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THE RELATIONSHIP BETWEEN PERSONALITY OF STUDENTS IN AN
INTERGENERATIONAL PROGRAM AND ATTITUDES TOWARD OLDER
ADULTS

BY

MARYAM MARZBAN

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE MASTER OF SCIENCE DEGREE IN HUMAN DEVELOPMENT AND FAMILY
STUDIES

UNIVERSITY OF RHODE ISLAND

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MASTER OF SCIENCE THESIS

OF

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2019

ABSTRACT

With the rapid aging of the population as well as increasing diversity in United State, research on ageism and intergenerational relationships is increasingly warranted. Ageism, or the prejudicial attitudes towards older adults, is seen as one of the most prevalent preconceived judgments that can cause poor treatment, and may even decrease levels of confidence, happiness, and health for older adults (Bishop, 2016). Intergenerational programs can provide many benefits for both younger and older adults, including developing positive changes in attitude towards aging (Wescott & Healy, 2011). Currently, the University of Rhode Island (URI) Engaging Generations: Cyber-Seniors program was developed to bring students and older adults together in order to help older adults learn more about using technology, and support students to promote more positive attitudes towards older adults. Most of the research on the topic of ageism has been focused on the impact of the fear of death, anxiety of older adults toward their own aging, and the fear of aging. Therefore, the role of personality traits for younger adults on ageism and changes in ageism is less well studied (e.g. Bodner et al., 2015; Galton, 2019).

Intergenerational programs can provide many benefits for both younger and older adults, including developing positive changes in attitudes (Wescott & Healy, 2011). Since, younger adults tend to demonstrate the higher levels of ageism towards older adults (Donizzetti, 2019), the aim of this study was to evaluate the outcomes of intergenerational programming participation for students related to attitudes toward older adults, apprehension toward older adults, and empathy toward older adults. Additionally, the current study builds on existing knowledge by examining the

associations between personality traits, ageism, and changes in ageism since the role of personality traits towards ageism or change in ageism is, to the author's knowledge, understudied in the ageism literature. Data for this study was taken from pre/post student surveys. SPSS software was used to conduct descriptive analysis, paired-sample *t* tests, correlation, and regression. Results showed significant decreases in ageism following participation in the program. The results also indicated that the traits of Conscientiousness, Agreeableness and Extraversion were found to have significant associations with less ageism towards older adults.

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CHAPTER 1

INTRODUCTION

Statement of the Problem

Age segregation is the separation and disengagement of people because of their age, and it can be observed in many aspects of our society (Butler, 1974). Research has shown that personal experiences, biases, and beliefs about older adults may lead individuals to view older adults as dependent, powerless, or narrow-minded individuals (Ball, 1999; Gendron, Welleford, Inker & White, 2016). Research has also shown that ageism and negative attitudes toward older adults can negatively influence older adults' potential toward successful, active, and healthy aging (Swift, Abrams, Lamont & Drury, 2017). For example, ageism in health and social care services is a barrier to healthy aging that can reduce older people's access to health services and increase their risk of illness (Kane & Kane, 2005). Therefore, in order to reduce ageism, related stereotypes, and negative attitudes toward age, there is need to explore factors that have an impact on students' attitudes towards older adults.

A study on health and social care professionals' attitudes toward older adults indicated that more contact with older patients was related to more positive attitudes and less stereotypes toward them (Drury, Abrams, Swift, Lamont, & Gerocova, 2017). Research also found that positive relationships among care workers and older adults living in nursing homes was related to better health of older people (Leedahl, Chapin, & Little, 2014), while negative attitudes have shown to be associated with psychological abuse of older adults (Weir, 2004). As a result, in order to decrease ageism and increase

positive attitudes towards older persons in society, intergenerational service-learning programs have been implemented to connect students and older adults. However, few studies have observed the role of personality traits in explaining attitudes towards older adults. Importantly, some studies have found personality traits as an important factor that contributes to anxiety toward aging and ageist attitudes (Allan et al., 2014; Gao, 2009). Through a study of URI's Engaging Generations: Cyber-Seniors Program, the aim of this study is to examine the relationship between students' personality types and attitudes towards older adults.

Justification for and Significance of the Study

Intergenerational programs have been created in order to connect students and older adults, decrease the generational gap, and improve outcomes for both students and older adults (June & Andreoletti, 2018). One of the significant outcomes of intergenerational programs has been contributing to more positive attitudes toward older adults (Wescott & Healy, 2011). Based on the literature, factors that may be attributed with having more positive attitudes towards older adults include gender, age, having experience or knowledge about older adults, and quality of student experiences working with older adults (Allen & Johnson, 2008; Chonody & Ranzijn, 2014; Flamion & Missotten, 2017; Goncalves, 2009). Further, some found that personality traits are a significant part of ageist attitudes, suggesting that Agreeableness, Neuroticism, Extraversion, and Conscientiousness are likely to have a relationship with attitudes towards older adults (Allan et al., 2014). Therefore, personality traits could be another predictor of stereotypes toward aging. However, no study to date has specifically explored the relationship between personality among younger adults in an

intergenerational program and stereotypes towards older persons. Although personality traits can be stable during the life span, recent longitudinal and cross-sectional aging research has shown that personality traits can continue to change at any age (Roberts & Wood, 2006). For instance, people show increased self-confidence, warmth, self-control, responsibility and emotional stability with age. Additionally, most personality-trait change occurs between the ages of 20 and 40 (Roberts & Mroczek, 2008). A number of studies indicated that life and work experiences are related with changes in personality traits and the direction of change is clearly in the positive direction (Roberts & Wood, 2006; Roberts et al., 2008). Therapy and intervention programs can be useful experience for students (who are usually the ages of 20 and 40) to help positively change their attitudes, patterns of behavior, thoughts, feelings, and even their personality (Heatherton & Weinberger, 1994). Moreover, identifying individual differences in personality traits that are linked with ageism may provide more insight into ways of reducing ageist attitudes.

CHAPTER 2

REVIEW OF LITERATURE

Definitions

This section explains key concepts in the current study including personality, ageism, and intergenerational programs.

Personality. Although there are many definitions of personality, there is agreement that what people do is influenced by a stable set of psychological traits, that being their personality (John & Srivastava, 1999). Larsen and Buss (2005) define personality as “a set of psychological traits and mechanisms within the individual that are organized and relatively enduring and that influence his or her interactions with, and adaptations to, the intrapsychic, physical, and social environments” (p. 4).

Researchers have identified countless personality traits by which individuals can be distinguished or measured. According to John and Srivastava (1999), these traits are grouped and summarized into five major categories to provide an integrative descriptive model for personality research (John & Srivastava, 1999). Although there is some disagreement about the exact meaning or the name of factors, there is general agreement about traits that define each factor (Barrick & Mount, 1991). The big five sub scales of personality include Neuroticism (emotional stability), Extraversion, Openness to experience, Agreeableness and Conscientiousness. Someone higher in Neuroticism is unstable; responds quickly to stress, anger or fear; and is difficult to get calm once upset. Those high in Extraversion are sociable, warm, happy, calm, carefree, optimistic and impulsive. They can become bored easily and are more likely to take risks. To get a high

score on Openness to experience, the person is curious, flexible, creative, imaginative, artistically sensitive, intellectual, and open to other cultures or experiences. Getting a high score on Agreeableness means that the person is normally cooperative, considerate, trusting, modest, sympathetic, warm, and good-natured. The person who gets high score on Conscientiousness, is normally dependable, hardworking, organized, self-disciplined, persistent, achievement oriented, and responsible (Harris & Dollinger, 2003; John & Srivastava, 1999; Mount, Barrick, Scullen, & Rounds, 2005). We used the Big Five Personality scale in the current study.

Ageism. Ageism is a complex problem that can be defined as a prejudice, discrimination, or negative attitude based on age (Nelson, 2002). Butler (1969) defines ageism “as a systematic stereotyping and discrimination against people because they are old, just as racism and sexism accomplishes this with skin color and gender” (p. 243). Negative attitudes toward older adults can cause poor treatment, ageism, and prejudice, and may even decrease levels of confidence, happiness, and health for older adults (Bishop, 2016). The spread of stereotypes has been attributed to a lack of knowledge, education, or experience about the aging process, which has been observed in all age ranges (Cuddy, Norton, & Fiske, 2005). However, males and younger adults tend to demonstrate the higher levels of ageism compare to females and older adults (Donizzetti, 2019). Intergenerational programs can provide many benefits for both young and older adults, including developing positive changes in attitudes (Wescott & Healy, 2011). In the current study, we assessed ageism using the psychological growth sub-scale from the Attitudes towards Aging Questionnaire, the Fear of Older People

sub-scale from the Anxiety about Aging scale, and Empathy toward Older Adult Questionnaire.

Intergenerational programs. A rapid growth in the population of older adults along with the existence of negative stereotypes toward them has contributed to the need to develop intergenerational programs (Cummings, Williams & Ellis, 2002). Intergenerational programs have been used to help change younger persons' attitudes towards older adults. Intergenerational programs have been implemented since the late 1970s in order to connect individuals from younger and older generations so that people from different generations can benefit from meaningful collaboration and help one another (Newman, 1997).

Intergenerational activities have been reported to have beneficial effects for both seniors and youth. Intergenerational approaches have been used to meet the needs of older generations including personal, social and emotional needs, improving their mental health, and developing openness towards younger adults' opinions (Underwood & Dorfman, 2006; Wang & Chonody, 2013; Young & Janke, 2013). For youth and students, the beneficial outcomes of intergenerational programs include developing positive changes in attitudes toward older adults (Wescott & Healy, 2011), increasing self-confidence and self-efficacy (Gamliel & Gabay, 2014; MacCallum et al., 2010), and promoting interests in working with older adults (Cohen-Mansfield & Jensen, 2017). We examined students participating in the URI Engaging Generations: Cyber-Seniors program in this study.

Importance of Students' Attitudes towards Older Adults

By the year 2030, 74 million Americans will be 65 years of age and older and will be more likely to be transitioning into retirement (Carpenter-Aeby, Aeby, Castro, Newsome & Teel, 2017). While numbers and proportions of older adults are expected to increase, there is a widening gap in available services and fewer gerontological, and geriatric practitioners available for older adults (Kuerbis, Mulliken, Muench, Moore, & Gardner, 2017). Findings from a study showed that a lack of knowledge, little focus on skill development, and little practice experience among social work students prevented many from feeling comfortable or knowledgeable about working with older adults (Bishop, 2016). Research has also shown that the negative attitudes toward older adults need to be reduced in order to increase potential for active, successful, and healthy aging. For instance, ageism and negative attitudes can exclude older people from social groups, increase risk of social isolation and loneliness, and make stereotypical assumptions about their needs and quality of their life (Swift, Abrams, Lamont & Drury, 2017). Although ageism is present among all ages, it seems to be more prevalent among youth (Reuveni & Werner, 2015). Therefore, it is important for all generations especially today's youth and students to possess accurate knowledge and promote greater understanding about older adults in order to decrease ageism in our society.

Further evidence suggests that negative stereotypes towards older adults can be changed through interventions or intergenerational programs. For instance, a study was designed to determine whether an exercise activity with older adults could create positive attitudes in students' views towards older adults. Results indicated that these activities can decrease negative bias, as measured by the Fraboni Scale of Ageism

(Wurtele & Maruyama, 2013). Consistent with this study, another paper used a systematic review in five East Asian communities in order to identify the influence of non-familial intergenerational programs toward age stereotyping. They found that both younger and older adults can benefit from programs through art activities and cultural heritage programs, and that stereotypes can be improved following participation (Sun, Lou, Dai & Wong, 2018).

There is a lack of literature needed to evaluate the role of personality traits related to attitudes or change in attitudes towards older adults in intergenerational programs. However, in order to improve our knowledge about the intergenerational programs or create more effective programs, it is important to recognize the personality traits that may play a crucial role in creating more positive attitudes towards older adults.

Ecological Systems Theory

The ecological systems theory states that different factors may influence our behavior in various degrees. These systems include the micro system, the mesosystem, the exosystem, and the macro system (Bronfenbrenner, 1979). The micro system is the direct environment we have in our lives including physiological characteristics, personality type, family, friends or other people who have a direct contact with us. The mesosystem involves the relationships between the microsystems. For example, the connection between our family and friends may influence our behavior. The exosystem defines the larger social system in which the individuals do not function directly. The macrosystem setting includes culture and social structure of an individual including cultural values, customs, laws, race, and ethnicity (Bronfenbrenner, 1979).

Based on the theory of Bronfenbrenner, the process of shaping attitudes toward aging can be studied in different layers of a society: the micro-level, such as, individuals and personality characteristics; the meso-level, including communities and organizations; the exosystem, including the connection between two or more settings; and the macro-level, including social structures, ideologies, and policies (Bronfenbrenner, 1979). Therefore, in order to promote our knowledge about the factors that may have impacts on stereotypes and create more positive attitudes towards older adults, it is important to focus on various risk factors within the micro-level since it involves people direct environment.

In order to understand and change negative stereotypes toward older adults, it is important to recognize factors associated with ageism and what may influence younger adults' attitudes or stereotypes towards older adults. Gender and age have been found as important factors associated with ageism in the micro level. Women have been shown to have more favorable attitudes toward older adults compared to men (Goncalves, 2009; Goncalves et al., 2011; Hatchett, Holmes, & Ryan, 2002; Kimuna & Knox, 2005). One explanation could be that women may have more experience and contact with older adults and thereby generate more positive attitudes (Chonody, Webb, Ranzijn & Bryan, 2014).

Age is another important factor in the microsystem, in which younger participants generally report more negative attitudes than older participants (Allen & Johnson, 2008; Van Dussen & Weaver, 2009). However, few studies have explored the evolution of ageism over time during childhood, adolescence, and adulthood.

The micro system also includes direct social interactions that we have in our lives. Some studies found that interest in aging may be fostered and reinforced through gerontological coursework, education, quality of personal contacts, and personal family contacts with older family members (Adelman, Fields, & Jutagir, 1992; Beissner, 1990; Litwin, 1994; McKillip, 1980). For instance, taking an aging course can create more positive attitudes toward older adults. Findings also have been somewhat contradictory about personal contacts. Some studies have found personal contacts with older people as an important factor related to interest in aging and older adults (Gomez, Young, & Gomez, 1991, Allan & Johnson, 2009; Meshel & McGlynn, 2004; Pettigrew & Tropp, 2008). However, some studies have found no relationship between frequency of personal contacts with older people and positive attitudes towards aging (Carmel et al., 1992; Dunkle & Hyde, 1995; Okoye, 2005). One explanation could be the quality of the relationship and personal family contacts may matter more than just frequency of these contacts (Flamion, Missotten, Marquet, & Adam, 2017).

Beside age, gender, and direct contacts in the micro system, personality traits could be another factor to create more positive attitudes toward older adults. However, there is lack of knowledge about the relationship between personality traits and attitudes towards older adults. In order to understand the personality and the association between personality traits and attitudes towards older adults, it would be essential to look at the theory of personality and available literature in this area.

Theory of Personality

The idiographic view of personality emphasizes the uniqueness of psychological structures for each person and uses case studies in order to understand the personality

of individuals, whereas the nomothetic view focuses on comparability among people and uses self-report personality questions to identify common traits. Eysenck and Cattell (1950, 1982, 1965) both have the nomothetic view of personality. However, there are differences in their view. Eysenck (1950) proposes a perspective of personality based on biological factors that identifies three dimensions of Neuroticism including stable vs. unstable, introversion vs. extroversion, and psychoticism vs. super-ego control. Cattell (1965) disagrees with Eysenck's theory that personality can be only recognized by three dimensions of Neuroticism. Instead, he uses the term personality in the wider sense in order to get a better picture of someone's personality. Therefore, he adds factors such as intelligence, social attitudes, and other concepts in the field covered by his Sixteen Personality Factor. Cattell (1965) also found that there is a difference between source and surface traits. Surface traits can be easily recognized by other individuals, whereas source traits are more important to describe personality, but they are less obvious and more difficult to be recognized by other people (McLeod, 2017).

There is considerable evidence that personality traits influence life experiences, psychological well-being, and mental health (McCrae and Costa, 1986, Costa & McCrae, 1997, McCrae, 2002). In addition, there is evidence that personality traits, such as Neuroticism, play an important role for understanding differences among individuals in terms of psychological adjustment (McCrae & Costa, 1990). For example, high Neuroticism has shown to be an important factor that leads to ineffective coping skills and life dissatisfaction (Costa and McCrae, 1980; McCrae & Costa, 1986). High Neuroticism, and low Agreeableness seem to play an important role in understanding relationship problems and career difficulties (Caspi, Elder, & Bem, 1987).

Some studies have found that the personality traits are a significant part of ageist attitudes (Allan et al., 2014). For instance, one study found that there was an association between less ageist attitudes and more Openness to new experience. There was also a direct association between higher Agreeableness and positive ageist attitudes, and an indirect association between more Agreeableness and less anxiety about aging. Also, Neuroticism was positively associated with more ageism via anxiety toward aging (Allan et al., 2014).

Some studies have examined anxiety about aging as a mediator in the relationship between personality and attitudes toward older adults. For instance, a study found a positive connection between Neuroticism and overall anxiety about aging. There was also a negative association between Conscientiousness, Agreeableness, Extraversion, and anxiety about aging. Neuroticism and Agreeableness were found as the most important predictors of aging anxiety. They also found Agreeableness and Conscientiousness were the only significant predictors for the Fear of Old People dimension (Harris & Dollinger, 2003). Consistent with these findings, another similar study examined the relationship between anxiety about aging and personality traits in a Taiwanese population among college students. Findings showed that all five personality traits significantly correlated with overall aging anxiety. Agreeableness, Extraversion and Conscientiousness have the strongest relationships with anxiety about aging. Additionally, people with lower scores for Agreeableness and Conscientiousness had higher level of fears towards old people (Gao, 2009). Therefore, most of these results are consistent about the relationship between Agreeableness and Conscientiousness with fear towards older adults.

Furthermore, extraverts are sociable and have a powerful desire for change. People who are open to new experience are curious, flexible, intellectual, and open to other culture. (John & Srivastava, 1999; Mount, Barrick, Scullen, & Rounds, 2005). Craving change and being flexible to other experiences may lead students to change their attitude more after participation in the program.

In interpreting these findings, it is important to realize that although personality traits are stable during the life span, therapy and intervention programs can change attitudes, patterns of behavior, thoughts, and feelings (Heatherton & Weinberger, 1994). Identifying individual differences in personality traits that are linked with ageism may provide insight into ways of reducing ageist attitudes.

Program Description

The University of Rhode Island (URI) is working to provide more opportunity for students in service-learning programs. As a result, the URI Engaging Generations Program was developed to bring students and older adults together in order to help older adults learn more about using technology, and also support students to improve their communication and teaching skills. Dr. Skye Leedahl & Dr. Erica Estus are leading the program, and students from different majors (e.g., Human Development & Family Study, Pharmacy, Sociology, Health Studies, Communicative Disorders, and Psychology) participate in the program through experiential learning, class assignments, and independent study. Therefore, the program operates as a faculty-led, student-run initiative. Faculty members dedicate time to the program as part of their teaching and research responsibilities and students receive course credits. The faculty who run the program have received two internal grants from Institute of the Integrated Health and

Innovation and College of Health Sciences to conduct research related to the program; and the faculty are actively seeking the grant funding to support program expansion and continued research.

The motivation for the development of the URI Engaging Generations Program came after viewing the Cyber-Seniors® documentary. The documentary is about a program in Canada in which high school students and older adults work with each other to help older adults learn more about using technology. During Aging & Health Week in the spring semester of 2015, this documentary was shown at the University of Rhode Island. Following the documentary showing, about 96% of students and all older adults showed some interest in the program. A trial program started in fall 2015 and has been expanding since (Leedahl et al., 2018).

The purpose of the program is to meet the following objectives: “(1) to promote civic engagement and service-learning for college students; (2) to help prepare future health and human service professionals for careers; and (3) to improve social connectedness and interest in technology for older adults” (Leedahl, Brasher, Estus, Breck, Dennis, & Clark, 2018, p.6). This program provides a chance for students who may work as future health and human services providers to build a resume and be more familiar with current health care challenges. This program also gives students an opportunity to be a teacher and improve their problem-solving skills. Additionally, it helps to improve intergenerational relationships, understand the strength and challenges of different age groups, and decrease age-segregation in our society (Leedahl et al., 2018).

Students in the program take a part in an hour-long training session before working with older adults, which includes information about the program and suggestions for working with seniors (Leedahl et al., 2018). Because of the variety of schedules, needs, and the availability of students, the program utilizes multiple ways for students to be involved. Therefore, during the study period, the program had at least four program models for seniors. In the first model, *individual appointments*, students spend about 30-60 minutes at each session at senior centers in Rhode Island. Seniors bring their own computer or cellphone to ask questions and receive technology support. During each session students answer questions, teach new skills, and manage the sessions based on the situation. Sometimes, older participants sign up for more sessions with that specific student mentor, which often results in the development of close relationships between these two generations. The second model, *matching program*, matches students in one gerontology class with members of Osher Lifelong Learning Institute (OLLI) (a program at URI that provide noncredit courses for older adults), and partners spend about 6 hours over the semester based on their interests and capabilities during the semester. The third model, *drop-in sessions*, meets the needs of OLLI members and is more flexible. In this model students from different majors provide sessions for about 2-4 hours at the OLLI building, and the OLLI members can stop by during that time to receive technology support. In the fourth model called *class sessions*, older adults sign up to take a class with the student leader and use the program's iPads or their own devices once a week. Student's leaders choose a topic based on the class interests and manage the class by receiving help from staff and URI pharmacy students.

Current Study

This study proposes to examine student experiences and outcomes for the program between fall 2016 and summer 2018, in which 144 students participated in the program, and of these, 105 students (72.9%) completed both the pre- and post-surveys. The 105 students participated in different semesters from fall 2016 to summer 2018 fall 2016-Summer 2017. In order to evaluate their experiences, this study examined if students had more positive attitudes towards older adults after taking a part in the program. Additionally, this study examined if the type of personality plays an important role in shaping and changing ageism. Research questions to be addressed in this study included:

1. From the fall 2016-Summer 2018, what were the demographic and program-related characteristics for the students who participated in the URI Engaging Generations: Cyber-Seniors program?
2. Is there a relationship between taking part in the program and a change in ageism?

Hypothesis 2a: Students will have more positive attitudes towards older adults after participation in the program.

Hypothesis 2b: Students will have less fear towards older adults after participation in the program.

Hypothesis 2c: Students will have more empathy towards older adults after participation in the program.

3. Is there a connection between types of personalities among students and ageism prior to students taking part in the program, while controlling for age, gender, and having a plan to work with older adults?

Previous study were consistent about the relationship between Agreeableness and Conscientiousness with fear towards older adults. However, there was no research, to the author's knowledge, about the relationship between traits of personality, attitudes toward older adults, and empathy. Therefore, this study considered Agreeableness and Conscientiousness as important predictors of ageism. Additionally, Agreeableness reflects trust, warmth, and cooperation which one would expect to be positively associated with acceptance of others and a less ageism (Ross, Rausch & Canada, 2003), and Contentiousness reflect dependable, hardworking, organized, and being responsible (Harris & Dollinger, 2003; Mount, Barrick, Scullen, & Rounds, 2005) that also could positively linked with less ageism.

Hypothesis 3a: Students with higher levels of Agreeableness will have less ageism towards older adults.

Hypothesis 3b: Students with higher levels of Conscientiousness will have less ageism towards older adults.

4. Is there an association between students' personalities and a change in ageism towards older adults following participation in the program, while controlling for age, gender, and having a plan to work with older adults?

The relationship between personality and change in ageist attitudes, to the author's knowledge, has never been studied in the literature. However, based on the definition of traits, people who have higher score on extraversion and openness crave

change and are more flexible to other experiences compare to other traits. Extraverts are sociable and have a powerful desire for change. Additionally, People who have higher score on openness are open to new experience are curious, flexible, intellectual, and open to other culture. (John & Srivastava, 1999; Mount, Barrick, Scullen, & Rounds, 2005). Therefore, craving change and being flexible to other experiences may help students who participated in the program to change their ageist attitudes more after participation in the program.

Hypothesis 4a: Students who are higher in Extraversion are more likely to have more change in ageist attitudes towards older adults following participation in the program.

Hypothesis 4b: Students who are higher in Openness to experience are more likely to have more change in ageist attitudes towards older adults following participation in the program.

CHAPTER 3

METHODOLOGY

Quantitative Analyses

In order to answer the above questions, quantitative data was collected through the URI Engaging Generations: Cyber-Seniors program, from fall 2016 to summer 2018. This study took place at eight senior centers, one PACE, and one OLLI location. Data for this study was taken from the pre/post student surveys. All students completed an online consent form prior to taking the pre-survey, and all collection methods were IRB-approved. This data was collected online using SurveyMonkey and then downloaded into SPSS Statistical Software files.

Design

The aims of the study were as follows: 1. Examine the descriptive statistics of students who participated in the program; 2. Determine if there was a statistically significant increase or decrease between pre/post-test scores on attitudes of students towards older adults; 3. Examine the connection between the sub-scales of personality (Extraversion, Openness, Conscientiousness, Neuroticism, and Agreeableness) for students and attitudes towards older adults; 4. Explore the association between the sub-scales of personality and the amount of change in attitudes towards older adults following participation in the program.

Sample

Between fall 2016 and summer 2018, 144 students participated in the program, and of these, 105 students (response rate=72.9%) completed both the pre- and post-surveys. I assessed for univariate outliers using boxplots and found one extreme outlier

on the measure of attitudes towards older adults. In this instance, the student answered the same response for every question and answers for open ended questions did not correspond with the responses on the measure of attitudes towards older adults. Therefore, I deleted the outlier from the analyses. I also identified two outliers from Neuroticism, but these were not deleted because after reviewing the scores, their scores were in reasonable limits and corresponded with other answers on the survey. Thirty-nine respondents (27.1%) who completed only the pre-survey were excluded from the analysis.

Student mentors completed a pre-survey at least 1 day prior to holding any sessions and filled out a post-survey within a week after finishing their hours. The students were required to fill out the surveys and logs as part of their classroom or experiential education requirements, and the students provided informed consent for their information to be included in research studies.

Data Collecting Tools

During spring 2016 by conducting a pilot study, the reliability and validity of the measures were estimated (Leedahl et al., 2018). In this study, the following measures were utilized. The Attitudes toward Aging Questionnaire (AAQ) explores the attitudes of older adults toward their own aging, and includes three specific sub-scales: (1) Psychosocial Loss (2) Physical Change, and (3) Psychological Growth (Shenkin, Watson, Laidlaw, Starr, & Deary, 2014). This study used the psychological growth subscale from the Attitudes toward Aging Questionnaire and modified it for use with younger adults (list of questions in appendix A). The Psychological Growth scale includes seven 5-point Likert scale questions (strongly disagree to strongly agree), and

the question scores are summed to create the scale score (higher scores indicate the more they are positive toward aging) (Laidlaw, Power, & Schmidt, 2007).

The Anxiety about Aging Scale (AAS) assess the degree of anxiety about growing old (Lasher & Faulkender, 1993). In order to measure overall anxiety about aging, the AAS includes four dimensions of anxiety about aging: (1) Fear of Old People, (2) Psychological Concerns, (3) Physical Appearance, and (4) Fear of Losses. We only included the Fear of Old People sub-scale from the Anxiety about Aging scale (Harris, & Dollinger, 2003; Lasher & Faulkender, 1993). The Fear of Old People sub-scale assesses the degree of comfort and satisfaction derived from interactions with older adults (list of questions in appendix A). The Fear of Old People sub-scale includes five 5-point Likert scale questions (strongly disagree to strongly agree) and the question scores are summed to create the scale score (higher scores indicate less fear or apprehension towards older people). We also used the adolescent measure of empathy and sympathy and modified the questions to relate to feeling towards older adults (Vossen, Piotrowski, & Valkenburg, 2015). The Empathy towards Older Adult scale assesses the degree of understanding and sense of older adult emotions (list of questions in appendix A). The scale includes ten items measure using a five 5-point Likert scale (strongly disagree to strongly agree) and the question scores are summed to create the scale score (higher scores indicate more empathy towards older people).

Type of personality was measured using the Big Five Personality Dimensions. The five sub-scale of personality include Extraversion, Emotional Stability, Agreeableness, Conscientiousness, and Openness to Experience. These personality domains have been shown to have adequate levels of test-retest stability over time, and

they are highly reliable and consistent across a number of cultures and situations (Gosling, Rentfrow & Swann, 2003). See Appendix A for the survey questions.

In the current study, internal consistency reliability has ranged from 0.77 for pre survey to 0.89 for post survey for attitudes of students towards older adults post survey, and from 0.88 for pre survey to 0.85 for post survey for empathy towards older adults. The alpha coefficients for 5 big personality traits was 0.74 (Costa & McCrae, 1992), and the fear of older people sub-scale has demonstrated high overall internal consistency (Cronbach alpha=0.87).

Control variables were age, gender, and having a plan to work with older adults. Gender (e.g., female or male) and having a plan to work with older adults (e.g., yes or no) were coded categorically, and age was a continuous variable.

Data Analysis

Data analysis was conducted using SPSS (v. 25). After downloading the SPSS files, the relevant data from the eight semesters, were merged to create one large dataset. Additionally, data was cleaned by removing duplicate student names and correcting inaccurate data or values from the data set.

Missing data was identified and labeled as -99. To address scale items in which people did not respond, mean substitution was used. Mean substitution is the process of replacing the missing data with the mean value of the same variable (Neuman, 2011). In the current study, mean substitution was used for only two respondents, one who missed a question in the attitudes sub-scale toward aging in pre-survey and another who missed a question in the attitude sub-scale in the post-survey. We did not use mean substitution for missing descriptive data. Rather, these missing data were not include in

the analysis. Additionally, we did not include eight students in the analysis for empathy, because their questionnaires did not measure the empathy scale.

A total score was created for each of the sub-scales of personality (e.g., Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism), the attitudes towards aging sub-scale, and fear towards aging sub-scale, and empathy towards aging scale. I examined the total scores, and answers to each question. In order to calculate the change in score for each scale, the pre-test score was subtracted from the post-test score of each participant. This was calculated for each of the measures assessing ageism.

Descriptive statistics, frequencies, means, and standard deviations were examined for the variables including age, gender, race, major, and plan to work with older adults. Paired-sample *t* tests were used to evaluate if scores on attitudes measures towards older adults from pre (T1) to post (T2) changed following participation. Additionally, using only pre-survey data, linear regression analyses were conducted to examine if there was a connection between types of personalities among students and attitudes towards older adults. Linear regression was also conducted to explore if there was an association between students' personalities and the amount of changes in attitudes towards older adults after participation in the program. We also examined effect size to help address potential Type I or Type II errors.

CHAPTER 4

FINDINGS

Research Question 1

Between fall 2016-summer 2018, 144 students participated in the program (M age =21.7, SD =2.5). 105 of these students (74.5%) completed both the pre- and post-survey. Specifically, summer 2016 had 7 students (6.7%), fall 2016 had 11(10.5%), spring 2017 had 28(26.7%), summer 2017 had 4(3.8%), fall 2017 had 8(7.6%), spring 2018 had 28(26.7%), summer 2018 had 8(7.6%), and fall 2018 had 11(10.5%). Spring participation is higher than fall semesters because an entire class participates in Cyber-Seniors, and summer participation is lower because only select students needing experiential education hours during the summer are included. The descriptive data for this questionnaire can be found in Table 1.1.

The sample who completed the survey ranged in age from 19 to 35 with a mean age of 21 (SD =2.19) years, and included 31 males and 73 females. The sample divided into 4 categories by race is as follows: 78 were White (74.3%), 9 Asian (8.9%), 11 Hispanic (10.5. %), and 5 Black or African American (4.8%). A small portion of the sample (10.5%) could speak another language besides English. The descriptive data for this questionnaire can be found in Table 1.1.

A large portion of sample (85.5%) was comfortable working with older adults prior to taking part in the program. In addition, 83% of sample was confident in teaching older adults how to use technology. Additionally, 58.1% of the sample was likely to volunteer in the field of senior services; and about half of the sample (49.5%) reported having a plan to work with older adults in their future career.

Total scores on the Big Five personality traits were calculated. Means and Standard Deviations were assessed for all sub-scales personality including: Openness ($M = 11.12$, $SD = 1.80$), Extraversion ($M = 9.20$, $SD = 2.80$), Emotional Stability ($M = 10.17$, $SD = 2.28$), Conscientiousness ($M = 12.20$, $SD = 1.73$), and Agreeableness ($M = 10.73$, $SD = 2.02$). The descriptive data for this questionnaire can be found in Table 1.2.

Mean and Standard Deviation was also assessed for 1) total attitudes towards older adults from pre-participation ($M = 27.13$, $SD = 3.72$) to post-participation ($M = 28.88$, $SD = 4.77$), 2) total fear towards older adults from pre-participation ($M = 20.95$, $SD = 3.19$) to post-participation ($M = 21.82$, $SD = 3.45$), and 3) total empathy towards older adults from pre-participation ($M = 38.34$, $SD = 5.86$) to post participation ($M = 40.59$, $SD = 6.30$). The descriptive data for this questionnaire can be found in Table 1.2.

Research Question 2

Paired-sample t tests were conducted to evaluate if any pre/post differences could be identified based on program participation for participants on ageism using: 1) attitudes towards older adults' measure, 2) fear towards older adult's measure, and 3) empathy towards older adults' measure. See Table 2 for pre/post scale scores and paired-sample t test results for the students who participated in the program. Results indicated that attitudes towards older adults were significantly different from pre-participation ($M = 27.13$, $SD = 3.72$) to post-participation ($M = 28.88$, $SD = 4.77$), $t(104) = -3.38$, $p < 0.001$). Results also indicated that fear towards older adults was significantly different from pre-participation ($M = 20.95$, $SD = 3.19$) to post-participation ($M = 21.82$, $SD = 3.45$), $t(104) = -2.618$, $p < 0.05$). Additionally, results showed that empathy

towards older adults was significantly different from pre-participation ($M = 38.34$, $SD = 5.86$) to post-participation ($M = 40.59$, $SD = 6.30$), $t(98) = -4.517$, $p < 0.001$). All scales showed improvements in thoughts and attitudes towards older adults.

Paired-samples t tests were then conducted on each question of the attitudes toward older adults scale, the fear towards older adults scale, and the empathy toward older adults scale (See Table 2.1, 2.2, and 2.3). All scale items were analyzed for the attitudes towards older adults, and four items showed significant improvements ($p < 0.05$); three items were not significantly different. Students improved their attitudes from pre to post on items including: As people get older, they are better able to cope with life ($t(104) = -4.30$, $p < 0.001$), it is a privilege to grow old ($t(104) = -2.09$, $p < 0.05$), there are many pleasant things about growing older ($t(104) = -3.41$, $p < 0.001$), and people become more accepting of themselves as they grow older ($t(104) = -3.69$, $p < 0.001$). See Table 2.1).

All scale items were analyzed for fear/apprehension towards older adults, and three items of the fear towards older adults scale showed significant improvements ($p < 0.05$); two items were not significantly different. Students improved their attitudes from pre to post on items including: I enjoy being around older people ($t(104) = -4.57$, $p < 0.001$), I enjoy talking with older adults ($t(104) = -2.04$, $p < 0.05$), and I feel very comfortable when I am around an older people ($t(104) = 2.01$, $p < 0.01$). See Table (2.2).

All scale items were also analyzed for empathy towards older adults, and six items of the empathy towards older adult scale showed significant improvements ($p < 0.001$); three items were not significantly different, and one item of the empathy towards older adult scale showed significant decline ($p < 0.05$). Students improved their

empathy from pre to post on six items including: I can easily tell how older adults are feeling ($t(98) = -3.24, p < 0.001$), I can often understand how older adults are feeling even before they tell me ($t(98) = -5.32, p < 0.001$), When an older adult is angry, I feel angry too ($t(98) = -5.06, p < 0.05$), I can tell when an older adult is angry, even if she/he tries to hide it ($t(98) = -5.47, p < 0.01$), I feel concerned for older adults that are lonely ($t(98) = -4.38, p < 0.001$), and I feel sad when I see an older adult who does not have any friends ($t(98) = -3.20, p < 0.001$). Students decreased their empathy from pre to post on one item including: I feel sorry for older adults who are treated unfairly ($t(98) = 2.01, p < 0.05$). See Table 2.3).

Research Question 3

Next, we examined the relationship between sub-scales of personality and ageism using: 1) attitudes toward older adults, 2) fear towards older adults, and 3) empathy towards older adults prior to students taking part in the program. Pearson correlation coefficients were calculated for the five sub-scales of personality, total attitudes toward older adults, total fear towards older adults, and total empathy towards older adults (See Table 3). Total attitudes towards older adults scores were not significantly related to four sub-scales of personality including: Emotional Stability, Agreeableness, Openness, and Extraversion. However, total scores on Conscientiousness were related to overall attitudes towards older adults. Students with higher levels of Conscientiousness had more positive attitudes towards older adults ($r = 0.27, p < 0.01$). Total fear towards older adults scores were significantly related to 4 sub-scales of personality including: Agreeableness, Openness, Conscientiousness, and Extraversion. Students with higher levels of Agreeableness had better attitudes towards

older adults ($r=0.35, p<0.01$), as did students with higher levels of Openness ($r=0.28, p<0.01$), higher levels of Conscientiousness ($r=0.42, p<0.01$), and higher levels of Extraversion ($r=0.33, p<0.01$). Total empathy towards older adults scores were significantly related to Agreeableness and Openness. Students with higher levels of Agreeableness ($r=0.34, p<0.01$) and higher levels of Openness ($r=0.28, p<0.01$) had more empathy towards older adults.

Regression Analysis: To further examine the relationship between ageism and sub-scales of personality for the first model, the control variables were regressed onto 1) total attitudes towards older adult scores, 2) total fear towards older adults sub-scale, and 3) total empathy toward older adults sub-scale. For the second model, the five traits of personality were regressed onto total ageism to evaluate whether sub-scales of personality predicted overall ageism when controlling for the effects of age, gender, and having a plan to work with older adults in the future.

Control variables were entered as independent variables, and total attitudes towards older adult (pre survey) as the dependent variable. The first model was not found to significantly predict attitudes towards older adults, and only age emerged as a significant predictor of overall attitudes toward older adults ($\beta = 0.202, p < 0.05$). Therefore, students who were older reported more positive attitudes towards older adults. After adding the five big traits to the model, the results indicated that of the control variables, age was still a significant predictor of attitudes towards older adults ($\beta = 0.209, p < 0.05$). The model was not found to significantly predict attitudes towards older adults ($R^2 = 0.23, f(5, 87) = 1.591, p = 0.17$). However, the results suggested that Conscientiousness was a significant predictor for total attitudes towards older adults

even when controlling for age, gender, or having a plan to work with older adults ($\beta = 0.257, p < 0.05$). See table 5.1 for the regression analysis testing personality on attitudes towards older adults.

For the second regression analysis, the first model was found to significantly predict fear towards older adults ($R^2 = 0.16, f(3, 92) = 5.94, p < 0.001$), with gender ($\beta = -0.125, p < 0.05$), and having a plan to work with older adults ($\beta = -0.246, p < 0.001$) emerging as significant predictors of overall fear/apprehension towards older adults. Therefore, female students and those who didn't have plan to work with older adults showed less apprehension towards older adults. The results for second model also indicated that second model significantly predicted fear towards older adults ($R^2 = 0.36, f(5, 87) = 5.552, p < 0.001$), and of the control variables, having a plan to work with older adults was a significant predictor of fear towards older adults ($\beta = -0.230, p < 0.05$). The results also suggested that Extraversion ($\beta = 0.205, p < 0.05$) is a significant predictor of overall fear towards older adults when controlling for age, gender, or having a plan to work with older adults. See table 5.2 for the regression analysis model testing personality on fear towards older adults.

For the third regression analysis, the first model was also found to significantly predict empathy towards older adults ($R^2 = 0.14, f(3, 92) = 5.152, p < 0.001$), with age ($\beta = -0.273, p < 0.001$) and gender ($\beta = 0.208, p < 0.05$) emerging as significant predictors of overall empathy towards older adults. Therefore, female students and those who were younger reported more empathy towards older adults. After adding the five traits of personality to the model, for control variables only age was a significant predictor of empathy towards older adults ($\beta = -0.236, p < 0.05$). The results suggested that

Agreeableness ($\beta = 0.272$, $p < 0.001$) was a significant predictor of overall empathy towards older adults when controlling for age, gender, or having a plan to work with older adults. See table 5.3 for the regression analysis model testing personality on empathy towards older adults.

Research Question 4

Another goal of the present study was to examine the relationship between the sub-scales of personality and overall changes in ageism using: (1) change in attitudes towards older adults, 2) change in fear towards older adults, and 3) change in empathy towards older adults following participation in the program. Pearson correlation coefficients were calculated for the overall change on attitudes towards older adults, fear towards older adults, empathy towards older adults, and the five sub-scales of personality. See table 3 for Pearson correlation coefficients for the changes on ageism towards older adults scale, and sub-scales of personality. As shown in the table 3, total change on attitudes towards older adults scores were not significantly related to four sub-scales of personality including: Neuroticism, Agreeableness, Conscientiousness, and Extraversion. Scores on Openness ($r = 0.197$, $P < 0.05$) were related to overall change on attitudes towards older adults. Therefore, students with higher levels of Openness had more changes in their attitudes towards older adults following participation in the program.

Pearson correlation coefficients were also calculated for the overall change on fear towards older and the five sub-scales of personality. As shown in the table 3 total change on fear towards older adults scores were not significantly related to four sub-scales of personality including: Neuroticism, Agreeableness, Conscientiousness, and

Openness. Scores on Extraversion ($r = -.022, p < 0.05$) were related to overall change on fear toward older adults. Therefore, students with higher levels of Extraversion had less change in their apprehension towards older adults following participation in the program.

Pearson correlation coefficient were also calculated for the overall change on empathy towards older and the five sub-scales of personality. As shown in the table 3 total change on empathy towards older adults scores were not significantly related to four sub-scales of personality including: Neuroticism, Agreeableness, Conscientiousness, and Extraversion. Scores on Openness ($r = -.020, p < 0.05$) were related to overall change on empathy toward older adults. Therefore, students with higher levels of Openness had less change in their empathy towards older adults following participation in the program.

Regression analyses: To further examine the relationship between changes in ageism towards older adults following participation in the program and sub-scales of personality, for first model, control variables were regressed onto overall change of 1) attitudes towards older adult's scores and 2) fear towards older adult's scores, and 3) empathy towards older adults (see tables 6.1, 6.2, and 6.3).

For the first regression analysis for the change scores, control variables were entered as independent variables, and overall change in attitudes of students towards older adult's scores as the dependent variable. The first model was not found to significantly predict changing attitudes towards older adults. A second model was also conducted to evaluate whether sub-scales of personality predicted overall change on attitudes towards older adults when controlling for the effects of age, gender, and having

a plan to work with older adults in the future. The results indicated that none of the control variables were significant predictors of attitudes towards older adults, and no traits of personality were significant predictors for overall change on attitudes towards older adults. See table 6.1 for the regression analysis testing personality on changing attitudes towards older adults.

For the second regression analysis on the change scores, the first model was not found to significantly predict change in fear toward older adults. For the second model, the results indicated that none of the control variables were significant predictors of fear towards older adults, and no traits of personality were significant predictors for overall change in fear towards older adults. See table 6.2 for the regression analysis testing personality on change in fear towards older adults.

For the third regression analysis for the change scores, the first model also was not found to significantly predict change in empathy toward older adults. However, age did emerge as a significant predictor of overall change in empathy towards older adults ($\beta = 0.258, p < 0.05$). Students who were older reported more change in empathy towards older adults. In the second model, sub-scales of personality did not predict overall change on empathy towards older adults, when controlling for the effects of age, gender, and having a plan to work with older adults in future. Among control variables age remained a significant predictor of change in empathy towards older adults ($\beta = 0.219, p < 0.05$). See table 6.3 for the regression analysis testing personality on change in empathy towards older adults.

CHAPTER 5

DISCUSSION

From fall 2016 to summer 2018, the Engaging Generations: Cyber-Seniors Program connected older adults with URI student technology mentors. Over multiple sessions, the students taught older adults how to use technological devices and online platforms. A larger proportion of students were seniors or juniors, White, female, comfortable working with older adults, and confident in teaching older adults how to use technology. Students' ageism towards older adults decreased following participation in the Cyber-Seniors program. Additionally, Agreeableness, Conscientiousness, and Extraversion were found to have a significant association with ageism towards older adults when controlling for the effects of age, gender, and having a plan to work with older adults in future. However, there were no significant personality trait predictors of changes in ageism when controlling for age, gender, and having a plan to work with older adults.

Main Hypotheses

It was hypothesized that there is a relationship between taking part in the program and changes in ageism. Students were expected to have less fear, more positive attitudes, and more empathy towards older adults after participation in the program. Significant improvement was found on change in ageism using: 1) attitude towards older adults, 2) fear towards older adults, and 3) empathy towards older adults. The first hypothesis was answered by using paired-sample *t* tests for each of the three models predicting total ageism and their questions. Students' attitudes towards older adults improved following participation in the Cyber-Seniors. Mean scores on four of the

questions on measure of attitudes (see table 2.1) were also significantly higher than pre-test mean scores ($p<0.05$) with medium effect sizes. Additionally, students' fear towards older adult's decreased following participation in the Cyber-Seniors. The mean scores on three of the questions on measure of fear (see table 2.2) were also significantly higher than pre-test mean scores ($p<0.05$) with medium effect sizes. Moreover, students' empathy towards older adult's increased following participation in the Cyber-Seniors. The mean scores on six of the questions on measure of empathy (see table 2.3) were also significantly higher than pre-test mean scores ($p<0.05$) with medium effect sizes.

These findings were consistent with previous studies that found intergenerational activities to be beneficial for both seniors and youth (Underwood & Dorfman, 2006; Wang & Chonody, 2013; Young & Janke, 2013). Some beneficial outcomes of intergenerational programs include developing positive changes in attitudes towards older adults (Wescott & Healy, 2011, Wurtele & Maruyama, 2013), developing openness toward older adults (Wang & Chonody, 2013), and promoting interests in working with older adults (Cohen-Mansfield & Jensen, 2017). My findings showed that intergenerational programs can be beneficial in decreasing the ageism, and the generational gap between students and older adults. The results from this study support how intergenerational programs can help students view older adults more positively and improve students' views and empathy towards older adults. Intergenerational programs also can narrow the generational gap by encouraging positive attitudes towards older adults, decreasing fear, and increasing empathy towards older adults. As a result, there is a potential to decrease ageism in our society that could help more students feel comfortable or knowledgeable about working with older adults.

The current findings also indicated the significant contribution of individual differences in personality traits to ageism towards older adults. Previous studies on the topic of attitudes and ageism focused more on the impact of the fear of death, anxiety toward aging, and the fear of aging (e.g. Bodner et al., 2015; Galton, N. 2019). However, the role of personality traits and individual differences in ageism is less well-studied. Additionally, previous studies on the topic did not investigate the role of individual differences in change of ageism. Therefore, this study aimed to deepen understanding of the relationships between sub-scales of personality, ageism, and change in ageism to explore how ageism might be modified and made more favorable among students or in groups that work with older adults. The relationships between personality traits and ageism were explored through a stepwise regression analysis.

It was hypothesized that there would be a connection between types of personalities among students and ageism prior to students taking part in the program, while controlling for age, gender, and having a plan to work with older adults. As such, students with higher levels of Agreeableness and Conscientiousness were expected to have less ageism towards older adults. The study results indicated that the traits of Conscientiousness, Agreeableness, and Extraversion had a significant association with ageism towards older adults. Students with higher scores on Conscientiousness, Agreeableness, and Extraversion reported less ageism towards older adults. The results are consistent with previous studies that found that the personality traits are a significant part of ageist attitudes (Allan et al., 2014, Galton, 2019). One study (Allen et al., 2014) found that there was an association between less ageist attitudes and more Openness to new experience; however, the present study did not find this. The Allen et al. (2014

study) also found a direct association between higher Agreeableness and positive ageist attitudes, and an indirect association between more Conscientiousness and less anxiety about aging, which this study also found. Also, Neuroticism was positively associated with more ageism via anxiety toward aging (Allan et al., 2014); however this study did not confirm that finding. Additionally, another study in this area found that Agreeableness, Openness, and Extraversion appeared as significant predictors of lower total ageism (Galton, 2019), which is similar to this study's findings. A potential explanation for the lack of direct consistency between the previous results and the present study could be explained due to differences in the samples used.

Specific to Conscientiousness, which was not found to be a significant predictor of ageism in past studies, this study found Conscientiousness to be a significant predictor. In general, people exhibiting more Conscientiousness tend to be more dependable, hardworking, organized, self-disciplined, persistent, achievement oriented, and responsible (Harris & Dollinger, 2003; Mount, Barrick, Scullen, & Rounds, 2005), which may be important traits for students taking part in the Cyber-Seniors program. Therefore, for students in this program, being responsible or reliable seems to be related to more positive attitudes and less fear towards older adults.

Related to Agreeableness, previous research is consistent about the significant role of Agreeableness as an important predictor of less ageism and less anxiety towards aging (Allan et al., 2014; Galton, 2019). The present study also found Agreeableness to be a significant predictor of less ageism. One explanation could be that a person with a high level of Agreeableness is usually warm, friendly, considerate, kind, and has an optimistic view of human nature and prosocial behavior. Therefore, these individuals

may have more experience with older adults or get along well with them. As a result, they may have less ageism towards older adults.

For Extraversion, participants exhibiting more Extraversion were found to report lower ageism towards older adults, similar to previous research in this area. Individuals reporting a more extraverted personality tend to value the frequency of their interpersonal relationships. They also tend to express more warmth, enjoy human interaction, and have a positive affect (Galton, 2019). Therefore, in this study, those with more tendency to enjoy human interaction tend to have less ageism towards older adults.

Related to the control variables, one unexpected and interesting result of the current study was that students who have a plan to work with older adults showed more initial apprehension towards older adults. Therefore, this may be that intergenerational programs could be more beneficial for those who have a plan to work with older adults or know that their careers will involve work with older adults in order to create less apprehension towards the older adult population and make them more prepared to work with older people. Another interesting result was that although younger students reported more negative attitudes than older participants, they showed more empathy towards older adults compared to older students. Further research is needed to further understand these findings. One thing to consider in this study is that most of the students in our sample were at similar age, so it is important not to overinterpret the findings.

Finally, it was also hypothesized that there was an association between students' personalities and a change in ageism towards older adults following participation in the program, while controlling for age, gender, and having a plan to work with older adults.

The current study did not find significant contributions for individual differences in personality traits related to changes in ageism towards older adults. It was hypothesized that higher levels of Openness and Extraversion would be associated with more changes on ageism scores. However, the results indicated that the traits of Openness and Extraversion were not significantly related to changes in ageism. One reason why Extraversion may not have had a significant relationship with changes on ageism is that students high in Extraversion had less ageism towards older adults prior to participation in the program, so making detecting change more difficult. Further, our sample was also high in the trait of openness ($M = 11.12$, $SD = 1.80$) compared to previous studies, which may affected this study's ability to detect change.

Theoretical Implications

Using ecological theory can explain how a variety of factors affecting the ageism. Many studies include an individual's environment effects on ageism and do not include the other factors, such as timing and individual differences in their discussion (Donizzetti, 2019). Therefore, the current study focused on individual differences (micro system) and the interaction between personality traits and contact with older adults in intergenerational program (meso level). However, it is important to consider the complexity of ageist attitudes and the fact that relevant risk factors for ageism could be related to other factors such as social/cultural contexts, the interactions between person and context, and the interaction between meso level and macro level. An applied ecological approach could best address the requirements for a better understanding of ageism regarding the interaction between context (macro), individuals (micro), and the community (meso level). As a result, we need to consider the broader contextual

framework within which the ageism occurs, such as broad ideological values, norms, and institutional patterns of a particular culture. For instance, a prevalent assumption in psychology is that Eastern cultures may have less ageist attitudes because of norms and values that honor and respect elders (Vauclair, Hanke, Huang & Abrams, 2017). Therefore in Eastern cultures, ageism may be even defined differently based on culture and values. Another important component of the Bronfenbrenner model is the chronosystem (Bronfenbrenner, 1986) and examining the influence of changes and timing. Social status of older people, social policies, and laws may change from one time to another time and impact on ageist attitudes. Therefore, we need to consider the importance of timing, context process, and country differences in levels of ageism and how it may impact on the relationship between students and older adults in intergenerational program.

Research and Program-Related Implications

Negative attitudes towards older adults can cause poor treatment, prejudice, and may even decrease levels of confidence, happiness, and health for older adults (Bishop, 2016). The spread of stereotypes has been attributed to a lack of knowledge, education, or experience about the aging process, which has been observed in all age ranges (Cuddy, Norton, & Fiske, 2005). Therefore, research on ageism allows for an increasing awareness of these issues and deeper understanding of the structure and relationships between the parts (Galton, 2019). This work, which indicates the significant role of Agreeableness, Extraversion and Conscientiousness with less ageism towards older adults, may help foster change in attitudes and decreased the intergenerational gap. The present study suggest that other variables could both directly or indirectly be related to

ageism. Based on the theory of Bronfenbrenner, interaction between different layers of society among system structures can impact on ageist attitudes. For instance, many aspects of the ageist attitudes may also depend on interaction between traits of personality and the macro system such as, social class, race, and culture. Therefore, it is importance to distinguish between the normative context and personal attitudes as well as the interaction between the different components of ageism. Additionally, we should consider that individuals are complex with multiple traits and experiences that all contribute towards their ageist ideas. Therefore, the relationship between personality and ageist attitudes should not be only recognized by dimensions of personality separately, and there is a need to have the wider sense of people's personality in order to get a better picture of the association between personality traits and ageism. For instance, adding other factors such as intelligence, social attitudes, or individual's identity could be beneficial. Moreover, one should not forget about the role of source traits and secondary traits. Source traits are more important to describe personality, but they are less obvious and more difficult to be recognized (McLeod, 2017). Secondary Traits are the traits that are related to attitudes or preferences and often appear only in specific conditions or under particular circumstances (Katz, 1991).

Urie Bronfenbrenner's ecological or bio-ecological model explains how human development and attitudes can be impacted by a set of interactions among system structures, such as family, friends, cultural, socioeconomic, political, and psychological domains. Understanding the set of interactions, influences, limitations, and structures can help developers in designing applications or programs that meet specific user needs. For example, as a result of increasing the numbers of older adults, the existing

intergenerational gap, and ageism towards older adults, there is a need to design intergenerational programs to account for individual differences (individual level), changes in relationships, communication needs, and social influences (microsystems and mesosystems). For instance, based on the results of the current study, agreeable, energetic and attentive interactions with older adults may cause more favorable inter-group communication, create less ageism, and greater inclusion for intergenerational program.

Using the bio-ecological model helped this study to consider the role of individual differences. Intergenerational programs such as the Cyber Seniors program could be more useful if they continue to do the personality test before students participate in the program but then use the data to tailor the training in some way based on personality traits.

The present study also can help students to be aware of factors that can help them towards their own healthy aging. Personality traits, especially Conscientiousness, have been shown to predict health outcomes in old age. For instance, a study found the association between personality traits in childhood and overall health outcomes 40 years later. They found significant indirect positive relationships between Extraversion, Conscientiousness, Agreeableness, and mid-life health status. Another study found associations between Conscientiousness, longevity (Jokela et al., 2013), and health (Hampson, Edmonds, Goldberg, Dubanoski, & Hillier, 2015). This may be that less ageism towards older adults or being open could result in positive health outcomes in their own mid-life or later. Related to this study, it may also be interesting to examine

personality traits of the older participants in order to identify who tends to participate in the program, and if there personality traits are related to their own ageist attitudes.

Importantly, based on the study's findings, the program is working positively, and the student participants are responding favorably to the program. Overall, students' ageist attitudes decreased following participation in the program. Therefore, the program should continue what it is doing in order to create more positive attitudes, increase more empathy, and decrease apprehension towards older adults among university students. Further based on the results, it does not seem that personality plays a significant role regarding who changes their attitudes towards aging and older adults. One suggestion for the program could to run the intergenerational program with younger participants, such as high school or middle school students, to see if the program could help them develop an early interest in working with older adults and actually avoid developing ageist attitudes prior to getting to college. Examining personality traits among these younger populations could also be interesting to understand if personality traits can play significant role in the development of ageist attitudes or change in ageist attitudes. It would also be interesting to examine the long-term outcomes of the students who participate in the program, specifically by following up with them after they get their first job to see if they are (or are not) working with older adults and how prepared they felt to work with older adults.

Study Limitations

Several limitations should be taken into account related to this study. There are limitations of this study due to the sample, and potential concern for the reliability of the independent variable (personality). The student and older adult samples in this

program and study are unique, which potentially limits the generalizability of the findings. Since the present sample was entirely composed of students, and most of the students volunteered or chose to take the course, this sample may be predisposed to having less ageist attitudes towards older adults. Additionally, older adults were fundamentally different from the general population of older adults in that they signed up for a session, and therefore wanted to learn technology, wanted to meet the college students, could drive, and were more active. Moreover, ageism, the definition of ageism, and personality traits, and the interaction between them may change from one culture to another culture. For example, a study conducted a cultural comparison between Jews and Arabs in Israel on attitudes toward older adults and personal views regarding one's own aging (Bergman, Bodner & Cohen-Fridel, 2013). The study found that Arabs rated their culture as more tolerant toward older adults, perceived older adults as significantly more contributing to society, and reported less ageist attitudes and apprehension towards them. However, Arab women reported more anxieties and ageist attitudes in comparison to Arab men, whereas no such differences were found among Jews. Therefore, it is important to consider to consider cultural differences.

Due to limitations of time and using data already collected, I am limited to analyzing the data that has been collected rather than being able to select measures on my choice. I also used the self-reported measure of five big personality traits that has only 10 questions. Since research about personality traits, ageism, and change in ageism as conceptualized in this study is, to the author's knowledge, non-existent, future research could replicate the present study with other measures of personality. For instance, future research can could strongly contribute to the knowledge of these

concepts by using other measures, such as the NEO Personality Inventory as it allows for an in-depth analysis of each trait's composing facets (Galton, 2019).

Furthermore, the current study is not a true experiment. I used a one group pretest/posttest design, so was unable to make causal inference and fully control for extraneous variables. A control group was not also included, but one suggestion is that that future research could do so. Future longitudinal studies also can follow students who have plan to work with older adults to see if their ageist attitudes will change by time and if intergenerational programs such as Cyber senior program had been successful to prepare them to works with older adults.. Finally, several other variables known to play a predominant role in attitudes towards older adults have not been included in the present study, for example major, having previous experience or knowledge about older adults, and quality of student experiences working with older adults.

Conclusion

Past studies have greatly demonstrated the role of intergenerational programs in encouraging positive attitudes towards older adults, and decreasing ageism. The present research included the role of personality traits towards ageism, and changes in ageism in intergenerational program. The goal of this inclusion was to broaden the knowledge of ageism, consider the role of individual differences in ageism, and explore how ageism might be changed and made more favorable among younger adults. The results supported the hypotheses and brought several suggestions of making progress for future research. Working on changes on ageism could be an investment in a better future for both seniors and youth. Less ageism towards older adults could result in desirable

treatment, increase levels of confidence, happiness, and health for older adults, and also could result in more positive health outcome in their own students mid-life or later.

TABLES

Table 1. 1 *Frequencies of Categorical Demographics for Pre/Post Survey of Samples (N = 105)*

Variables	Frequency%	
Gender		
Male	31	29.8
Female	73	70.2
Race/ethnicity		
Hispanic	11	10.5
Asian	9	8.6
Black or African American	5	4.8
White	78	74.3
Language		
English	94	89.5
Others	11	10.5
Year in school		
Junior	37	35.2
Senior	64	61.0
Grad Student	3	2.9
Semester		
Fall 2016	11	10.5
Summer 2016	7	6.7
Spring 2017	28	26.7
Fall 2017	4	3.8
Summer 2017	8	7.6
Spring 2018	28	26.7
Summer 2018	8	7.6
Fall 2018	11	10

Table 1.2 Scores on Big Five Inventory and total ageism N = 105

Trait	Mean	Std. Deviation	Range
Extraversion	9.20	2.80	3.00- 14.00
Openness	11.12	1.80	6.00-14.00
Conscientiousness	12.20	1.73	7.00-14.00
Emotional Stability	10.17	2.28	4.00-14.00
Agreeableness	10.73	2.02	5.00-14.00
Total Attitude(pre)	27.13	3.72	10.00- 35.00
Total Attitude(post)	28.88	4.77	7.00-35.00
Total Fear(pre)	20.95	3.19	8.00- 25.00
Total Fear(post)	21.82	3.45	5.00-25.00
Total Empathy(pre)	38.34	5.86	10.00-49.00
Total Empathy(post)	40.59	6.30	15.00-51.00

Table 2

Table 2.1. *Student pre/post scores on Attitudes towards Older Adults scale N = 105*

Measures ^a	Pre Mean (SD)	Post Mean (SD)	<i>t</i> value
Attitudes towards older adults total score	27.13(3.72)	28.88(4.77)	-3.38***
Individual items:			
1-As people get older, they are better able to cope with life.	3.36(0.87)	3.87 (0.92)	-4.30***
2-It is a privilege to grow old.	3.95(0.86)	4.17 (0.90)	-2.09*
3-Wisdom comes with age.	3.97(0.89)	4.02 (0.96)	-0.61
4-There are many pleasant things about growing older.	3.75(0.78)	4.07 (0.85)	-3.41***
5-People become more accepting of themselves as they grow older.	3.62(0.86)	4.00 (0.92)	-3.69***
6- It is very important for older people to pass on the benefits of their experiences to younger.	4.29(0.69)	4.43 (0.76)	-1.39
7-It is important that older people give a good example for younger people.	4.21(0.73)	4.36 (0.81)	-1.68

^a Possible scores range from 7–35 for attitude towards older adult scale, and possible scores for each item range from 1–7, with higher scores indicating the more they have positive attitude toward older adults.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 2.2. *Student pre/post scores on fear towards Older Adults scale N = 105*

Measures ^a	Pre Mean (SD)	Post Mean (SD)	<i>t</i> value
Fear towards older adults total score	20.95(3.19)	21.82(3.45)	-2.61 [*]
Individual items:			
1-I enjoy being around older people.	4.01(0.77)	4.38 (0.75)	-4.57***
2- I like to go visit my older relatives	4.40(0.79)	4.42 (0.77)	-0.34
3- I enjoy talking with older adults.	4.22(0.74)	4.40 (0.73)	-2.04 [*]
4- I feel very comfortable when I am around an older person.	4.03(0.83)	4.29(0.81)	-2.86***
5-I enjoy doing things for older people,	4.26(0.77)	4.40 (0.76)	-1.79

^a Possible scores range from 5–25 for fear towards older adult scale, and possible scores for each item range from 1–5, with higher scores indicating the less they have fear toward older adults.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 2.3. *Student pre/post scores on empathy towards Older Adults scale N = 98*

Measures ^a	Pre Mean (SD)	Post Mean (SD)	<i>t</i> value
Empathy towards older adults total score	38.34(5.86)	40.59(6.30)	-4.517***
Individual items:			
1-I can easily tell how older adults are feeling.	3.32(0.72)	3.63 (0.85)	-3.24***
2-I feel sorry for an older adult who feels sad.	4.32(0.74)	4.14 (0.91)	1.99
3-I can often understand how older adults are feeling even before they tell me.	3.15(0.77)	3.64 (0.91)	-5.32***
4- I feel sorry for older adults who are treated unfairly.	4.64(0.76)	4.45 (0.87)	2.01*
5-When an older adult is angry, I feel angry too.	2.87(0.91)	3.40 (1.08)	-5.06***
6-I am concerned for older adults who are hurt.	4.42(0.85)	4.45 (0.80)	-0.38
7-When an older adult is sad, I become sad too.	3.63(1.04)	3.75(1.02)	-1.34
8-I can tell when an older adult is angry, even if she/he tries to hide it.	3.25(80)	3.80 (0.88)	-5.47**
9-I feel concerned for older adults that are lonely.	4.34(0.77)	4.61(0.68)	-4.38***
10-I feel sad when I see an older adult who does not have any friends.	4.39(0.88)	4.76(1.25)	-3.20***

^a Possible scores range from 10–50 for empathy towards older adult scale, and possible scores for each item range from 1–5, with higher scores indicating the more they have empathy toward older adults.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 3

Table 3. *Correlation of subscales of personality, ageism, and changes in ageism N = 105*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1-Extraversion	-													
2-Openness	0.380**	-												
3-Agreeableness	0.243*	0.335**	-											
4-Emotional Stability	0.204*	0.322**	0.205*	-										
5-Contentiousness	0.320**	0.279**	0.429**	0.315**	-									
6-Attitude towards older adults	0.092	0.056	0.104	0.171	0.266**	-								
7-Fear towards older adults	0.332**	0.282**	0.354**	0.191	0.419**	0.450**	-							
8-Empathy towards older adults	0.111	0.286**	0.344**	0.036	0.159	0.160	0.489**	-						
9-Change in attitude towards older adults	-0.053	0.197*	0.099	0.010	-0.13	-0.470**	-0.116	0.232*	-					
10-Change in fear towards older adults	-0.227*	-0.082	-0.024	-0.027	-0.148	-0.289**	-0.459	-0.012	0.553**	-				
11-Change in empathy toward older adults	-0.005	-0.202*	-0.013	-0.086	-0.007	-0.021	-0.076	-0.327**	0.134	0.257	-			
12-Age	-0.037	-0.180	-0.038	-0.128	0.020	0.158	-0.100	0.267**	0.020	0.154	0.263**	-		
13-Gender	0.120	0.189	0.442**	-0.056	0.341**	0.033	0.201*	0.212	0.139	0.015	0.141	0.009	-	
14-Have a plan	0.043	0.044	-0.228*	-0.092	-0.185	-0.158	-0.312**	-0.186	0.061	0.062	0.026	0.020	-0.124	-

***. Correlation is significant at the 0.001 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 4

Table 4. *Partial correlation of subscales of personality, ageism, and changes in ageism N = 105*

Variables	1	2	3	4	5	6	7	8	9	10	11
1-Extraversion	-										
2-Openness	0.352	-									
3-Agreeableness	0.155	0.238	-								
4-Emotional Stability	0.226	0.337	0.174	—							
5-Contentiousness	0.243*	0.246*	0.293**	0.369***	-						
6-Attitude towards older adults	0.107	0.078	-0.001	0.205*	0.270**	-					
7-Fear towards older adults	0.336**	0.263*	0.310**	0.259*	0.353**	0.477***	-				
8-Empathy towards older adults	0.063	0.220*	0.272**	0.013	0.067	0.194	0.418***	-			
9-Chaning in attitude towards older adults	-0.037	0.195	0.137	0.053	-0.014	-0.481***	-0.124	0.243*	-		
10-Changing in fear towards older adults	-0.257*	-0.068	-0.030	-0.066	-0.162	-0.257*	-0.535***	-0.063	0.553***	-	
11-Changing in empathy toward older adults	-0.009	-0.189	-0.084	-0.039	-0.066	-0.057	-0.089	-0.325**	0.129	0.293**	-

***. Correlation is significant at the 0.001 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5

Table 5.1. *Regression analyses summary for 5 sub scales of personality predicting total attitudes towards older adults scale N = 105*

Variable	<i>B</i>	SE	95%CI	β	<i>t</i>	<i>p</i>
First Model: after controlling for age						
Age	0.334	0.167	[0.003, 0.666]	0.202	2.003	0.048*
Gender	0.475	0.841	[-1.195, 2.144]	0.057	0.564	0.574
Have a plan	-1.067	0.748	[-2.552, 0.419]	-0.145	-1.426	0.157
R ² = 0.067						
Second model						
Age	0.346	0.169	[0.009, 0.682]	0.209	2.039	0.045*
Gender	0.180	1.027	[-1.862, 2.222]	0.022	0.176	0.861
Have a plan	-0.900	0.771	[0.421, 0.632]	0.122	-2.432	0.246
Extraversion	0.041	0.253	[-0.249, 0.332]	0.031	0.283	0.778
Openness	-0.009	0.189	[-0.506, 0.502]	0.001	-0.009	0.778
Conscientiousness	0.547	0.260	[0.031, 1.064]	0.257	2.105	0.038*
Emotional Stability	0.162	0.239	[-0.215, 0.538]	0.096	0.853	0.396
Agreeableness	-0.208	0.146	[-0.682, 0.266]	-0.239	-0.873	0.385
R ² = 0.145						

* $p < .05$

Table 5.2. Regression analyses summary for 5 sub scales of personality predicting total fear towards older adults scale $N = 105$

Variable	B	SE	95%CI	β	t	p
First Model: after controlling for age						
Age	-0.179	0.137	[-0.451, 0.094]	-0.125	-1.304	0.196
Gender	0.766	0.691	[0.394, 3.138]	0.246	2.557	0.012*
Have a plan	-1.691	0.615	[-2.912, 0.471]	0.125	-2.752	0.007**
$R^2 = 0.162$						
Second model						
Age	-0.130	0.127	[-0.382, 0.122]	-0.090	1.024	0.309
Gender	0.123	0.768	[-1.405, 1.650]	0.017	0.160	0.873
Have a plan	-1.471	0.576	[0.421, 0.632]	-0.230	-2.552	0.012*
Extraversion	0.234	0.109	[0.017, 0.452]	0.205	2.141	0.035*
Openness	0.113	0.190	[-0.506, 0.502]	0.062	0.597	0.552
Conscientiousness	0.367	0.194	[-0.019, 0.754]	0.199	1.889	0.062
Emotional stability	0.116	0.142	[-0.166, 0.397]	0.080	0.818	0.416
Agreeableness	0.337	0.178	[-0.017, 0.692]	0.204	1.890	0.062
$R^2 = 0.364$						

* $p < .05$

** $p < .01$

Table 5.3. *Regression analyses summary for 5 sub scales of personality predicting total empathy toward older adults scale N = 10*

Variable	<i>B</i>	SE	95%CI	β	<i>t</i>	<i>p</i>
First Model: after controlling for age						
Age	-0.724	0.256	[-1.233, -0.216]	-0.273	-2.829	0.006**
Gender	2.746	1.289	[0.186, 5.307]	0.208	2.130	0.036*
Have a plan	-1.729	1.147	[-4.008, 0.549]	-0.148	-1.508	0.135
R ² = 0.144						
Second model						
Age	-0.626	0.256	[-1.136, -0.116]	-0.236	-2.441	0.017*
Gender	0.259	1.555	[-2.830, 3.349]	0.020	0.167	0.868
Have a plan	-1.697	1.166	[-4.014, 0.621]	-0.144	-1.455	0.149
Extraversion	-0.045	0.221	[-0.485, 0.395]	-0.021	-0.203	0.839
Openness	0.677	0.384	[-0.085, 1.440]	0.200	-1.766	0.024*
Conscientiousness	-0.062	0.393	[-0.844, 0.720]	-0.018	-0.158	0.875
Emotional stability	-0.219	0.286	[-0.788, 0.351]	0.081	-0.764	0.447
Agreeableness	0.829	0.361	[0.112, 1.546]	0.272	2.297	0.081
R ² = 0.236						

**p*<.05

***p*<.01

Table 6.1. *Regression analyses summary for 5 sub scales of personality predicting total change on attitudes toward older adults scale*
N = 105

Variable	<i>B</i>	SE	95%CI	β	<i>t</i>	<i>p</i>
First Model: after controlling for age						
Age	0.001	0.214	[-0.426, -0.425]	0.000	0.003	0.998
Gender	1.102	1.079	[-1.042, 3.246]	0.107	1.021	0.310
Have a plan	0.700	0.964	[-1.216, 2.615]	0.076	-1.726	0.470
R ² = 0.015						
Second model						
Age	-0.141	0.219	[-0.337, 0.534]	0.048	0.450	0.654
Gender	0.457	1.329	[-2.323, 2.961]	0.031	0.240	0.811
Have a plan	0.750	1.001	[-1.380, 2.599]	0.066	0.609	0.544
Extraversion	-0.188	0.189	[-0.573, 0.179]	-0.120	-1.041	0.301
Openness	0.700	0.328	[-0.034, 1.271]	0.235	1.855	0.063
Conscientiousness	-0.345	0.336	[-0.901, 0.435]	-0.088	-0.693	0.490
Emotional stability	0.138	0.246	[-0.460, 0.518]	0.014	0.118	0.906
Agreeableness	0.315	0.308	[-0.269, 0.957]	0.146	1.117	0.267
R ² = 0.081						

Table 6.2. Regression analyses summary for 5 sub scales of personality predicting total change on fear toward older adults scale $N = 105$

Variable	B	SE	95%CI	β	t	p
First Model: after controlling for age						
Age	0.267	0.163	[-0.061, -0.586]	0.165	1.610	0.111
Gender	-0.166	0.821	[-1.795, 1.464]	-0.021	-0.202	0.841
Have a plan	0.402	0.730	[-1.048, 1.853]	0.057	0.551	0.583
$R^2 = 0.031$						
Second model						
Age	-0.256	0.168	[-0.077, 0.590]	0.162	1.529	0.130
Gender	0.476	1.016	[-1.544, 2.490]	0.060	0.469	0.641
Have a plan	0.496	0.762	[-1.019, 2.011]	0.070	0.651	0.517
Extraversion	-0.267	0.145	[-0.555, 0.020]	-0.211	-1.846	0.068
Openness	0.010	0.251	[-0.489, 0.508]	0.005	0.038	0.970
Conscientiousness	-0.262	0.257	[-0.773, 0.249]	-0.128	-1.020	0.311
Emotional stability	0.108	0.187	[-0.264, 0.481]	0.067	0.578	0.564
Agreeableness	0.067	0.236	[-0.402, 0.536]	0.037	0.283	0.778
$R^2 = 0.089$						

Table 6.3. *Regression analyses summary for 5 sub scales of personality predicting total change on empathy toward older adults scale*
N = 98

Variable	<i>B</i>	SE	95%CI	β	<i>t</i>	<i>p</i>
First Model: after controlling for age						
Age	0.573	0.222	[0.132, 1.014]	0.258	2.581	0.011*
Gender	1.368	1.118	[-0.853, 3.589]	0.123	1.223	0.224
Have a plan	-0.233	0.995	[-2.210, 1.743]	-0.024	-0.234	0.815
R ² = 0.085						
Second model						
Age	0.488	0.231	[0.029, 0.946]	0.219	2.116	0.037*
Gender	2.256	1.398	[-0.523, 5.034]	0.203	1.614	0.110
Have a plan	-0.094	1.048	[-2.077, 1.990]	-0.009	-0.089	0.929
Extraversion	0.120	0.199	[-0.276, 0.516]	0.068	0.603	0.548
Openness	-0.590	0.345	[-1.276, 0.095]	-0.207	-1.711	0.091
Conscientiousness	-0.095	0.354	[-0.798, 0.608]	-0.033	-0.268	0.790
Emotional stability	0.058	0.258	[-0.454, 0.570]	-0.026	0.225	0.822
Agreeableness	-0.122	0.325	[-0.767, 0.523]	-0.048	-0.376	0.708
R ² = 0.124						

* $p < .05$

APPENDIX A

Attitudes toward older adult measure

Respondents were asked about their attitude toward older adults by using “Attitudes toward Aging Scale” that includes seven 5-point Likert scale questions.

1-Strongly disagree 2- Disagree 3-Natural 4-Agree 5-Strongly agree

1. As people get older, they are better able to cope with life.
2. It is a privilege to grow old.
3. Wisdom comes with age.
4. There are many pleasant things about growing older.
5. People become more accepting of themselves as they grow older.
6. It is very important for older people to pass on the benefits of their experiences to younger people.
7. It is important that older people give a good example for younger people.

Type of personality measure

Type of Personality is independent variable that include 10-item measure of the Big Five or 5 broad domains— extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience that includes seven 7-point Likert scale questions.

1- Disagree strongly 2-Disagree moderately 3- Disagree 4-Natural 5-Agree strongly 6- agree moderately 7- agree

I see myself as:

1. _____ Extraverted, enthusiastic.

2. _____ Critical, quarrelsome.
3. _____ Dependable, self-disciplined.
4. _____ Anxious easily upset.
5. _____ Open to new experiences, complex.
6. _____ Reserved, quiet.
7. _____ Sympathetic, warm.
8. _____ Disorganized, careless.
9. _____ Calm, emotionally stable.
10. _____ Conventional, uncreative

Fear toward older adult measure

We included the Fear of Older People sub-scale from the Anxiety about Aging scale (Lasher & Faulkender, 1993) that includes five 5-point Likert scale questions.

1-Strongly disagree 2- Disagree 3-Natural 4-Agree 5-Strongly agree

1. I enjoy being around older people.
2. I like to go visit my older relatives.
3. I enjoy talking with older adults.
4. I feel very comfortable when I am around an older person.
5. I enjoy doing things for older people.

Empathy toward older adult measure

We includes Empathy towards older adult scale with ten items measure using a five 5-point Likert scale questions.

1-Never 2- Rarely 3-Sometimes4- Often 5-Always

1. I can easily tell how older adults are feeling.
2. I feel sorry for an older adult who feels sad.
3. I can often understand how older adults are feeling even before they tell me.
4. I feel sorry for older adults who are treated unfairly.
5. When an older adult is angry, I feel angry too.
6. I am concerned for older adults who are hurt.
7. When an older adult is sad, I become sad too.
8. I can tell when an older adult is angry, even if she/he tries to hide it.
9. I feel concerned for older adults that are lonely.
10. I feel sad when I see an older adult who does not have any friends.

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