that lower burden scores were significantly associated with more positive perceptions of caregiver preparedness at both 2 and 5 weeks ($p < .05$). Studies (Silver, Wellman, Galindo-Ciocon, & Johnson, 2004) have reported low preparedness for caregiving scores (mean=1.72, maximum=4.0) which were positively correlated with caregiver competence ($p < .001$) and self-rated caregiver effectiveness ($p = .004$). Preparedness was also negatively correlated with health care use ($p = .03$) among the family caregivers who provided home enteral nutrition caregiving. Preparedness affects the psychological health of the caregiver. In a study conducted by Scherbring (2002), the researcher reported for every one-unit increase in the preparedness score, the

burden score decreased 0.853 units. Burden was found to decline, on average about 17% for every one-unit increase in preparedness. It has been documented that caregivers must be prepared adequately for their responsibilities as a means of controlling burden (Scherbring, 2002). In addition, a Taiwanese study, Shyu et al, 2010 reported that higher preparedness was associated with higher caregiving rewards and better mental health. Schumacher, Stewart and Archbold, 2007 reported in their study of family caregivers of patients receiving treatment for cancer, that high preparedness protected caregivers from adverse outcomes when demand was high. But when preparedness was low, caregivers were at greater risk for negative outcomes and mood disturbance. Schumacher, Stewart and Archbold, 2007 also reported that preparedness was associated more strongly with mood disturbance outcomes than with the caregiving specific variables of difficulty and strain among the family caregivers. In a mixed-methods study by Giarelli, McCorkle and Monturo, 2003 used Preparedness for Caregiving Scale (PCGS) to assess the preparedness of wives' caring for their husband's after prostate surgery. The PCGS (Archbold et al, 1990) is a self-report questionnaire that measures four perspectives of domain-specific preparedness: physical needs, emotional needs, resources, and stress. Wives in the intervention and control groups rated themselves as being "pretty well" and "well prepared" to take care of the physical and emotional needs of their husbands at baseline. These findings were similar to what Scherbring (2002) also reported. But 54% of wives reported needs to help them prepare for the role of caregiver after their husbands' prostate surgery. In a qualitative study based on grounded theory by Silva-Smith, 2007 five dimensions of restructuring life were identified in the interview data; including daily life, management of

multiple roles, and relationship with the stroke survivor, future hopes, and plans, and time for self, all these indirectly pointed out the process of getting prepared for the caregiver role. When asked what type of assistance they would most appreciate, most caregivers indicated that they needed assistance with housework (Van den Berg, Brouwer, Exel, and Koopmanschap, 2004).

Attitude towards older population

An extensive literature review focused on studying the attitudes of young adults especially college students towards the older adults. Majority of the studies reported have been conducted in medical and social work field including nursing, physical therapy, social work major students. Attitudes have been traditionally defined as a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor (Eagly and Chaiken, 1993, p. 1). Hogg and Vaughan, 2005 defined attitude as "a relatively enduring organization of beliefs, feelings, and behavioral tendencies towards socially significant objects, groups, events or symbols." Kogan 1961, defined attitudes towards elderly as the beliefs and feelings that individuals have towards old people. Ageism (Butler, 1969) refers to a kind of discrimination, similar to racism and sexism directed towards elderly people. Historically, the researchers primarily focused on studying attitude towards older population. Tuckman and Lorge, 1952, 1953 developed comprehensive instrument to assess misconceptions and stereotype about older people. They found people most likely agreed that old people are conservative and set in their ways and least likely to agree that old people are inattentive to cleanliness. Kite and Wagner, reported automatic ageism among younger and older adults and found more association of old and unpleasant stimuli rather than old and pleasant.

Gellis, Shermand, & Lawrance (2003) reported first year graduate social work students' negative attitude towards older adults on productivity, adapting to change, independence and optimism. They also reported male and younger age students being less favorable towards older person but previous experience with older people did not predict attitudes toward older people. In contrast, Tomko and Munley, 2013 and Jody and Patrick, 2013 in their study with counseling psychologists reported men scoring more positive attitude and gender as a significant predictor of global attitudes towards elderly. Similarly, Nochajski, Waldrop, Davis, Fabiano, & Goldberg, 2009 reported female dental students having more negative attitudes towards older adults than males. Whereas in a Sub-Sahara African study the researchers found majority of medical and nursing students having positive attitude towards the elderly and found no difference between males and females (Zverev and Yuriy, 2013). Narayan, 2008 and SAIF, 2004-2005 in the studies designed to determine young adults' attitudes towards older adults reported more positive attitudes towards older adults, with older women being rated significantly more positive than older males in the sample of university undergraduate students. In an intervention study, on attitudes about aging and gender among young, middle age and older college-based students (Laditka, Fischer, Laditka, & Segal, 2004), the sample for the study included junior, senior, graduate students and members of an elder hostel organization on campus. The participants were divided into three age groups consisting 20-34 years old as young adults, 35-59 years old as middle age adults and 60 years and older were classified as the older adults. The study reported no statistical difference in attitude based on the majors but the gender of the respondents had a significant difference towards the gender of the target group i.e., older adults.

Older raters had more positive attitudes towards older targets compared with younger or middle age raters.

The literature supports various variables account for a positive attitude towards older adults among college students including contact with older adults, health majors including psychology, medicine, nursing, dental, students who had gerontology as an elective course and female college students tend to have a more positive attitude towards older adults (Maurer et al, 2006; Funderburk, Damron-Rodriguez, Storms & Solomon, 2013; Gonzales and Morrow-Howell, 2009; Swanlund and Kujath, 2012; Lee, 2009).

Theory of Planned Behavior and Attitude towards older adults.

The Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) focus on the determinants of likelihood of performing a specific behavior including beliefs, attitude, intentions and perceived control (Ajzen and Fishbein, 1980). TRA and TPB assume attitude, subjective norm and perceived control influences intentions which are the best predictors of actual behavior (Glanz, Rimer and Vishwanath, 2008). Established on the attitude measurement theory TRA was developed by Fishbein, 1967 to understand the attitude and intentions towards behavior and not only towards objects as previous attitude theorists. TRA asserts on attitude towards behavior and subjective norms associated with behavior as direct determinants of individual's behavior intentions. Ajzen 1991, identified the individual control and ability over behavior and added the construct of perceived behavioral control to TRA thus creating TPB. The perceived behavioral control, is most compatible with Bandura's (1977, 1982) concept of perceived self-efficacy, i.e., the confidence in one's ability to perform a behavior (perceived behavioral control). Investigations have shown that individual behavior is

strongly influenced by their Self-efficacy beliefs to influence choice of activities, preparation for an activity, input effort, as well as thought patterns and emotional reactions (Bandura, 1982, 1991). Aizen, 2002 p.668 specified the term perceived behavioral control as the “perceived control over performance of a behavior”

The construct of self-efficacy belief or perceived behavioral control within the general framework of TPB explains the relations among beliefs, attitudes, intentions, and behavior. Fishbein and Aizen, 2010 p.155 include availability of information, skills, opportunities and other resources required to perform the behavior as well as possible barriers or obstacles that they may have to overcome into the perceived behavioral control Individuals with a higher sense of efficacy would hold an optimistic view in a given situation and would react with much less distress, and thus have a higher likelihood of fully applying their potential skills. Therefore, they are more likely to succeed and gain satisfaction from their experiences (Bandura, 2001). Those people with a higher sense of efficacy have strengthened resiliency and reduced vulnerability to negative consequences (e.g. suffering from depression and feelings of burden) in challenging situations, and, thus, have a more positive perception of their quality of life and psychological well-being in general. Social networks can help enhance caregivers' psychological well-being in two ways. First, the members of the social network could directly contribute to the level of caregiver satisfaction (e.g. a sense of accomplishment, pride) through their acknowledgement of his/her contribution in caregiving efforts social networks may indirectly contribute to caregiver well-being through establishing and increasing the caregiver's sense of efficacy, their belief that they have the abilities to perform effectively as family caregivers (Shirai, Koerner & Kenyony, 2009).

In their studies, Ajzen, 1988, and Sheppard, Hartwick, and Washaw, 1988, explained that behaviors can be predicted accurately, when they pose no serious problems of control. Conceptually, TPB includes three independent determinants of intention. First, the attitude toward the behavior, that refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question. Second, subjective norm; refers to the perceived social pressure to perform or not to perform the behavior. Third, the degree of perceived behavioral control; the perceived ease or difficulty of performing the behavior and reflects past experience as well as anticipated impediments and obstacles. As a general rule, the perceived behavioral control is determined by more favorable attitude and subjective norm (Ajzen, 1991). Studies have established the role of personal experiences, exposure to older adults and societal influence on college students in development of positive attitude towards older adults (Lovell, 2006; McKinlay and Cowan, 2003; and Nochajski, et al, 2009).

Over the years, various studies validated the relationship between intentions, attitude, subjective norms and perceived behavioral control. Positive attitude towards older adults is likely to inculcate favorable beliefs, feelings, behavior and strong intentions to care for them among young adults (Lee, 2009). McKinlay and Cowan, 2003 reported generally positive intentions towards and attitudes about, working with older patients among student nurses. The hierarchical analyses of the results reported mainly the attitudes predicted the intention and, although small subjective norms but played a significant role in predicting the student nurses' intentions towards working with older patients. Participants reported a moderately high level of control over their behavior

towards older patients, but their perceptions of behavioral control did not predict intention. Year on course and number of weeks' experience of working with older people in a dedicated unit had no impact on attitude but, attitude was affected by participants other experience of working with older people. Positive attitude towards older people has been reported to be related to more experience and completion of geriatric courses in various studies (Cottle and Glover, 2007; Swanlund and Kujath, 2012; and Wurtele and Maruyama, 2012).

According to Nochajski, Waldrop, Davis, Fabiana, and Goldberg, 2009 p.96, formation of attitude reflects a feedback loop including beliefs, attitudes, intentions and behaviors. Attitudes may influence the formation of new beliefs, and performance of particular behavior which may lead to new beliefs and in turn influence attitudes. They also reported reciprocal interaction between attitudes and beliefs in development of professional behavior and practice patterns among dental students. The researchers in their longitudinal survey involving comparison of dental students in years one through four, indicated significant difference in attitudes towards older adults in different cohorts and indicated the positive influence of academic experiences on general attitude towards older people (Nochajski, et al, 2009).

Behavioral intentions, regarded as necessary precursor to behavior. Similarly, positive feelings accompany positive beliefs and result in positive behaviors (Ajzen and Fishbein, 1980). Lee (2009) supported the movement to induce positive feelings and intentions towards older adults among younger generation. The positive attitude towards older people prevents them from being isolated and mistreated. Students who had never lived with an older adult scored low on their knowledge of aging phenomena.

As in the original theory of reasoned action, a central factor in the theory of planned behavior is the individual's intention to perform a given behavior. Intentions are assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior. As a general rule, the stronger the intention to engage in a behavior, the more likely should be its performance (Fishbein and Aizen, 2010).

In summary, it is important to assess multiple factors to understand the involvement and intentions of young adults to provide care to their older relatives. These factors include growing burden on young adults to provide care, their attitude towards older adults, race/ethnicity of the caregiver, and preparedness to provide care. There exists paucity in literature that identifies the role of young adults especially those enrolled in some college or university. This population faces unique challenges in balancing their academic achievement and taking care of their sick or old relative. Even if at present many of these young people are not responsible for any of their relatives but given statistics of growing older population this young generation will at some time in their future be responsible to help and care for their elderly relatives. The present research identifies that the level of preparedness for caregiving that reduces the burden and in fact helps in providing better caregiving services. If we assess the preparedness of the present college going generation health professionals can tailor the programs according to the level of preparedness and this future population of caregivers will be better prepared and equipped to take the challenge. The research also shows that culture and ethnicity has an exponential impact on acquiring a role of caregiver. For all

cultural groups (i.e., African Americans, Latino, and Asians), it is important for formal care providers as well as health professionals to acknowledge how individual groups and families frame the disease (biomedical versus folk models), how prepared and confident they are to take the challenge which could potentially influence the well-being and care for the care recipient as well as health of caregiver himself.

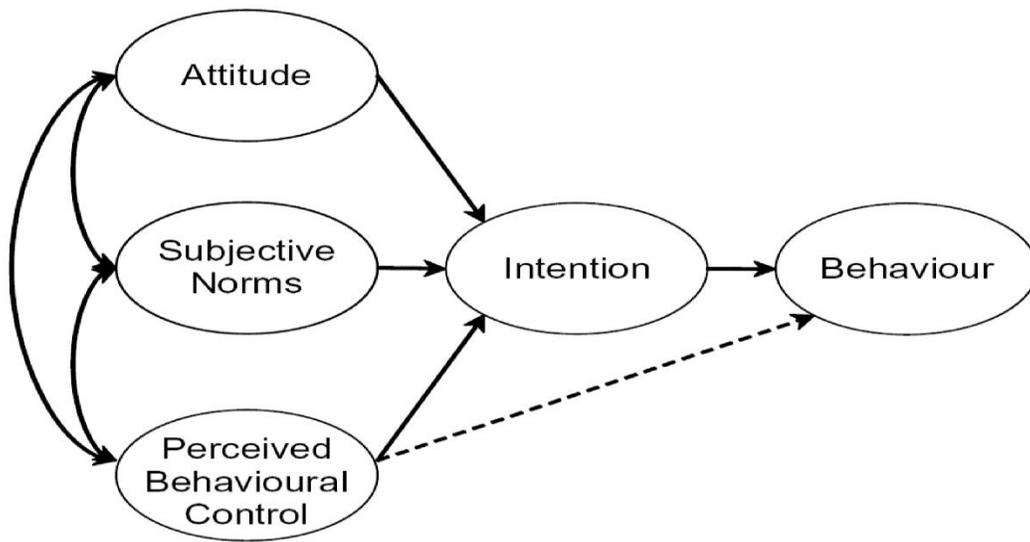


Figure 2-1. Theory of Planned Behavior (Source: Aizen, 1991)

CHAPTER 3 METHODS

The study examined the attitude of college students towards older relatives, and adults, and their preparedness levels to provide care to their older relatives. Chapter 3 describes the methodology used in this study, which includes the research design, research variables, instruments, the pilot study, and the final study.

Research Design

The study used a cross-sectional survey research design to explore preparedness of college students as informal caregivers and their attitudes towards their older relatives and other older adults. With this design, a standardized protocol with standardized procedures can be administered to a group of participants that require a reasonable amount of time. Likewise, data can be analyzed uniformly and objectively (McDermott and Sarvela, 1999).

Research Variables

The study included CPS and RASDS as the dependent (outcome) variables, ethnicity, academic classification, SES (Socio Economic Status), gender, age, and major were the independent variables in the study. Other variables in the study included interactions, quality of experiences with their older relatives, their intentions to serve as informal caregivers, perceptions, and confidence to provide informal caregiving in future, the level of current help they provided their elder relatives with instrumental activities of daily living, activities of daily living and medical task in the past 12 months.

Participants

The study participants were 18 years and older, full-time undergraduate and graduate students enrolled in a large public land-grant, sea-grant, and space-grant

research southeastern university. 50,000 students enrolled in the university represented academic and ethnical diversity. According to the University of Florida office of institutional planning and research, 2013 there were more number of females enrolled in the university (56%), and nearly half of the students enrolled identified themselves as whites (56%), only 15% were Hispanics and 7% each identified as Asians and Blacks during the Fall 2013 semester. Majority of the students were undergraduates (76%) and reported their ages between 18-22 years old, whereas graduate students age range was between 22-32 years. The university offered more than 250 majors with many enrolled in engineering, health science, computer science, English, finance, nursing, psychology, law, and agriculture majors respectively.

Three on-campus large classes were identified to participate in the study based on their representation of general college population in terms of age, gender, class, and academic majors. The classes included were Health and Medical Terminology (HMT), Anatomy, and Personal and Family health (PFH). Students included represented over 50 different majors including law, nursing, biochemistry, engineering, health education, chemistry, biology, applied physiology and kinesiology, and education. Pilot data were collected from Health and Medical Terminology class during the Spring 2013 semester, and the final data were collected from students enrolled in HMT and Anatomy classes during Summer 2013 and from students enrolled in HMT and PFH classes during Fall 2013 semester, respectively.

Instruments

Instruments for the study were selected by conducting an extensive literature review of instruments previously used by researchers to examine preparedness, and attitude of young adults. The protocol for this study included two standardized

instruments: Caregiving Preparedness Scale (Archbold, Stewart, Greenlick, & Harvath, 1990), and, Caregiver Profile Information. Although, online survey programs support the bipolar questions but as in the original RASD scale the numbers 1-7 could not be displayed between the choices and it would be difficult for the participants to understand the original scale thus the reliability issue, which was the reason a paper-pencil format was used in its original format instead of the online survey. The final paper-pencil survey included the original scales and other questions.

Caregiving Preparedness Scale

After extensively reviewing the literature, this scale was deemed most appropriate to measure preparedness among people currently involved in caregiving as well as who are still not providing any care. The instrument was created originally for caregivers of older adults with an acute exacerbation of chronic illness, prior to transitions to any other formal care facility. The scale was designed specifically to measure how well caregivers believed they were prepared for multiple domains of caregiving. This is 8-item scale with an open ended question where participants can specify areas in which they feel unprepared to provide care for. Responses are rated on a 5 point scale with scores ranging from 0 (not at all prepared) to 4 (very well prepared). The scale is scored by calculating the mean of all items answered with a score range of 0 to 4. The higher the score the more prepared the caregiver feels for caregiving; the lower the score the less prepared the caregiver feels. Internal consistency for the scale has been reported as moderate to high with alphas of 0.88 to 0.93 reported (Carter et al, 1998; Hudson and Hayman-White, 2006). Archbold et al, 1990 reported construct and content validity between caregiver worry and lack of resources. Available as an open source on the internet, the scale was used in its original paper-pencil format.

Refined Aging Semantic Differential scale

A standard, global measure of attitude towards any behavior, concept or object is an evaluative semantic differential (Osgood, Suci and Tannenbaum, 1957). In most applications of the theory of planned behavior evaluations for attitudes, are usually assumed to form a bipolar continuum, from a negative evaluation on one end to a positive evaluation on the other. Several semantic differential scales to measure attitudes have been reported in the literature. Literature reports, the scales developed in 1950s lack their reliability and validity in the present multi-cultural and modern society. Therefore, the refined version of Aging Semantic Differential scale (RASD) was chosen over the Aging Semantic Differential scale (Rosencrantz and McNevin, 1969). The original ASD consists of 32 items utilizing 7 point Likert-scale with 1 representing most positive and 7 most negative. Overall attitude score is calculated adding the 32 responses with a range score between 32 and 224. The original scale did not report Cronbach's alpha nor conducted test-retest procedures thus no measures of reliability and validity were estimated. Although the independent reliability and validity measures obtained from other studies using the scale have been reported (Polizzi and Steitz, 1998; Polizzi and Millikin, 2002,).

The RASD is similar to the original scale but includes 24 pairs of bipolar adjectives instead of 32 and can be used to record attitudes towards older adults in general. Each item consists of polar adjectives opposite in meaning with positive adjective on left side and corresponding negative on the right side. The lower score corresponds to a positive attitude and a score of 128 is considered neutral.

The RASD scale found no difference between the attitudes towards older men or women. The participants mark along a seven-point continuum at the point that

represents a spontaneous judgment about the person being rated. The score range of 24-168 for RASD, the scores are calculated similar to the original ASD where score of 96 indicates neutral attitudes and scores less than 96 indicate positive attitudes towards older person. For this study participants will rate 'a person-65+ years of age'. A relatively new scale has been extensively used and reported high Cronbach's alpha values (.97) and test-retest reliability (.81-.84). The studies using the scale reported similar high Cronbach's alpha values between 0.91-.97 (Laditka, Fischer, Laditka, & Segal 2004; Narayan, 2008; Chase, 2010; Henry, Ozier and Johnson, 2011; Tomko and Munley, 2013).

Due to the paucity in the literature identifying attitudes towards older relatives in particular, researcher decided to use RASD twice in the instrument. The first one asked students to think about their older relatives including grandparents, aunts and uncles and answer the attitudes scale. Whereas the second RASD was included towards the end of the survey, which reported attitudes towards unrelated older adults.

General Profile Information

A general profile was developed to obtain demographic information about students -- such as age, gender, marital status, race/ethnicity, income level, enrollment status, and academic major. Items related to providing any care to their elderly relatives, their interaction and quality of experience were included to assess the extent of care students provided to their older relatives provide.

Items based on the theory of planned behavior were developed including the subjective belief's, intentions, and perceived behavioral control to take care of their older relatives (Francis et al, 2004). Additional profile items included use of smartphone

and tablets and other resources to access health related information for their older relatives.

Expert Review (Face validity)

Two faculty members and one Ph.D candidate in the department of health education and behavior, and another Ph.D. candidate in the College of Education reviewed the survey drafts during the Fall 2012 semester. They were asked to review the survey draft and suggest if the instrument looks to measure what it is supposed to. After the suggestions from the experts some questions were revised and another was added to measure the construct of the theory.

Pilot Study One

The present study was the first attempt by the researcher to understand the attitudes and preparedness of informal caregiving to their older relatives among general college population. The CPS has never been used with the college population, and there is limited literature reporting the use of RASD with general college population besides medical and nursing majors. Also, the researcher developed the scales to test the subjective beliefs, perceived behavioral control and intentions which have never been used in any previous studies, hence to test the reliability and validity of the scales pilot test was conducted using a representative population.

Participant Recruitment

A random sample of 25 undergraduate and graduate students enrolled in the university were contacted. A paper-pencil survey method was used and participants were asked to complete the entire instrument after they agreed to the consent form. Pilot data were used to determine face validity, identify formatting and grammatical

errors, and assess language clarity, skipped questions, and amount of time required to complete the survey.

Procedure

A draft version of the study protocol including a script for prospective participants, the CPS, RASD, and demographic profile Information was prepared. Students were also asked to assess the instrument for readability, comprehension, and cultural sensitivity and offered comments or suggestions about the structure and questions of the instrument using open-ended evaluation. Participants were encouraged to pen their comments near any items they deemed inappropriate or not applicable. After the completion of survey the participants were asked about their suggestions and comments on the items they found difficult to understand or respond. Data from this pilot test were not included for analysis.

Pilot study Two

The comments and data from the pilot study one were inconclusive weather the students viewed older adults and older relatives similarly. Hence it was decided to include the RADS twice in the final survey in order to understand the attitude differences towards older relatives and older adults. Suggested changes were made to the instrument and were prepared for an extensive pilot study two. The study protocol was approved by the researcher's university internal review board.

Participant Recruitment

During the Spring semester 2013, 350 students enrolled in the large on-campus class of HMT were administered the survey before they took their mid-term exam in class.

Procedure

The surveys were distributed after a brief introduction to the study was given by the researcher and their rights as approved by IRB protocol were read. Students were explained about the two attitude scales in the survey, first one about their attitudes towards older relatives and the second was about the attitudes towards older adults. Surveys were collected after the end of the class and were placed separately from the consent forms.

Data Analysis

The data from pilot study were analyzed for descriptive, frequency statistics, and the Cronbach's alpha. Incomplete surveys were not included in the final analysis. A total of 306 completed surveys were used for analysis of which $n=213$ were females and $n=93$ males. Majority of the respondents reported their ages between 18-22 years (93.2%) and were Juniors (33.66%), and Sophomores (27.45%), in the college (Table 3-1). Majority of the students identified themselves as White $n=171$ (56.25%), and there equal number of students identified themselves as Asians $n=47$ (15.46%), African Americans $n=46$ (15.00%) and Spanish $n=40$ (13.2%). The reliability coefficient for each scale calculated was $\alpha=0.906$ for CPS, $\alpha=0.972$ for RASD, subjective beliefs $\alpha=0.851$, and perceived behavioral control $\alpha=0.905$.

Final Study

After the pilot study two, in order to measure all the constructs of TPB, another scale measuring intentions of the college students to provide informal care to their older relatives was included in the final instrument. The revised study protocol was submitted to the University of Florida Institutional Review Board (IRB) for approval of the data collection. The pilot study procedures were replicated to recruit final participants for the

study. Students enrolled in three different classes including HMT, PFH, and Anatomy were recruited during the Summer, 2013 and the Fall, 2013 semester for the final data collection.

Participant Recruitment

The final data were collected from large on campus classes selected based on their representation of typical college population including class size, gender, class, and majors. Beginning in Summer 2013, 100 students each in two different classes (HMT, and Anatomy) were provided with the instrument and consent form during their class time. Later, in the Fall semester 2013, other classes (HMT, and PFH) with 100 and 450 students each were recruited to complete surveys during class time.

Procedures

All participants received a description of study procedures and information regarding their rights as a participant, and complete confidentiality before they actually start taking the survey. Participants were informed that participation was strictly voluntarily and they could discontinue answering questions at any time during the process without penalty. Only the researcher had access to results and no identification information was collected. The surveys were distributed in the class and later collected after the completion. The consent forms were removed from the survey and placed in a separate file. One of the professors wanted to track the students who participated hence they were asked to write their university id on the consent form. To maintain the anonymity the consent forms were removed from the survey and placed in different files. Two extra points were added to their final exam by the professors as an incentive to promote response rate (Dillman, Smyth, & Christian, 2009) for participation.

Data Analysis

The data from only completed surveys were included for final data analysis. Data obtained from volunteer participants were recorded in Microsoft Excel™ spread sheet by the volunteer research assistants under the supervision of the primary researcher. The data were then analyzed using SPSS 21 statistical software. The study included two dependent variables (RASD and CPS) and several independent variables (age, SES, gender, race, college majors, and amount of interaction with older adults). The list of majors was dummy coded into two categories of 1) health (Applied Physiology and Kinesiology, Health Education and Behavior, and Nursing) and 2) non-health (Biology, Chemistry, Law, Psychology).

After determining that the data set was approximately normally distributed, descriptive statistics were calculated to determine baseline frequency rates. Univariate analyses can be used to present primary statistical information and to assess patterns within a data set (Peck, Olsen and Devore, 2008). In this study, frequency distributions and descriptive statistics were calculated to obtain baseline information about frequency of gender, race/ethnicity, mean preparedness scores, RASD score, intentions to provide care in future, frequency of different caregiving activities they are currently providing, ownership of smartphone and I pad or tablets, assessing mobile technology for applications to help taking care of older relatives. These descriptive statistics were used to determine a general profile of the caregiver sample for the study.

Multivariate analyses were conducted including one-way ANOVA to assess if previous caregiving activities impact the preparedness scores. Multiple regression with equation $Y = a + b_1X_1 + b_2X_2 + b_3X_3$ was conducted to answer the research questions 3, 4, 5, and 6 that were to assess any relationship between demographics and

preparedness scores, and quality of experience as well as relationship between preparedness and attitudes scores. In the regression equation; a = constant, b_1 is the slope (Beta coefficient) for X_1 , X_1 = First independent variable that is explaining the variance in Y , b_2 = the Slope (Beta coefficient) for X_2 , X_2 = Second independent variable that is explaining the variance in Y , b_3 = the Slope (Beta coefficient) for X_3 , X_3 = third independent variable that is explaining the variance in Y . The data set was investigated to satisfy the assumptions of the multiple regression analyses including; (a) missing values, (b) presence of outliers, (c) normality, (d) linearity, and (e) homoscedasticity. Visual inspection of histograms and Normal Quantile-Quantile (Q-Q) plots for the intention scores; attitude and perception score variables indicated approximately normal distributions. For regression analyses The demographic variables were coded as; (a) Ethnicity (coded into four dichotomous variables of White, Black, Asian, Hispanic, and multiracial); (b) Gender, coded as 1 = female, 2 = male; (c) Class, coded as 1=Freshman, 2=Sophomore, 3=Junior, 4=Senior , and 5= Graduate student; (d) Married, coded as 1= married, and 2= not married; (e) Major, coded as 1= Health, and 2=Non-Health; age and SES were entered as continuous variables. Case-wise diagnostics were selected in SPSS to check for standardized residues and any outliers with more than 3 standardized residues were manually removed before final regression analysis. The Hierarchical regression (HR) was conducted to test the research question 7 that was to assess relationship between Theory of Planned behavior constructs and intentions of students to serve as informal caregivers; Theory of planned behavior constructs while controlling the demographic variables such as age, race, gender, marriage status, SES, and academic major. HR has been designed to test specific

theory-based hypotheses as noted by (Cohen, 2001; pp.523-524 and Wampold and Freund (1987, p.377). Data were checked for normality, outliers, and multicollinearity before the regression analysis. Analyses for all research questions were tested at a .05 significance level for α .

Summary

The Chapter 3 provides details of the implementation methodology about research design, research variables, instruments, pilot study and final study. The survey was developed to assess the attitude and preparedness levels of college students to take care of their older relatives. Two standardized instruments were used along with the questions based on theory of planned behavior were developed. Large pilot test data were used to establish reliability of the items developed and instruments included in the survey. Pilot test reported high values of Cronbach's alpha for the survey items which established the reliability of the items to be included in the final survey. Pilot data collection procedures were replicated to collect final data. The data set was checked for approximately normal distribution and to satisfy the assumptions of the multiple regression analyses. Descriptive statistics were calculated to determine baseline frequency rates and multiple regressions was conducted to assess any relationship between various independent and dependent variables identified in the study.

Table 3-1. Demographic Distribution of Pilot test Sample Population

Class Rank	f	%
Freshman	58	19.4
Sophomore	84	27.45
Junior	103	33.66
Senior	41	12.39
Graduate	15	4.90
Married		
Yes	5	1.6
No	298	97.7
Gender		
Female	213	69.61
Male	93	30.40
Age		
18-22	285	93.20
23-30	18	5.88
31-40	2	0.06
Estimated combined Annual Household income		
Less than 25,000	112	38.62
\$25001-\$75,000	51	17.60
\$75,001-125,000	71	24.48
More than 125,001	56	19.31
Ethnicity		
Asian Indian	47	15.46
Black/African American	46	15.00
Spanish/Hispanic/ Latino	40	13.20
White/Caucasian	171	56.25

Table 3-2. Pilot Survey Attitude towards Older Relatives Scores and distribution

Item	f	%	Mean	SD	95% CI
Attitude Relative			56.35	24.11	54.05-58.65
Positive <96	286	93.4			
Neutral =96	5	1.63			
Negative >96	15	4.9			

Table 3-3. Pilot Survey Attitude towards Older Adults Scores and distribution

Item	f	%	Mean	SD	95% CI
Attitude Adult			64.14	21.70	62.07-66.21
Positive <96	285	93.13			
Neutral =96	4	1.3			
Negative >96	17	5.55			

Table 3-4. Pilot Survey Preparedness Scores and distribution

Item	f	%	Mean	SD	95% CI
Preparedness Score			16.644	6.98	15.98-17.30
Not at all Prepared	23	7.5			
Somewhat prepared	74	24.18			
Not too prepared	106	34.64			
Well prepared	90	29.41			
Very well Prepared	13	4.2			

Table 3-5. Reliability analysis of sub-scales

Item	Cronbach's alpha Value
RASDS	0.975
PCS	0.908
Perceived behavioral control	0.905
Subjective Norms	0.847

CHAPTER 4 RESULTS

The purpose of this study was to determine the caregiving preparedness level and attitude of college students towards their older relatives and determine whether Theory of planned behavior influenced their intentions to take the role of caregivers in future. Chapter 4 presents the results and is organized into demographics characteristics, role as caregiver, attitudes, preparedness for informal caregiving and subjective norms sections. A total of 750 surveys were collected of which 722 completed the survey and were included in the final analysis. No pilot test data were included in the final analysis.

Demographic Characteristics

Table 4-1 displays summary of study participants according to their age, class, ethnicity, marital status, gender and socio-economic status. Majority of the participants in the study were females (n=526, 73.9%), and reported being not married (n=704, 98.9). There were 65 freshmen (9.1%), 278 sophomores (39.0%), 216 juniors (30.3%), 136 seniors (19.1%) and 17 graduate (2.4%) students who completed the survey. Reported mean age of the respondents calculated was 20.2 years, SD=3.3 with a 95% confidence interval between 19.9-20.4 years (Table 4-2). Majority of the respondents identified themselves as white (n= 371, 56.1%), some identified themselves as Hispanic (n=96, 14.5%). There were almost equal number of Asians (n= 71, 10.7%), and African Americans (n=68, 10.3%) and n= 55 (8.3 %) identified themselves as multiracial. One third (n=224, 33.6%) of the respondents reported their estimated annual household income less than \$25,000. About 12% (n=79) reported their annual household income within the \$25,001-\$50,000 range. Some of the students reported their income within the range of \$75,001-100,000 (n=88, 13.2%), \$100,001-125,000 (n=88, 13.2%), and

\$50,001-\$75,000 (n=93, 13.9%). Students also (n=95, 14.2%) reported their annual income more than \$125,001.

The college majors were recoded into two different categories of health and non-health respectively. Biology, chemistry, law, psychology were grouped under the non-health majors category. Whereas, Applied Physiology and Kinesiology, Health Education and Behavior, and Nursing were coded as health majors. There were almost equal number of students enrolled in health (n=338, 49.3%) and non-health (n=346, 50.6%) majors.

Role as Caregivers

Table 4-3 reports the caregiving activities of the students in the past 12 months and majority of the respondents (n= 480, 66.5%) had never provided unpaid care to any of their older relatives in the past but most of them reported being somewhat likely or very likely (56.1%) to be responsible for their older relatives in the future (Table 4-4). A majority of the respondents reported planning taking care of their mother (n=586, 81.2%), and father (n=534, 74%) in future. The study participants reported also being responsible for their grandmother (n= 296, 41%) along with grandfather (n=175, 24%), aunt (106, 14.7%), mother-in-law (n= 98, 13.6%), father-in-law (n=94, 13%), uncle (n=90, 12.5%) and few reported being responsible for their step-parents (n=50, 6.9%), other relatives (n=24, 3.3%) and great-grandparents (n=14, 1.9%) in their future (Table 4-5).

Students were asked if they have assisted any of their older relatives with activities of daily living or instrumental activities of daily living or in any other way in the past 12 months .It was important to ask them these questions to identify if they are currently or recently involved in providing care to their relatives which might impact their attitude and

preparedness levels. The results indicate many of the respondents never assisted their older relatives with instrumental activities of daily living (n=298, 41.6%), activities of daily living (n=425, 59.5%) and other activities (n=452, 62.6%) in the past 12 months. For the instrumental activities of daily living (Table4-6) most reported helping with house work such as dishes and laundry (n=307,42.9%), Transportation (driving, helping arrange for transportation, or accompanying on public transit) (n=262,36.7%), about one-third helped with grocery shopping (n=232,32.4%), one-fourth helped with preparing meals (n=183,25.6%) , giving medications/pills (n=142, 19.8%) and a few of the respondents also reported managing the finances (n=46,6.4%) for their older relatives.

When asked about helping with any activities of daily living (Table 4-7), about one-third of the students reported they (33.33%), and helped with walking (n=228, 31.9%). Some also reported helping their older relatives with climbing stairs (n= 151, 24.07%), and getting in and out of beds or chairs (n=142, 21.30%). Very few helped with Feeding (n= 69, 9.87%), getting dressed (n= 69, 8.64%), toileting and diapers (n=27, 4.63%) and bathing (n=30, 4.2%).

Few of the respondents had assisted their relatives in finding health information on line (n=91, 12.7%), went to a medical appointment with them (n=140, 19.6%),explained side effects of a medication (n=79, 11.0%), helped them understand instructions on how to take medications (n=98,13.6%), helped them in understanding written information from doctor's office or insurance (n=140, 19.6%) and made medical appointment for them (n=60, 8.4%) (Table4-8)

The survey instrument also included items about use of technology by the students to provide caregiving (Table 4-9). Most of the students own a smartphone (n=659, 92.6%) and reported being very receptive and somewhat receptive to use their smartphone for applications helpful to take care of their OR (n=602, 84.7%). Similarly, students reported being very receptive to use their Ipad/Tablet (n=323, 45.6%) for applications helpful in providing informal caregiving to their OR.

Quality of Experiences and Interactions with OR

Quality of experience and interactions with their OR are identified as critical in literature for determining the attitudes. Hence, the survey included items about the quality of experiences students had with their OR and OA as well as the amount of interaction they had in the past 12 months with their OR. Most of the students reported positive and very positive experiences with their OR (n=612, 84.8%) (Table 4-10) as well as OA (n=485, 68.7%) (Table 4-11). Many students reported having few interactions (n=215, 29.9%) or intermittent contact several times a year (n=241, 33.5%) with their OR. Very few had a significant contact or lived in the same household with their OR (n=72, 10%) or had frequent contact on regular basis (n=54, 7.5%). Thirty-seven students reported that their OR were not alive (Table 4-12). There was a significant correlation between the interactions with OR and quality of experiences with them ($t=0.365$, $p<0.0001$).

A standard multiple regression was used to test if demographic variables (gender, age, SES, ethnicity, class, and major), quality of experiences with OA, and interactions with OR significantly predicted quality of experiences with OR. Tests for multicollinearity indicated that a very low level of multicollinearity was present ($VIF < 1.142$). The results of the regression are presented in Table 4-13 indicate that and the variables explained

24.9 % of the variance. ($R = 0.499$, $F(9,612) = 22.606$, $p < .0001$). It was found that ethnicity ($\beta = -0.115$, $t = -3.253$, $p = 0.001$) (1=White, 2= African American, 3=Hispanic, 4=Asian, 5=Multiracial), quality of experiences with OA ($\beta = 0.327$, $t = 9.140$, $p < 0.0001$), and interactions with OR ($\beta = 0.292$, $t = 8.082$, $p < 0.0001$), significantly predicted the quality of experiences between the students and their OR (Table 4-14). The regression equation based on the results for Quality of experiences with OR = $2.94 + 0.026(\text{class}) - 0.163(\text{married}) - 0.053(\text{gender}) - 0.001(\text{age}) + 0.17(\text{income}) + 0.012(\text{major}) - 0.024(\text{ethnicity}) + 0.273(\text{Q.Exp. OA}) + 0.159(\text{interaction with OR})$

To further explore the relationship of ethnicity and quality of experiences analysis of variance was conducted to identify differences among different ethnic groups the results of ANOVA are presented in Table 4-15 and indicate that there was a significant difference in quality of experiences among the ethnic groups ($F(4,683) = 6.467$, $p < 0.0001$). However, further post-hoc analysis of Scheffe could not identify any significant differences between the ethnic groups and quality of experiences of the students with their OR.

Attitudes

The descriptive results are presented in Table 4-16, and indicate that the majority of the respondents ($n = 644$, 90.2%) scored less than 96 on the RASDS, thus a positive attitude towards their older relatives with a mean score of 56.19, $SD = 26.41$, and 95% CI between 53.19 - 57.17. Similarly, the majority ($n = 626$, 87.3%) scored less than 96 and reported a positive attitude towards OA with a mean score of 66.72, $SD = 24.15$, and 95% CI between 64.45 - 68.06. The bivariate analysis determined a significant relationship ($p < 0.001$) between the two scores with a variance of 0.645. Based on the study results we reject the null hypotheses for research question one, because the

mean score for the RASD is not equal to 96 but lower thus indicating positive attitude towards OR.

A multiple regression was performed to test the hypothesis of association between demographic characteristics (age, SES, gender, ethnicity, majors, marriage), attitudes towards OA, amount of interaction with OR, past informal caregiving, quality of experience with OR and attitudes of college students towards their OR. Tests for multicollinearity indicated very low level of multicollinearity ($VIF < 1.99$). As a group demographics variables did not contribute significantly and accounted for only 0.6% of the variance in attitude ($F(7,617) = 0.531, p = 0.812$) (Table 4-17). Whereas amount of interaction, past informal caregiving, attitudes towards OA, and quality of experiences with OR accounted for 56.4% of the variance in attitudes ($F(11,613) = 72.133, p < 0.0001$). Attitude towards OA ($\beta = 0.628, t = 21.75, p < .0001$), and quality of experiences with OR ($\beta = -0.245, t = -8.151, p < 0.0001$) significantly predicted attitudes towards OR (Table 4-18). The negative β values implies that as the quality of experience increases by one standard deviation attitude score will decrease by 0.245. (low quality of experiences with older relatives tend to develop a negative attitude towards them) (high RASDS score= negative attitude). Interactions with OR and providing informal care in the past 12 months did not predict the attitudes towards OR. Therefore, model for predicting attitude towards OR is a linear combination of, quality of experience with OR and attitude towards OA ($R = 0.720, R^2 = 0.518, F(10,625) = 67.275, p < 0.001$). The regression equation based on the results for attitudes towards OR= $61.979 - 0.448(\text{class}) - 12.159(\text{married}) + 0.573(\text{gender}) + 0.009(\text{age}) - 0.395$

(income) + 1.903(major) +0.027 (ethnicity) + 1.502 (previous caregiving) +0.679
(attitudes towards OA)-7.670 (Q.Exp. OA) +0.380 (interaction with OR)

Preparedness to Take Care Of Older Relatives In Future

Consistent with the proposed method, responses to the categories agree and strongly agree were summed and divided by 8 to calculate the mean preparedness score (Table 4-19). Participants scored low on the scale with $M=1.8587$, $SD=0.975$, and 95% CI between 1.787-1.930. Based on the score range of CPS many of the students reported being not too prepared ($n=198$, 27.4%) as informal caregivers for their older relatives, lower percentage reported being well prepared ($n=165$, 22.9%), not at all prepared ($n=100$, 13.9%), and very well prepared ($n=38$, 5.3%). Most of the students ($n=221$, 30.6%) felt somewhat prepared for the future role.

The detailed CPS responses are presented in Table 4-20. Most of the students reported not at all, somewhat, and not too well prepared for the stress of caregiving ($n=496$, 69.0%), setting up services ($n=495$, 68.8%), get help and information from health care system ($n=464$, 64.5%), take care of their OR emotional needs ($n=457$, 63.5%), respond to and handle emergencies ($n=445$, 61.8%), make caregiving activities pleasant for themselves and their OR ($n=438$, 61.0%), and take care of their OR physical needs ($n=483$, 57.2%). Overall $n=482$, 67% students reported being not at all, somewhat, and not too well prepared to care for their OR.

One-way ANOVA was conducted to compare the effect of previous caregiving activities including ADL, IADL and others on the preparedness scores. The results are presented in Table 4-21 and indicate a significant effect of previously provided IADL ($F=24.130$, $P<0.0001$), ADL ($F=32.361$, $p<0.0001$) and other activities ($F=23.792$, $p<0.0001$) in the past 12 months on the preparedness scores of the students.

A multiple linear regression was performed to test any association between the demographic variables (age, SES, gender, ethnicity, majors, marriage), past informal caregiving, amount of interaction, perceived behavioral control for taking care, and quality of experience with OR. Tests for multicollinearity indicated that a very low level of multicollinearity was present ($VIF < 1.191$). Results are presented in Table 4-22 and report a statistically significant proportion of variance (45.9%, $p < 0.0001$) was explained by the model including past informal caregiving (Yes=1, No=2), amount of interaction, perceived behavioral control for taking care, and quality of experience with OR while controlling for demographic variables. Standardized regression coefficient (β) results (Table 4-23) showed that perceived behavioral control for taking care was strongly associated with preparedness to take care of them ($\beta = 0.631$, $t = 20.542$, $p < 0.0001$). Also, past informal caregiving ($\beta = -0.090$, $t = -2.957$, $p < 0.05$), and quality of experiences with OR ($\beta = 0.090$, $t = 2.872$, $p < .05$), had smaller but statistically significant association with preparedness for caregiving. The negative β for past informal caregiving implies that as the students report not having provided informal care to any of their OR in the past 12 months increases by one std. deviation, their preparedness as informal caregiver decreases by 0.090 SD. Therefore, the model for predicting preparedness to take care of OR is a linear combination of, quality of experience with OR, perceived behavioral control, and having provided informal care in the past ($R = .687$, $R^2 = .473$, $F(11,622) = 50.026$, $p < .0001$) and the regression equation included preparedness as informal caregiver = $-1.873 + 0.005(\text{class}) + 0.091(\text{married}) + 0.004(\text{gender}) + 0.027(\text{age}) + 0.025(\text{income}) + 0.032(\text{major}) - 0.007(\text{ethnicity}) -$

0.186 (previous caregiving)+0.108 (Qty.Exp with OR)-7.670 (Q.Exp. OA) +0.017
(interaction with OR) +0.087 (perceived behavioral control)

Relationship between Attitudes towards OR and Preparedness for Caregiving

Table 4-24 shows the results of association between the attitude and preparedness score. The model explained only 4.6% variance in attitude towards OR based on the preparedness scores ($R = .215$, $R^2 = .046$, $F(1,700) = 33.962$, $p < .0001$). The significant negative standardized regression coefficient ($\beta = -0.215$, $t = -5.828$, $p < 0.0001$) (Table 4-25) implies that as the preparedness to take care of the older relatives SD increases by one, students' attitude scores drop by 0.215 SD (low RASDS score=positive attitudes). The multiple regression equation explained attitudes towards OR= $65.674 - 0.698(\text{preparedness score})$

Theory of Planned Behavior Constructs

Perceived Behavioral Control

PBC is one of the constructs of TPB which is closely associated with self-efficacy or confidence to adopt or change a behavior. Many respondents agree and strongly agree that they are confident of assisting their OR with IADL ($n=486$, 68.5%), make caregiving activities pleasant ($n=422$, 59.4%), handle emergencies ($n=397$, 56.0%), get help and information from health care system ($n=397$, 56.0%), setting up services ($n=393$, 55.4%), take care of their emotional needs ($n=383$, 53.9%), managing the stress associated with caregiving ($n=332$, 46.8%), ADL ($N=308$, 43.4%) (Table 4-26). About half of the students 389 (54.8%) reported they were overall prepared for informal caregiving.

Subjective Norms

SN is one of the constructs of TPB that includes how individuals perceive other people important to them think about the behavior. Many respondents agree and strongly agree that their family expects (47%), it's their culture (46%), religion (34%), an obligation (51%) and important for their own personal fulfillment (74%) to take care of their older relatives (Table 4-27).

Intentions

Table 4-28 presents the frequency analysis of the intentions of the students to provide informal care to their OR. About three fourth of the students reported that they somewhat likely and very likely intend to handle emergencies (n=544, 76.7%) and seek help and information from health care system (n=526, 74.1%). Many intend to set up services (n=513, 72.3%), cater to emotional needs (n=497, 70.0%), and assist of their OR with IADL (n=471, 66.4%) and ADL (n=361, 50.8%).

Theory of Planned Behavior

To explore the constructs of TPB as predictors of students' intentions as informal caregivers for their older relatives in future, a hierarchical multiple regression analysis was performed with the independent demographic variables ((a) Ethnicity (coded into four dichotomous variables of 1=White,2= Black, 3=Asian,4= Hispanic, and 5=multiracial); (b) Gender, coded as 1 = female, 2 = male; (c) Class, coded as 1=Freshman, 2=Sophomore, 3=Junior, 4=Senior , and 5= Graduate student; (d) Married, coded as 1= married, and 2= not married; (e) Major, coded as 1= Health, and 2=Non-Health; age and SES were entered as continuous variables) . The data set was investigated to satisfy the assumptions of the multiple regression analyses including; missing values, presence of outliers, normality, linearity, and homoscedasticity. Visual

inspection of histograms and Normal Quantile-Quantile (Q-Q) plots for the intentions score; attitude and perception score variables indicated approximately normal distributions. Controls variables (demographics) were entered into the model on the first step of the regression followed by attitude towards OR scores, perception scores on the third step, and perceived behavioral control scores were entered into the model on the fourth step.

Table 4-29 shows the results of hierarchal multiple regressions. The demographic variables explained only 1.9% of the variance in intentions. Attitude towards older relatives explained 8.5% variance, subjective norms about informal caregiving contributed additional 41.9% variance and confidence to take care explained 53.7% of variance in the intention scores when we controlled for demographics. It was found that attitude towards OR ($\beta=-0.126$, $t=-4.439$, $p<0.0001$) (Negative attitude β represents with one SD increase in attitude scores results in decrease of 0.126 SD in the intentions), subjective norms ($\beta=0.388$, $t=11.628$, $p<0.0001$) and perceived behavioral control ($\beta=0.412$, $t=12.370$, $p<0.0001$) significantly predicted intentions of the students to take care of their older relatives in future (Table 4-30). The β values imply that with an increase of one SD of subjective norms and perceived behavioral control the intentions to serve as informal caregiver increases by 0.388 and 0.412 respectively.

The full model that included attitude towards OR, subjective norms about informal caregiving and perceived behavioral control to serve as informal caregiver was a significant improvement from step one ($F(10, 602) = 69.733, p<0.0001$), which was the controls only, model and the regression equation explained Intentions to serve as informal caregivers for their OR = $11.090 + 0.117(\text{class}) - 1.249(\text{married}) - 0.405$

(gender)+0.012 (age)-0.055 (income) -0.163(major)-0.038 (ethnicity)-0.024 (attitudes towards OR)+0.421 (subjective norms)+0.280 (perceived behavioral control) .We reject the null hypothesis and conclude that the constructs of theory of planned behavior had a statistically significant association with the intentions to provide informal care to the older relatives beyond the control variables.

Table 4-1. Distribution of Participants by Class, Marriage, gender, SES and Major.

Item	f	%
Class		
Freshman	65	9.1
Sophomore	278	39
Junior	216	30.3
Senior	136	19.1
Graduate	17	2.4
Total	712	
Married		
Yes	8	1.1
No	704	98.9
Total	712	
Gender		
Female	526	73.9
Male	186	26.1
Total	712	
Estimated combined Annual Household income		
Less than 25,000	224	33.6
\$25001-\$50,000	79	11.8
\$50,001-\$75,000	93	13.9
\$75,001-100,000	88	13.2
\$100,001-125,000	88	13.2
More than 125,001	95	14.2
Total	667	33.6
Ethnicity		
Asian	71	10.7
Black/African American	68	10.3
Spanish/Hispanic/ Latino	96	14.5
White/Caucasian	371	56.1
Multi Race	55	8.3
Total	661	
Major		
Health	338	49.3
Non-Health	346	50.6
Total	684	

Table 4-2. Age Variable

Item	Mean	SD	95% Conf. Interval
Age	20.187	3.31	19.943-20.43

Table 4-3. Frequency Analysis Results for Provided Unpaid Care in Past 12 Months

Item	f	%
Yes	241	33.5
No	480	66.5
Total	712	

Note: Twelve students did not report providing unpaid care in past 12 months. Valid percentages are reported

Table 4-4. Frequency Analysis Results for Likely Responsible For Older Relatives

Item	f	%
Very unlikely	109	15.1
Somewhat Unlikely	124	17.2
Undecided	84	11.6
Somewhat Likely	221	30.6
Very Likely	184	25.5
Total	722	

Note: Two students did not report likelihood of being responsible for their older relatives. Valid percentages are reported

Table 4-5. Frequency Analysis Results for Family Members Need to Take Care

Item	f	%
Mother	586	81.2
Grandfather	175	24.2
Great-Grandparents	14	1.9
Father	534	74
Mother-in-law	98	13.6
Step Parents	50	6.9
Aunt	106	14.7
Grandmother	296	41
Father-in-law	94	13
Uncle	90	12.5

Table 4-6. Frequency Analysis Results for Providing Instrumental Activities of Daily Living

Item	f	%
Giving medications/pills	142	19.8
Manage finances	46	6.4
Grocery shopping	232	32.4
House work such as dishes, laundry	307	42.9
Preparing meals	183	25.6
Transportation (driving, helping arrange for transportation)	263	36.7
Arranging or supervising paid services (nurses,, Meals on Wheels)	34	4.7
None	298	41.6

Table 4-7. Frequency Analysis Results for Providing Activities of Daily Living

Item	f	%
Bathing	30	4.2
Getting dressed	69	9.7
Feeding	69	9.6
Getting in and out of beds or chairs	142	19.9
Help with toileting	38	5.3
Dealing with incontinence or diapers	27	3.8
Walking	228	31.9
Climbing stairs	151	21.1
None	425	59.5

Table 4-8. Frequency Analysis Results for Providing Other Activities

Item	f	%
Made a medical appointment for him or her	60	8.4
Went with him or her to a medical appointment	140	19.6
Helped him or her in understanding written information from doctor's office or insurance	140	19.6
Acted as a translator at a medical or social service visit	108	15.1
Helped with filling out a medical or insurance form	68	9.5
Helped him or her to understand the instructions on how to take a medication	98	13.6
Explained the side effects of a medication	79	11
Gone online to find health information for him or her	91	12.7
None	452	62.6

Table 4-9. Frequency Analysis Results for Use of Technology for Caregiving

Item	f	%
Own Smartphone		
Yes	659	92.6
No	53	7.4
Total	712	
Own an I-pad/Tablet		
Yes	269	37.8
no	443	62.2
Total	712	
Receptive to use smartphone for applications helpful to take care of their older relatives		
Very Receptive	394	55.4
Somewhat receptive	208	29.3
A little receptive	69	9.7
Not receptive	40	5.6
Total	711	
Receptive to use I-pad/Tablet for applications helpful to take care of their older relatives		
Very Receptive	323	45.6
Somewhat receptive	204	28.8
A little receptive	72	10.2
Not receptive	109	15.4
Total	708	

Table 4-10. Frequency Analysis Results for Quality of experiences with Older Relatives

Item	f	%
Negative	11	1.5
Very Negative	7	1
Neutral	91	12.6
Positive	298	41.3
Very positive	314	43.5
Total	724	

Table 4-11. Frequency Analysis Results for Quality of experiences with Older Adults

Item	f	%
Negative	22	3.1
Very Negative	7	1
Neutral	197	27.3
Positive	382	53
Very positive	113	15.7
Very Negative	7	1
Total	706	

Note: Eighteen students did not report quality of their experiences with older adults. Valid percentages are reported

Table 4-12. Frequency Analysis Results for Interaction with older relatives

Item	f	%
They are Not alive	37	5.1
Frequent contact on regular basis	54	7.5
Little or no contact	101	14
Few Interactions	215	29.9
Intermittent contact several times a year	241	33.5
Significant contact/lived in same household	72	10
Total	720	

Note: Four students did not report frequency of interaction with older relatives. Valid percentages are reported

Table 4-13. Summary of Multiple Regression Analysis of Independent Variables Predicting Quality of Experience with OR

	R	R ²	ΔR ²	F	Sig.
Interaction with OR	.499	.249	.238	22.606	.000**

*Significant at the p<0.05 level, **Significant at the p<0.0001 level

Table 4-14. Summary of Multiple Regression Analysis of Independent Variables Predicting Quality of Experience with OR

		B	SE B	β	t	Sig
Model 1	(Constant)	2.940	.525		5.600	.000
	Class	.026	.027	.036	.961	.337
	Married	-.163	.222	-.026	-.734	.463
	Gender	-.053	.057	-.034	-.938	.349
	Age	.001	.007	.007	.194	.846
	Income	.017	.014	.044	1.229	.220
	Major	.012	.050	.009	.243	.808
	Ethnicity	-.024	.007	-.115	-3.253	.001**
	QEXP.A	.273	.030	.327	9.140	.000**
	interaction	.159	.020	.292	8.082	.000**

Table 4-15. ANOVA of Quality of Experience with OR with different ethnic groups

	f	Mean	Std. Deviation	Std. Error	F	Sig
White	364	4.41	.677	.035	6.467	0.000
African American	67	4.04	.747	.091		
Hispanic	94	4.33	.739	.076		
Asian	109	4.12	.690	.066		
Multiracial	54	4.30	.690	.094		
Total	688	4.31	.707	.027		

Table 4-16. Analysis Results for Attitudes towards Older Relatives and Older Adults

Item	f	%	Mean	SD	95% CI
Attitude towards older relatives (f=709)			56.19	26.412	53.19-57.17
Positive <96	644	90.2			
Neutral =96	25	3.5			
Negative >96	45	6.3			
Attitude towards older adults (f=717)			66.72	24.146	64.45-68.06
Positive <96	626	87.3			
Neutral =96	21	2.9			
Negative >96	70	9.8			

Table 4-17. Summary of Multiple Regression Analysis of Independent Variables with Attitudes towards Older Relatives

	R	R ²	ΔR ²	F	Sig.
Model1					
Age, Class, Ethnicity, Major, Married, Income	.077	.006	.006	.531	.812
Model 2					
Age, Class, Ethnicity, Major, Married, Income, Attitude towards OA, Provided unpaid care, interaction with OR and Quality of Experience with OR.	.751	.564	.558	72.133	.000**

**Significant at the p<0.0001 level

Table 4-18. Multiple Regression Analysis of Independent Variables with Attitudes towards Older Relatives

		B	SE B	β	t	Sig
Model 1	(Constant)	64.262	21.103		3.045	.002
	Class	-.341	1.140	-.013	-.299	.765
	Married	-4.719	9.376	-.021	-.503	.615
	Gender	2.517	2.364	.044	1.065	.287
	Age	-.134	.316	-.018	-.425	.671
	Income	-.515	.572	-.037	-.900	.368
	Major	1.476	2.106	.029	.701	.484
	Ethnicity	.176	.308	.023	.571	.568
Model 2	(Constant)	61.979	15.482		4.003	.000
	Class	-.448	.761	-.017	-.588	.556
	Married	-12.159	6.243	-.053	-1.948	.052*
	Gender	.573	1.583	.010	.362	.717
	Age	.009	.210	.001	.043	.966
	Income	-.395	.384	-.028	-1.029	.304
	Major	1.903	1.400	.037	1.359	.175
	Ethnicity	.027	.205	.004	.130	.896
	Unp.Care	1.502	1.476	.028	1.018	.309
	Atti. OA	.679	.031	.628	21.754	.000**
Interaction	.380	.587	.019	.647	.518	
QExp.OR	-7.670	.941	-.245	-8.151	.000**	

*Significant at the p<0.05 level, **Significant at the p<0.0001 level

Table 4-19. Analysis Results for Preparedness Score N=722

Item	f	%	Mean	SD	95% CI
Preparedness Score			1.858	0.975	1.787- 1.930
Not at all Prepared	100	13.9			
Somewhat prepared	221	30.6			
Not too prepared	198	27.4			
Well prepared	165	22.9			
Very well Prepared	38	5.3			
Total	722				

Table 4-20. Frequency Analysis Results for Preparedness for Caregiving

	Not at all Prepared f (%)	Somewhat Prepared f (%)	Not too well Prepared f (%)	Pretty well Prepared f (%)	Very well Prepared f (%)
How well are you prepared to take care of your older family member's physical needs	114 (15.9)	221 (20.7)	148 (20.6)	180 (25.0)	53 (7.4)
How well are you prepared to take care of your older family member's emotional needs	70 (9.7)	208 (28.9)	179 (24.9)	193 (26.8)	65 (9.0)
How well prepared do you think you are to find out about and set up services for him or her?	116 (16.1)	175 (24.3)	204 (28.4)	167 (23.2)	53 (7.4)
How well prepared do you think you are for the stress of caregiving	141 (19.6)	168 (23.4)	187 (26.0)	171 (23.8)	48 (6.7)
How well prepared do you think you are to make caregiving activities pleasant for both you and your family member?	94 (13.1)	204 (28.4)	140 (19.5)	222 (30.9)	55 (7.6)
How well prepared do you think you are to respond to and handle emergencies that involve him or her?	83 (11.5)	180 (25.0)	182 (25.3)	196 (27.3)	71 (9.9)
How well prepared do you think you are to get help and information you need from the health care system?	114 (15.9)	185 (25.7)	165 (22.9)	182 (25.3)	69 (9.6)
Overall, How well prepared do you think you are to care for your older family member?	77 (10.7)	212 (29.5)	193 (26.8)	179 (24.9)	54 (7.5)

Table 4-21. Summary of One-way ANOVA of Preparedness Scores with previous caregiving activities

Item	f	%	Mean	SE	F	Sig
IADL					24.787	.000**
yes	418	58.34	2.008	.046		
No	296	41.65	1.654	.056		
Total	714					
ADL					32.210	.000**
yes	288	40.50	2.104	0.053		
No	424	59.49	1.689	0.047		
Total	712					
Other						
yes	263	36.93	2.098	.059	26.086	.000**
No	450	63.06	1.718	.044		
Total	713					

*Significant at the $p < 0.05$ level, **Significant at the $p < 0.0001$ level

Table 4-22. Summary of Multiple Regression Analysis of Independent Variables with Preparedness Scores

	R	R ²	ΔR^2	F	Sig.
Model 1 Age, Class, Ethnicity, Major, Married, Income	.134	.018	.007	1.608	.130
Model 2 Unpaid Care, Qexp.OR, Per. Beh.Control, interaction with OR	.687	.473	.463	50.026	.000**

*Significant at the $p < 0.05$ level, **Significant at the $p < 0.0001$ level

Table 4-23. Hierarchical Regression Analysis of Independent Variables with Preparedness Scores

		B	SEB	β	t	Sig
Model 1	(Constant)	2.075	1.119		1.854	.064
	Class	.074	.055	.073	1.337	.182
	Married	-.467	.384	-.054	-1.217	.224
	Gender	-.055	.090	-.025	-.617	.538
	Age	.020	.032	.037	.643	.520
	Income	.032	.022	.060	1.476	.140
	Major	.076	.080	.039	.953	.341
	Ethnicity	-.001	.012	-.003	-.085	.932
Model 2	(Constant)	-1.873	.860		-2.177	.030
	Class	.005	.041	.005	.115	.908
	Married	.091	.283	.010	.320	.749
	Gender	.004	.067	.002	.067	.947
	Age	.027	.023	.050	1.173	.241
	Income	.025	.016	.047	1.544	.123
	Major	.032	.059	.016	.541	.589
	Ethnicity	-.007	.009	-.024	-.827	.408
	Unpaid Care	-.186	.063	-.090	-2.957	.003*
	Interaction OR	.017	.025	.023	.705	.481
	Q.Exp.OR	.108	.038	.090	2.872	.004*
	Perc.Beh. Control	.087	.004	.631	20.542	.000**

*Significant at the $p < 0.05$ level, **Significant at the $p < 0.0001$ level

Table 4-24. Summary of Linear Regression Analysis of Attitudes towards OR with Preparedness to take care (f=722)

Model	R	R 2	$\Delta R 2$	F	Sig.
1	.215 ^a	.046	.045	33.962	.000**

*Significant at the $p < 0.05$ level, **Significant at the $p < 0.0001$ level

Table 4-25. Linear Regression Analysis of Attitude Scores with Preparedness Scores

	B	SEB	β	t	Sig
(Constant)	65.674	2.027		32.399	.000**
Preparedness score	-.698	.120	-.215	-5.828	.000**

*Significant at the $p < 0.05$ level, **Significant at the $p < 0.0001$ level

Table 4-26. Frequency Analysis Results for Perceived Behavioral Control for Caregiving

I feel confident of assisting my older relatives in the future with	Strongly Disagree f (%)	Disagree f (%)	Neither Agree nor Disagree f (%)	Agree f (%)	Strongly Agree f (%)
IADL	26 (3.7)	64 (9.0)	134 (18.9)	379 (53.4)	107 (15.1)
ADL	49 (6.9)	158 (22.3)	195 (27.5)	249 (35.1)	59 (8.3)
Emotional needs	25 (3.5)	112 (15.8)	190 (26.8)	300 (42.3)	83 (11.6)
Set up services	29 (4.1)	115 (16.2)	172 (24.3)	309 (43.6)	84 (11.8)
Manage the stress	39 (5.5)	121 (17.1)	217 (30.6)	269 (37.9)	63 (8.9)
Make care giving activities pleasant	20 (2.8)	77 (10.8)	191 (26.9)	345 (48.6)	77 (10.8)
Handle emergencies	32 (4.5)	95 (13.4)	185 (26.1)	300 (42.3)	97 (13.7)
Information from health care system	39 (5.5)	111 (15.4)	171 (23.7)	300 (42.3)	97 (13.7)
Over all I feel confident	31 (4.4)	84 (11.8)	206 (29.0)	319 (44.9)	70 (9.9)

Table 4-27. Frequency Analysis Results for Subjective Norms about Caregiving

Items	Strongly Disagree N (%)	Disagree N (%)	Neither Agree nor Disagree N (%)	Agree N (%)	Strongly Agree N (%)
My family expects me to take care of my OR	62 (8.7)	118 (16.6)	226 (31.7)	208 (29.2)	98 (13.8)
In my culture, It is responsibility of young adults to take care of OR	57 (8)	105 (14.7)	205 (28.8)	216 (30.3)	129 (18.1)
In my religion, It is responsibility of young adults to take care of OR	59 (8.3)	109 (15.4)	279 (39.4)	181 (25.5)	81 (11.4)
It is an obligation for me to take care of my OR	56 (7.8)	91 (12.8)	229 (32.2)	231 (32.5)	104 (14.6)
It is important for my own Personal Fulfillment to take care of my OR	17 (2.4)	57 (8)	150 (21.1)	300 (42.2)	187 (26.3)

Table 4-28. Frequency Analysis Results for Intentions about providing care to Older

I intend to assist my older relatives	Very Unlikely f (%)	Somewhat Unlikely f (%)	Undecided f (%)	Somewhat Likely f (%)	Very Likely f (%)
IADL	31 (4.4)	49 (6.9)	159 (22.4)	337 (47.5)	134 (18.9)
ADL	28 (3.9)	102 (14.4)	219 (20.8)	262 (36.9)	99 (13.9)
Emotional needs	20 (2.8)	37 (5.2)	156 (21.6)	367 (51.7)	130 (18.3)
Set up services	19 (2.7)	38 (5.4)	140 (19.7)	362 (51.0)	151 (21.3)
Handle emergencies	14 (2.0)	32 (4.5)	119 (16.8)	373 (52.6)	171 (24.1)
Information from the health care system	21 (3.0)	34 (4.8)	129 (18.2)	369 (52.0)	157 (22.1)

Table 4-29. Summary of Hierarchical Regression Analysis of Theory of Planned Behavior Constructs with Intentions to provide care

	R	R ²	ΔR^2	F	Sig
Model 1 Age, Class, Ethnicity, Major, Married, Income	.139 ^a	.019	.008	1.707	.104
Model 2 Attitude Relative	.292 ^b	.085	.073	7.011	.000**
Model 3 Perception	.647 ^c	.419	.410	48.303	.000**
Model 4 Perc. Beh. Control	.733 ^d	.537	.529	69.733	.000**

*Significant at the $p < 0.05$ level, **Significant at the $p < 0.0001$ level

Table 4-30. Hierarchical Regression Analysis of Theory of Planned Behavior Constructs with Intentions to Provide care

		B	SEB	β	t	Sig
Model 1	(Constant)	27.684	4.168		6.642	.000
	Class	.266	.213	.053	1.247	.213
	Married	-3.246	1.858	-.072	-1.747	.081
	Gender	-.670	.444	-.062	-1.509	.132
	Age	.055	.059	.041	.941	.347
	Income	-.027	.107	-.010	-.248	.804
	Major	.091	.393	.010	.232	.816
	Ethnicity	.089	.058	.063	1.542	.124
Model 2	(Constant)	30.405	4.051		7.506	.000
	Class	.249	.206	.050	1.209	.227
	Married	-3.270	1.797	-.073	-1.820	.069
	Gender	-.567	.429	-.053	-1.321	.187
	Age	.049	.057	.036	.871	.384
	Income	-.049	.104	-.019	-.473	.636
	Major	.169	.380	.018	.445	.657
	Ethnicity	.097	.056	.068	1.725	.085
	Attitude OR	-.049	.007	-.257	-6.581	.000**
	(Constant)	17.077	3.309		5.161	.000
Model 3	Class	.355	.164	.071	2.160	.031
	Married	-1.742	1.435	-.039	-1.214	.225
	Gender	-.522	.343	-.049	-1.523	.128
	Age	.014	.045	.010	.308	.758
	Income	-.044	.083	-.017	-.530	.596
	Major	-.116	.304	-.012	-.383	.702
	Ethnicity	-.082	.046	-.058	-1.801	.072
	Attitude OR	-.037	.006	-.191	-6.113	.000**
	Sub.Norms	.649	.035	.598	18.616	.000**
Model 4	(Constant)	11.090	2.997		3.701	.000
	Class	.117	.148	.024	.791	.429
	Married	-1.249	1.283	-.028	-.973	.331
	Gender	-.405	.306	-.038	-1.321	.187
	Age	.012	.040	.009	.299	.765
	Income	-.055	.074	-.021	-.747	.456
	Major	-.163	.271	-.017	-.600	.549
	Ethnicity	-.038	.041	-.027	-.936	.350
	Attitude OR	-.024	.005	-.126	-4.439	.000**

Table 4-30. Continued

	B	SEB	β	t	Sig
Sub.Norms	.421	.036	.388	11.628	.000**
Perc. Beh.	.280	.023	.412	12.370	.000**
Control					

*Significant at the $p < 0.05$ level, **Significant at the $p < 0.0001$ level

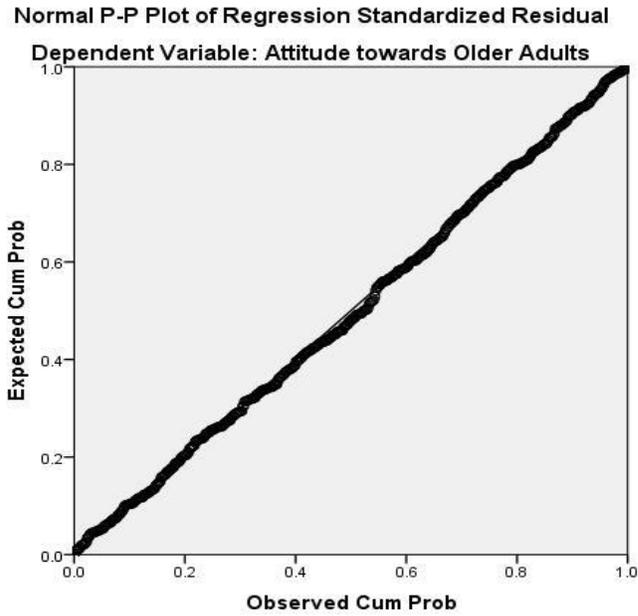


Figure 4-1. Normal P-P Plot of Regression Standardized Residual of Attitude towards older adults Score

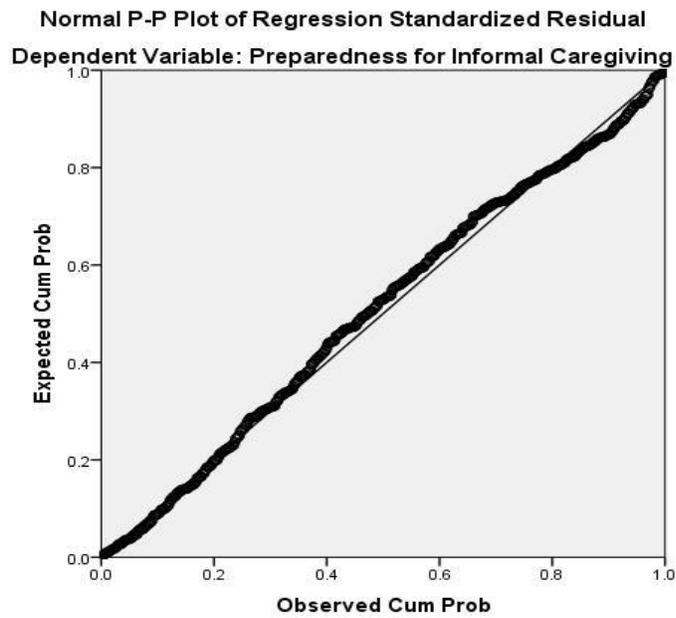


Figure 4-2. Normal P-P Plot of Regression Standardized Residual of Preparedness Score

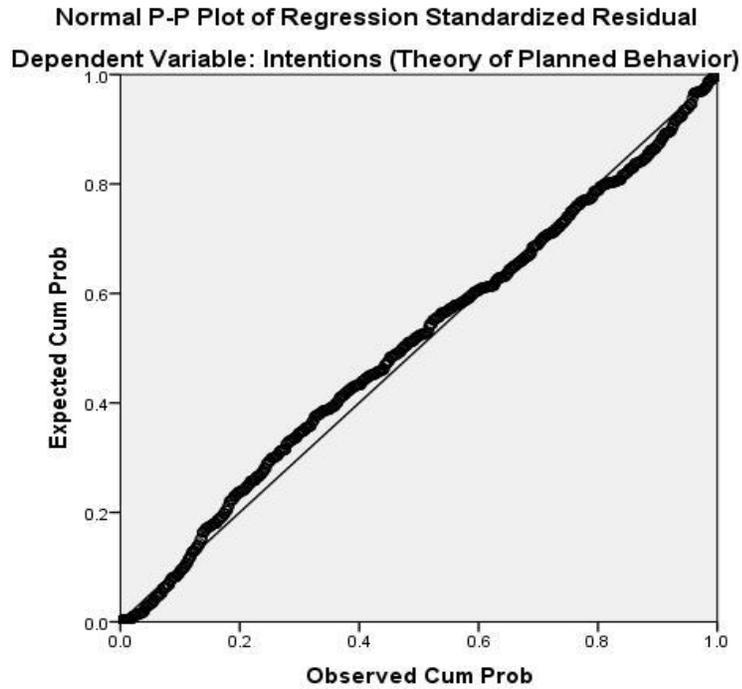


Figure 4-3. Normal P-P Plot of Regression Standardized Residual of Intentions Score

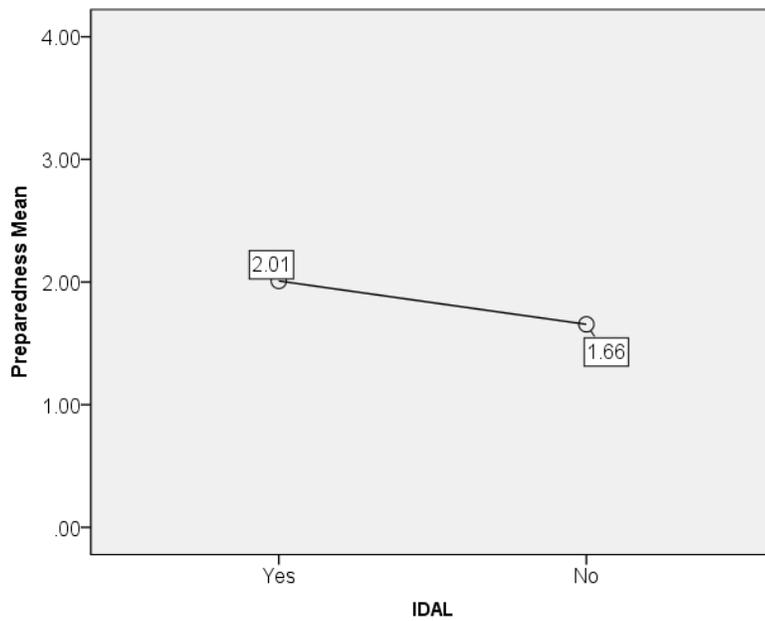


Figure 4-4 Means Plot between Preparedness Mean and Provided IADL in past 12 months

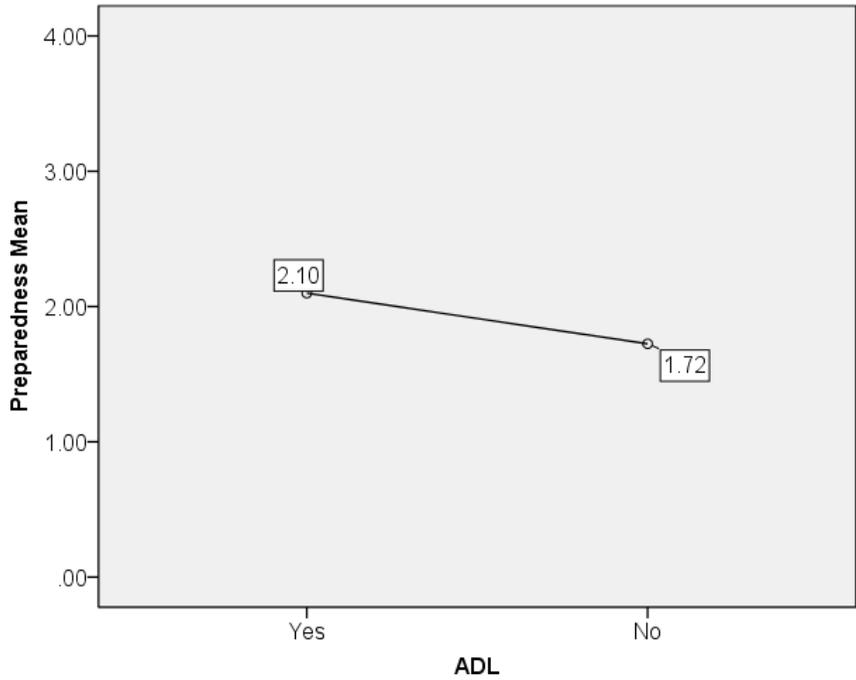


Figure 4-5. Means Plot between Preparedness Mean and Provided ADL in past 12 months

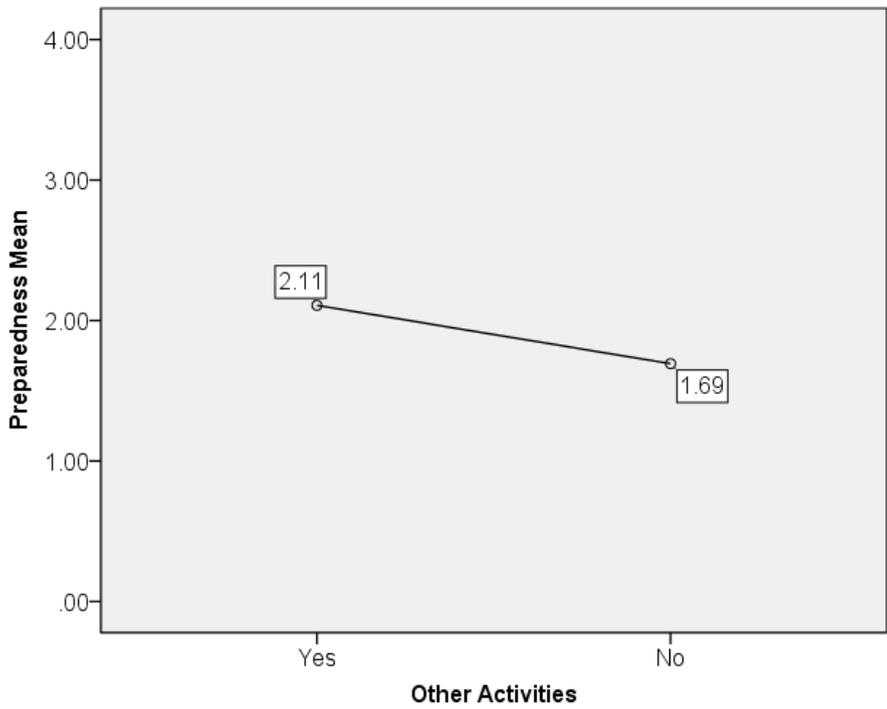


Figure 4-6. Means Plot between Preparedness Mean and Provided Other Activities of Caregiving in past 12 months

CHAPTER 5 DISCUSSION

This study used a cross-sectional survey design that included RASDS and PCS besides scales based on TPB constructs, and demographic information. The study assessed the attitudes of college students towards their older relatives and levels of preparedness to serve as informal caregivers, a group that has, to date, received little attention in the informal caregiving literature. This research also examined the relationship of age, gender, SES, ethnicity, major, and marriage to attitudes and preparedness scores. Lastly the study investigated the influence of TPB constructs (attitudes, subjective norms and perceived behavioral control) on the intentions of students to provide informal care to their older relatives.

Findings of the study disclosed a positive attitude of students towards their older relatives but lower levels of preparedness to serve as informal caregivers. This study also revealed that the constructs of the TPB influenced the intentions of college students to serve as informal caregivers. As yet, few studies have investigated attitudes of typical college population towards older relatives and none has been reported to assess the preparedness for informal caregiving among the college population. The study included two pilot studies and the final administration of a paper-pencil survey. The pilot studies were used only to test the reliability and validity of the scales used and whether there was any difference between the attitudes towards older adults and older relatives. Pilot test responses were used to refine and improve the survey instrument for use in the final implementation. The main purpose of this chapter is to discuss the results for the current study in view with previous literature and presents strengths and

limitations of the study and provides future research recommendations and study conclusions.

Study Population and Previous Caregiving Activities

The study recruited students enrolled in three large on campus classes which were representative of the university enrolled population based on their age, gender, SES, major and ethnicity. For a representative sample data were collected over one academic calendar beginning Spring semester for pilot test, and final data were collected over the Summer and Fall semesters within a year. The average age of the students was comparable with other studies that included college students (Harwood et al, 2005; Chase 2011; Swanlund and Kujath, 2012). The study included fewer male participants than females and more participants identified themselves as white, typical with many studies those have included gender and ethnic discrepancies in their studies that involved college population (Harwood et al, 2005, Narayan, 2008; &, Hawkins 2004). Also, demographics of the participants included in the study were representative of the university population which reported higher enrollment of females, whites, and undergraduates during the study year (University office of institutional planning and research, 2013).

The study adds to the literature by identifying one-third of the study participants as informal caregivers, who reported that they have provided unpaid care to their OR in the past 12 months, which is lower than a national study by Johnson and Johnson, 2013 which reported an estimate of 120 million adult Americans (57%) are either providing or have provided in informal care in the past, to their OR or friends. Other studies with adolescents and college population have also reported higher number of their participants as either providing or have provided informal care to their OR in past

(Hamil, 2012 (68%), and Baus, Dysart-Gale, & Haven, 2005 (83.8%) . Although not current active informal caregivers but many students did report their intentions for being somewhat likely and very likely (56%) responsible of their OR in future which is consistent with the results reported by Hamil, 2012 (59.3%) but lower than the study by Johnson and Johnson, 2013 who reported two-third of the population (66%) reported very likely (43%) or somewhat likely (23%) will need to provide care to someone in the future, and 34% reported having talked with their families about providing care to them in future. Many of the participants identified their parents and grandparents as the OR they will need to take care in future similar to Dellmann-Jenkins, Blankemeyer & Pinkard (2000) who reported majority of grandchildren between the ages of 18-35 years (76%) acquired the role of caregiving. According to Pew Research Center, 2010 an estimated 83%of Americans say they would feel very obligated to provide assistance to their parent in a time of need which echoes our study results where 68% agreed and strongly agreed that it was important for their personal fulfillment to take care of their OR. The study results align with the qualitative study conducted by Sweden Ali, Ahlstrom, Rot, & Skarsater (2012) who reported young adults (16-24 years) were ready as informal caregivers to their OR in future.

The students selected various caregiving activities they have assisted with and more number reported providing assistance with IADLs such as housework, preparing meals, transportation, which are less complex than ADLs and other activities of caregiving consistent with findings of Baus, Dysart-Gale, & Haven (2005), Hamill (2012), and Dellmann-Jenkins, Blankemeyer, & Pinkard (2000). These results may attribute to the fact that college students generally are not the primary caregivers and

may assist with simple activities of transportation or preparing a meal. Consistent with Ryn et al 2011, study that reported the majority of caregivers felt 'very' to 'extremely' confident 71% (n= 472) about providing physical care and emotional needs (46%,n = 312), our study population also reported higher confidence to provide assistance with IADLs and emotional needs as well.

Given the technological advancement and increased use of smartphones, ipad and tablets by young generation, the study also explored the receptiveness of the college students to use the smart technology as an assistance to provide informal caregiving. Most of the students were very receptive and somewhat receptive to use applications for informal caregiving on their smartphones, Ipads and tablets. This provides an opportunity for the educators and app developers to collaborate and develop applications for informal caregiving.

Attitudes towards Older Relatives

Attitudes represent the feelings of an individual towards any person or object and study included to identify the students' attitudes towards OA and their OR. The RASDS yielded a high reliability consistent with other studies who recruited medical major students (Cronbach's alpha=0.91, Henry et al, 2011; and Chase, 2011), counselling psychologists students (Cronbach's alpha=0.95, Tomko and Munley, 2012, alpha=0.94, Laditka, Fischer, Laditka, & Segal, 2004).The study participants reported a positive attitude towards their OR as well as OA. These findings echo those of earlier studies who identified the attitudes of nursing, nutrition, and medical major students (Henry et al, 2011; Narayan, 2008, Gonzales and Morrow-Howell, 2009; Chase, 2011; and Yuriy, 2013). Contrary to our study Swanlund and Kujath, 2012, reported negative attitudes of nursing students towards older adults. The significant difference between the scores of

attitudes towards OA and OR suggest that college students tend to have more positive attitude towards their own OR than other OA.

Most of the attitude studies among college students in the literature have studied effect of academic intervention on the attitude (Nochajski et al, 2009; Bernard et al, 2003; and Jensen and Winifred, 2004) but rarely there have been studies that have studied the impact of other behaviors and perceptions on attitudes. Our study identified attitude towards OA and quality of experience with OR associated significantly with the attitude towards OR. Contrary to the study of adolescents by Harwood et al, 2005 who noted that quality of contact and interaction significantly predicted attitudes, our study did not report interaction or demographic variables as predictor of attitudes towards OR.

A positive relationship between attitudes and age, gender, and major has been reported in the literature but this relationship is not consistently upheld. While our study consistent with Zverev, 2013 and Narayan, 2008 did not identify any gender differences in the attitude towards older relatives, some studies identified men having a less positive attitude towards older population (Rupp et al, 2005; Lee, 2009; Gellis, et al, 2003) while others reported females having a less positive attitude towards elderly (Tomko and Munley, 2012; Nochajski, et al, 2009). In a study conducted by Tomko and Munley, 2012, age and gender together accounted for a significant variance in the attitude but identified only gender as a significant predictor ($t=-2.38$, $p=0.018$). O'Hanlon and Brookover, 2002; Lee, 2009; and Nochajski, 2009 also reported no association between age and attitude which is consistent with our findings but Laditka et al, 2009 did report a positive attitude with increase in age. Our study did not report any association between class and attitude which is contrary to other studies (Nochajski,

2009; Gellis et al, 2003; Swanlund and Kujath, 2012) who reported a positive association between the attitudes and as the students progressed in class. Study also intended to explore any differences between health and non-health majors but no significant differences were found between attitudes and major as noted in the literature (Laditka, Fischer, Laditka, & Segal, 2004).

Other constructs in the study including interaction and quality of experiences have been hypothesized to be positively associated with attitudes towards OR. The study results suggest that higher-quality of experience with OR rather than more interaction with them may lead to positive attitudes. Consistent with our study results, other studies have established relationship between attitudes and having frequent or occasional contact with older adults and high-quality experience with older relatives (Funderbunk, Damron-Rodriguez, Storms, & Solomon, 2006; Harwood et al 2005; and Voogt, Mickus, Santiago, & Herman, 2008) as a significant predictor of positive attitudes . Lovell, 2006;, McKinlay and Cowan, 2003; Nochajski et al, 2009, Lee, Reuben and Ferrell, 2005; and McKinlay and Cowan, 2003 also reported personal experiences of medical students and student nurses had a significant association with their attitudes towards their older patients. Similar to our study Voogt, Mickus, Santiago, & Herman, 2008; O'Hanlon and Brookover, 2002 also reported that amount of interaction with OR was not a predictor of attitudes. On the contrary, Lee 2009, observed a positive association between interaction and attitudes but not between quality of experiences and attitudes. Positive attitude towards older people has been reported to be related to more experience and completion of geriatric courses in various studies as well (Cottle and Glover, 2007; Swanlund and Kujath, 2012; Wurtele and Maruyama, 2012).

A growing number of college students and graduates will be needed to provide informal care to their older relatives due to economic downturn and growing number of elderly hence it is quiet essential to assess their attitudes towards the older population which influences the quality of care provided an in return impacts health of both caregivers as well as care receivers.

Preparedness to take care of older relatives in future

An extensive literature has identified the physical, mental and emotional effects of caregiving on the overall health of the caregivers as well as care receivers (Cannuscio et al, 2004; Chritakis and Allison, 2006; Fredman, Cauley, Hochberg, Ensrud, & Doros, 2010; Norton et al, 2010; Haley, Roth, Howard, & Safford, 2010; Sparrengerger et al, 2009). Other literature has also identified preparedness for caregiving as critical determinant of quality of care to the elderly as well as essential for overall well-being of the caregiver (Scherbring, 2002; Shyu et al, 2010; and Schumacher, Stewart and Archbold, 2007).The preparedness of the college students to serve as informal caregivers for their older relatives was assessed using the CPS. Although, used for the first time among the college population, CPS yielded a high reliability which adds to the body of literature which has used this scale extensively among active caregivers (Cronbach's alpha = 0.85, Ducharme, 2011) The study identified previous informal caregiving experience, quality of experience with older relatives and perceived behavioral control to provide informal care influenced the preparedness scores.

As noted earlier the scale has never been used among the population which identifies as future caregivers, however, the study results are comparable with the literature that identified preparedness for caregiving among active caregivers. The mean preparedness score of the study participants (1.858) lower than the studies that

reported mean preparedness score for active caregivers (Scherbring, 2002, and Ducharme et al, 2011), but was comparable (Mean= 1.80, SD = 0.70) with the study that identified future caregiving preparedness (Sorensen, Wenster, & Roggman, 2002) and higher than the active caregivers in the study by Silver et al, 2004 (M = 1.72, SD=0.77). A voluminous literature included the factors affecting preparedness of caregivers. The liner multiple regression analysis in this study reported a significant association between the preparedness scores and having provided informal care in the past, quality of experience and perceived behavioral control that was contrary with the findings reported by Silver et al, 2004 who did not find any relationship between low preparedness scores and providing caregiving tasks but noted that greater competence as caregiver was significantly associated with greater overall preparedness. Although Henriksson and Arestedt, 2013 identified females to be better prepared as caregivers but our study could not establish a relationship between preparedness and any other demographic variables. The relationship between having provided informal caregiving in the past had a positive impact on the preparedness scores and the students who have provided IADLs, IDL and other activities scored significantly higher that the students who reported not providing informal care in the past. About one third of the study participants reported feeling prepared or pretty well prepared for the caregiving activities including physical, and emotional needs. Our study also noted that low preparedness for caregiving had a negative correlation with positive attitude and hence better preparedness to serve as informal caregivers may influence the attitude towards OR.

Constructs of Theory of Planned Behavior

The study incorporated TPB constructs; attitudes, perceived behavioral control and subjective norms to explore intentions of college students for providing informal

care to their OR. Participants generally had stronger intentions to serve as informal caregivers in line with McKinlay and Cowan, 2003 study of student nurses' attitudes towards working with older patients. Our study echoes the results of various studies that validate the relationship between intentions, attitude, subjective norms and perceived behavioral control. Our study partially confirmed the results of McKinlay and Cowan, 2003 who conducted hierarchical analyses and reported mainly the attitudes, predicted the intentions, and subjective norms had small but significant association, but behavioral control was not significantly associated with intentions. Consistent with Lee 2009, hierarchal regression results of our study reported that positive attitude, subjective norms and perceived behavioral control are positively associated with intentions to provide informal caregiving. Besides reporting a positive attitude, our participants also reported high levels of confidence to serve as informal caregivers. Thus assuming a strengthened resiliency and reduced vulnerability to negative consequences of serving as informal caregiver even though they lack preparedness for the role.

Lower percentage reported influence/pressure of family, culture and, religion on their perceptions to serve as informal caregiver and majority perceived the role as important for their own personal fulfillment and reported over all high intention scores to serve as informal caregiver to their OR. As intentions are a central factor in the TPB that are assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior. As a general rule, the stronger the intention to engage in a behavior, the more likely should be its performance (Fishbein

and Aizen 2010). Thus, the findings of our study show that in the present context, TPB offers a satisfactory explanation of students' intentions to serve as informal caregivers.

Our study aligns with the provisions, and opportunities, the new health care reform law—the Patient Protection and Affordable Care Act includes for informal family caregivers. The law advances efforts to better prepare family caregivers to perform their care tasks and enhances opportunities to expand home and community-based services and provide better support to caregiving families. The law explicitly mentions the term “caregiver” 46 times and “family caregiver” 11 times. The study also supports the earlier evidence of more family caregivers assisting OR than in past (Doty, 2010; Houser, Gibson, Redfoot, & AARP, 2011) .Although the literature has frequently reported the burden and stress of caregiving Hogstel, Curry and Walker (2005) have identified the benefits of informal family caregiving as resolving past hurts and conflicts, celebrating small things, developing personal strength and aging readiness and experiencing the older person's full life. These can motivate young adults to get more involved with their older relatives, develop healthy relationship and attitudes, and provide care to the older generation.

Implications and Future Research

As there are not many previous studies that identify college students as informal caregivers and recognize their preparedness for the role it is anticipated that this study will provide basis for further exploration. One of the salient findings of the study is that TPB can be used to explore the intentions of informal caregiving and thus has implications of including broader population in terms of gender, age, and ethnicity. The results report that as the preparedness to take care of the older relatives increases students report a positive attitude towards their OR. Therefore, there is an opportunity

among academic and health professionals to better prepare this group in order to develop better attitudes and in turn improve their intentions to provide informal care to their OR in future. The low preparedness scores has the potential to be of practical utility to the academic professionals in context of planning curriculum, interventions and study materials for the typical college population to help them prepare for the role of informal caregiver. The study results have implications for health educators, patient educators, and health care providers to involve and educate this young adult population in providing care to older population.

A future qualitative interview research will give detailed information about the topics college students identify in order to provide informal care to their OR. An extensive study including larger sample size and equal number of females and males is recommended to further understand any gender differences between attitudes and preparedness. Also, although the study results did not have any significant association with the five different ethnic groups but a further analysis with just two groups including Whites and Non-Whites will be interesting. Although currently, college students are not involved in informal caregiving but this population is the future workforce as well who will face the challenge of balancing work and their personal responsibilities hence providing them with information and resources early on will impact their future stress as well as burden levels.

Recommendations

The study is pioneer in the field by identifying preparedness of college students for informal caregiving. The study results can form the basis for future qualitative research to identify needs of college students' in order to be prepared for the informal caregiver role. Multiple site studies are recommended to understand the preparedness for

informal caregiving in a larger population. The study also presents a scope for developing intervention studies with small lessons to prepare the students for the challenges and later assessing its impact. Additionally, the study expanded the population to assess attitudes of typical college students. An extensive literature has reported education intervention studies to improve attitudes of medical/health major students towards older population, which now can be extended to the typical college population as well. This study echoes the recommendations of Lee 2009, who supported the movement to induce positive feelings and intentions towards older adults among younger generation. The positive attitude towards older people prevents them from being isolated and mistreated. Similarly, academics as well as health professionals can promote perceived behavioral control that has a strong association with intentions and preparedness for informal caregiving among the student population by providing support and information. The study also underscores the relevance of quality of experiences with attitude and preparedness which can be improved by efforts of family and other members of the society.

Conclusions

The study was set to explore the attitudes of college students towards their older relatives and assess their preparedness for the role of informal caregivers. The study also sought to know whether the theory of planned behavior could predict the intentions of the college students to provide informal care to their older relatives in future. Although the college students reported a positive attitude towards their older generation but they scored low on their preparedness to take care of them. The theory of planned behavior constructs including attitude, subjective norms, and perceived behavioral control contributed towards the intentions to serve as informal caregivers by the college

students. The study identified no differences in attitudes towards older population based on gender, class, SES, age, and major. The quality of experiences with older relatives contributed towards better preparedness as informal caregivers as well as better attitudes towards older relatives. High preparedness scores were also associated with perceived behavioral control. The study results have implications for health educators, patient educators, and health care providers to involve and educate this young adult population in providing care to older population. The results of the study indicate not many college students are providing assistance with ADL, IADL or other activities related with caregiving to their older relatives but have a positive attitude towards them. This has implications for the geriatrics health care providers be informed about the attitudes and role of young population and develop strategies to assist this particular group in taking better care of the older generation in future. In conclusion, it must be noted that the study reported here has explored the attitudes, preparedness and intentions of the college students and makes no attempt to determine the extent to which intentions are translated into actual informal caregiving behavior, and how they serve as caregivers, therefore further research is recommended to measure actual informal caregiving behavior in the future.

APPENDIX A
RELIABILITY ANALYSIS TABLES

Table A-1 Attitude towards older relatives: Item-Total Statistics

item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Cheerful	53.86	642.199	.784	.781	.972
Pleasant	53.94	642.836	.833	.842	.972
Friendly	54.06	644.825	.848	.845	.972
Kind	54.14	644.967	.846	.859	.972
Sweet	54.03	641.012	.860	.855	.972
Nice	54.08	643.390	.842	.823	.972
Tolerant	53.44	636.837	.731	.673	.973
Cooperative	53.48	636.267	.781	.745	.972
Fair	53.73	639.447	.815	.721	.972
Grateful	53.95	637.596	.826	.734	.972
Unselfish	53.87	639.253	.806	.750	.972
Considerate	53.90	639.367	.818	.786	.972
Patient	53.40	632.752	.758	.673	.972
Positive	53.72	634.086	.834	.762	.972
Calm	53.62	638.459	.764	.642	.972
Thoughtful	54.01	642.034	.840	.771	.972
Humble	53.93	641.164	.809	.696	.972
Frugal	53.11	663.856	.306	.172	.977
Flexible	53.31	637.199	.715	.612	.973
Good	54.09	643.735	.824	.753	.972
Hopeful	53.75	637.865	.806	.812	.972
Optimistic	53.67	635.688	.786	.801	.972
Trustful	54.07	640.056	.813	.736	.972
Safe	54.19	651.735	.712	.630	.973

Table A-2 Reliability Analysis for Caregiver Preparedness Scale

item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Physical needs	13.20	46.383	.764	.624	.920
Emotional needs	13.01	48.227	.681	.516	.926
Set up services	13.16	46.622	.766	.607	.920
Handle stress	13.23	46.607	.746	.585	.921
Pleasant	13.06	46.211	.788	.643	.918
Handle ER	12.99	46.721	.761	.607	.920
Information	13.11	46.865	.712	.573	.924
Overall	13.09	46.207	.845	.723	.914

Table A-3 Reliability Analysis for Intentions Scale

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
IDL	18.81	16.619	.799	.684	.926
ADL	19.08	16.848	.737	.623	.935
Emotional care	18.73	17.085	.830	.693	.922
Set up services	18.68	16.914	.843	.761	.920
Handle ER	18.58	17.425	.811	.722	.925
Info from health system	18.65	16.799	.859	.794	.918

Table A-4 Reliability Analysis for Subjective Norms Scale

item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Family expectations	13.68	12.564	.722	.529	.827
Culture	13.55	12.276	.742	.626	.821
Religion	13.74	13.020	.710	.579	.830
Obligation	13.57	12.843	.706	.508	.831
Personal fulfillment	13.08	14.625	.548	.324	.867

Table A-5 Reliability Analysis for Perceived Behavioral control

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
IDL	27.14	42.548	.667	.531	.922
ADL	27.65	41.125	.686	.554	.921
Emotional care	27.38	42.075	.669	.470	.922
Set up services	27.38	41.236	.721	.598	.918
Stress	27.53	40.569	.779	.657	.915
Pleasant	27.27	41.599	.784	.629	.915
Handle ER	27.34	41.116	.726	.574	.918
Info from health system	27.40	40.917	.716	.595	.919
Overall	27.37	40.357	.853	.744	.910

APPENDIX B
 INSTITUTIONAL REVIEW BOARD SUMMER 2013 SUBMISSION FORM

UFIRB 02 – Social and Behavioral Research			
Protocol Submission Form			
<i>This form must be typed. Send this form and the supporting documents to IRB02, PO Box 112250, Gainesville, FL 32611. Should you have questions about completing this form, call 352-392-0433.</i>			
Title of Protocol:	ATTITUDE TOWARDS, AND CAREGIVING PREPAREDNESS FOR, THEIR OLDER RELATIVES AMONG COLLEGE STUDENTS		
Principal Investigator:	Gungeet Joshi	UFID: [REDACTED]	
Degree / Title:	Ph.D, Candidate	Mailing Address: [REDACTED]	Email: [REDACTED]
Department:	Health Education and Behavior	Telephone #: [REDACTED]	
Co-Investigator(s):		UFID#:	Email:
Supervisor (If PI is student):	Dr. Christine B. Stopka,	UFID#: [REDACTED]	
Degree / Title:	Ph.D/Professor	Mailing Address: [REDACTED]	Email : [REDACTED]
Department:	Health Education and Behavior	Telephone #: [REDACTED]	
Date of Proposed Research:	March 1, 2013- March 30, 2014		
Source of Funding (A copy of the grant proposal must be submitted with this protocol if funding is involved):	N/A		
Scientific Purpose of the Study: The older population in United States is growing in number each year. As of 2010, 40.4 million citizens representing 13% of U.S population are 65 years or older (DHHS, 2011). About 60% of this population will manage a chronic disease by 2030. Family caregivers are the majority (83%) among available caregivers (Family Caregiver Alliance [FCA], 2005; Healthy people 2020). It is anticipated that a larger proportion of adult children are likely to take care of their older relatives. A few research studies have looked at the attitude of young adults towards their older relatives, but none has looked specifically at college student's preparedness to take care of their older family. The goal of the study is to understand the attitude of college students towards their older relatives and how well prepared are they to take care of their older relatives.			

<p>Describe the Research Methodology in Non-Technical Language: This Cross-sectional exploratory survey research design study will survey 2000 full-time enrolled college students at the University of Florida.</p> <p>The students will be asked to complete an online survey including Semantic attitude scale, Preparedness for caregiving scale and a demographic profile.</p>					
<p>Describe Potential Benefits: There are no direct benefits to the participants. However, the data from the study will be used to develop programs and resources that can help students at UF to prepare better with their caregiving responsibilities.</p>					
<p>Describe Potential Risks: There is no more than minimal risk involved in this study.</p>					
<p>Describe How Participant(s) Will Be Recruited: The study is exploratory in nature hence we need a university representative sample. The following classes were selected to collect the sample data because students enrolled in these classes represent different majors and academic classifications in the University. During the Summer B and Fall 2013 semesters, 225 students in <u>APK 2100C</u>, by Dr. Mark. D. Tillman, 800 students in Medical and Terminology sections HSC 5536, by Dr. C. <u>Stopka</u> and 200 in Personal and family health HSC 3102 by Dr. A. <u>Delisle</u> will be requested to complete in-class survey. Survey will take 10-15 minutes to complete. Students will receive up to 2 points of extra credit on their final grade as a compensation for their time irrespective of their completion of the survey.</p> <p>Paper-pencil will be used to collect data and identifying information including name or UF-id will not be collected at any given point. A consent form will be provided before the actual survey for students to sign as agreement to participate. The completed surveys will be stored in a locked cabinet of the researcher office.</p>					
Maximum Number of Participants (to be approached with consent)	1000	Age Range of Participants :	18-40 years	Amount of Compensation/ course credit:	2 extra points.
<p>Describe the Informed Consent Process. Copy of online consent form is attached.</p>					
<p>(SIGNATURE SECTION)</p>					
Principal Investigator(s) Signature:					Date:
Co-Investigator(s) Signature(s):					Date:
Supervisor's Signature (if PI is a student):					Date:
Department Chair Signature:					Date:

DATE: May 30, 2013

TO: Gungeet Joshi
PO Box 118210
Campus

FROM: Ira S. Fischler, PhD; Chair 
University of Florida
Institutional Review Board

SUBJECT: **Revision of Protocol #2013-U-0278**
Caregiving Preparedness and Attitude towards their Older Relatives among
College Students

SPONSOR: None

The request to revise the above referenced protocol has been reviewed and approved. Approval of this study is valid through April 1, 2014.

The Board must review any further revisions to this protocol, including the need to increase the number of participants authorized prior to implementation.

IF:dl

- *Reworded title*
- *Changed recruitment of the participants (will recruit in various classes and ps will complete paper-pencil survey)*
- *Revised consent*

APPENDIX C
CONSENT FORM

You are invited to participate in this anonymous survey. The study aims to assess the attitude of college students towards older relatives and their preparedness levels to take care of their older relatives. Completing the survey is voluntary. There are no anticipated risks for completing the survey and there are no direct benefits. However, through your participation, we will be able to understand attitudes and preparation of college students to take care of their older relatives.

You will receive two extra points on your final exam grade as a compensation for your time. If you are not comfortable answering a question, just leave it blank. The survey will take about 10-15 minutes to complete. The survey is anonymous and any identifying information including your name or UF-ID, will not be collected.

If you have any questions about this study, please contact the principal researcher, Gungeet Joshi, Department of Health Education and Behavior, FLG 65, (352) 294-1815, or contact the University of Florida's Institutional Review Board at IRB02 Office, Box 112250, University of Florida, Gainesville, FL 32611-2250 (352) 392-0433.

Please indicate your acceptance to participate.

I agree, Signature _____

I disagree, Signature _____

APPENDIX D SURVEY FORM

Please respond to the following questions thinking about your older relatives 65+ years old. Older relatives include: Father, Mother, Grandmother, Grandfather, Mother-in-law, Father-in-law, Aunt, Uncle, Step Parents, God-Father, and God-Mother.

Unpaid care implies that you help your older relatives without being paid for assisting them with household chores, grocery, yard-work, medication, driving them, help them with walking, climbing stairs, move in or out of bed, manage their finances etc.

1. In the last 12 months, have you provided **Unpaid care** to any of your **older relatives (65+)** to help them take care of themselves because of some physical or mental illness, disability, or frailty?

— Yes

— No

2. How likely are you to be responsible for **older relatives (65+)**, in the future?

— Very unlikely

— Somewhat Unlikely

— Undecided

— Somewhat Likely

— Very Likely

3. Please tell us more about the family member whom you might need to take care of in your future? **Choose all that apply...**

— Father

— Mother

— Step Parents

— Grandfather

— Grandmother

— Great-Grandparents

— Father-in-law

— Mother-in-law

— Uncle

— Aunt

— Other relative _____

4. How much interaction do you have with your **older relatives (65+)**?

— They are not alive

— Little or no contact

— Few interactions

— Intermittent contact several times a year

— Frequent contact on regular basis

— Significant contact/lived in same household

5. Please place a check mark that best represents your feelings about **Any Older Adults (65+)**.

It is your first impression or immediate feeling that is the most important. **Please be sure to mark each item on the scale: (#'s 1-3 represent positive attitudes; #'s 5-7 represent negative attitudes; 4N = Neutral).**

	1+ve	2+ve	3+ve	4N	5-ve	6-ve	7-ve	
Cheerful	___	___	___	___	___	___	___	Crabby
Pleasant	___	___	___	___	___	___	___	Unpleasant
Friendly	___	___	___	___	___	___	___	Unfriendly
Kind	___	___	___	___	___	___	___	Cruel
Sweet	___	___	___	___	___	___	___	Sour
Nice	___	___	___	___	___	___	___	Mean
Tolerant	___	___	___	___	___	___	___	Intolerant
Cooperative	___	___	___	___	___	___	___	Uncooperative
Fair	___	___	___	___	___	___	___	Unfair
Grateful	___	___	___	___	___	___	___	Ungrateful
Unselfish	___	___	___	___	___	___	___	Selfish
Considerate	___	___	___	___	___	___	___	Inconsiderate
Patient	___	___	___	___	___	___	___	Impatient
Positive	___	___	___	___	___	___	___	Negative
Calm	___	___	___	___	___	___	___	Agitated
Thoughtful	___	___	___	___	___	___	___	Thoughtless
Humble	___	___	___	___	___	___	___	Arrogant
Frugal	___	___	___	___	___	___	___	Generous
Flexible	___	___	___	___	___	___	___	Inflexible
Good	___	___	___	___	___	___	___	Bad
Hopeful	___	___	___	___	___	___	___	Despairing
Optimistic	___	___	___	___	___	___	___	Pessimistic
Trustful	___	___	___	___	___	___	___	Suspicious
Safe	___	___	___	___	___	___	___	Dangerous

6. How would you describe the quality of experiences with your **older relatives (65+)**?

- Negative
- Very negative
- Neutral
- Positive
- Very positive

7. How would you describe the quality of experiences with **any other older adults (65+)**?

- Negative
- Very negative
- Neutral
- Positive
- Very positive

8a. Please Answer the following based on how prepared you think you are to **take care of your older relatives in the future?**

	Not at all prepared	Somewhat prepared	Not too well prepared	pretty well prepared	very well prepared
How well are you prepared to take care of your older family member's physical needs					
How well are you prepared to take care of your older family member's emotional needs					
How well prepared do you think you are to find out about and set up services for him or her?					
How well prepared do you think you are for the stress of caregiving					
How well prepared do you think you are to make caregiving activities pleasant for both you and your family member?					
How well prepared do you think you are to respond to and handle emergencies that involve him or her?					
How well prepared do you think you are to get help and information you need from the health care system?					
Overall, How well prepared do you think you are to care for your older family member?					

8b. Is there anything specific you would like to be better prepared for, to take care of your **older relatives (65+)**?

9. How do you perceive/ think about **taking care of your older relatives (65+) in the future?**

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
My family expects me to take care of my older relatives .					
In my culture, It is responsibility of young adults to take care of older relatives .					
In my religion, It is responsibility of young adults to take care of older relatives .					
It is an obligation for me to take care of my older relatives					
It is important for my own Personal Fulfillment to take care of my older relatives .					

10. How confident do you feel about taking care of your **older relatives (65+) in the future?**

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I feel confident of assisting my older relatives (65+) in the future with instrumental daily activities including giving medication, cooking, shopping, driving, and laundry.					
I feel confident of assisting my older relatives (65+) in the future with activities of daily living including bathing, feeding, grooming, walking.					
I feel confident of taking care of emotional needs of my older relatives (65+) in the in future.					
I feel confident to finding out about and set up services for my older relatives (65+) .					
I feel confident to manage the stress of providing care to my older relatives (65+) .					
I feel confident to make care giving activities pleasant for both me and my older relatives (65+) .					
I feel confident to respond to and handle emergencies that involve my older relatives (65+) .					
I feel confident to get help and information I need from the health care system in order to take care of my older relatives (65+) .					
Over all I feel confident in taking care of my older relatives (65+) in the future.					

11. In the past 12 months, have you assisted any **older relatives (65+)** with any of the following instrumental activities of daily living? **Choose all that apply.**

- Giving medications/pills
- Manage finances
- Grocery shopping
- House work such as dishes, laundry
- Preparing meals
- Transportation (driving, helping arrange for transportation, or accompanying on public transit)
- Arranging or supervising paid services (nurses, aides, Meals on Wheels)
- None

12. In the past 12 months, have you assisted any **older relatives (65+)** with any of the following? **Choose all that apply.**

- Made a medical appointment for him or her
- Went with him or her to a medical appointment
- Helped him or her in understanding written information from doctor's office or insurance
- Acted as a translator at a medical or social service visit
- Helped with filling out a medical or insurance form
- Helped him or her to understand the instructions on how to take a medication
- Explained the side effects of a medication
- Gone online to find health information for him or her
- None

13. In the past 12 months, have you assisted any **older relatives (65+)** with any of the following activities of daily living? **Choose all that apply.**

- Bathing
- Getting dressed
- Feeding
- Getting in and out of beds or chairs
- Help with toileting
- Dealing with incontinence or diapers
- Walking
- Climbing stairs
- None

14. Please Answer the following based on your intentions to take care of your older relatives in future?

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I intend to assist my older relatives (65+) with instrumental daily activities including giving medication, cooking, shopping, driving, and laundry.					
I intend to assist my older relatives (65+) with activities of daily living including bathing, feeding, grooming, walking.					
I intend to take care of emotional needs of my older relatives (65+) .					
I intend to find out about and set up services for my older relatives (65+) .					
I intend to respond to and handle emergencies of my older relatives (65+) .					
I intend to get help and information I need from the health care system in order to take care of my older relatives (65+) .					

15. Which of the following are you most likely to use in order to assess and share information about providing care to your **older relatives (65+)**? **(Choose all that apply)**

- Blogs Books/Magazines Websites Facebook Twitter Other (Please write) _____

16. Please place a check mark that best represents your feelings about your **OWN older relatives** including **Parents, Grandparents, Aunts, Uncles, God-Father God-Mother, In-laws, Step Parents, etc.**

It is your first impression or immediate feeling that is the most important. **Please be sure to mark each item on the scale: (#'s 1-3 represent positive attitudes; #'s 5-7 represent negative attitudes; 4N = Neutral).**

	1+ve	2+ve	3+ve	4N	5-ve	6-ve	7-ve	
Cheerful	___	___	___	___	___	___	___	Crabby
Pleasant	___	___	___	___	___	___	___	Unpleasant
Friendly	___	___	___	___	___	___	___	Unfriendly
Kind	___	___	___	___	___	___	___	Cruel
Sweet	___	___	___	___	___	___	___	Sour
Nice	___	___	___	___	___	___	___	Mean
Tolerant	___	___	___	___	___	___	___	Intolerant
Cooperative	___	___	___	___	___	___	___	Uncooperative
Fair	___	___	___	___	___	___	___	Unfair
Grateful	___	___	___	___	___	___	___	Ungrateful
Unselfish	___	___	___	___	___	___	___	Selfish
Considerate	___	___	___	___	___	___	___	Inconsiderate
Patient	___	___	___	___	___	___	___	Impatient
Positive	___	___	___	___	___	___	___	Negative
Calm	___	___	___	___	___	___	___	Agitated
Thoughtful	___	___	___	___	___	___	___	Thoughtless
Humble	___	___	___	___	___	___	___	Arrogant
Frugal	___	___	___	___	___	___	___	Generous
Flexible	___	___	___	___	___	___	___	Inflexible
Good	___	___	___	___	___	___	___	Bad
Hopeful	___	___	___	___	___	___	___	Despairing
Optimistic	___	___	___	___	___	___	___	Pessimistic
Trustful	___	___	___	___	___	___	___	Suspicious
Safe	___	___	___	___	___	___	___	Dangerous

17. Do you own a Smart Phone?

- Yes
- No

18. Do you own an I-Pad/Tablet?

- Yes
- No

19. How receptive would you be to using a smart phone for applications to help you take care of your **older relatives (65+)**?

- Very receptive
- Somewhat receptive
- A little receptive
- Not receptive

20. How receptive would you be to using I-Pad /tablet for applications to help you with taking care of your **older relatives**?

- Very receptive
- Somewhat receptive
- A little receptive
- Not receptive

21. What is your academic classification?

Freshman Sophomore Junior Senior Graduate or professional student

22. Are you married?

Yes No

23. What is your gender? Female Male

24. What is your current age? Years Months

25. What is your estimated combined Annual Household income?

Less than 25,000 \$25001-50,000 \$50,001-75,000

\$75,001-100,000 \$100,001-125,000 More than 125,001

26. What is your major? (Please write) _____

27. Which racial or ethnic category best describes you?

- American Indian/Alaska Native Asian Indian
- Black/African American Chinese
- Filipino Japanese
- Korean Pacific Islander
- Spanish/Hispanic/ Latino Vietnamese
- White/Caucasian Multiple-Ethnic/ Multi-Racial

Thank You!

LIST OF REFERENCES

- Adamson, J., & Donovan, J. (2005). "Normal disruption": South Asian and African/Caribbean relatives for an older family member in the UK. *Social Science and Medicine*, 60, 37-48.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology*, 22(5), 453-474.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Ajzen, I. (2002). *Constructing a TPB Questionnaire: Conceptual and Methodological Considerations*. Retrieved from www.people.umass.edu/aizen/pdf/tpb.measurement.pdf
- Ajzen, I., & Cote, N. G. (2008). Attitudes and the prediction of behavior. *Attitudes and Attitude Change*, 289-311.
- Ali, L., Ahlström, B.H., Rot, B.K., & Skärsäter, I. (2012). Daily life for young adults who care for a person with mental illness: a qualitative study. *Journal of Psychiatric and Mental Health Nursing*, 19 (7), 610–617.
- American Hospital Association. (2007). *When I'm 64: How boomers will change health care*. Long Beach, CA: First Consulting Group.
- American Association of Retired Person. (2011). *Public Policy Institute*. Retrieved from www.aarp.org/ppi.
- Anngela-Cole, L., & Hilton, J. M. (2009). The role of attitudes and culture in family caregiving for older adults. *Home Health Care Services Quarterly*, 28(2-3), 59-83
- Arbaje, A. I., Wolff, J. L., Yu, Q., Powe, N. R., Anderson, G. F., & Boulton, C. (2008). Postdischarge environmental and socioeconomic factors and the likelihood of early hospital readmission among community-dwelling medicare beneficiaries. *The Gerontologist*, 48(4), 495-504.
- Archbold, G.P., Stewart, B.J., Greenlick, M.R., & Harvath T. (1990). Mutuality and preparedness as predictors of caregiver role strain. *Research in Nursing and Health*, 13, 375–384.
- Arno, P. S., Levine, C., & Memmott, M. M. (1999). The economic value of informal caregiving. *Health Affairs*, 18, 182-188.

- Association of American Retired Persons (2009). The economic value of family caregiving in 2009. Retrieved from <http://www.aarp.org/relationships/caregiving/info-07-2011/valuing-the-invaluable.html>.
- Auerbach, D.I., Buerhaus, P., & Staiger, D.O. (2007). Better late than never: Workforce supply implications of later entry into nursing. *Health Affairs*, 26 (1), 178-185.
- Aumann, K., Galinsky, E., Sakai, K., Brown, M., & Bond, J.T. (2010). The elder care study: everyday realities and wishes for change. New York, NY: Families and Work Institute.
- Au, A., Lau, K. M., Sit, E., Cheung, G., Lai, M. K., Wong, S. K. A., & Fok, D. (2010). The role of self-efficacy in the Alzheimer's family caregiver stress process: A partial mediator between physical health and depressive symptoms. *Clinical Gerontologist*, 33(4), 298-315.
- Ayalong, L. (2004). Cultural variants of caregiving or the culture of caregiving. *Journal of Cultural Diversity*, 11, 131-138.
- Balik, B., Conway, J., Zipperer, L., & Watson, J. (2011). Achieving an exceptional patient and family experience of inpatient hospital care. IHI Innovation Series White Paper. Cambridge, MA: Institute for Healthcare Improvement.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*.
- Bandura, A. (2001). Social Cognitive Theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26
- Baus, R., Dysart-Gale, D., & Haven, P. (2005). Caregiving and social support: A twenty-first century challenge for college students. *Communication Quarterly*, 53(2), 125-142.
- Brougham, R.R., Zail, M.C., Mendoza, M.C & Miller, J.R. (2009). Stress, sex differences, and coping strategies among college students. *Current Psychology*. 28, 85-97.
- Becker, S. (2007). Global perspectives on children's unpaid caregiving in the family: research and policy on 'Young Carers' in the UK, Australia, the USA and Sub-Saharan Africa. *Global social policy*, 7 (1), 23-50.
- Bernard, M. A., McAuley, W. J., Belzer, J. A., & Neal, K. S. (2003). An evaluation of a Low-Intensity intervention to introduce medical students to healthy older people. *Journal of the American Geriatrics Society*, 51(3), 419-423.

- Bookman, A., & Kimbrel, D. (2011). Families and elder care in the twenty-first century. *The Future of Children*, 21(2), 117-140.
- Browne, K., Roseman, D., Shaller, D., & Edgman-Levitan, S. (2010). Analysis and commentary measuring patient experience as a strategy for improving primary care. *Health Affairs*, 29(5), 921-925.
- Cannuscio, C. C., Colditz, G. A., Rimm, E. B., Berkman, L. F., Jones, C. P., & Kawachi, I. (2004). Employment status, social ties, and caregivers' mental health. *Social Science and Medicine*, 58, 1247-1256.
- Carter, J.H., Stewart, B.J., Archbold, P.G., Inoue, I., Jaglin, J., & Lannon, M. (1998). Living with a person who has Parkinson's disease: The spouse's perspective by stage of disease. *Movement Disorders*, 13(1), 20-28.
- Carter-Parker, K., Edwards, K. A., & McCleary-Jones, V. (2012). Correlates of physical activity and the theory of planned behavior between african american women who are physically active and those who are not. *The ABNF Journal: Official Journal of the Association of Black Nursing Faculty in Higher Education, Inc*, 23(3), 51-58.
- Centers for Disease Control and Prevention. (2012). Multiple Chronic Conditions Among Adults Aged 45 and Over: Trends Over the Past 10 Years. Retrieved from <http://www.cdc.gov/nchs/data/databriefs/db100.html>.
- Chase, C. A. (2011). An intergenerational e-mail pal project on attitudes of college students toward older adults. *Educational Gerontology*, 37(1), 27-37.
- Charles, G. (2011). Bringing young carers out of the shadows. *Reclaiming Children and Youth*, 20(3), 26-30.
- Christakis, N. A., & Allison, P. D. (2006). Mortality after the hospitalization of a spouse. *New England Journal of Medicine*, 354(7), 719-730.
- Cohen, B. H. (2001). *Explaining psychological statistics* (2nd Ed.). New York: Wiley.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd Ed.). Hillsdale, NJ: Erlbaum.
- Coleman, E. A. (2003). Falling through the cracks: Challenges and opportunities for improving transitional care for persons with continuous complex care needs. *Journal of the American Geriatrics Society*, 51(4), 549-555.
- Coon, D. W., Rubert, M., Solano, N., Mausbach, B., Kraemer, H., Arguelles, T., Haley, W. E., Thompson, L. W., & Gallagher-Thompson, D. (2004). Well-being, appraisal, and coping in Latina and Caucasian female dementia caregivers: Findings from the REACH study. *Aging and Mental Health*, 8, 330-345.

- Coon, D. W., Thompson, L., Steffen, A., Sorocco, K., & Gallagher-Thompson, D. (2003). Anger and depression management: Psycho educational skill training interventions for women caregivers of a relative with dementia. *The Gerontologist*, 43, 678-689.
- Cottle, N., & Glover, R. (2007). Combating ageism: Change in student knowledge and attitudes regarding aging. *Educational Gerontology*, 33(6), 501–512.
- Coughlin, J. (2010). Estimating the impact of caregiving and employment on well-being, outcomes and insights in health management, 2, and 1.
- Council on Graduate Medical Education (2005). 16th Report: COGME physician workforce policy guidelines for the United States, 2000-2020. Retrieved from <http://www.cogme.gov/report16.html>.
- Dellmann-Jenkins, M., Blankemeyer, M., & Pinkard, O. (2000). Young adult children and grandchildren in primary caregiver roles to older relatives and their service needs. *Family Relations*, 49(2), 177-186.
- Department of Health and Human Services. (1998). Informal caregiving: compassion in action. Retrieved from <http://aspe.hhs.gov/daltcp/reports/carebro2.pdf>.
- Department of Health and Human Services. (2011). Informal caregiving: compassion in action. Retrieved from <http://aspe.hhs.gov/daltcp/reports/carebro2.pdf>
- Depp, C., Sorocco, K., Kasl-Godley, J., Thompson, L., Rabinowitz, Y., & Gallagher-Thompson, D. (2005). Caregiver self-efficacy, ethnicity, and kinship differences in dementia caregivers. *American Journal of Geriatric Psych*, 13(9), 787-794.
- [Dew-Reeves, S.E., & Athay, M.M. \(2012\). Validation and use of the youth and caregiver treatment outcome expectations scale \(toes\) to assess the relationships between expectations, pretreatment characteristics, and outcomes. Administration and Policy in Mental Health and Mental Health Services Research. 39, 90-103.](#)
- Dillman, D.A., Smyth, J.D., & Christian, L.M. (2009). Internet, mail, and mixed-mode surveys: The tailored design method (3rd Ed.). Hoboken, New Jersey: John Wiley and Sons, Inc
- Dilworth-Anderson, P., Goodwin, P. Y., & Williams, S. W. (2004). Can culture help explain the physical health effects of caregiving over time among African American caregivers? *Journal of Gerontology: Social Sciences*, 59B, S138-S145.
- Dilworth-Anderson, P., Brummette, B. H., Goodwin, P., Williams, S. W., Williams, R. B., & Siegler, I. C. (2005). Effect of race on cultural justifications for caregiving. *Journal of Gerontology: Social Sciences*, 60B, S257-S262.
- Donelan, K., Hill, C. A., Hoffman, C., Scoles, K., Feldman, P. H., Levine, C., & Gould, D. (2002). Challenged to care: Informal caregivers in a changing health system. *Health Affairs*, 21(4), 222-231.

- Doty, P. (2010). The evolving balance of formal and informal, institutional and non-institutional long-term care for older Americans: A thirty-year perspective. *Public Policy and Aging Report*, 20(1), 3-9.
- Ducharme, F., Lévesque, L., Lachance, L., Kergoat, M., & Coulombe, R. (2011). Challenges associated with transition to caregiver role following diagnostic disclosure of Alzheimer disease: A descriptive study. *International Journal of Nursing Studies*, 48(9), 1109-1119.
- Eagly & Chaiken, (1993). *The Psychology of Attitudes*, Fort Worth, TX: Harcourt Brace Jovanovich. - See more at:
<http://www.simplypsychology.org/attitudes.html#sthash.K5fdC6U5.dpuf>
- Eiken, S., Sredl, K., Burwell, B., & Gold, L. (2010). *Medicaid Long Term Care Expenditures FY 2009*. Cambridge, MA: Thomson Reuters.
- Englewood Cliffs, NJ: Prentice Hall. Baus, R., Dysart-Gale, D., & Haven, P. (2005). Caregiving and social support: A twenty-first century challenge for college students. *Communication Quarterly*, 53(2), 125-142.
- Family Caregiver Alliance. (2005). Family caregiver alliance, fact sheet: selected caregiver statistics, 2005. Retrieved from
http://www.caregiver.org/caregiver/jsp/content_node.jsp?nodeid=439
- Federal Interagency Forum on Aging Related Statistics. (2010). *Older Americans 2010: Key Indicators of Well Being*. Retrieved from
www.agingstats.gov/agingstatsdotnet/Main_Site/Data/2010_Documents/Docs/OA_2010.pdf.
- Feinberg, L., Reinhard, S. C., Houser, A., & Choula, R. (2011). *Valuing the invaluable: 2011 update the growing contributions and costs of family caregiving*.
- Feinberg, L & Reamy, A.L. (2011). *Health Reform Law Creates New Opportunities to Better Recognize and Support Family Caregivers*. Retrieved from
<http://assets.aarp.org/rgcenter/ppi/ltc/fs239.pdf>
- Field, A. (2011). *Discovering Statistics using SPSS*. California: SAGE.
- Fishbein, M, & Aizen, I. (2009). *Predicting and Changing Behavior: The Reasoned Action Approach*. Psychology Press. Taylor and Francis Group, New York
- Foster, L., Brown, R., Phillips, B., & Carlson, B. L. (2005). Easing the burden of caregiving: The impact of consumer direction on primary informal caregivers in Arkansas. *The Gerontologist*, 45, 474-485.

- Fredman, L., Cauley, J. A., Hochberg, M., Ensrud, K. E., & Doros, G. (2010). Mortality associated with caregiving, general stress, and Caregiving-Related stress in elderly women: Results of Caregiver-Study of osteoporotic fractures. *Journal of the American Geriatrics Society*, 58(5), 937-943.
- Funderburk, B., Damron-Rodriguez, J., Storms, L. L., & Solomon, D. H. (2006). Endurance of undergraduate attitudes toward older adults. *Educational Gerontology*, 32(6), 447-462.
- Gellis, Z. D., Sherman, S., & Lawrance, F. (2003). First year graduate social work students' knowledge of and attitude toward older adults. *Educational Gerontology*, 29(1), 1-16.
- Giarelli, E., McCorkle, R., & Monturo, C. (2003). Caring for a spouse after prostate surgery: The preparedness needs of wives. *Journal of Family Nursing*, 9(4), 453-485.
- Gibson, M.J & Houser, A. (2007). *Valuing the Invaluable: A New look at the economic value of family caregiving*. AARP Public Policy Institute, Washington, DC.
- Glanz, K., Rimer, B. K., & Viswanath, K. (2008). *Health behavior*.
- Gonzales, E., & Morrow-Howell, N. Evaluation report of vital visionaries.
- Gonzales, E., Tan, J., & Morrow-Howell, N. (2010). Assessment of the refined aging semantic differential: Recommendations for enhancing validity. *Journal of Gerontological Social Work*, 53(4), 304-318.
- Gottlieb, B. H., & Rooney, J. A. (2004). Coping effectiveness: Determinants and relevance to the mental health and effect of family caregivers of persons with dementia. *Aging and Mental Health*, 8, 364-373.
- Grant, J.S. (2012). Social Problem-Solving Partnerships with Family Caregivers. *Rehabilitation Nursing*, 24 (6), 254–260
- Hamill, S. B. (2012). Caring for grandparents with Alzheimer's disease help from the "Forgotten" generation. *Journal of Family Issues*, 33(9), 1195-1217.
- Hamilton, J. B., & Sandelowski, M. (2003). Living the golden rule: Reciprocal exchanges among African Americans with cancer. *Qualitative Health Research*, 13, 656-674.
- Hamilton, M.B. (2009). Online Survey Response Rates and Times Background and Guidance for Industry. Retrieved from http://www.supersurvey.com/papers/supersurvey_white_paper_response_rates.pdf

Harwood, J., Hewstone, M., Paolini, S., & Voci, A. (2005). Grandparent-grandchild contact and attitudes toward older adults: Moderator and mediator effects. *Personality and Social Psychology Bulletin*, 31(3), 393-406.

Healthy people 2020.Older adults. Retrieved from <http://healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=31>

Hebert, R., Levesque, L., Vezina, J., Lavoie, J-P., Ducharme, F., Gendron, C., Preville, M., Voyer, L., & Dubois, M. F. (2003). Efficacy of a psychoeducative group program for caregivers of demented persons living at home. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58B, S58-S67.

Henriksson, A., Andershed, B., Benzein, E., & Årestedt, K. (2011). Measuring preparedness, n. competence and rewards for family members in relation to palliative caregiving: A pshychometric evaluation. *Palliative Medicine: A Multiprofessional Journal*.

Henriksson, A., & Årestedt, K. (2013). Exploring factors and caregiver outcomes associated with feelings of preparedness for caregiving in family caregivers in palliative care: A correlational, cross-sectional study. *Palliative Medicine*, 27(7), 639-646.

Henriksson, A., Årestedt, K., Benzein, E., Ternstedt, B., & Andershed, B. (2013). Effects of a support group programme for patients with life-threatening illness during ongoing palliative care. *Palliative Medicine*, 27(3), 257-264.

Henry, B. W., Ozier, A. D., & Johnson, A. (2011). Empathetic responses and attitudes about older adults: How experience with the aging game measures up. *Educational Gerontology*, 37(10), 924-941.

Hogg, M., & Vaughan, G. (2005). *Social Psychology* (4th edition). London: Prentice-Hall. - See more at: <http://www.simplypsychology.org/attitudes.html#sthash.0Rfufj53.dpuf>

Hogstel, M. O., Curry, L. C., & Walker, C. (2005). Caring for older adults: The benefits of informal family caregiving. *Journal of Theory Construction and Testing*, 9(2)

Houser,A., Gibson, M.J., Redfoot, D.L. & AARP. (2011). Trends in family caregiving and paid home care for older people with disabilities in the community. Data from national long term care survey. Retrieved from <http://assets.aarp.org/rgcenter/ppi/ltc/2010-09-caregiving.pdf>.

Hinton, L., Franz, C. E., Yeo, G., & Levkoff, S. E. (2005). Conceptions of dementia in a multiethnic sample of family caregivers. *Journal of the American Geriatric Society*, 53, 1405-1410.

- Hseuh, K-H., Phillips, L. R., Cheng, W. Y., & Picot, S. J. F. (2005). Assessing cross-cultural equivalence through confirmatory factor analysis. *Western Journal of Nursing Research*, 27, 755-771.
- Hudd, S., Dumlao, J., Erdmann-Sager, D., Murray, D., Phan, E.,.... Soukas, N. (2000). Stress at college: Effects on health habits, health status and self-esteem. *College Student Journal*. 34, 217– 227.
- Hudson, P.L., & Hayman-White, K. (2006). Measuring the psychosocial characteristics of family caregivers of palliative care patients: Psychometric properties of nine self-report instruments. *Journal of Pain and Symptom Management*, 31(3), 215– 228.
- Institute of Medicine, (2008) *Retooling for an Aging America* .Washington, DC: The National Academies Press.
- Jacobsen, A., Kent, M., Lee, M & Mather, M. (2011). America's aging population. *Population Bulletin*, 66, (1).
- Jansen, D. A & Morse, W. A. (2004). Positively influencing student nurse attitudes toward caring for elders. *Gerontology and Geriatrics Education*, 25(2), 1-14.
- Jenkins, M.D., & Brittain, L. (2003). Young adults' attitudes toward filial responsibility and actual assistance to elderly family members. *Journal of Applied Gerontology*. 22, 214-229.
- Jenkins, M.D., Blankemeyer, M., & Pinkard, O. (2005). Young adult children and grandchildren in primary caregiver roles to older relatives and their service needs. *Family Relations*. 49, 177–186.
- Johnson, R. W., & Lo Sasso, A. T. (2006). The impact of elder care on women's labor supply. *Inquiry*, 43(3), 195-210.
- Katbamna, S., Ahmad, W., Bhakta, P., Baker, R., & Parker, G. (2004). Do they look after their own? Informal support for South Asian carers. *Health and Social Care in the Community*, 12, 398-406.
- Khan, F., Pallant, J., & Brand, C. (2007). Caregiver strain and factors associated with caregiver self-efficacy and quality of life in a community cohort with multiple sclerosis. *Disability and Rehabilitation*, 29(16), 1241-1250.
- Kim, M., & Hunter, J. E. (2006). Attitude-behavior relations: A meta-analysis of attitudinal relevance and topic. *Journal of Communication*, 43(1), 101-142.
- Koffman, J. S., & Higginson, I. J. (2003). Fit to care? A comparison of informal caregivers of first-generation black Caribbeans and white dependents with advanced progressive disease in the UK. *Health and Social Care in the Community*, 11(6), 528-536.

- Laditka, S. B., Fischer, M., Laditka, J. N., & Segal, D. R. (2004). Attitudes about aging and gender among young, middle age, and older college-based students. *Educational Gerontology, 30*(5), 403-421.
- Laditka, S. B., Laditka, J. N., Houck, M. M., & Olatosi, B. A. (2011). Not quite color blind: Ethnic and gender differences in attitudes toward older people among college students. *The International Journal of Aging and Human Development, 73*(1), 53-71.
- Lee, C., Gramotnev, H. (2007). Transitions into and out of caregiving: Health and social characteristics of mid-age Australian women. *Psychology and Health, 22*, 193-209.
- Lee, M., Reuben, D. B., & Ferrell, B. A. (2005). Multidimensional attitudes of medical residents and geriatrics fellows toward older people. *Journal of the American Geriatrics Society, 53*(3), 489-494.
- Lee, S., Hoerr, S. L., Weatherspoon, L., & Schiffman, R. F. (2007). Previous experience with older adults positively affects nutrition students' attitudes toward this age group. *Journal of Nutrition Education and Behavior, 39*(3), 150-156.
- Lee, Y. (2009). Measures of student attitudes on aging. *Educational Gerontology, 35*(2), 121-134.
- Levine, C., Hunt, G.G., Halper, D., Hart, Y.A., Lautz, J., & Gould, A.D. (2005). Young adult caregivers: a first look at an unstudied population. *American Journal of Public Health, 95*, 2071-2075.
- Levine, C., Halper, D., Peist, A., & Gould, D. A. (2010). Bridging troubled waters: Family caregivers, transitions, and long-term care. *Health Affairs, 29*(1), 116-124.
- Lewis, M. I., Watson, B., & White, K. M. (2009). Internet versus paper-and-pencil survey methods in psychological experiments: Equivalence testing of participant responses to health-related messages. *Australian Journal of Psychology, 61*(2), 107-116.
- Limpanichkul, Y., & Magilvy, K. (2004). Managing caregiving at home: Thai caregivers living in the United States. *Journal of Cultural Diversity, 11*, 18-24.
- Löckenhoff, C. E., Duberstein, P. R., Friedman, B., & Costa Jr, P. T. (2011). Five-factor personality traits and subjective health among caregivers: The role of caregiver strain and self-efficacy. *Psychology and Aging, 26*(3), 592.
- Lovell, M. (2006). Caring for the elderly: Changing perceptions and attitudes. *Journal of Vascular Nursing, 24*(1), 22-26.
- Mack, K. & Thompson, L. (2001). Data profiles, family caregivers of older persons: adult children. Washington, DC: Center on an Aging Society.

- Maurer, M. S., Costley, A. W., Miller, P. A., McCabe, S., Dubin, S., Cheng, H., . . . Page, K. P. (2006). The Columbia cooperative aging program: An interdisciplinary and interdepartmental approach to geriatric education for medical interns. *Journal of the American Geriatrics Society*, 54(3), 520-526.
- McClave, J.T., & Sincich, T., [Mendenhall](#), W. (2009). *Statistics*. Pearson; 11th edition.
- McDermott, R., & Sarvela, P. (1999). *Health, education, and evaluation*. McGraw-Hill College.
- McKinlay, A., & Cowan, S. (2003). Student nurses' attitudes towards working with older patients. *Journal of Advanced Nursing*, 43(3), 298-309
- MetLife and National Alliance for Caregiving (2006). *The MetLife Caregiving Cost Study: Productivity Losses to US Business*. Retrieved from <http://www.caregiving.org/data/Caregiver%20Cost%20Study.pdf>
- MetLife Mature Market Institute, NAC, and University of Pittsburgh (2010). *MetLife Study of Working Caregivers and Employer Health Care Costs*. Westport, CT: MetLife Mature Market Institute.
- Michael Sargen, Roderick S. Hooker., & Richard A. Cooper. (2011). Gaps in the Supply of Physicians, Advance Practice Nurses, and Physician Assistants. *Journal of the American College of Surgeons*, 212 (6): 991 DOI: [10.1016/j.jamcollsurg.2011.03.005](https://doi.org/10.1016/j.jamcollsurg.2011.03.005)
- Miller, B.F., & Keane, C.B. (1992). *Encyclopedia and dictionary of medicine, nursing, and allied health* (5th Ed.). Philadelphia: Saunders.
- Miller, E. A., & Weissert, W. G. (2000). Predicting elderly people's risk for nursing home placement, hospitalization, functional impairment, and mortality: A synthesis. *Medical Care Research and Review*, 57(3), 259-297.
- Miller, E. A., Allen, S. M., & Mor, V. (2008). Commentary: Navigating the labyrinth of long-term care: Shoring up informal caregiving in a home-and community-based world. *Journal of Aging and Social Policy*, 21(1), 1-16.
- Min, J. W., & Barrio, C. (2009). Cultural values and caregiver preference for Mexican-American and non-Latino white elders. *Journal of Cross-Cultural Gerontology*, 24(3), 225-239.
- Montoro-Rodriguez, J., & Gallagher-Thompson, D. (2009). The role of resources and appraisals in predicting burden among Latina and non-Hispanic white female caregivers: A test of an expanded socio-cultural model of stress and coping. *Aging and Mental Health*, 13(5), 648-658.
- Narayan, C. (2008). Is there a double standard of aging? Older men and women and ageism. *Educational Gerontology*, 34(9), 782-787.

- National Alliance for Caregiving (2004) Estimated Prevalence and Economic Value of Family Caregiving, by State. Retrieved from http://www.caregiver.org/caregiver/jsp/content_node.jsp?nodeid=1805andbig_font=true
- National Alliance for Caregiving and AARP, Caregiving in the US, Bethesda, MD: National Alliance for Caregiving, and Washington, DC: AARP. Retrieved from <http://www.caregiving.org/data/04finalreport.pdf>
- National Centre for Education Statistics. (2012). Retrieved from <http://nces.ed.gov/fastfacts/>
- National Center for Health Statistics. Health, United States, 2011: With Special Feature on Socioeconomic Status and Health. Hyattsville, MD. 2012. Retrieved from [http://www.cdc.gov/nchs/data/11.pdf#070](http://www.cdc.gov/nchs/data/hus/11.pdf#070)
- Naylor, M. D., Aiken, L. H., Kurtzman, E. T., Olds, D. M., & Hirschman, K. B. (2011). The importance of transitional care in achieving health reform. *Health Affairs*, 30(4), 746-754.
- Neary, S. R., & Mahoney, D. F. (2005). Dementia caregiving: The experiences of Hispanic/Latino caregivers. *Journal of Transcultural Nursing*, 16, 163-170.
- Nochajski, T. H., Waldrop, D. P., Davis, E. L., Fabiano, J. A., & Goldberg, L. J. (2009). Factors that influence dental students' attitudes about older adults. *Journal of Dental Education*, 73(1), 95-104.
- O'Hanlon, A. M., & Brookover, B. C. (2002). Assessing changes in attitudes about aging: Personal reflections and a standardized measure. *Educational Gerontology*, 28(8), 711-725.
- Partnership for solutions (2003). Care coordination for people with chronic conditions. Retrieved from http://www.partnershipforsolutions.org/DMS/files/Care_coordination.pdf.
- Pavalko E.K., & Henderson, K.A. (2006). Combining care work and paid work: Do workplace policies make a difference? *Research on Aging*, 28(3), 359–74.
- Peck, R., Olsen, C., & Devore, J.L. (2008). *Introduction to statistics and data analysis*. Duxbury Press.
- Pew Research Center (2008), *Social and Demographic Trends*. Retrieved from <http://www.pewsocialtrends.org/>
- Pinquart, M., & Sörensen, S. (2005). Ethnic differences in stressors, resources, and psychological outcomes of family caregiving: A meta-analysis. *The Gerontologist*, 45(1), 90-106.

- Pierceall, E. A., & Keim, M. C. (2007). Stress and coping strategies among community college students. *Community College Journal of Research and Practice*, 31, 703–712.
- Pinquart, M., & Sörensen, S. (2007). Correlates of physical health of informal caregivers: A meta-analysis. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 62(2), P126-P137.
- Polizzi, K. G., & Steitz, J. A. (1998). Examining the aging semantic differential: Suggestions for refinement. *Educational Gerontology an International Quarterly*, 24(3), 207-223.
- Polizzi, K. G. (2003). Assessing attitudes toward the elderly: Polizzi's refined version of the aging semantic differential. *Educational Gerontology*, 29(3), 197-216.
- Polizzi, K. G., & Millikin, R. J. (2002). Attitudes toward the elderly: Identifying problematic usage of ageist and overextended terminology in research instructions. *Educational Gerontology*, 28(5), 367-377.
- Qualtrics. (n.d). Retrieved November 3, 2012, from Qualtrics website, <https://www.qualtrics.com/>
- Roff, L. L., Burgio, L. D., Gitlin, L., Nichols, W., Chaplin W., & Hardin, J. M. (2004). Positive aspects of Alzheimer's caregiving: The role of race. *Journal of Gerontology B and Psychological Science, Social Science*, 59, P185-P190.
- Rosencrantz, H.A., & McNevin, T.E. (1969). A factor analysis of attitudes toward the aged. *The Gerontologist*, 9, 55–59.
- Rupp, D. E., Vodanovich, S. J., & Credé, M. (2005). The multidimensional nature of ageism: Construct validity and group differences. *The Journal of Social Psychology*, 145(3), 335-362.
- Rusinak, R. L., & Murphy, J. F. (1995). Elderly spousal caregivers: Knowledge of cancer care, perceptions of preparedness, and coping strategies. *Journal of Gerontological Nursing*, 21(3), 33-41
- Sample, J., & Warland, R. (1973). Attitude and prediction of behavior. *Social Forces*, 51(3), 292-304
- Sax, L. J. (1997). Health trends among college freshmen. *Journal of American College Health*. 45, 252–262.
- Sax, L. J. (2003). Our incoming students: What are they like? *About Campus*.8, 15–20.
- Scherbring, M. (2002). [Effect of Caregiver Perception of Preparedness on Burden in an Oncology Population](#). *Oncology Nursing Forum*, 29(6), E70-E76

- Schubert, C. C., Boustani, M., Callahan, C. M., Perkins, A. J., Hui, S., & Hendrie, H. C. (2008). Acute care utilization by dementia caregivers within urban primary care practices. *Journal of General Internal Medicine*, 23(11), 1736-1740.
- Schubert, C. C., Boustani, M., Callahan, C. M., Perkins, A. J., Hui, S., & Hendrie, H. C. (2008). Acute care utilization by dementia caregivers within urban primary care practices. *Journal of General Internal Medicine*, 23(11), 1736-1740.
- Schulz, R., & Martire, L. (2004). Family caregiving of persons with dementia: prevalence, health effects, and support strategies. *American Journal of Geriatric Psychiatry*, 12, 240-249.
- Schulz, R., & Sherwood, P. R. (2008). Physical and mental health effects of family caregiving. *Journal of Social Work Education*, 44, 105-113.
- Schumacher, K. L., Stewart, B. J., & Archbold, P. G. (2007). Mutuality and preparedness moderate the effects of caregiving demand on cancer family caregiver outcomes. *Nursing Research*, 56(6), 425.
- Schumacher, K. L., Stewart, B. J., Archbold, P. G., Caparro, M., Mutale, F., & Agrawal, S. (2008). Effects of caregiving demand, mutuality, and preparedness on family caregiver outcomes during cancer treatment. *Oncology Nursing Forum*, 35(1) 49-56.
- Sharma, G., Fletcher, K. E., Zhang, D., Kuo, Y. F., Freeman, J. L., & Goodwin, J. S. (2009). Continuity of outpatient and inpatient care by primary care physicians for hospitalized older adults. *JAMA: The Journal of the American Medical Association*, 301(16), 1671-1680.
- Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *Journal of Consumer Research*, 325-343.
- Shifren, K. (2008). Early caregiving: Perceived parental relations and current social support. *Journal of Adult Development*, 15(3), 160-168.
- Shifren, K., & Chong, A. (2012). Health-related behaviors: A study among former young caregivers. *Journal of Adult Development*, 1-11.
- Shirai, Y., Koerner, S. S., & Kenyony, D. B. (2009). Reaping caregiver feelings of gain: The roles of socio-emotional support and mastery. *Aging and Mental Health*, 13, 106-117.
- Shyu, Y. I. L., Yang, C. T., Huang, C. C., Kuo, H. C., Chen, S. T., & Hsu, W. C. (2010). Influences of mutuality, preparedness, and balance on caregivers of patients with dementia. *Journal of Nursing Research*, 18(3), 155-163.

- Silva-Smith, A. L. (2007). Restructuring life preparing for and beginning a new caregiving role. *Journal of Family Nursing*, 13(1), 99-116.
- Silver, H.J., Author VitaeWellman, N.S., Author VitaeGalindo-Ciocon, D., & Author Vitae Johnson, P. (2004). Family caregivers of older adults on home enteral nutrition have multiple unmet task-related training needs and low overall preparedness for caregiving. *Journal of the American Dietetic Association*, 104(1), 43-50.
- Smyth, C., Blaxland, M., & Cass, B. (2011). So that's how I found out I was a young carer and that I actually had been a carer most of my life'. Identifying and supporting hidden young carers. *Journal of Youth Studies*, 14(2), 145-160.
- Sörensen, S., Webster, J. D., & Roggman, L. A. (2002). Adult attachment and preparing to provide care for older relatives. *Attachment and Human Development*, 4(1), 84-106.
- Sparrenberger, F., Cichelero, F., Ascoli, A., Fonseca, F., Weiss, G., Berwanger, O., & Fuchs, F. (2008). Does psychosocial stress cause hypertension and quest; A systematic review of observational studies. *Journal of Human Hypertension*, 23(1), 12-19.
- Spillman, B.C., & Long, S.K. (2009). Does high caregiver stress predict nursing home entry? *Inquiry*, 46, 140-61.
- Swanlund, S., & Kujath, A. (2012). Attitudes of baccalaureate nursing students toward older adults: A pilot study. *Nursing Education Perspectives*, 33(3), 181-183.
- Tomko, J. K., & Munley, P. H. (2012). Predicting counseling psychologist's attitudes and clinical judgments with respect to older adults.
- University of Florida office of institutional planning and research. (2013). Enrollment. Retrieved from <http://www.ir.ufl.edu/factbook/enroll.htm>
- US Administration on Aging. (2011). Caregivers. Retrieved from http://www.aoa.gov/AoARoot/AoA_Programs/HCLTC/Caregiver/index.aspx.
- US Census Bureau. (2010). The next four decades: The older population in the United States: 2010-2050.
- US Department of Commerce, Bureau of Economic Analysis. (2009). NIPA table 1.1.5, 2009-A. Retrieved from <http://www.bea.gov/national/nipaweb/TableView.asp?SelectedTable=5andViewSeries=NOandJava=noandRequest3Place=Nand3Place=NandFromView=YESandFreq=YearandFirstYear=2009andLastYear=2009and3Place=NandUpdate=UpdateandJavaBox=no#Mid>

- US Administration on Aging. (2001). Retrieved from http://www.aoa.gov/AoARoot/AoA_Programs/HCLTC/Caregiver/index.aspx.
- United States Department of Health and Human Services (2012). Strengthen the Nation's Health and Human Service Infrastructure and Workforce Retrieved from <http://www.hhs.gov/secretary/about/goal5.html>
- Van den Berg, B., Brouwer, W., van Exel, J., & Koopmanschap, M. (2004). Economic valuation of informal care: The contingent valuation method applied to informal caregiving. *Health Economics*. Retrieved from www.interscience.wiley.com.
- Van Ryn, M., Sanders, S., Kahn, K., van Houtven, C., Griffin, J. M.,... Martin, M.I. (2011). Objective burden, resources, and other stressors among informal cancer caregivers: A hidden quality issue? *Psycho-oncology*, 20(1), 44-52.
- Viola, D., Arno, P., Siskowski, C., Cohen, D., & Gusmano, M. (2012). The economic value of youth caregiving in the United States. *Relational Child and Youth Care Practice*, 25(2), 10.
- Voogt, S. J., Mickus, M., Santiago, O., & Herman, S. E. (2008). Attitudes, experiences, and interest in geriatrics of First-Year allopathic and osteopathic medical students. *Journal of the American Geriatrics Society*, 56(2), 339-344.
- Wampold, B. E., & Freund, R. D. (1987). Use of multiple regression in counseling psychology research: A flexible data-analytic strategy. *Journal of Counseling Psychology*, 34, 372-382.
- Warren, J. (2007). Young carers: conventional or exaggerated levels of domestic and caring tasks. *Children and society*, 21(2), 136-146.
- Wolff, J. L., & Kasper, J. D. (2006). Caregivers of frail elders: Updating a national profile. *The Gerontologist*, 46(3), 344-356.
- Wolff, J. L., & Roter, D. L. (2008). Hidden in plain sight: Medical visit companions as a resource for vulnerable older adults. *Archives of Internal Medicine*, 168(13), 1409.
- Wurtele, S. K., & Maruyama, L. (2013). Changing students' stereotypes of older adults. *Teaching of Psychology*, 40(1), 59-61.
- Zverev, Y. (2013). Attitude towards older people among malawian medical and nursing students. *Educational Gerontology*, 39(1), 57-66.
- Zywiak, W. (2010). US healthcare workforce shortages: caregivers. Retrieved from http://assets1.csc.com/health_services/downloads/CSC_US_Healthcare_Workforce_Shortages_Caregivers.pdf

BIOGRAPHICAL SKETCH

Originally from northern state of Punjab, India Gungeet Joshi came to U.S in 2006. She earned her undergraduate degree in Home Science in 2002, Master of Science in Food and Nutrition 2004, and Bachelor of Education in 2006 from Punjab Agricultural University, India. She is also trained as dietician and has completed observership at a leading post graduate Institute of medical research in India. After she moved to Gainesville, Florida, Gungeet worked to receive her Master of Science degree in Health Education and Behavior and also received her certification as Health Education specialist in 2011 from University of Florida. As a master student she worked as graduate research assistant and was involved in various research projects. Gungeet continued in the same department as doctoral student and was teaching assistant for the Medical Terminology course offered by the department. Gungeet successfully defended her dissertation titled “Attitude towards, and caregiving preparedness for, their older relatives among college students” and received her Ph.D. degree in August 2014. Her areas of research include; Asian Indian student population in the US, informal caregivers and survey development. Gungeet plans to continue working in academia and research in informal caregiving.