

**A MULTIMODAL APPROACH TO AGEISM: UNDERSTANDING
PREDICTORS OF HOSTILE AGEISM, BENEVOLENT AGEISM, AND
OVERALL AGEIST ATTITUDES**

by

Madison Herrington

BSc (University of New Brunswick, 2020)

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of

Master of Arts

in the Graduate Academic Unit of Psychology

Supervisor: Lilly Both, Ph. D. Psychology

Examining Board: Gregory Marquis, Ph. D. History
Sean Roach, Ph. D. Psychology

This thesis is accepted by the
Dean of Graduate Studies

THE UNIVERSITY OF NEW BRUNSWICK

July, 2023

©Madison Herrington, 2023

ABSTRACT

The purpose of this study was to investigate predictors of ageist attitudes. Several theories have been postulated as to why ageism occurs (i.e., contact theory, social identity theory [SIT], terror management theory [TMT], modernization theory); however, many researchers have failed to examine these multiple theories in one model, and failed to tease apart overall ageism from its benevolent and hostile forms.

Participants (N = 389) were recruited from university psychology classes and from the community via social media to complete an online survey. Demographic characteristics and contact measures were assessed using self-generated questionnaires. In addition, measures of personality, SIT, TMT, and modernization theory were administered. Also, measures of COVID-19 attitudes were administered to examine the influence of the pandemic on overall, benevolent, and hostile ageist attitudes. The results of hierarchical linear regressions found that higher scores on overall ageist attitudes were predicted by being younger, cisgender male, having lower scores on quality of present intergenerational contact, Agreeableness, Openness, and Extraversion, and higher scores on ageing anxiety and modernization. In turn, being younger, cisgender male, having lower scores on Openness, and higher scores on religiosity, fear of death and modernization were significant predictors of benevolent ageist attitudes. Lastly, being younger, having lower scores on present quality of intergenerational contact and Agreeableness, and higher scores on religiosity and modernization were significant predictors of hostile ageist attitudes. As well, significant correlations were found among the three types of ageist attitudes and the COVID-19 measures.

Keywords: ageism, contact, social identity, terror management, modernization

ACKNOWLEDGEMENT

It has been a privilege to have worked under the supervision of Dr. Lilly Both. I am grateful for her considerable support, encouragement, knowledge, and guidance throughout my graduate degree. I am especially grateful for Dr. Both's attention to detail and commitment to excellence. Dr. Both offered irreplaceable guidance in conducting this research, as well as a hand in conducting it, and for that I am eternally grateful.

I would also like to thank the members of my thesis committee, Dr. Enrico DiTommaso, Dr. Sean Roach, and Dr. Gregory Marquis for their valued comments and recommendations on my thesis. I would not have been able to compose this document without their collaboration and assistance.

Lastly, I would like to thank my family and friends. I thank my mom and dad who encouraged me throughout my undergraduate degree and while I pursued higher education throughout my graduate program. To my fiancé, I would like to emphasize my extreme gratitude and appreciation for his continuous support, patience, kindness, and encouragement throughout my academic career. I could not have finished successfully without the support of all the aforementioned individuals. Thank you.

Table of Contents

ABSTRACT.....	ii
ACKNOWLEDGEMENT.....	iii
Table of Contents	iv
List of Tables.....	x
List of Symbols, Nomenclature or Abbreviations.....	xi
A Multimodal Approach to Ageism: Understanding Predictors of Hostile Ageism, Benevolent Ageism, and Overall Ageist Attitudes	1
Ageism	3
Forms of Ageism: Negative and Positive Ageism	5
Ageism Theories	9
<i>Contact Theory</i>	10
<i>Social Identity Theory</i>	13
<i>Terror Management Theory</i>	15
<i>Modernization Theory</i>	18
Other Predictors of Ageism: Demographic Variables and Personality Factors.....	23
Ageism and COVID-19.....	26
The Current Study	29
Hypotheses	30
<i>Demographic Variables</i>	31
<i>Personality</i>	31

<i>Contact Theory</i>	32
<i>SIT</i>	32
<i>TMT</i>	33
<i>Modernization Theory</i>	34
<i>Regression Models</i>	34
<i>COVID-19</i>	35
Method	37
Participants.....	37
Measures	38
<i>Demographics</i>	38
<i>Contact</i>	38
<i>Personality</i>	38
<i>Social Identity</i>	39
<i>Terror Management</i>	43
<i>Modernization</i>	46
<i>Ageist Attitudes</i>	48
<i>COVID-19</i>	51
Procedure.....	54
Results.....	55
Power Analysis	55

Data Conditioning.....	56
<i>Linear Model Assumptions</i>	57
<i>Multivariate Outliers</i>	57
<i>Multicollinearity and Singularity</i>	58
Sample Characteristics	58
<i>Group Differences</i>	58
<i>Zero Order Correlations</i>	60
<i>Demographic Variables</i>	60
<i>Personality</i>	61
<i>Contact Theory</i>	62
<i>Social Identity Theory</i>	63
<i>Terror Management Theory</i>	64
<i>Modernization</i>	64
<i>Dependent Measures</i>	65
Canonical Correlations.....	65
Hierarchical Linear Regressions	67
<i>Overall Ageist Attitudes</i>	68
<i>Benevolent Ageist Attitudes</i>	70
<i>Hostile Ageist Attitudes</i>	72
COVID-19 – Descriptive Analysis	73

Discussion	76
Age-Related and Gender Differences in Ageist Attitudes	78
Contact Theory and Ageist Attitudes	81
Personality Factors and Ageist Attitudes	84
SIT and Ageist Attitudes	87
TMT and Ageist Attitudes	88
Modernization Theory and Ageist Attitudes	90
Summary of Overall, Hostile, and Benevolent Ageism Results	92
COVID-19 Associations with Ageist Attitudes	94
<i>Pandemic-Related Behaviour Change</i>	94
<i>Attitudes Towards COVID-19 Vaccine</i>	95
<i>Pandemic-Related Fear</i>	96
<i>Political Party Affiliation</i>	97
<i>Loss of Employment</i>	98
Limitations and Future Research Directions	98
Conclusion	102
Table 1	105
Table 2	110
Table 3	112
Table 4	113
Table 5	114

Table 6.....	116
Table 7.....	118
Table 8.....	119
Table 9.....	120
Table 10.....	121
Table 11.....	123
Table 12.....	124
Table 13.....	125
Table 14.....	126
Table 15.....	127
Table 16.....	128
References.....	129
Appendix A.....	148
Appendix B.....	152
Appendix C.....	156
Appendix D.....	158
Appendix E.....	161
Appendix F.....	165
Appendix G.....	167
Appendix H.....	168
Appendix I.....	171
Appendix J.....	174
Appendix K.....	175
Appendix L.....	177
Appendix M.....	178

Appendix N.....	179
Appendix O.....	180
Appendix P.....	181
Appendix Q.....	182
Appendix R.....	183
Appendix S.....	184
Curriculum Vitae	

List of Tables

Table 1 Hypotheses and Predictions with Supporting Research.....	105
Table 2 Descriptive Statistics for Demographics, Predictor Variables, and Measures of Ageism	110
Table 3 Gender Differences	112
Table 4 Age Group Differences	113
Table 5 Zero-Order Correlations for Age, Religion, Contact and Personality Factors..	114
Table 6 Zero-Order Correlations for Age, Religion, Contact, Personality Factors, SIT, TMT, Modernization and Dependent Ageism Measures	116
Table 7 Zero-Order Correlations for Intergenerational Contact and Ageism Measures Filtered for Young Adults (i.e., 18-35 years).....	118
Table 8 Zero-Order Correlations for SIT and Ageism Measures Filtered for Young Adults (i.e., 18-35 years).....	119
Table 9 Zero-Order Correlations for SIT, TMT, Modernization, and Dependent Ageism Measures	120
Table 10 Canonical Correlation Between Sets of Predictor Variables and Ageism Measures	121
Table 11 Hierarchical Regression for Predictors of Overall Ageist Attitudes	123
Table 12 Hierarchical Regression for Predictors of Benevolent Ageism.....	124
Table 13 Hierarchical Regression for Predictors of Hostile Ageism.....	125
Table 14 Zero-Order Correlations for Pandemic-Related Behaviour Change, Pandemic-Related Fear, Attitudes Towards COVID-19 Vaccine, and Dependent Ageism Measures.....	126
Table 15 ANOVA for Political Affiliation Predicting Ageism Measures.....	127
Table 16 Loss of Employment Differences on Ageism Measures.....	128

List of Symbols, Nomenclature or Abbreviations

Anxiety About Aging Scale (AAS)

Attitudes Towards COVID-19 Vaccine Subscale (ATV-COVID-19)

Big Five Inventory-2 (BFI-2)

Collective Self-Esteem Scale (CSES)

Collett-Lester Fear of Death Scale Version 3.0 (CLFDS)

Five-factor model (FFM)

Fraboni Scale of Ageism (FSA)

Social Identity Theory (SIT)

Terror Management Theory (TMT)

Present Quality of Contact (Pr. Qual)

Present Frequency of Contact (Pr. Freq)

Past Quality of Contact (P. Qual)

Past Frequency of Contact (P. Freq)

A Multimodal Approach to Ageism: Understanding Predictors of Hostile Ageism, Benevolent Ageism, and Overall Ageist Attitudes

Population ageing is rapidly occurring around the world (United Nations, 2019; World Health Organization, 2021). In 2019, there were 703 million persons aged 65 and older globally (United Nations, 2019). Over the years, population ageing has been identified in many developed (industrialized) countries (United Nations, 2019; World Health Organization, 2021). For example, in 2019, Eastern and South-Eastern Asia had the largest number of older persons in their population with a total of 260 million people, followed by Europe and North America with 200 million people (United Nations, 2019). However, developing (less industrialized) countries are also experiencing shifts in their aging populations (United Nations, 2019; World Health Organization, 2021). For instance, the fastest increase in the proportion of the older population between 2019 and 2050 is projected to occur in developing (less industrialized) countries, rising by 225% from 37 million in 2019 to 120 million in 2050 (United Nations, 2019). In addition, it is estimated that two-thirds of the world's population over 60 years will be living in low- and middle-income countries in 2050, accounting for 1.1 billion older adults. Between 2015 and 2050, the global number of older persons is expected to increase from 12% to 22%, doubling the world's population of older adults to reach 2.1 billion (World Health Organization, 2021).

In addition to the many countries around the world, Canada has been experiencing a surge in population ageing (Government of Canada, 2014; Statistics Canada, 2021). In 2021, Canada continued to report a rapidly ageing population with

almost 1 in 5 Canadians (18.5%) being aged 65 and older (Statistics Canada, 2021). By 2030, seniors are estimated to number over 9.5 million Canadians and comprise approximately 23% of the population (Government of Canada, 2014). In addition, the average life expectancy for both women and men is projected to increase by the year 2036; the life expectancy for women will rise to 86.2 years from the current 84.2 and to 82.9 years from the current 80.0 years for men. Centenarians are the fastest growing sub-population in Canada, followed by individuals aged 85 through 99 years (Statistics Canada, 2017). Specifically, the Atlantic provinces are ageing quickly compared to the other Canadian provinces and territories (Statistics Canada, 2022). In 2021, the proportion of the population aged 65 and older in Canada was 19%. On the contrary, 22.8% of New Brunswick's population was aged 65 and older and experienced a +2.9% change from 2016 to 2021. In 2017, seniors comprised nearly 20% of New Brunswick's population (Government of New Brunswick, 2017). By 2037, age projections suggest that the proportion of older adults in New Brunswick will increase to a greater extent than any other province and Canada overall.

As the population continues to age, researchers of various disciplines have focused their attention on older adults (i.e., individuals over the age of 65 years; however different operational definitions may exist). For instance, social science and health researchers have examined attitudes and behaviours towards older adults. Researchers suggest that attitudes towards older adults might have negative consequences for care delivery and treatment of older adults. For example, Dobrowolska and colleagues (2017) found that 30% of the seniors in their sample experienced age-based discrimination in healthcare institutions from various healthcare professionals and

younger patients. In turn, negative self-perception has been reported in seniors who have experienced forms of age-based discrimination, which has been associated with increased health problems, functional dependency, depression, weakness, hospitalizations, and reduced quality of relationships between family and friends (Allen, 2016; Bai et al., 2016; Chrisler et al., 2016). In addition, Gallagher and colleagues (2006) found that non-professional and professional health care staff in a long-term care home had negative beliefs towards older adults. Their research found that both professional and non-professional care personnel scored high on the beliefs that older adults are “complaining” and “irritable” and that they “make one feel ill at ease,” which may cause serious consequences for delivery and provision of care for the elderly. Based on this empirical evidence and the rapid increase in population ageing around the world, research studies focusing on attitudes towards ageing is of utmost importance.

Ageism

Negative attitudes towards older adults are often characterized as ageist attitudes (Levy & Macdonald, 2016). Butler (1969) first defined ageism as the prejudice or discrimination towards another age group because of their age. Furthermore, Butler characterized ageism as the uneasiness and distaste for growing old experienced by younger- and middle-aged adults by reflecting on associations between old age and disease, disability, fear of powerlessness, and death. Nelson (2005) suggested that ageism is one of the most pervasive and widespread prejudices, joining racism and sexism. However, the World Health Organization (2015) has recently suggested that ageism may in fact be more pervasive than its counterparts. Like racism and sexism,

ageism is a form of prejudice or discrimination against a specific category of people (Palmore, 1999). However, unlike its counterparts, the presence and consequences of ageism are relatively covert and have lacked empirical examination (Nelson, 2005; North & Fiske, 2012). In addition, ageism is unique because anyone may experience ageism if they live long enough to be identified as an older adult (Palmore, 2004). Ageism continues to be widespread across multiple cultures (North & Fiske, 2012; Palmore & Maeda, 1985 as cited in Palmore, 2004). Specifically, research by Palmore and Maeda found that ageist attitudes were more common among modernized societies, compared to traditional societies where older adults are often honoured and respected.

According to Palmore (2004), older adults in Canada report more incidents of ageism compared to older adults in the United States. Palmore found that 91% of Canadian respondents who were older adults reported having experienced more than one incident of ageism, and more than half of these incidents were reported as having occurred more than once. The Canadian legislature has attempted to protect members of society from experiencing ageism by creating anti-discriminatory age provisions within the *Charter of Rights and Freedoms* (Canadian Charter, 1982, s 15(1)(b)). Jurisdiction under Section 15(1) of the *Charter* outlines an equality clause which prohibits discrimination based on age. However, ageism continues to be reflected and reinforced in culture using ageist language that includes stereotypes or beliefs about ageing (Whaley, 2021). Ageist language is often found in media but can also be found within healthcare and education settings, workplace environments, and during everyday conversations. Therefore, ageism can occur at both the macro-level and the micro-level,

such as anti-ageing campaigns and everyday language with derogatory comments towards older adults, respectively (Mikolajczyk, 2015).

Forms of Ageism: Negative and Positive Ageism

The concept of ageism has since been extended to include both positive and negative ageism (Levy & Macdonald, 2016). Negative ageism includes negative attitudes towards older adults, whereas positive ageism includes positive attitudes towards older adults because of their age. Traditionally, ageism and ageist attitudes have been portrayed in their negative form. For instance, Butler (1980) emphasized the negative form of ageism, where he revised his definition of ageism noting three distinct and unrelated aspects to the problem of ageism: prejudicial attitudes, discriminatory practices, and institutional practices and policies. Prejudicial attitudes include attitudes towards the aged, old age, and the ageing process, including the attitudes held by older adults themselves. Discriminatory practices against older adults include negative actions towards the elderly that can occur in various social roles, such as in employment. Lastly, Butler highlighted that the institutional practices and policies can often unintentionally perpetuate stereotypic beliefs about older adults, undermine their personal dignity, and reduce life satisfaction. Butler also distinguished that negative ageism could take two forms: benign ageism (i.e., the sense of discomfort or anxiety towards old age, fear of ageing) and malignant ageism (i.e., the more detrimental form of stereotyping which involves characterizing older adults as worthless).

Although the field of research studying ageism has been largely understudied, the research that has been completed has continued to use Butler's framework to

primarily examine negative ageism and its consequences (Palmore, 2004; Vale et al., 2020). Research examining ageism in the workplace has found associations between ageism and negative treatment of older employees, such as reduced opportunities for training (Duncan & Loretto, 2004; Harris et al., 2018). In addition, ageism has been correlated with older employees having reductions in employment advancement and promotion (Bal et al., 2011), decreased likelihood of receiving bonus (Kluge & Krings, 2008), higher chance of layoff because of age (Cheug et al., 2011), and higher pressure to retire from both managers and younger workers (Duncan & Loretto, 2004; Harris et al., 2018; Yang, 2012). Workers that are above the age of 50 are more likely to experience longer unemployment and accept lower paying and lower skilled work (Harris et al., 2018).

Negative ageism has also been studied in relation to health and well-being of older adults (Nelson, 2016). Levy and Macdonald (2016) highlighted that the medical complaints of older adults that could be treated with medications are often not taken seriously by healthcare personnel. Instead, their complaints are either considered to be a natural part of the aging process or ignored based on the stereotype that older adults tend to complain more with age. In addition, ageism has been associated with elder abuse (Phelan, 2008). Research by Phelan suggests that ageism can contribute to the apathy towards the ill-treatment of older adults and the tolerance of abusive activities. In addition, researchers have documented impacts of negative ageism on individuals' cognitive, physical and mental health (Levy, 2009; Levy & Macdonald, 2016). Researchers have found that older adults who internalize negative ageist stereotypes are more at risk for poorer memory performance (Levy et al., 2012), poorer hearing (Levy et

al., 2006), earlier signs of Alzheimer's disease (Levy et al., 2016), increased risk of cardiovascular complications (Levy et al., 2009), and increased difficulty recovering from cardiovascular complications compared to older adults who have not endorsed ageist stereotypes (Levy et al., 2006). In addition, older adults with negative self-perceptions due to age have been associated with shorter lifespans (Levy et al., 2002) and higher incidence of respiratory mortality (Levy & Myers, 2005). Moreover, older adults with negative self-perceptions about ageing are also more likely to experience psychiatric conditions such as suicidal ideation, anxiety, and PTSD symptoms (Levy et al., 2014).

Aside from negative ageism, efforts have been taken to examine positive ageism (Levy & Macdonald, 2016; Vale et al., 2020). As indicated by Vale and colleagues (2020), negative or otherwise known as hostile ageism cannot capture the entirety of ways which older adults are treated. For instance, negative ageism often characterizes older adults as forgetful, sick, incompetent, unattractive and burdensome (Levy & Macdonald, 2016). However, older adults can also be pictured as sweet, trustworthy, wise and respectful (Chonody, 2016). Characterizing older adults in a positive light relates to positive ageism (Chonody, 2016, Levy & Macdonald, Vale et al., 2020). In other words, positive ageism involves biased positive attitudes towards older adults because of their age. The concept of positive ageism was first introduced by Palmore (1990), who redefined ageism to include prejudicial attitudes or discriminatory acts that can either be in favour (i.e., positive ageism) or against (i.e., negative ageism) an age group. Additionally, effects of positive ageism can result in the unique positive treatment towards older adults such as discounts, pensions, tax exemptions, low-cost housing, and special health care benefits (Levy & Macdonald, 2016; Palmore, 1990).

Although positive forms of ageism may appear to be empathetic, they can be considered paternalistic and support ageist behaviours, which can be detrimental to older adults (Chonody, 2016). Therefore, negative consequences are also found under positive ageism (Chonody, 2016; Vale et al., 2020). For example, positive ageism may be expressed by engaging in overaccommodative treatment or behaviours towards older adults under the assumption that they need additional assistance for even menial tasks because of their age (Chonody, 2016). This form of paternalistic stereotyping encourages older adults to be perceived as high on emotional attributes but low on cognitive capabilities, resulting in individuals feeling pity towards people in this age domain (Cuddy et al., 2005). Actions out of pity towards older adults can lead to benevolent forms of ageism (Vale et al., 2020). Benevolent ageism can be characterized as having positive beliefs (e.g., warmth) with the presence of less desirable or negative beliefs (e.g., incompetence) towards older adults. Researchers have argued that benevolent ageism may facilitate intergenerational contact between younger and older adults (Levy & Macdonald, 2016; North & Fiske, 2012). However, others have questioned the influence of benevolent ageism on older adults and the possible negative consequences that could arise in the target population.

A manifestation of benevolent ageism is the usage of elderspeak, otherwise known as secondary baby-talk (Kemper, 1994; Vale et al., 2020). Elderspeak is a form of patronizing communication directed at older adults, which is characterized by the exaggeration or accommodation of speech style to be louder, slower, and more simplified. Individuals engaging in elderspeak towards older adults view older adults in a positive light (i.e., cute or kind) but are also under the impression that older adults are

incapable (i.e., incompetent) of understanding regular speech unless it is modified to resemble baby-talk. Therefore, elderspeak is an example of benevolent (i.e., positive) ageism. Researchers have found that elderspeak has been associated with numerous psychological, cognitive, and physiological deficits in older adults. For instance, elderspeak has been associated with decline in self-esteem (O’Conner et al., 1996) and cognitive performance, such as lower reported memory (Hehman & Bugental, 2015). In addition, Hehman and Bugental found increased levels of cortisol, a common stress hormone, in older adults following instances of elderspeak. Elderspeak has also been associated with an increase in destructive behaviours for older adults with dementia living in long-term care facilities, creating cause of concern for treatment and care practices (Williams et al., 2008).

In summary, although the literature on ageism began with the focus on negative ageism, there has been a gradual shift to also examine the influence of positive ageism (Levy & Macdonald, 2016). Research findings, such as the studies on elderspeak, suggest that benevolent forms of ageism can also pose negative social, psychological, and physiological consequences (Hehman & Bugental, 2015; O’Conner et al., 1996; Williams et al., 2008). Therefore, more work is needed to further the understanding of both benevolent and hostile forms to achieve a more balanced and representative picture of ageism (Levy & Macdonald, 2016).

Ageism Theories

Given the prevalent consequences of ageist attitudes and the rapid increase in ageing population, it becomes important to develop strategies to decrease ageist attitudes

and behaviours (Allan et al., 2014). One approach that may be useful to broaden the understanding of ageism is to explore predictors of both positive and negative ageism. Currently, researchers studying ageism have developed and are testing several theories of ageist attitudes to explain and identify predictors of ageism. These include contact theory, social identity theory, terror management theory, and modernization theory.

Contact Theory

Stemming from social psychology, the contact hypothesis suggests that increased contact with outgroup members can improve attitudes towards members of that group under certain conditions (Allport, 1954). For instance, intergroup attitudes can be improved when individuals from both parties are united with equal status, while cooperating with common goals, and while having support from relevant institutions and authorities to create norms of acceptance. Caspi (1984) hypothesized that the intergroup contact hypothesis could explain positive and negative attitudes towards older adults. In other words, Caspi suggested that intergenerational contact would foster positive attitudes towards older adults based on the premise of contact theory. Caspi found that children who had daily contact with older adults displayed more positive attitudes towards older individuals compared to children who did not engage in daily intergenerational contact. Therefore, intergenerational contact was suggested as a predictor of ageist attitudes. Subsequent research has supported Caspi's (1984) findings. For example, research by Van Dussen and Weaver (2009) examined undergraduate students' contact with older adults and found that undergraduate students who had more intergenerational contact, such as through friendship and volunteer experiences,

displayed significantly more positive attitudes towards working with older adults compared to students who reported lower levels of intergenerational contact. Similarly, Stewart and colleagues (2005) found that nursing students who had monthly contact with older adults had significantly fewer negative biases towards members of this age group compared to students without.

Some researchers have found contradictory evidence surrounding contact theory and ageism. Research by Carmel and colleagues (1992) found that the frequency of contact with older adults was unrelated to trainees' and practicing professionals' attitudes towards working with older adults. In addition, Schwartz and Simmons (2001) found that the frequency of intergenerational contact failed to predict age-related attitudes in a sample of college students. On the other hand, Schwartz and Simmons found that the self-reported quality of interactions with older adults predicted attitudes towards older adults; those reporting good quality of contact had less ageist attitudes. Based on their findings, Schwartz and Simmons suggested that the quality of intergenerational interactions may be a better predictor of ageist attitudes compared to the frequency or quantity of those interactions.

Further research has continued to examine the importance of assessing quality of intergenerational contact and ageist attitudes. Allan and Johnson (2008) found that young adults who had regular interactions with older adults at work had more positive attitudes towards older adults; however, those living with older relatives were found to have ageist attitudes. Allan and Johnson postulated that these results could be explained by the differences in the quality of contact with older adults; contact with older adults at work is more likely to be with competent older adults compared to those living at home

who are more likely to be dependent. In addition, Bousfield and Hutchison (2010) found that good quality of contact with older adults was positively associated with positive behavioural intentions towards older adults among undergraduate university students. For example, university students who reported good quality of contact also reported more intentions of spending time with older adults, assisting them, and making donations to charities supporting older adults. To supplement, Herrington and Both (2022) found that the self-reported quality of contact with grandparents during childhood and current quality of contact with non-related older adults each predicted less ageist attitudes towards older adults among undergraduate university students.

Addressing ageist attitudes in respect to contact theory has posed several challenges and considerations. Currently, societies are age-segregated which means that there may be reduced opportunities to facilitate positive and meaningful contact between younger and older adults (Hagestad & Uhlenberg, 2005). Changes in moral and political values, advances in technology and social media, and differences in family structure and composition have encouraged the interaction primarily among same-aged individuals (Peacock & Talley, 1984). Current social norms discouraging intergenerational interactions can further lead to age segregation in societies (Nelson, 2005). Despite challenges with age segregation, some researchers have attempted to identify interventions surrounding intergenerational contact to reduce ageist attitudes. For example, researchers recommend introducing intergenerational contact into educational programs to reduce ageist attitudes, such as through online and in-person platforms (Lytle & Levy, 2019; Lytle et al., 2021). In addition, since in-person contact may not always be feasible or ideal for certain individuals due to anxieties, researchers

recommend integrating extended contact theory into curriculum. Extended contact theory states that increasing knowledge of a close relationship between an in-group and out-group member could lead to more positive intergroup attitudes without necessitating in-person contact (Wright et al., 1997). Researchers have found that sharing knowledge of positive intergenerational encounters in academia has been associated with decreased ageist attitudes, in addition to direct intergenerational contact (Lytle & Levy, 2019; Lytle et al., 2021). Based on these research findings, contact (especially quality of contact) with older adults is suggested to be a valuable predictor of ageist attitudes and offers an avenue for intervention.

Social Identity Theory

Social identity theory (SIT), otherwise known as age stratification theory, suggests that people are stratified by age and that people form social identities in accordance with a particular age group (Brewer & Gardener, 1996; Hogg & Abrams, 1988; Tajfel & Turner, 1979). In other words, SIT is the realization of belonging to a particular age group. Each social group comprises people within the same social classification who categorize themselves into their group spontaneously (Turner et al., 1987). Therefore, people may assess their own age group more positively than others (Tajfel & Turner, 1979) or may alienate other age groups through in-group bias and create distinctiveness between generations (Butler, 1969). According to SIT, young people are motivated to gain positive distinctiveness and self-esteem by distinguishing themselves from members of older age groups (Tajfel & Turner, 1979). Therefore, younger generations are more likely to perceive older adults as members of their out-

group and are more likely to display ageist attitudes (Allan & Johnson, 2008; Chasteen et al., 2002; Martens et al., 2004; Rupp et al., 2005; Snyder & Meine, 1994). It follows that as people age and become closer to the older age group, they are more likely to become sympathetic towards their contemporaries and become less ageist (Musaiger & D'Souza, 2009).

According to the literature, there are no scales that directly assess SIT. Instead, SIT can be quantified by measuring age identification (Taşdemir, 2020) and collective self-esteem (Luhtanen & Crocker, 1992). Age identification has been found to be an important predictor of ageist attitudes (Allan & Johnson, 2008; Packer & Chasteen, 2006; Martens et al., 2004; Rupp et al., 2005; Snyder & Meine, 1994; Taşdemir, 2020; Yoon et al., 2017). Taşdemir (2020) found that belonging to a young age group was a significant predictor of benevolent (i.e., positive) ageism. Young people who felt a sense of inclusion and acceptance from peers were more likely to have seemingly positive but patronizing attitudes towards older adults. In addition, young adults who had a sense of meaning of being associated with the young adult age group were more likely to engage in negative stereotyping of older adults. Similarly, Packer and Chasteen (2006) found that young adults who strongly identified with their age group were more likely to express fewer positive attitudes and more prejudices towards older adults compared to those who scored lower on age identification. On the contrary, Yoon and colleagues (2017) did not find a significant correlation between age identification and negative perceptions towards the elderly. However, Yoon and colleagues found that age was positively associated with having a positive perception towards the elderly; working adults who were older were more likely to have a positive perception of the elderly

compared to working adults who were younger. Yoon and colleagues' findings support SIT, where as people age, they are more likely to have more positive attitudes towards their contemporaries (Musaiger & D'Souza, 2009).

SIT has also been quantified by measuring collective self-esteem (Luhtanen & Crocker, 1992). European psychologists, like Tajfel and Turner (1979), use the term "social identity" to describe the part of one's self concept that is based on memberships in social groups or categories; Americans generally refer to this aspect of self concept as "collective identity" (Luhtanen & Crocker, 1992). Luhtanen and Crocker suggest that collective self-esteem is an important aspect of SIT (or, in European terminology, social identity) because it denotes the value one places on their social groups. Individuals with a positive collective self-esteem experience a sense of worth or pride from their social affiliation that bolsters their self-concept. Although utilized as a measure of SIT in other research areas (Branscombe & Wann, 1994; Harwood, 2009), the influence of collective self-esteem is understudied in ageism research. Overall, age-identification is an important predictor of ageism under SIT and should be further investigated along with the role of collective self-esteem.

Terror Management Theory

Terror management theory (TMT) is based on the work of Becker (1997), who stated that humans have the unique cognitive capability to understand that they will eventually die. Since humans, like many other species, have a biological predisposition to survive, this awareness of inevitable death creates a deep anxiety. In turn, humans manage their fear associated with death by investing in a shared belief system or cultural

worldview (i.e., culture, nationality) that provides a sense of meaning and self-esteem. By investing in a cultural worldview and securing self-esteem, people can convince themselves that they are in some way not vulnerable to death because they have important and meaningful symbolic identities that are not subject to natural physical decay (Becker, 1997; Martens et al., 2004). Therefore, thoughts and anxieties about death and dying are pushed to the back of the mind and psychological composure is maintained.

Researchers studying TMT have suggested that people may try to relieve their fear and anxieties associated with death by stereotyping and stigmatizing older adults (Martens et al., 2004). Since older adults tend to be associated with greater susceptibility to disease and death, people may psychologically distance themselves from older adults and adopt ageist attitudes. Research by Martens and colleagues found that student participants were more likely to exhibit ageist attitudes following experimentally induced reminders of mortality. Specifically, Martens and colleagues had students view pictures of young adults or pictures of both young and older adults and then complete a word fragment completion task. Compared to those who viewed pictures of young adults, students who viewed pictures of both young and older adults were more likely to complete the word fragment completion task with death-related words, to think of themselves differently from older adults, and to have negative attitudes towards older adults. Similarly, research by Galton and colleagues (2020) found that undergraduate university students who reported fearing the dying process of a loved one also reported a higher agreement with avoiding older adults, supporting prejudicial measures against older adults, and higher hostility fueled by stereotypes about old age.

In addition to fear of death, ageing anxiety has also been identified as a predictor of ageist attitudes (Allan & Johnson, 2008; Allan et al., 2014; Boswell, 2012; Bodner et al., 2015; Harris & Dollinger, 2001; Herrington & Both, 2022). Ageing anxiety includes the concern and the anticipation of physical, mental, and personal losses associated with the ageing process (Lasher & Faulkender, 1993). Unlike death anxiety, ageing anxiety may remind people that life is coming to an end without being directly associated with the absolute and inevitable meaning of death. Therefore, individuals with higher ageing anxiety may perceive older adults as symbols of change and loss associated with the ageing process and may experience exacerbated feelings of anxiety and ageist attitudes (Boswell, 2012). Ageing anxiety has been found to be correlated with fear of death (Benton et al., 2007) and previous studies demonstrated that anxiety about one's own ageing is positively correlated with ageist attitudes (Allan & Johnson, 2008; Allan et al., 2014; Boswell, 2012; Bodner et al., 2015; Harris & Dollinger, 2001; Herrington & Both, 2022). For instance, Harris and Dollinger (2001) found that university students with higher levels of ageing anxiety were more likely to have negative attitudes toward older adults and rate themselves at older age more negatively than students who had lower aging anxiety. In addition, Boswell (2012) explored the effects of ageing anxiety on ageist attitudes among undergraduate students enrolled in training courses in the allied health and mental health fields and found higher levels of anxiety towards ageing were associated with higher levels of ageist attitudes. Likewise, Allan and colleagues (2014) also found that ageing anxiety was a significant predictor of ageist attitudes among undergraduate university students.

Some researchers have examined the effects of both fear of death and ageing anxiety to predict ageist attitudes (Bodner et al., 2015; Herrington & Both, 2022). Research by Herrington and Both examined the influence of both ageing anxiety and fear of death on ageist attitudes among undergraduate university students and found that only anxiety towards ageing predicted ageist attitudes. However, Bodner and colleagues (2015) explored the interaction of both ageing and death anxieties while also examining the effects of each predictor on ageist attitudes. Bodner and colleagues found both main and interaction effects. There was a relation between ageing anxiety and ageism, but only when fear of death was low. Similarly, there was a relation between death anxiety and ageism, but only when ageing anxiety was low. Therefore, Bodner and colleagues highlight that both ageing anxiety and fear of death are important predictors under terror management theory and recommend further exploration of the moderation effect between the two predictors.

Modernization Theory

Modernization theory is one of the main theories of ageism and attempts to explain ageist attitudes at the macro level (De Tavernier et al., 2019). With respect to ageing, modernization theory was first described by Cowgill and Holmes who stated that the status of older adults is inversely related to the degree of modernization in a society (Cowgill & Holmes, 1972 as cited in De Tavernier et al., 2019). In other words, modernization theory suggests that older adults can be perceived as having lower social status and being less important in modern societies (Yoon et al., 2017). Cowgill and Holmes (1972 as cited in De Tavernier et al., 2019) offered several explanations for why

the social status of older adults decreases as a function of modernization: societies proceed through periods of social change, increases in mobility and urbanization, agriculture becoming less important as an economic activity, the transition from extended families to nuclear families, decreases in ceremonialism, and increases in literacy. As a society transitions from an agricultural economy to an industrialized economy, the status of older adults declines (De Tavernier et al., 2019; Yoon et al., 2017). In an agricultural economy, extended families are common and each family member has a defined role and contributes economically (Yoon et al., 2017). However, modernization impacts how families form and function. For example, people become more individualistic as nuclear families become the standard family structure. In addition, younger labour is preferred in modernized societies and leads to the dismissal of the skills of older adults and lowers their socio-economic status. Moreover, retirement is argued to have removed the productive and reproductive roles of older adults in society and essentially leads to older adults being seen as obsolete (Cowgill & Holmes, 1972 as cited in De Tavernier et al., 2019). This perception is particularly a concern in Westernized societies where individual status is mainly dependent on productive capability. Overall, older adults are likely to be perceived more negatively and as a burden in modernized societies. Therefore, researchers suggest that ageism increases as societies become more modern. It is in this context that the term modernization is used in this thesis; older adults are seen as obsolete in increasingly modernized societies.

Some researchers have found that modernization is associated with negative consequences to older adults. For example, Palmore and Manton (1974 as cited in Chow & Bai, 2011) assessed 31 countries on items of modernization including gross national

product (GNP) per capita, number of young people in school, and percent of labour employed in agriculture, and found that higher levels on these modernization items were associated with the higher likelihood of older adults suffering from educational, employment, and occupational disadvantages. In addition, researchers studying Eastern and South-eastern cultures have demonstrated that perceptions towards older adults are changing with modernization (Boduroglu et al., 2006; Chiu & Yu, 2011; Chow & Bai, 2011; Thomas, 2019). In the past, Eastern cultures have traditionally viewed older adults with respect and honour, commonly referred to as filial piety (Thomas, 2019). However, researchers have suggested that respect towards older adults in China has been rapidly declining since China began its modernization in 1978 (Chiu & Yu, 2011). Similarly, Borduroglu and colleagues (2006) found that the practice of filial piety has also been declining in other East Asian societies. In addition, modernization has also played a major role in reducing financial and care support for older adults (Chow, 2007; Lai, 2009). Studies conducted in Guangzhou have found that clients of a Home-Based Elderly Service Programme reported not receiving routine attention or care from their children because of changes in family structures, such as their children no longer living with them or living too far away (Thomas, 2019). Yan and colleagues (2002) suggested that older adults living in China may not be living in a “safe haven” as seen in the past. Researchers have also found that modernization has tainted the self-image and lowered the status of older adults living in China (Chow & Bai, 2011).

Various measures of modernization, at both macro and micro levels, have been suggested to relate to ageist attitudes (Ayalon, 2013; Yoon et al., 2017). By assessing data from multiple large countries, macro level variables characterizing modernization

include the percent of individuals over the age of 60, gross national income, and level of education (Palmore & Manton, 1974 as cited in Ayalon, 2013). Therefore, countries scoring higher on these variables have been suggested to exhibit more negative feelings towards older adults. However, mixed findings regarding macro level variables of modernization and ageist attitudes have been reported (Ayalon, 2013; Yoon et al., 2017). In addition, some micro level indicators of modernization (such as place of residency and religiosity) have been associated with ageist attitudes. For example, place of residency has been associated with ageist attitudes where individuals who reside in urban areas are more likely to display ageist attitudes than individuals living in rural areas. Using data from a national survey, research by Yoon and colleagues found that people living in urban and industrial centers scored more negatively on both positive and negative perceptions towards older adults. Although the negative correlation between modernization and positive perceptions towards older adults is in keeping with modernization theory, the negative correlation between modernization and negative perceptions towards older adults is in stark contrast with modernization theory. Yoon and colleagues postulated that this discrepancy may be explained by adults living in capitalist environments becoming generally more opinionated towards the elderly, which may manifest in both positive and negative directions as opposed to just negative views towards older adults. Therefore, Yoon and colleagues concluded that the relations between the level of modernization and how the elderly are regarded by younger generations is complex and should be further investigated.

In addition, religiosity has also been identified as a micro level predictor of ageist attitudes (Ayalon, 2013). Although the concept of religiosity is hard to define

(Angel, 2013), religiosity can include beliefs or practices in a faith or higher power. Since secularity is considered one of the fallouts of modernization (McAllister, 1988), religiosity is often used as a micro level predictor of ageist attitudes (Ayalon, 2013). Ayalon found that individuals scoring lower on religiosity had more positive feelings towards younger adults than older adults, thereby offering support for modernization theory.

Overall, findings pertaining to modernization theory and ageist attitudes have been mixed. In addition, researchers have questioned the relevance of modernization theory in today's society. For example, De Tavernier and colleagues (2019) argue that the characterization of modernization has fundamentally changed since Cowgill and Holmes (1972, as cited in De Tavernier et al., 2019) introduced their definition. Some argue that we have currently transitioned to a new era of post-modernity, whereas others refer to the present tense as a continuation of modernity. Therefore, the basis of traditional versus modern characterization would no longer be applicable. Similarly, Palmore and Manton (1974 as cited in Ayalon, 2013) suggest that the relation between older people's status and modernization is a J-shaped function, meaning that older adults' status would decrease to a certain point then increase as modernization advances. However, other researchers have found significant correlations between measures of modernization, such as religion (Ayalon, 2013) and place of residence (Yoon et al., 2017), and ageist attitudes. Moreover, emerging research has found that higher total modernization scores (i.e., viewing older adults as obsolete and as a burden to society) in undergraduate university students have been associated with ageist attitudes (Herrington & Both, 2022). These research findings suggest that society is still in a process of

modernization and that modernization may be negatively impacting perceptions and attitudes towards older adults. Therefore, the influence of modernization should continue to be investigated as a predictor of ageist attitudes. Since most ageing research pertaining to modernization theory has been conducted in Eastern cultures, the effects of modernization on ageist attitudes should also be studied in Western cultures to further the understanding of modernization and its influence on ageism.

Other Predictors of Ageism: Demographic Variables and Personality Factors

In addition to ageism theories, researchers have identified various other predictors of ageist attitudes including demographic variables and personality factors. Gender has been identified as an important demographic variable in ageism research; cisgender men score higher on ageist attitudes compared to cisgender women (Boswell, 2012; Chonody et al., 2014; Galton et al., 2020). Research conducted by Galton (2020) found that male undergraduate university students scored significantly higher than female undergraduate university students on three parameters of ageism including avoidance, discrimination, and antilocution (i.e., elicited expression of dislike, hostility, and opposition). Similarly, Chonody and colleagues (2014) found a gender bias towards ageist attitudes in which men scored significantly higher than women on discomfort with and fear of older adults in their sample of undergraduate students, faculty, and practitioners from disciplines of psychology and social work. Research by Herrington and Both (2022) also found that male undergraduate university students scored significantly higher on ageist attitudes compared to female undergraduate university students. Moreover, Hawkins (1996) found that male respondents viewed male and

female older adult targets more negatively than female respondents. However, some researchers have suggested that gender is not a significant predictor of ageist attitudes (Kite et al., 2005; Van Dussen & Weaver, 2009). Furthermore, results of a meta-analysis suggests that gender differences in ageism research is inconclusive (Kite et al, 2005). Kite and colleagues conducted a meta-analytic review of 232 effect sizes and found that the gender of research participants influenced both competence ratings (i.e., intelligence, good memory) and behaviour/behavioural intentions ratings (i.e., willingness to interact with) towards older adults, but the results were mixed depending on the rating category. Therefore, Kite and colleagues concluded that gender differences in ageism research is mixed and should be further investigated.

Age of the respondent has also been identified as a demographic variable predicting ageist attitudes (Allan & Johnson, 2008; Van Dussen & Weaver, 2009). Older participants have been found to report less ageist attitudes than younger participants. In turn, researchers have shown that ageist attitudes are most prevalent among younger adults, including college and university students (Gellis et al., 2003; Kimuna et al., 2005). Herrington and Both (2022) found that age was a significant negative predictor of ageist attitudes among undergraduate university students. These results can be explained by in-group preferences under social identity theory; younger adults are more likely to perceive older adults as their out-group and demonstrate ageist attitudes (Allan & Johnson, 2008; Chasteen et al., 2002; Martens et al., 2004; Rupp et al., 2005; Snyder & Meine, 1994), whereas people become less prejudice and ageist towards older adults as they age (Musaiger & D'Souza, 2009). Overall, gender and age remain important

demographic predictors of ageist attitudes and should continue to be assessed in ageism research.

Certain personality factors have also been identified as important predictors of ageist attitudes (Allan et al., 2014; Galton et al., 2020; Herrington & Both, 2022). Personality is often described using the five-factor model (FFM) of personality (McCrae & Costa, 1997; McCrae & John, 1992). According to the FFM, most personality traits can be categorized into the following five factors: extraversion, agreeableness, conscientiousness, neuroticism, and openness. Personality theorists (e.g., McCrae & Costa, 1997; McCrae & John, 1992) have described extraversion as the extent to which individuals are outgoing, sociable, and assertive as opposed to being quiet, shy, and withdrawn. Agreeableness relates to the degree to which individuals are altruistic, caring, and kind towards others; people who score low on agreeableness would be perceived as self-centered and unfriendly, hostile, and spiteful towards others. Conscientiousness describes the extent to which individuals are organized, diligent, and achievement oriented, as opposed to being disorganized and inefficient. Neuroticism concerns the extent to which individuals are nervous, depressed, impulsive, and self-conscious. Individuals who score low on neuroticism are characterized as calm, even-tempered and relaxed. Openness refers to the degree to which individuals are intelligent, imaginative, and creative; individuals who score low on openness are cautious of new experiences and ideas.

Researchers have found that both Agreeableness and Openness are significant predictors of less ageist attitudes (Allan et al., 2014; Galton et al., 2020). For example, research by Galton (2020) found that university students scoring higher on

Agreeableness and Openness reported a lower tendency to avoid or to support the isolation of older adults and reported lower antagonism towards older adults. In addition, Conscientiousness (Allan et al., 2014) and Extraversion (Galton et al., 2020) have also been identified as predictors of less ageist attitudes. On the contrary, other researchers have found that only Agreeableness significantly predicted less ageist attitudes (Herrington & Both, 2022). Based on these findings and contradiction in the literature, personality factors have been identified as predictors of ageism and should be further investigated in relation to ageist attitudes.

Ageism and COVID-19

The COVID-19 pandemic has impacted many different aspects about the world, including the treatment of older adults (Ayalon, 2020; Ayalon et al., 2021). In the beginning of March 2020, when the spread of COVID-19 was escalating, the media consistently paired the terms “vulnerable” and “older people” when discussing the pandemic. Although the advertisements were well intended and may have been representative of the risks older adults faced compared to younger adults during the pandemic, this messaging utilized two narratives that created damaging consequences for older adults (Ayalon, 2020; Ayalon et al., 2021; Cohn-Schwartz & Ayalon, 2020; Swift & Chasteen, 2021). First, it utilized a vulnerability narrative that strengthened the widely embedded negative age stereotype that older adults are vulnerable (Cohn-Schwartz & Ayalon, 2020). This form of narrative can have detrimental effects on older adults. For instance, as previously mentioned, older adults can internalize negative age stereotypes which can be a risk to health, well-being, and social participation later in life

(Levy, 2009; Swift et al., 2017). The vulnerability narrative is also consistent with the negative age stereotype that older adults are incompetent, which has been related to age-based discrimination in various environments, such as in the workplace and healthcare settings (Swift et al., 2017). Moreover, age stereotypes have been related to the use of over-patronizing tones and gestures, such as baby-talk, when interacting with older adults (Vale et al., 2020). Second, the media fostered a burden narrative when describing that the healthcare system was becoming increasingly overwhelmed with cases in seniors and could not continue to provide adequate care to all (Ayalon, 2020; Ayalon et al., 2021). As a result, some countries decided to employ an age requirement for hospital beds and ventilator usage (White & Lo, 2020). These practices further condoned the notion that older adults are a burden to society.

Media during the COVID-19 pandemic also suggested that only older adults should be worried or are at risk of contracting the virus and, as a result, fostered the belief that young people are not vulnerable to or are resilient of COVID-19 (Gerontological Society of America [GSA], 2020 as cited in Swift & Chasteen, 2021). In many countries, the media failed to acknowledge that people of all ages are vulnerable to COVID-19. Research has indicated that adults in their twenties and thirties are the largest proportion of COVID-19 carriers, when compared to other age groups, and that many young adults were suffering serious health consequences because of the virus (Henley, 2020). The framing of vulnerability to COVID-19 is important because it influences perceived risk and health behaviours in relation to the virus (Swift & Chasteen, 2021). Moreover, researchers have found a relation between ageist attitudes and the frequency of engaging in protective behaviours against COVID-19 (Vale et al.,

2020; Visintin, 2021). Visintin (2021) conducted a correlational study during the April 2020 COVID-19 lockdown in Italy and found that respondents who displayed negative attitudes toward older adults were less likely to adhere to containment behaviours to reduce the spread of the virus. In turn, respondents who scored higher on benevolent ageism (i.e., positive ageism) were more likely to follow behavioural guidelines of using protective devices. In addition, Vale and colleagues (2020) assessed whether hostile and benevolent ageism related to pandemic-related fear and behavioural changes during COVID-19. Higher scores on hostile ageism were found to be negatively associated with safety-related behaviour change due to the pandemic. However, individuals who scored higher on benevolent ageism also scored lower on pandemic-related behaviour modification but reported higher pandemic-related fear. When pandemic-related fear was entered as a mediator, the relationship between benevolent ageism and behaviour modification switched so that individuals scoring higher on benevolent ageism scored lower on pandemic-related behaviour change, suggesting evidence of a suppression effect. Based on their research findings, Vale and colleagues concluded that both benevolent and hostile ageism predict responses to the COVID-19 pandemic.

The COVID-19 pandemic has also been suggested to have depreciated the value attributed to older adults' lives compared to the lives of younger adults (Aronson, 2020; Fraser et al., 2020; Monahan et al., 2020; White & Lo, 2020; Xiang et al., 2020). Fraser and colleagues (2020) suggested that the exclusion of nursing home deaths in the official announced death counts in France could lead the public to believe that the deaths of these older adults were anticipated and insignificant. In addition, the widespread hashtag "BoomerRemover" also suggests a lack of appreciation towards older adults' lives and

how the pandemic is affecting members of the older generation (Aronson, 2020; Monahan et al., 2020). To supplement, Xiang and colleagues (2020) assessed Twitter posts and found that 1 in 10 tweets implied that the lives of older adults were less valuable than younger adults and downplayed the severity of the pandemic claiming that COVID-19 mostly affects older adults. The devaluing of older adults' lives can also be seen when considering the age-based reasoning of allocating ventilators and hospital beds in some countries throughout the pandemic (White & Lo, 2020). White and Lo suggested that the high demand for limited care resources can lead people to justify distributing these resources to people who are younger in age, implying that older adults' lives are less valuable. Overall, the COVID-19 pandemic has shaped how people feel about age and towards the ageing process (Swift & Chasteen, 2021) and has influenced ageist attitudes (Vale et al., 2020; Visintin, 2021). Therefore, the influence of COVID-19 should continue to be considered in relation to ageism.

The Current Study

The current study investigated ageist attitudes among young and middle-aged adults towards older adults. Expanding on the work of Herrington and Both (2022), this study examined multiple theories of ageism (i.e., contact theory, terror management theory, modernization theory, and social identity theory) in one model. To our knowledge, Herrington and Both (2022) were the first to examine multiple theories of ageism, but they only examined contact theory, terror management theory, and modernization theory among undergraduate university students. According to their research findings, being younger, cisgender male, having lower quality of contact with

grandparents during childhood, having lower current quality of contact with older adults, lower scores on Agreeableness, higher scores on anxiety towards ageing, and higher scores on modernization (i.e., viewing older adults as obsolete and as a burden to society) predicted ageist attitudes. The current study expanded on their work by adding social identity theory to the model, while also examining ageist attitudes among undergraduate students and community members from a wider age range. Comparable to the work conducted by Herrington and Both, the present study also considered the influence of personality factors and demographic factors on ageist attitudes. However, the present study added to previous research by examining both positive ageism (i.e., benevolent) and negative ageism (i.e., hostile). Finally, the present study also considered the impact of the COVID-19 pandemic on ageist attitudes. To sum, the current study investigated the four proposed theories of ageism, along with the influence of demographic variables and personality factors, to facilitate a comprehensive understanding of the predictors of benevolent ageism, hostile ageism, and overall ageism among young and middle-aged adults. The current study also provided a description of the relation between the COVID-19 pandemic and ageist attitudes.

Hypotheses

Ageism research has mostly been examined in relation to overall ageism scores, as opposed to positive and negative forms of ageism. Therefore, there is a lack of empirical evidence indicating predictors of positive and negative ageism. As such, hypotheses were developed predicting overall ageism scores. In turn, specific predictions were made for each of the hypotheses for overall ageism scores, and for

positive ageism and negative ageism where applicable (see Table 1 for summary of all hypotheses and predictions). Since ageism has traditionally been conceptualized in its negative form (Butler, 1969; Levy & Macdonald, 2016), the current study predicted that most of the variables that have been previously correlated with overall ageism scores would also correlate with negative ageism. On the contrary, most predictions in relation to positive ageism were exploratory in nature.

Demographic Variables

The current study hypothesized that there would be gender differences in ageist attitudes (Hypothesis 1). In accordance with previous research, cisgender men were predicted to score higher on overall ageist attitudes (Boswell, 2012; Chonody et al., 2014; Galton et al., 2020; Herrington & Both, 2022), and higher on negative ageism. Age was hypothesized to correlate with ageist attitudes (Hypothesis 2). Specifically, age was predicted to negatively correlate with overall ageist attitudes (Allan & Johnson, 2008; Herrington & Both, 2022; Van Dussen & Weaver, 2009) and with negative ageism.

Personality

Personality factors were also hypothesized to correlate with ageist attitudes (Hypothesis 3). Agreeableness was predicted to be negatively associated with overall ageist attitudes (Allan et al., 2014; Galton et al., 2020; Herrington & Both, 2022). Openness was also predicted to be negatively correlated with overall ageist attitudes (Allan et al., 2014; Galton et al., 2020). Based on the theoretical work by Butler (1969) and by Levy and Macdonald (2016), higher scores on agreeableness and openness were

predicted to associate with lower scores on negative ageism, and higher scores on positive ageism. Since there have been mixed findings regarding the influence of conscientiousness (Allan et al., 2014) and extraversion (Galton et al., 2020) on ageist attitudes, no specific predictions were developed for these personality factors.

Contact Theory

In relation to contact theory, contact was hypothesized to correlate with ageist attitudes (Hypothesis 4). Since contact theory research has been conducted mostly in younger adults, predictions were developed for younger adults in the sample and no predictions were made for the middle-aged adults. Younger adults with higher quality of intergenerational contact were predicted to have lower scores on overall ageist attitudes (Bousfield & Hutchison, 2010; Herrington & Both, 2022) and negative ageism. Finally, researchers have suggested that positive ageism may facilitate intergenerational contact between younger and older adults (Levy & Macdonald, 2016; North & Fiske, 2012). Therefore, the current study predicted that younger adults with higher quantity of intergenerational contact would score higher on positive ageism.

SIT

In reference to SIT, age identification was hypothesized to correlate with ageist attitudes (Hypothesis 5). Specifically, young age group identification has been found to positively correlate with higher overall ageism scores (Packer & Chasteen, 2006). Therefore, the current study predicted that greater young age group identification would positively correlate with overall ageism and negative ageism. Research by Taşdemir (2019) found that belonging to a young age group positively correlated with positive

ageism. Based on this research, the current study predicted that young age group identification would also positively correlate with positive ageism. In addition, collective self-esteem was hypothesized to correlate with ageist attitudes (Hypothesis 6). Using theoretical evidence pertaining to collective self-esteem, the current study predicted that higher collective self-esteem among young adults would positively correlate with overall ageism scores (Luhtanen & Crocker, 1992). Due to the lack of empirical research investigating collective self-esteem in relation to ageist attitudes, the current study did not predict the influence of collective self-esteem on positive nor negative ageism.

TMT

In regards to TMT, fear of death was hypothesized to correlate with ageist attitudes (Hypothesis 7). Researchers have found that fear of death positively correlates with overall ageism scores (Galton et al., 2020; Martens et al., 2004). Therefore, the current study predicted that higher scores on fear of death would positively correlate with overall ageism and negative ageism. In addition, ageing anxiety was hypothesized to correlate with ageist attitudes (Hypothesis 8). Researchers have found that ageing anxiety was positively correlated with overall ageist attitudes (Allan et al., 2014; Allan & Johnson, 2008; Boswell, 2012; Harris & Dollinger, 2001; Herrington & Both, 2022). Similarly, the current study predicted that higher scores on ageing anxiety would be correlated with higher scores on overall ageism and negative ageism.

Modernization Theory

In relation to modernization theory, the current study adopted Herrington and Both's (2022) framework and assessed religiosity and total modernization scores in relation to ageist attitudes. The current study did not assess macro level predictors and other micro level predictors of modernization since the previous literature highlighting these predictors were collected from large Eastern countries, such as Thailand, and used national data. The current study hypothesized that modernization would correlate with ageist attitudes (Hypothesis 9). Specifically, individuals who score lower on religiosity were predicted to score higher on overall ageism scores (Ayalon, 2013). Similarly, individuals scoring lower on religiosity were predicted to score higher on negative ageism. In addition, individuals with higher overall modernization scores were predicted to score higher on overall ageist attitudes (Herrington & Both, 2022). Since modernization theory has been understudied in relation to positive and negative forms of ageism, and research is limited surrounding the influence of modernization on ageist attitudes in Western countries, no predictions were developed predicting positive and negative ageism.

Regression Models

In regards to the regression models, the current study hypothesized that the measures of modernization theory, terror management theory (TMT), and social identity theory (SIT) would contribute over and above demographics, personality factors, and contact theory to ageism scores (Hypothesis 10). Specifically, these measures were predicted to add unique variance to overall ageism scores. This hypothesis and

prediction were formulated partially in accordance with previous research; total modernization scores and ageing anxiety (i.e., a measure of TMT) contributed over and above demographic variables (i.e., gender and age), contact theory (i.e., quality of contact with grandparents during childhood, current quality of contact with older adults), and personality factors (i.e., Agreeableness) on overall ageism scores (Herrington & Both, 2022). However, the current study also hypothesized that social identity theory will contribute unique variance to the model predicting overall ageism scores (Luhtanen & Crocker, 1992; Packer & Chasteen, 2006; Taşdemir, 2019). No specific predictions for regressions predicting positive and negative ageism were included in the present study. In addition, moderation effects were also examined between ageing anxiety, death anxiety and overall ageism scores. Ageing anxiety was predicted to positively correlate with overall ageism scores only when fear of death scores were low (Bodner et al., 2015). In turn, fear of death was predicted to positively correlate with overall ageism scores only when ageing anxiety scores were low.

COVID-19

The current study also investigated the influence of COVID-19 in relation to ageist attitudes. Although this examination was descriptive, the current study also examined the relation between ageism and pandemic related behaviours and fears. Visintin (2021) found that individuals who displayed negative attitudes towards older adults were less likely to engage in pandemic-related containment behaviours compared to individuals with positive attitudes towards older adults. Moreover, Vale and colleagues (2020) found that individuals scoring higher on positive ageism also scored

lower on pandemic-related behaviour modification but suggested evidence of a potential suppression effect. Therefore, the current study investigated the influence of pandemic-related behaviour change in relation to ageist attitudes, although no specific hypotheses nor predictions were made. Since pandemic-related behavioural changes could be appraised in relation to the COVID-19 vaccine, perceived attitudes towards the vaccine were hypothesized to influence ageist attitudes (Hypothesis 11). Specifically, more positive attitudes towards the vaccine were predicted to positively correlate with positive ageism and to negatively correlate with hostile ageism and overall ageist attitudes (theoretical reasoning using Vale et al., 2020; Visintin, 2021). In addition, Vale and colleagues (2020) found that individuals reporting higher benevolent ageist attitudes scored higher on pandemic-related fear. Therefore, the current study hypothesized that pandemic-related fear would correlate with ageist attitudes (Hypothesis 12). Specifically, higher scores on pandemic-related fear were predicted to positively correlate with benevolent ageist attitudes. Moreover, Vale and colleagues found that individuals who were Republican scored higher on ageist attitudes. Therefore, the current study hypothesized that political affiliation would correlate with ageist attitudes (Hypothesis 13). Specifically, the present study predicted that participants with conservative political affiliation would score higher on overall ageist attitudes (Vale et al., 2020). However, due to the lack of research, no specific predictions were made for political affiliation and hostile and benevolent ageist attitudes. Moreover, loss of employment due to COVID-19 was conceptualized to possibly influence attitudes towards the COVID-19 vaccine, which could in turn influence ageism scores (Hypothesis 14). Specifically, individuals reporting a prolonged loss of employment due

to COVID-19 were predicted to score higher on overall ageist attitudes, however no specific predictions were made for hostile nor benevolent ageist attitudes due to the lack of research in this field.

Method

Participants

A total of 389 participants were included in the present study (see Table 2). They were recruited from undergraduate psychology courses at University of New Brunswick in Saint John (see Appendix A for the consent form) and from the general public (see Appendix B for the consent form). The average age was 28.37 years ($SD = 13.64$) and ages ranged from 18 to 64 years. Within this sample, 316 participants identified as female (81.2%), 69 participants identified as male (17.7%), 3 persons identified as transgender male (0.8%), and 1 person identified as two-spirited (0.3%). Mean levels of religiosity (measured on a scale from 0 to 10) were considered low ($M = 3.50$, $SD = 3.10$) for the current sample. The majority of the sample ($N = 246$) reported having never lived and/or are not currently living with their grandparents (64.6%). Moreover, 128 participants reported experiencing a prolonged loss of employment (i.e., loss of work for longer than 2 weeks) during the COVID-19 pandemic (32.9%), 210 reported having no prolonged loss of employment (54.0%), and 51 participants reported it not being applicable (13.1%).

Measures

Demographics

Demographic variables including age, gender, religiosity, political affiliation, and loss of employment due to COVID-19 were measured using a self-developed questionnaire (see Appendix C).

Contact

Intergenerational contact with older adults for both past and present tense was measured using a self-developed questionnaire (see Appendix D). This measure was designed and used by Herrington and Both (2022) in keeping with previous work on contact theory and assessed the frequency and quality of contact with grandparents and non-related older adults.

Personality

The Big Five Inventory-2 (BFI-2) was used to measure personality (Soto & John, 2017a; see Appendix E). The five factors of personality include Openness, Conscientiousness, Extraversion, Agreeableness, and Negative Emotionality (i.e., neuroticism). Each item is formatted to begin with “I am someone who,” which is then followed by a statement describing a personality characteristic. For example, two items found on the BFI-2 include, “I am someone who is outgoing, sociable” and “I am someone who is compassionate, has a soft heart.” Respondents indicated the extent to which they agree or disagree with each statement using a 5-point Likert scale, which ranges from 1 (*disagree strongly*) to 5 (*agree strongly*). The BFI-2 includes 60 items in

total and can be completed in 5 to 10 minutes, whereas other personality measures can include hundreds of items that can take an hour or more to administer (Soto & John, 2017b). Therefore, the reasonably short completion time makes the BFI-2 appropriate and the preferred measure for many basic and applied research contexts.

The BFI-2 is commonly used in personality research because of its excellent reliability. Soto and John (2017a) reported Cronbach's alphas for the five personality factor scores ranged from .83 to .90. Test-retest reliability was determined to be acceptable when assessed eight weeks apart ($r = .76$). The validity of the BFI-2 has been demonstrated by correlating the inventory with several other personality inventories. For example, Soto and John examined the BFI-2's domain-level and facet-level associations with other Big Five personality measures, including the original Big Five Inventory (BFI), Big Five Aspect Scales (BFAS), Big Five Mini-Markers, NEO Five Factor Inventory (NEO-FFI) and NEO Personality Inventory-Revised (NEO PI-R). The BFI-2 converged strongly with each of the other personality measures suggesting good validity (see Soto & John, 2017a for details).

In the current study, the personality factors demonstrated good reliability. Cronbach's α for the factors were $\alpha = .82$ for Extraversion; $\alpha = .78$ for Agreeableness; $\alpha = .79$ for Open Mindedness; $\alpha = .84$ for Conscientiousness; and $\alpha = .88$ for Negative Emotionality.

Social Identity

SIT was assessed by measuring age group identification and collective self-esteem (see Appendix F and G, respectively). Age group identification was assessed

using five age group identity items from Garstka and colleagues (AGI; 1997, as cited in Garstka et al., 2004). For example, “I like being a member of my age group,” and “I am proud to be a member of my age group,” are two items on the AGI. For each of the five items, participants responded using a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). In addition, participants were instructed to consider their chronological age when responding to each item. Gartska and colleagues defined young adults as being between 18-25 years of age, middle-aged adults as 35-50 years of age, and people aged 65 and over were considered to belong to the older adult age group. However, to make the age categories more seamless in distribution and inclusive of ages in between the original age groupings, the current study defined young adults as individuals aged 18-35 years, middle-aged adults as individuals aged 35-65 years, and older adults to be over the age of 65. An average AGI score was calculated for this measure, with higher values indicating greater age group identification. Garstka and colleagues reported good internal reliability for the young adult age group ($\alpha = .80$) and the older adult age group ($\alpha = .82$) in their sample. Since Garstka and colleagues did not sample middle-aged adults in their sample, the internal reliability for middle-aged adults could not be assessed.

Other researchers have also reported good internal reliability for the AGI across age groups. For example, Taşdemir (2020) found good internal reliability ($\alpha = .83$) in a Turkish sample of undergraduate university students after translating the 5-item measure, suggesting good cross-cultural reliability. In addition, Macdonald and Levy (2016) found excellent internal reliability for the AGI in their sample ranging from 18 to 75 years of age ($\alpha = .91$). Overall, these results suggest that Garstka and colleagues’

(2004) 5-item measure is reliable across ages. According to the literature, there are no reports of the validity for the 5-item age identification measure. However, due to the good reliability and face validity of the measure it was used to assess age identification in the current study. The present study found that the AGI had good internal reliability (Cronbach's $\alpha = .87$).

Luhtanen and Crocker's (1992) collective self-esteem scale (CSES) was also used to measure SIT in the current study. This measure contains 16-items that are equally divided into 4 subscales (i.e., 4 items per each subscale) which are scored using a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The four subscales include Membership esteem, Private collective self-esteem, Public collective self-esteem, and Identity. Membership esteem assesses the most individualistic aspect of collective self-esteem by measuring individuals' judgements of how good or worthy they are as members of their social groups (e.g., "I am a worthy member of the social groups I belong to"). Private collective self-esteem assesses one's personal judgements of how good one's social groups are (e.g., "I feel good about the social groups I belong to"). Public collective self-esteem assesses one's judgements of how other people evaluate one's social groups (e.g., "In general, others respect the social groups I am a member of"). Identity measures the importance of one's social group memberships to one's self-concept (e.g., "The social groups I belong to are an important reflection of who I am"). Luhtanen and Crocker conducted 3 studies assessing internal reliability and found good reliability for each of the subscales and for the overall measure. Construct validity was also assessed by correlating the subscales and the total measure to the Rosenberg, Coopersmith, and Janis-Field scales assessing personal self-esteem.

Luhtanen and Crocker found significant, yet modest, correlations between CSES with each of the total scale scores: Rosenberg ($r = .38$), Coopersmith ($r = .33$), and Janis Field ($r = .34$). In addition, 6-week test-retest correlations were conducted and demonstrated adequate reliability: Total ($r = .68$), Membership ($r = .58$), Private ($r = .62$), Public ($r = .66$), and Identity ($r = .68$). Overall, Luhtanen and Crocker concluded that the CSES is a valid measure demonstrating good reliability.

Other researchers have also used the CSES across cultures. Bazińska (2015) found that the Polish version of the CSES and its four subscales demonstrated adequate reliability and evidence of construct validity after translated from the original English version. To supplement, Khanum and Ahmad (2021) found that the translated version of CSES to the Urdu language also showed adequate “temporal validity” or reliability ($r = .62$), internal consistency ($\alpha = .73$) and split half reliability ($\alpha = .76$). These results highlight that the CSES also maintains reliability and validity across cultures.

The current study adapted the CSES in accordance with Harwood’s (1999) research. Since the present study was assessing collective self-esteem in relation to age group memberships, the phrasing of each item was adjusted from inquiring about “social groups” to specifically about “age group.” For example, the item “I am a worthy member of the social groups I belong to” was adjusted to “I am a worthy member of the age group I belong to.” Harwood used a 9-item version of the CSES instead of the 16-item version that was used in the present study; however, the current study employed Harwood’s phrasing adaptation to specifically measure age group membership instead of social group membership.

The present study found that the CSES was found to have good total reliability ($\alpha = .84$) and adequate reliability for each of the subscales including Membership ($\alpha = .74$), Private ($\alpha = .80$), Public ($\alpha = .74$), Identity ($\alpha = .69$). However, only the total score for the CSES was employed in the present study.

Terror Management

The Collett-Lester Fear of Death Scale Version 3.0 (CLFDS; Lester & Abel-Khalek, 2003) and the Anxiety About Aging Scale (AAS; Lasher & Faulkender, 1993) were used to measure TMT (see Appendix H and I, respectively). The CLFDS contains 28 items overall, which are equally divided into 4 subscales (Lester & Abel-Khalek, 2003). Therefore, each of the four subscales contains 7 items. The four subscales are to measure 4 distinct fears including Your Own Death (i.e., Death of Self), Your Own Dying (i.e., Dying of Self), Death of Others, and Dying of Others. Respondents were asked to indicate the degree to which they are disturbed or made anxious by each item on the inventory. The scale was scored as *Not* (1), *Somewhat* (2, 3, 4), and *Very* (5). Lester & Abel-Khalek reported excellent reliability for each of the four subscales including: Death of Self ($\alpha = .91$), Dying of Self ($\alpha = .92$), Death of Others ($\alpha = .88$), and Dying of Others ($\alpha = .92$).

Cross cultural research indicates that subsequent researchers have also found evidence of excellent test-retest reliability for the CLFDS as well as evidence of good internal consistency and validity. Tomás-Sábado and colleagues (2007) found good internal consistency and satisfactory test-retest reliability of the four subscales in their Spanish version of the CLFDS. The two-week test-retest reliabilities ranged from .72 to

.89, denoting good temporal stability. In addition, Kolawole and Olusegun (2008) found good internal consistency for the CLFDS in their sample of Nigerian medical students, where each of the subscales had an alpha coefficient of at least .70 or greater. Lastly, Venegas and colleagues (2011) found that the 28 items of the CFLDS possessed good internal consistency with $\alpha = 0.91$ for the total scale. Venegas and colleagues also demonstrated good construct validity as confirmed by the significant correlation ($r = 0.43$) between the CLFDS and the Attitude Towards Death Scale (ATDS). Overall, these findings suggest that the CLFDS is a reliable and valid measure.

For the current study, the CLFDS was adapted in accordance with research conducted by Herrington and Both (2022). Herrington and Both adapted the CLFDS to be scored using a 5-point Likert of 1 (*Not at all*), 2 (*Slightly*), 3 (*Somewhat*), 4 (*Moderately*), 5 (*Very*) instead of the original scoring protocol of *Not* (1), *Somewhat* (2, 3, 4), and *Very* (5). According to their findings, the scale demonstrated excellent reliability overall ($\alpha = .95$) and for each of the subscales with Cronbach's alphas ranging from .86 to .91. Since a 5-point Likert scale is easier to administer, interpret, and score compared to the original scoring protocol, the current study used Herrington and Both's adapted scoring for this measure.

The current study found that the CLFDS was a reliable measure of TMT. The CLFDS was found to have excellent total reliability ($\alpha = .95$) and good reliability for each of the subscales including Death of Self ($\alpha = .91$), Dying of Self ($\alpha = .88$), Death of Others ($\alpha = 0.80$), and Dying of Others ($\alpha = .88$). However, only the total score for the CLFDS was employed in the present study.

The AAS was also used to measure ageing anxiety under TMT. The AAS contains 20 items which are scored using a 5-point Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*) (Lasher & Faulkender, 1993). The AAS contains 4 subscales, each having 5 items, and include Fear of Old People, Psychological Concerns, Physical Appearance, and Fear of Losses. The factor Fear of Old People measures the degree of comfort and satisfaction derived from interacting with older adults, such as “I enjoy being around old people.” Psychological Concerns assesses psychological tasks or changes associated with the ageing process. For example, “I fear it will be very hard for me to find contentment in old age,” is an item on this subscale. Physical Appearance measures the anxiety associated with changes in physical appearance because of the ageing process, such as “I have never dreaded looking old.” Lastly, Fear of Losses measures the anxiety about anticipated losses in old age, such as “I fear when I am old all my friends will be gone.” The AAS contains 5 reverse scored items including items 2, 5, 6, 8, 14, 17, and higher scores indicate less ageing anxiety.

In a sample of individuals ranging from 25 years to over 74 years, Lasher and Faulkender found acceptable reliability for each of the four factors including Fear of Old People ($\alpha = .78$), Psychological Concerns ($\alpha = .74$), Physical Appearance ($\alpha = .71$), and Fear of Losses ($\alpha = .69$), and good reliability overall ($\alpha = .82$). Other researchers have reported acceptable reliability and validity for the AAS. For example, Donizetti (2019) found good total internal reliability for the AAS ($\alpha = .78$) and each of the subscales had acceptable reliabilities ranging from .65 to .78. High internal consistency has also been reported for an Australian sample of older adults with ages ranging from 60 to 85 years (Watkins et al., 1998).

Herrington and Both (2022) modified the scoring for the AAS by reverse scoring items so that higher scores meant more anxiety. In addition, Herrington and Both did not reverse code item 20 because it appeared to be necessary for the direction of the scale and improved the total reliability of the scale from .78 to .83. The current study followed the same scoring protocol as Herrington and Both.

The current study found that the AAS was a reliable measure of TMT ($\alpha = .84$). In addition, each of the subscales including Fear of Old People ($\alpha = .86$), Psychological Concerns ($\alpha = .75$), Physical Appearance ($\alpha = .67$), and Fear of Losses ($\alpha = .74$) demonstrated adequate reliability. However, only the total score for the AAS was employed in the present study.

Modernization

Modernization theory was assessed using Herrington and Both's (2022) framework and their adaptation of the Survey of Knowledge and Attitudes on Elderly Issues (NSO, 2011 as cited in Yoon et al., 2017, see Appendix J). This measure includes 18-items that are subjective statements about the elderly. The 18-items are equally divided into two groups, including 9-items that are positively phrased statements about older adults and the other 9-items are negatively phrased statements about older adults. Items on this survey demonstrate excellent face validity in accordance with modernization theory. For example, "older people are outdated" and "older people complain too much" are two negatively phrased items on the measure. Agreement with these statements represent the essence of modernization theory, where older adults are viewed as obsolete and a burden to society. In addition, disagreement with positively

phrased items such as “older people can contribute to the community and the society” and “older people should have an important role in society” also demonstrate the basis of modernization theory. In the original survey, respondents indicated their agreement or disagreement with each statement, or could express their uncertainty. Herrington and Both (2022) adapted the scoring protocol to resemble a 3-point Likert scale; participants selected either Disagree (0), Not Sure (1), or Agree (2) for each of the 18-items. In addition, Herrington and Both reverse-coded the 9 positively phrased items so that higher scores meant more modernization (i.e., viewing older adults as obsolete and as a burden to society). Item 5 was also re-written from “Older people belong in temples” to “Older people belong in institutions” to facilitate a more culturally appropriate phrasing. Herrington and Both found that the overall measure demonstrated good reliability ($\alpha = .80$).

To my knowledge, Herrington and Both (2022) were the first to administer a quantitative measure assessing modernization theory. Other researchers have used one-item questions measuring religiosity or other micro- or macro-level predictors to assess modernization theory (Ayalon, 2013; Yoon et al., 2017). Since the inventory exhibited good reliability in Herrington and Both’s (2022) study, and demonstrated excellent face validity, the current study employed Herrington and Both’s framework to measure modernization theory. The current study found that the overall measure demonstrated good total reliability ($\alpha = .77$).

Ageist Attitudes

Ageist attitudes were assessed using two measures. The Fraboni Scale of Ageism (FSA; Fraboni et al., 1990) was used to measure overall ageist attitudes (see Appendix K). The FSA was designed to assess the cognitive and affective components of ageism. The construct of ageism is measured in relation to Butler's (1978, as cited in Fraboni et al., 1990) definition of ageism and three of Allport's (1958, as cited in Fraboni et al., 1990) five levels of prejudice related to ageism including Antilocution (e.g., "Most old people just live in the past"), Avoidance (e.g., "I don't like it when old people try to make conversation with me"), and Discrimination (e.g., "Most old people should not be trusted to take care of infants"). These three levels of prejudice represent the three subscales on the FSA. The overall FSA contains 29 items, with 10 items measuring the factor Antilocution, 9 items measuring the factor Discrimination, and 10 items measuring the factor Avoidance. The items are scored using a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Fraboni and colleagues then scored missing data with a value of 3 and adjusted scores afterwards to resemble a 5-point Likert format. In addition, several items (i.e., items 12, 20, 32, 33, 37, 38) are reverse scored so that higher scores indicate more ageist attitudes. Fraboni and colleagues demonstrated adequate reliability for the overall measure ($\alpha = .86$) and each of the three factors: Antilocution ($\alpha = .76$), Discrimination ($\alpha = .65$), and Avoidance ($\alpha = .77$), suggesting that the FSA is a homogenous scale. In addition, they provided evidence of construct validity by finding that scores on the FSA possessed significant negative correlations with the Facts on Aging Quiz ($r = -.28$) and Acceptance of Others Scale ($r =$

-22). Overall, these findings supported that the FSA is a reliable and valid measure for assessing ageist attitudes.

Other researchers have also used the FSA to assess ageist attitudes. Herrington and Both (2022) found that the traditional 4-point Likert FSA, without adjustments in coding, demonstrated excellent total reliability ($\alpha = .92$). Similarly, Vowels and Crandall (2014) found good total reliability for the 4-point FSA ($\alpha = .86$). Luo and colleagues (2013) assessed ageist attitudes in two samples from the United States and China and found the adjusted 5-point FSA demonstrated adequate reliability for both the English version administered in the United States ($\alpha = .86$) and the translated version administered in China ($\alpha = .78$). In addition, Ozel Bilim and Kutlu (2020) found that after translating the FSA into Turkish and removing 4 items for cultural relevance, the measure demonstrated good total reliability ($\alpha = .84$) and split half reliability ($\alpha = .81$) suggesting evidence of cross-cultural reliability. The current study employed the 4-point Likert FSA without adjustments due to the good total reliability of the measure as indicated by researchers (Herrington & Both, 2022; Vowels & Crandall, 2014).

The Ambivalent Ageism Scale (Cary et al., 2016, see Appendix L) was the second dependent measure used in the current study. This scale is a 13-item measure with two subscales: benevolent subscale (i.e., positive ageism) and the hostile subscale (i.e., negative). The benevolent subscale includes 9 items and the hostile subscale includes 4 items. For example, “It is good to tell old people that they are too old to do certain things; otherwise they might get their feelings hurt when they eventually fail” and “old people are too easily offended” are two items representing a benevolent form of ageism and a hostile form of ageism, respectively. Participants score using a 7-point

Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) and higher scores are indicative of higher ageism. Cary and colleagues reported excellent internal consistency ($\alpha = .91$) and 2-week test-retest reliability ($r = .80$). One method Cary and colleagues used to assess construct validity was by correlating the full scale with a 5-point Likert version of the FSA. The authors reported that the two measures were highly correlated ($r = .65, p < .001$). In addition, since most items in the FSA are related to hostile ageism, the authors expected a higher correlation between the hostile factor of the Ambivalent Ageism Scale with the FSA compared to the benevolent subscale. Cary and colleagues confirmed this expectation and found that the hostile subscale correlated more strongly with the FSA ($r = .75, p < .001$) compared to the benevolent ($r = .51, p < .001$). In addition, the difference between these two correlations were found to be significant ($z = -4.97, p < .001$). The Ambivalent Ageism Scale also showed that it possesses discriminant validity because the benevolent and the hostile subscales differentially predicted stereotypes about older adults. Specifically, higher scores on the hostile subscale predicted negative beliefs about the competence ($\beta = -.44, p < .001$) and warmth ($\beta = -.44, p < .001$) of older adults. On the contrary, higher scores on the benevolent subscale predicted positive beliefs about the warmth ($\beta = .22, p = .016$) of older adults. These results provide evidence of construct validity while also supporting the idea that ageism has two distinct subtypes that should be measured when assessing ageist attitudes.

Researchers have employed the Ambivalent Ageism Scale in their own research when measuring ageist attitudes. For example, Forlenza and colleagues (2019) found that the Ambivalent Ageism Scale demonstrated high internal consistency in their

sample of exercise students in the United States ($\alpha = .85$). Yun and Maxfield (2020) also reported good reliability for both the benevolent subscale ($\alpha = .83$) and the hostile subscale ($\alpha = .76$). Taşdemir (2020) also reported good reliability ($\alpha = .87$) for the measure after translating the Ambivalent Ageism Scale into Turkish, suggesting evidence of good cross-cultural reliability.

The current study measured ageist attitudes using both the FSA and the Ambivalent Ageism. Characterizing ageist attitudes in both hostile and benevolent forms provided further insight to the construct of ageism and how the various predictors and models fit in respect to ageism. In addition, by using the FSA, the current study was able to compare the predictors in relation to the measures of ageism to facilitate a deeper understanding of conceptualizing the construct of ageism and measuring ageist attitudes.

The current study found that the dependent measures demonstrated good reliability. The FSA was found to have excellent overall reliability ($\alpha = .91$), and good reliability for each of the subscales including Antilocution ($\alpha = .81$), Discrimination ($\alpha = .72$), and Avoidance ($\alpha = .83$). In turn, the subscales of the Ambivalent Ageism Scale, including the hostile subscale ($\alpha = .79$) and the benevolent subscale ($\alpha = .86$), demonstrated good reliability.

COVID-19

The assessment of COVID-19 perceptions and behaviours was conducted using various measures. First, perception of COVID-19 was assessed using the Attitudes Towards the COVID-19 Vaccine subscale (ATV-COVID-19, Geniş et al., 2020, see Appendix M). This subscale contains 9 items; 4 items represent statements of negative

attitudes towards the COVID-19 vaccine and 5 items represent statements of positive attitudes towards the COVID-19 vaccine. One item, “I want to have the vaccine developed for this disease as much as possible,” was removed from the current study since the majority of individuals have already obtained their COVID-19 vaccinations (Holder, 2022). Items are scored using a 5-point Likert ranging from 1 (*definitely disagree*) to 5 (*strongly agree*). Each item on the ATV-COVID-19 asked participants about the COVID-19 vaccine by referring to it as “the vaccine to be developed/the vaccine developed.” For example, items on the inventory include “I want my family to have the vaccine developed for this disease.” To specify that this survey was assessing attitudes regarding the COVID-19 vaccine specifically, the scale was adapted to the phrasing “the COVID-19 vaccine.” Items on the positive attitudes subdimension were scored reversely so that higher scores indicated more negative attitudes towards the COVID-19 vaccine. Geniş and colleagues reported good total reliability for the ATV-COVID-19 measure ($\alpha = .80$) and for both the positive ($\alpha = .96$) and negative subscales ($\alpha = .78$). Face validity for the subscale was confirmed with personal interviews that were conducted with 12 people, and content validity was assessed and verified by nine experts in the field outside of the research team. Structural validity was also confirmed using a factor analysis and the ATV-COVID-19 scale explained 70% of the total variance, with the positive subdimension explaining roughly 41% and the negative subdimension explaining 28% of the total variance. The ATV-COVID-19 subscale is considered as a reliable and a valid measure to assess attitudes towards the COVID-19 vaccine.

Other researchers have confirmed the reliability of the ATV-COVID-19 subscale. Turan and colleagues (2022) found good reliability in their sample for the overall measure ($\alpha = .80$). Similarly, Doğan (2022) found good reliability for the total items ($\alpha = .88$). Tarus and colleagues (2022) confirmed good total reliability for the overall measure ($\alpha = .88$) and for each of the subscales: positive subscale ($\alpha = .93$) and negative subscale ($\alpha = .75$). Çelik (2022) also confirmed the reliability of both the positive ($\alpha = .91$) and negative subscales ($\alpha = .76$). The current study found that the ATV-COVID-19 had excellent overall reliability ($\alpha = .90$) and good reliability for each of the subscales: positive subscale ($\alpha = .91$) and negative subscale ($\alpha = .81$). However, only overall ATV-COVID-19 scores were used.

The current study also assessed pandemic-related behaviour changes (Vale et al., 2020; see Appendix N). Using Vale and colleague's framework, pandemic-related behaviour changes were measured using 5 items related to safety-related habits. These items included frequency of washing hands, duration of washing hands, frequency of visiting stores, amount of time spent inside stores, frequency of leaving their house/property. Vale and colleagues stated using six items; however, they only reported five behaviours, so the current study only used the five listed above. Each item was scored on a scale from 1 (*extremely decreased*) to 9 (*extremely increased*). The last three items were reverse-scored so that higher scores indicated more safety-related behaviour changes due to the pandemic. In their sample using six items, a composite behaviour change score was created by averaging the six items which exhibited acceptable reliability ($\alpha = .76$). The current study found that the measure of pandemic related-behaviour changes ($\alpha = .69$) had adequate reliability.

Pandemic-related fear (Vale et al., 2020; see Appendix O) was measured using 4 items including “How afraid are you of contracting coronavirus,” “How often in the past week did you fear that you would contract the coronavirus,” “How often in the last week did you fear one of your loved ones would contract the coronavirus,” and “How often in the last week did you think about the coronavirus.” The first item was scored on a scale from 1 (*Not at all*) to 10 (*Extremely*) and the remaining items were also scored on an adapted scale from 1 (*Not at all*) to 10 (*Extremely often*). Vale and colleagues created a composite score by averaging the 4 items and found that they demonstrated acceptable reliability ($\alpha = .80$). The current study found that the measure of pandemic-related fear ($\alpha = .88$) had good reliability.

Procedure

After approval by the Research Ethics Board, the current study was advertised via social media (Facebook and Instagram) for the link to be shared via a snowball effect by others to recruit participants. In-class announcements in undergraduate psychology courses were also used to recruit participants. Individuals under the age of 18 (for the university students) or 19 (for the general public) and individuals over the age of 65 were excluded from participating in the current study. Students who were eligible and interested in participating in the study registered using the SONA online registration system, which provided them a link to Qualtrics (www.qualtrics.com), an online survey platform. In turn, individuals from the community who were recruited via social media were provided a direct link to complete the current study. Qualtrics is an online survey platform that was used to administer the questionnaires. All participants were required to

complete a consent form prior to data collection (see Appendix A and Appendix B). The online consent form was presented first, followed by the demographics questionnaire, and then the remaining ageism and COVID-19 measures were administered in random order within two blocks. The first block contained questionnaires pertaining to ageism theories, other predictors of ageist attitudes, and the dependent measures. The second block included the remaining questionnaires regarding the COVID-19 pandemic (i.e., ATV-COVID-19, Pandemic-Related Behaviour Change, Pandemic-Related Fear). The study took approximately 40 minutes to complete, and student participants who registered via SONA received 1 bonus point in an eligible psychology course as an incentive for participating in this study. Participants from the general public had the opportunity to be entered into a draw for one of two 50 Canadian dollar Amazon gift cards. Following the completion of the survey, participants were directed to a separate page where they could indicate if they would like to be notified of the results of the study once they become available.

Results

Power Analysis

A power analysis was conducted using G-power for a linear multiple regression. Due to the abundance of tests included in the present study, an alpha level of .01 was set for all analyses to control for Type 1 error rate. A G-power for a linear multiple regression with a moderate effect size ($f^2 = .15$), an alpha level of .01, a power of .80, and 17 predictors, indicated that a minimum of 195 participants were needed for this

study. Given there were 389 participants included in the present study, this threshold was met.

Data Conditioning

Data from the current study were downloaded from Qualtrics and exported to SPSS. A total of 544 data sets were collected for the present study. Of these 544 data sets, 142 participants were removed for missing more than 80% of the data and/or for having incomplete outcome measures. In addition, 4 participants were removed for not reporting their age since they may not have been of age to consent to the study. The data set was then checked for missing values and variables were computed for all measures employed in the study. Computed variables included age, gender, religion, AGI total, CSES total, personality factors, CLFDS, AAS, modernization total, FSA, hostile ageism, benevolent ageism, and the COVID-19 measures including ATV-COVID-19, pandemic related-behaviour change and pandemic-related fear. In addition, 4 variables were computed for contact theory by combining scores for past and present frequency and past and present quality of intergenerational contact. Frequencies and descriptives were then generated for all variables to check for out-of-range values and univariate outliers. Using the frequency output, minimum and maximum values were checked for each of the variables and no out-of-range values were found. In turn, univariate outliers were checked by generating standardized scores and histograms for the variables employed in the current study. According to Tabachnick and Fidell (2007), univariate outliers are defined as standardized scores greater than +3.29 or less than -3.29. Moreover, univariate outliers are also characterized as being discontinuous with the distribution.

Using these guidelines, 4 univariate outliers were found and these scores were Winsorized to the next lowest or highest in the distribution (Tabachnick & Fidell, 2007). After making these adjustments, there were no univariate outliers in the sample.

Linear Model Assumptions

Assumptions of a linear model include normality, linearity, and homoscedasticity. To examine normality, skewness and kurtosis values were evaluated for all standardized scores. A non-normal distribution is characterized as having a skewness and kurtosis greater than +3.29 or less than -3.29 for standardized scores (Tabachnick & Fidell, 2007). Using these criteria, the current study found normal distributions for the variables included in the present study. Residual scatterplots were also inspected for linearity and homoscedasticity and concluded that the data met these assumptions. Therefore, the data met the assumptions of the linear model and did not require adjustments.

Multivariate Outliers

Multivariate outliers were assessed by regressing participant ID number onto the relevant variables in the data file and generating Mahalanobis distances. Using a Chi-Square distribution table, the critical value for MAHAL with 17 predictors at a significance level of .001 was found to be 40.79. Using this cutoff value, nine participants were identified as multivariate outliers and were removed from the sample resulting in a total sample size of 389 participants.

Multicollinearity and Singularity

According to Tabachnick and Fidel (2007), multicollinearity is said to exist when two or more independent variables are too highly correlated ($r = > .90$). Tolerance and variance inflation factor (VIF) values for all variables were found to be within acceptable limits and no adjustments were made.

Sample Characteristics

As previously mentioned, an alpha level was set to $p \leq .01$ to control for Type 1 error rate due to the large number of analyses included in the present study. Therefore, sample characteristics as well as all other analyses were interpreted at an alpha level of .01.

Group Differences

Following data conditioning, a total of 389 participants were included in the present study. Gender differences were assessed using independent samples *t*-tests. The sample included 316 women, 69 men, 3 transgender men, and one person who identified as two-spirited. Since there were too few individuals who identified as transgender or two-spirited, gender differences were computed between women and men only. *T*-test analyses were conducted to assess gender differences on frequency of past and present intergenerational contact, quality of past and present intergenerational contact, AGI scores, CSES scores, AAS scores, BFI-2 factor responses, CLFDS scores, modernization scores, overall ageism scores (i.e., FSA), and benevolent and hostile ageism scores. The current study hypothesized that there would be gender differences in ageist attitudes (Hypothesis 1). Specifically, cisgender men were predicted to score higher on overall

ageist attitudes and hostile ageist attitudes. Independent samples *t*-tests showed that there were significant gender differences on ageist attitudes (see Table 3). In accordance with Hypothesis 1, men scored higher than women on overall ageist attitudes (FSA $M = 2.05$, $SD = 0.39$ for men; $M = 1.87$, $SD = 0.37$ for women) and hostile ageist attitudes ($M = 3.20$, $SD = 1.26$ for men; $M = 2.76$, $SD = 1.09$ for women). In addition, men were also found to score higher than women on benevolent ageist attitudes ($M = 3.63$, $SD = 1.18$ for men; $M = 2.92$, $SD = 1.09$ for women). Noteworthy gender differences were also found on modernization and fear of death (CLFDS); men scored higher than women on modernization ($M = 0.42$, $SD = 0.30$ for men; $M = 0.31$, $SD = 0.23$ for women) and women scored higher than men on and fear of death ($M = 3.55$, $SD = 0.90$ for women; $M = 3.20$, $SD = 0.87$ for men). Other significant gender differences can be found in Table 3.

The present study investigated age group differences between young adults and middle-aged adults using independent samples *t*-tests (see Table 4). Noteworthy age group differences were found on all three measures of ageist attitudes; young adults scored higher than middle-aged adults on overall ageism (FSA $M = 1.95$, $SD = 0.39$ for young adults; $M = 1.76$, $SD = 0.30$ for middle-aged adults), benevolent ageism ($M = 3.22$, $SD = 1.12$ for young adults; $M = 2.47$, $SD = 0.98$ for middle-aged adults), and hostile ageism ($M = 2.97$, $SD = 1.15$ for young adults; $M = 2.44$, $SD = 0.99$ for middle-aged adults). Young adults also scored higher than middle-aged adults on fear of death (CLFDS $M = 3.61$, $SD = 0.88$ for young adults; $M = 3.11$, $SD = 0.86$ for middle-aged adults), and modernization ($M = 0.37$, $SD = 0.25$ for young adults; $M = 0.20$, $SD = 0.18$ for middle-aged adults). On the other hand, middle-aged adults scored higher than young

adults on frequency of present intergenerational contact (Present Frequency $M = 5.91$, $SD = 1.95$ for middle-aged; $M = 5.28$, $SD = 1.73$ for young adults) and collective self-esteem (CSES $M = 4.98$, $SD = 0.66$ for middle-aged; $M = 4.58$, $SD = 0.85$ for young adults). Other significant age group differences can be found in Table 4.

Zero Order Correlations

Correlations were conducted among age, religion, frequency of present and past intergenerational contact, quality of present and past intergenerational contact, the Big-5 personality factors, age group identification, collective self-esteem, anxiety about ageing, fear of death, modernization, overall ageist attitudes, benevolent ageism scores and hostile ageism scores. A comprehensive summary of all correlations can be found in the correlation tables (see Table 5 - Table 9). However, for brevity, only correlations pertaining to the ageism measures and hypotheses will be presented here.

Demographic Variables

The present study hypothesized that age would correlate with ageist attitudes (Hypothesis 2). Specifically, age was predicted to negatively correlate with overall ageist attitudes and with negative ageism. In accordance with Hypothesis 2 and the associated predictions, age was significantly negatively correlated with overall ($r = -.21$, $p < .001$) and hostile ($r = -.21$, $p < .001$) ageism scores (see Table 6). Other noteworthy significant negative correlations were found between age and benevolent ageism ($r = -.28$, $p < .001$), and age and fear of death (CLFDS $r = -.25$, $p < .001$).

Personality

Correlations were also computed among the Big-5 personality factors, other predictors, and measures of ageist attitudes (see Table 5 and Table 6). The current study hypothesized that personality factors would correlate with ageist attitudes (Hypothesis 3). Specifically, Agreeableness and Openness were predicted to negatively correlate with overall ageist attitudes and hostile ageist attitudes. In accordance with Hypothesis 3 and the predictions, Agreeableness ($r = -.42, p < .001$) and Openness ($r = -.29, p < .001$) significantly negatively correlated with overall ageism scores and with hostile ($r = -.30, p < .001$ for Agreeableness; $r = -.19, p < .001$ for Openness) ageist attitudes (see Table 6). The current study also predicted that higher scores on Agreeableness and Openness would associate with higher scores on benevolent ageism. In contrast with the prediction, the current study found that both Agreeableness ($r = -.24, p < .001$) and Openness ($r = -.24, p < .001$) had significant negative correlations with benevolent ageism scores.

Although no specific predictions were made for the remaining personality factors, significant correlations were found for Conscientiousness and Extraversion with ageist attitudes (see Table 6). Extraversion ($r = -.25, p < .001$) and Conscientiousness ($r = -.22, p < .001$) significantly negatively correlated with overall ageism scores. In addition, Conscientiousness significantly negatively correlated with benevolent ageism scores ($r = -.16, p < .01$), and hostile ageism scores ($r = -.18, p < .001$).

Contact Theory

The current study hypothesized that intergenerational contact would correlate with ageist attitudes (Hypothesis 4). However, since contact theory research has been mostly conducted in younger adults, the specific predictions were only developed for younger adults in the sample and were explored using correlations filtered for participants aged 18 to 35 years of age (see Table 7). Younger adults with higher quality of intergenerational contact were predicted to have lower scores on overall ageism (FSA) and hostile ageist attitudes. In accordance with Hypothesis 4 and the predictions for young adults, quality of present intergenerational contact ($r = -.34, p < .001$) and quality of past intergenerational contact ($r = -.31, p < .001$) were significantly negatively correlated with overall ageist attitudes (FSA) and with hostile ageist attitudes ($r = -.22, p < .001$ for quality of present intergenerational contact; $r = -.19, p < .001$ for quality of past intergenerational contact). The current study also predicted that higher quantity (i.e., frequency) of intergenerational contact would predict benevolent ageist attitudes. Contrary to the prediction, current frequency of intergenerational contact ($r = -.09, p = .12$) and past frequency of intergenerational contact ($r = -.06, p = .29$) were not significantly correlated with benevolent ageist attitudes. However, current frequency of intergenerational contact ($r = -.17, p < .01$) and past frequency of intergenerational contact ($r = -.15, p < .01$) were significantly negatively correlated with overall ageist attitudes.

Zero-order correlations with the contact measures were also conducted with the general sample (see Table 6). For the correlations generated for the young adult sample, present quality of intergenerational contact ($r = -.36, p < .001$) and past quality of

intergenerational contact ($r = -.27, p < .001$) significantly negatively correlated with overall ageism scores (FSA). In addition, present frequency of intergenerational contact significantly negatively correlated with overall ageism scores ($r = -.19, p < .001$). Unlike the young adult correlations, frequency of past intergenerational contact ($r = -.11, p = >.01$) was not found to be a significant predictor of overall ageism scores. Moreover, present quality of intergenerational contact was found to be a significant negative predictor of hostile ageist attitudes ($r = -.22, p < .001$) as was past quality of intergenerational contact ($r = -.15, p < .01$).

Social Identity Theory

The current study hypothesized that age group identification would correlate with ageist attitudes (Hypothesis 5). Specifically, greater young age group identification was predicted to positively associate with overall ageism and hostile ageism scores. Hypothesis 5 and associated predictions were explored using correlations filtered for participants aged 18 to 35 years of age (see Table 8) and within the general sample (see Table 9). In contrary to Hypothesis 5, age group identification did not significantly correlate with ageist attitudes.

Collective self-esteem (CSES) was hypothesized to correlate with ageist attitudes (Hypothesis 6). Specifically, the current study predicted that higher collective self-esteem among young adults would positively associate with overall ageism scores. In contradiction with Hypothesis 6 and the prediction, collective self-esteem significantly negatively correlated with overall ageism scores ($r = -.16, p < .01$) in the young adult sample (see Table 8). Similarly, in the general sample, collective self-esteem

significantly negatively correlated with overall ($r = -.21, p < .001$) and hostile ($r = -.14, p < .01$) ageist attitudes (see Table 9).

Terror Management Theory

The current study hypothesized that fear of death would correlate with ageist attitudes (Hypothesis 7). Specifically, the current study predicted that higher fear of death scores would positively correlate with overall ageism scores and hostile ageism scores. In contradiction with Hypothesis 7 and the predictions, fear of death significantly positively correlated with benevolent (CLFDS $r = .23, p < .001$) ageism scores but did not correlate with overall ageism nor hostile ageism at the $\alpha = .01$ level (see Table 9). The current study also hypothesized that ageing anxiety would correlate with ageist attitudes (Hypothesis 8), where it was predicted that higher scores on ageing anxiety would positively correlate with overall ageist attitudes and hostile ageist attitudes. In accordance with Hypothesis 8 and the predictions, ageing anxiety (AAS) significantly positively correlated with overall ageism scores ($r = .38, p < .001$) and with hostile ageism scores ($r = .31, p < .001$). Moreover, ageing anxiety also significantly positively correlated with benevolent ageism scores ($r = .15, p < .01$).

Modernization

Modernization was hypothesized to correlate with ageist attitudes (Hypothesis 9). Specifically, individuals with higher overall modernization scores were predicted to score higher on overall ageism scores. In accordance with Hypothesis 9 and the prediction, modernization significantly positively correlated with overall ageism ($r = .66, p < .001$) scores (see Table 9). However, modernization was also significantly

positively correlated with benevolent ageism ($r = .35, p < .001$) and hostile ageism ($r = .55, p < .001$). In addition, religiosity (i.e., a demographic measure of modernization), was predicted to negatively correlated with overall ageism scores and hostile ageism scores. In contrast with the predictions, religiosity significantly positively correlated with benevolent ($r = .28, p < .001$) and hostile ($r = .18, p < .001$) ageism scores (see Table 6).

Dependent Measures

Significant correlations were also found between the dependent ageism measures (see Table 9). Overall ageism scores significantly positively correlated with benevolent ($r = .58, p < .001$) and hostile ($r = .65, p < .001$) ageism scores. Lastly, benevolent ageism scores significantly positively correlated with hostile ageism scores ($r = .63, p < .001$). Due to the large number of predictor and outcome measures, canonical correlations were run to determine the relation between the set of predictor variables and the set of criteria variables.

Canonical Correlations

Canonical correlation analysis examines the relation between two sets of variables to see if and how they are related (Tabachnick & Fidell, 2007). One set included all the predictor variables (such as ageing anxiety, contact, modernization) and the second set included all the outcome variables (i.e., overall ageism, hostile ageism, benevolent ageism). Canonical loadings, standardized canonical coefficients, and the percentage of variance extracted by canonical variates from their sets of variables are presented in Table 10.

Two of the three canonical roots were statistically significant (see Table 10 and Appendix P). The first canonical correlation was .77, indicating that the first canonical variate of predictors and the first canonical variate of criteria shared 79.01% of their variance ($F_{(51.00, 1078.54)} = 10.75, p < .001$). The second canonical correlation was .50 and accounted for 18.29% of their variance ($F_{(32.00, 726.00)} = 4.13, p < .001$). However, the third canonical correlation (see Appendix P) of .22 was not statistically significant ($F_{(15.00, 364.00)} = 1.18, p = .29$). Therefore, only the first two pairs of canonical variates accounted for significant associations between these two sets of variables.

With a cut off correlation of $\pm .30$ (Tabachnick & Fidell, 2007), the predictors found to be relevant to the first canonical variate included quality of present intergenerational contact, quality of past intergenerational contact, ageing anxiety, Extraversion, Agreeableness, Openness, and modernization. In turn, age, gender, religion, frequency of past and present intergenerational contact, age group identification, collective self-esteem, Conscientiousness, Negative Emotionality, and fear of death were not found to be correlated to the first canonical variate. Thus, the first pair of canonical variates indicated that higher quality of present and past intergenerational contact, higher Extraversion, Agreeableness and Openness, along with lower anxiety about ageing and modernization are associated with lower FSA, benevolent and hostile ageism scores.

For the second canonical correlation, the relevant predictors were age, gender, religiosity, age group identification, and fear of death (see Table 10). The second canonical variates suggest that being older in age, being female, and having lower scores on religiousness, age group identification, and fear of death are associated with lower

benevolent ageism scores. However, the second canonical covariate of criteria showed a standardized coefficient of -1.32 for benevolent ageism, thereby indicating multicollinearity issues between the outcome variates (Deegan, 1978; Tabachnick & Fidell, 2007). Since this form of multicollinearity was only found in the second canonical correlation, the first canonical correlation was used to inform the development of the hierarchical linear regressions in the major analyses.

Hierarchical Linear Regressions

Results of the first canonical correlation were considered in the development of hierarchical linear regressions predicting overall ageism, benevolent ageism, and hostile ageism scores. Since this study is the first to assess the influence of contact theory, social identity theory, terror management theory, and modernization theory on three categories of ageist attitudes (i.e., overall, benevolent, and hostile), the current study conducted complete hierarchical linear regression models with all predictors. The results of the first canonical correlation informed that the three types of ageist attitudes were each contributing unique variance to the canonical variate, meaning that it was important to assess predictors for each of the dependent ageism measures. Although the results of the first canonical correlation informed to remove some predictors, such as age and gender, it was determined that removing predictors such as these may be too restrictive at this early stage of research. Therefore, all predictors were included in the hierarchical linear regression models predicting overall ageist attitudes, benevolent ageism, and hostile ageism. For transparency, hierarchical linear regressions informed by the first canonical correlation were also conducted and the results for those regressions are

included in the Appendix (see Appendix Q, Appendix R, and Appendix S). It should be noted that there was considerable overlap in the pattern of results between the regressions informed by theory and the regressions informed by the canonical correlations.

Overall Ageist Attitudes

The first hierarchical linear regression was conducted to examine the role of demographics, contact, personality, social identity theory, terror management theory, and modernization theory on overall ageist attitudes (see Table 11). Demographic variables including age, gender and religiosity were added on the first step to control for their effects. The second step added intergenerational contact since contact temporally precedes other predictors in the current study. On the third step, personality factors including Extraversion, Agreeableness, Openness, Conscientiousness, and Negative Emotionality were added. The fourth step added all other remaining variables to predict overall ageist attitudes. The fifth step included the interaction term for fear of death and ageing anxiety to examine the proposed moderation effect between fear of death and ageing anxiety on overall ageist attitudes. Tolerance and variance inflation factors (VIF) were all within acceptable levels (Keith, 2006). The overall model was statistically significant ($F_{(18, 363)} = 26.64, p < .001$) and accounted for approximately 57% of the variance.

The first step was statistically significant ($F_{(3, 378)} = 10.67, p < .001$) and accounted for 8% of the variance (see Table 11). Age and gender were found to be significant predictors of overall ageist attitudes. Adults who were younger in age were

found to have higher FSA scores compared to older adults, indicating higher ageist attitudes ($\beta = -.20, sr^2 = 0.04$). In addition, men were found to have higher FSA scores compared to women, indicating higher overall ageist attitudes ($\beta = .16, sr^2 = 0.02$).

The second step was statistically significant ($\Delta R^2 = .13, Fchange_{(4, 374)} = 15.40, p < .001$). The significant predictor at this step was present quality of intergenerational contact ($\beta = -.31, sr^2 = 0.05$). Participants who scored lower on present quality of intergenerational contact scored significantly higher on overall ageist attitudes.

The third step, including the Big-5 factors of personality, was also found to be statistically significant ($\Delta R^2 = .13, Fchange_{(5, 369)} = 15.07, p < .001$). The personality factors that made a statistically significant contribution to the model included Extraversion ($\beta = -.15, sr^2 = 0.02$), Agreeableness ($\beta = -.27, sr^2 = 0.04$), and Openness ($\beta = -.16, sr^2 = 0.02$). Participants who scored lower on Extraversion, Agreeableness, and Openness were found to score higher on overall ageist attitudes.

The fourth step of the model was statistically significant ($\Delta R^2 = .22, Fchange_{(5, 364)} = 37.67, p < .001$). Ageing anxiety ($\beta = .15, sr^2 = 0.01$) and modernization ($\beta = .48, sr^2 = 0.15$) were found to be significant predictors at this step. Therefore, participants who reported higher anxiety about ageing and participants who scored higher on modernization scored higher on overall ageist attitudes.

The final step of the model was not statistically significant ($\Delta R^2 = .00, Fchange_{(1, 363)} = 1.97, p = .16$) indicating that the interaction between ageing anxiety and fear of death was not significant. In other words, the current study did not find evidence of a moderation effect between ageing anxiety and fear of death on overall ageist attitudes.

The current study hypothesized that the measures of modernization theory, TMT, and SIT would contribute over and above demographics, personality factors, and contact theory to overall ageism scores (Hypothesis 10, see Table 1). The results were found to partially support Hypothesis 10. Modernization and ageing anxiety (i.e., a measure of TMT) were found to contribute over and above demographics, personality factors, and contact theory to overall ageism scores. However, the current study did not find evidence to support SIT in relation to overall ageist attitudes. In addition, the current study predicted that ageing anxiety would positively correlate with total ageism scores only when fear of death scores were low (i.e., the moderation effect). However, the results found a non-significant interaction effect and failed to provide evidence in support of the proposed moderation effect between ageing anxiety, fear of death, and overall ageism scores. Overall, the adjusted R^2 of .55 suggests that approximately 55% of the variance in overall ageist attitudes is attributed to being younger, cisgender male, having lower present quality of intergenerational contact, lower Agreeableness, Extraversion, and Openness scores, and higher anxiety about ageing and reported modernization.

Benevolent Ageist Attitudes

The second hierarchical regression predicted benevolent (i.e., positive) ageism using the benevolent subscale scores on the Ambivalent Ageism Scale (see Table 12). Demographic variables including age, gender and religiosity were added on the first step to control for their effects. The second step added intergenerational contact. On the third step, personality factors were added. On the final step, all other remaining variables

were added to predict overall ageist attitudes. Tolerance and variance inflation factors (VIF) were all found to be within acceptable levels (Keith, 2006). The overall model was statistically significant ($F_{(17, 365)} = 12.47, p < .001$) and accounted for approximately 37% of the variance.

The first step was statistically significant ($F_{(3, 379)} = 34.49, p < .001$) and accounted for 21% of the variance (see Table 12). Age, gender, and religiosity were found to be significant predictors of benevolent ageist attitudes. Adults who were younger in age were found to have higher benevolent scores compared to older adults, indicating higher benevolent ageist attitudes ($\beta = -.30, sr^2 = 0.09$). In addition, men were found to have higher benevolent scores compared to women, indicating higher benevolent ageist attitudes ($\beta = .19, sr^2 = 0.03$). Individuals reporting higher religiosity were also found to score higher on benevolent ageist attitudes ($\beta = .30, sr^2 = 0.09$).

The second step was not statistically significant ($\Delta R^2 = .02; Fchange_{(4, 375)} = 1.81, p = .13$), suggesting that measures of contact theory did not contribute to benevolent ageist attitudes scores. The third step was found to be statistically significant ($\Delta R^2 = .05; Fchange_{(5, 370)} = 5.45, p < .001$). The significant predictor on this step was Openness ($\beta = -.18, sr^2 = 0.03$). Therefore, participants scoring lower on Openness were found to score higher on benevolent ageist attitudes.

The final step was found to be statistically significant ($\Delta R^2 = .09; Fchange_{(5, 365)} = 9.83, p < .001$). Significant predictors at this step included fear of death ($\beta = .20, sr^2 = 0.03$) and modernization ($\beta = .21, sr^2 = 0.03$). In other words, participants scoring higher on fear of death and higher on modernization were also found to score higher on benevolent ageist attitudes.

The current study did not construct hypotheses nor predictions for the regression model predicting benevolent ageist attitudes due to the lack of research surrounding benevolent ageism in relation to the theories of ageism. The results of the regression predicting benevolent ageist attitudes found an adjusted R^2 of .34, suggesting that approximately one third of the variance in benevolent ageist attitudes is attributed to being younger, cisgender male, having lower scores on Openness, and higher scores on religiosity, fear of death, and modernization.

Hostile Ageist Attitudes

The third hierarchical regression predicted hostile (i.e., negative) ageism using the hostile subscale scores on the Ambivalent Ageism Scale (see Table 13). Predictors were added in the same order as the hierarchical linear regression predicting benevolent ageist attitudes. Tolerance and variance inflation factors (VIF) were all found to be within acceptable levels (Keith, 2006). The overall model was statistically significant ($F_{(17, 365)} = 13.35, p < .001$) and accounted for approximately 38% of the variance.

The first step was statistically significant ($F_{(3, 379)} = 13.87, p < .001$) and accounted for 10% of the variance (see Table 13). Age and religion were found to be significant predictors of hostile ageist attitudes. Adults who were younger were found to have higher hostile scores compared to older adults, indicating higher hostile ageist attitudes ($\beta = -.23, sr^2 = 0.05$). In addition, individuals reporting higher religiosity were also found to score higher on hostile ageist attitudes ($\beta = .19, sr^2 = 0.04$).

The second step was statistically significant ($\Delta R^2 = .05; Fchange_{(4, 375)} = 5.75, p < .001$). The significant predictor at this step was present quality of intergenerational

contact ($\beta = -.23$, $sr^2 = 0.03$). Participants who scored lower on present quality of intergenerational contact scored significantly higher on hostile ageist attitudes.

The third step was also found to be statistically significant ($\Delta R^2 = .06$; $F_{change(5, 370)} = 5.43$, $p < .001$). The significant predictor at this step was Agreeableness ($\beta = -.20$, $sr^2 = 0.02$). Therefore, participants who scored lower on Agreeableness were found to score significantly higher on hostile ageist attitudes.

The final step was statistically significant ($\Delta R^2 = .17$; $F_{change(5, 365)} = 20.63$, $p < .001$). The significant predictor at this step was modernization ($\beta = .42$, $sr^2 = 0.19$); participants reporting higher modernization were found to score higher on hostile ageist attitudes.

Similar to the regression predicting benevolent ageism, the current study did not construct hypotheses nor predictions for the regression model predicting hostile ageist attitudes due to the lack of research surrounding hostile ageism in relation to the theories of ageism. The results of the regression predicting hostile ageist attitudes found an adjusted R^2 of .36, suggesting that approximately 36% of the variance in hostile ageist attitudes is attributed to being younger, religious, having lower present quality of intergenerational contact, lower Agreeableness, and higher reported modernization.

COVID-19 – Descriptive Analysis

Descriptive statistics and correlations were used to examine the associations between attitudes towards the COVID-19 vaccine, pandemic-related behaviour change (PRBC), and pandemic related fear (PRF) with ageist attitudes (see Table 14). The current study investigated the influence of pandemic-related behaviour change on ageist

attitudes; however, no specific hypotheses nor predictions were made. Pandemic-related behaviour change was significantly negatively correlated with overall ageism scores ($r = -.15, p < .01$), benevolent ageism scores ($r = -.18, p < .001$), and hostile ageism scores ($r = -.15, p < .01$).

Perceived attitudes towards the COVID-19 vaccine were hypothesized to correlate with ageist attitudes (Hypothesis 11, see Table 1). Specifically, more negative attitudes towards the COVID-19 vaccine were predicted to positively correlate with overall and hostile ageist attitudes. Moreover, more negative attitudes towards the vaccine were predicted to negatively correlate with benevolent ageism. In support of Hypothesis 11 and the prediction for overall ageist attitudes, negative attitudes towards the COVID-19 vaccine (ATV-COVID-19) significantly correlated with overall ageism ($r = .15, p < .01$) scores (see Table 14; recall that higher scores on ATV-COVID-19 denote more negative attitudes). However, in contrast with the prediction for hostile ageism, negative attitudes towards the COVID-19 vaccine did not significantly correlate with hostile ageist attitudes. In addition, higher scores on negative attitudes towards the COVID-19 vaccine significantly correlated with higher benevolent ageism scores ($r = .15, p < .01$), which is in contradiction to the prediction for benevolent ageism.

Zero-order correlations were also generated to assess the relation of pandemic-related fear with ageist attitudes. The current study hypothesized that pandemic-related fear would correlate with ageist attitudes (Hypothesis 12, see Table 1). Specifically, higher scores on pandemic-related fear were predicted to positively correlate with benevolent ageist attitudes. In accordance with the hypothesis and prediction, pandemic-related fear significantly positively correlated with benevolent ageism scores ($r = .22, p$

< .001). In addition, pandemic-related fear also significantly positively correlated with overall ageism scores ($r = .17, p < .01$) and hostile ageism scores ($r = .21, p < .001$).

Other significant correlations can be found in Table 14.

In addition, to examine the role of COVID-19 on ageism, data on political affiliation and loss of employment were collected. The majority of the sample reported that they would vote for the Liberal Party ($n = 116; 30.5\%$) and New Democratic Party ($n = 115; 30.3\%$) if an election was held tomorrow (see Table 2). In turn, 25.5% of the sample ($n = 97$) reported that they would vote for Conservative Party, 13.2% of the sample ($n = 50$) reported that they would vote for Green Party, and 0.5% of the sample ($n = 2$) reported that they would vote for Bloc Québécois. The current study hypothesized that political affiliation would associate with ageist attitudes (Hypothesis 13, see Table 1). Specifically, the present study predicted that participants who report having conservative political affiliation would score higher on overall ageist attitudes. The current study conducted one-way ANOVAs to investigate group differences between political affiliation and ageist attitudes. Since there were too few individuals who identified as having Green Party or Bloc Québécois political affiliation, only participants having Conservative, Liberal, or New Democratic political affiliation were included in the ANOVAs examining group differences in ageist attitudes (see Table 15). In contrast with the hypothesis, there were no significant group differences on any of three types of ageist attitudes based on political affiliation.

The present study also hypothesized that loss of employment due to COVID-19 would correlate with ageist attitudes (Hypothesis 14, see Table 1). Specifically, individuals who reported experiencing a prolonged loss of employment due to COVID-

19 were predicted to score higher on overall ageist attitudes. In accordance with Hypothesis 14 and the prediction, independent samples *t*-tests showed that individuals who reported experiencing a prolonged loss of employment due to the COVID-19 pandemic ($M = 1.97, SD = 0.41$) scored higher than participants who didn't experience a prolonged loss of employment ($M = 1.84, SD = 0.36$) on overall ageist attitudes (see Table 16). Moreover, individuals reporting a prolonged loss of employment also scored higher on benevolent ($M = 3.36, SD = 1.29$) and hostile ageist attitudes ($M = 3.09, SD = 1.31$) compared to individuals who did not report a prolonged loss of employment due to COVID-19 ($M = 2.80, SD = 1.02$ for benevolent ageist attitudes; $M = 2.63, SD = 1.01$ for hostile ageist attitudes). Therefore, individuals who reported experiencing a prolonged loss of employment during the COVID-19 pandemic scored higher than individuals who did not on all three measures of ageist attitudes.

Discussion

Ageism is a global concern that can influence older adults in terms of physical, cognitive, and behavioural outcomes (Meisner, 2012). Ageist attitudes have traditionally been characterized in their negative form; however, ageist attitudes may also take a positive form (Levy & Macdonald, 2012). Negative (i.e., hostile) ageism includes negative attitudes towards older adults and often characterizes older adults as forgetful, sick, incompetent, unattractive, and burdensome. However, positive (i.e., benevolent) ageism characterizes older adults as sweet, trustworthy, wise, and respectful, but also as incompetent and in need of assistance due to their limited cognitive or physical abilities. Benevolent ageism, thus, leads to paternalistic attitudes and feelings of pity towards

older adults and results in the unique positive treatment towards elder individuals (Chonody, 2016; Levy & Macdonald, 2012; Vale et al., 2020). Hostile and benevolent ageist attitudes have been associated with negative consequences in older adults. Researchers have found that hostile ageism has been associated with workplace discrimination, increased pressure to retire, and reduced opportunities for training for older employees (Duncan & Loretto, 2004; Harris et al., 2018), as well as increased incidents of elder abuse (Phelan et al., 2008), and decreased cognitive, physical, and mental health outcomes (Levy, 2009; Levy & Macdonald, 2016). Benevolent ageism, although less studied compared to its counterpart, has been associated with reductions in older adults' self-esteem, social abilities, and cognitive and memory performance (Hehman & Bugental, 2015; O'Conner et al., 1996; Williams et al., 2008). Due to the prevalence of and the associated consequences with ageist attitudes, it becomes important to understand predictors of ageist attitudes so that strategies may be developed to decrease ageist attitudes and behaviours.

The influence of demographic characteristics, personality factors, contact theory, SIT, TMT, and modernization theory were examined within one model in relation to each of the types of ageist attitudes (i.e., overall, benevolent, and hostile). Since benevolent ageism is relatively understudied, this study also served to establish predictors of benevolent ageist attitudes, in addition to hostile and overall ageist attitudes. The current study also explored the influence of the COVID-19 pandemic on ageist attitudes.

It is worth noting that no previous study has investigated the multiple predictors and theories of ageist attitudes in one comprehensive model. Moreover, no other study

has examined these multiple predictors in relation to each of the three forms of ageist attitudes. To my knowledge, this is also the first study to quantify and examine the influence of the COVID-19 pandemic on overall, hostile, and benevolent ageist attitudes. By analyzing these relationships, the current study expanded upon what is currently known about ageist attitudes and their subsequent predictors, so that specific interventions targeting ageist attitudes may be developed.

Age-Related and Gender Differences in Ageist Attitudes

The current study investigated the influence of age and gender in relation to overall, benevolent, and hostile ageist attitudes. Researchers have found that age is significantly associated with ageist attitudes. For example, individuals who are younger in age (Allan & Johnson, 2008; Gellis et al., 2003; Herrington & Both, 2022; Kimuna et al., 2005; Van Dussen & Weaver, 2009) are more likely to display ageist attitudes. In accordance with the literature, the current study found significant negative relations between age and overall ageist attitudes. Moreover, older individuals were also found to score lower on benevolent and hostile ageist attitudes. These results suggest that age is a significant predictor of the three types of ageist attitudes. Some researchers have proposed that age-related differences in ageist attitudes may be attributed to in-group and out-group differences between age groups in line with SIT (Musaiger & D'Souza, 2009); younger adults are more likely to perceive older adults as belonging to their out-group and demonstrate ageist attitudes towards members of the out-age group (Allan & Johnson, 2008; Chasteen et al., 2002; Martens et al., 2004; Rupp et al., 2005; Synder & Meine, 1994). However, the current study failed to provide evidence in support of SIT.

Instead, the significant age-related differences in ageist attitudes may be attributed to younger adults perceiving older adults as irrelevant or obsolete to society (De Tavernier et al., 2019). Individuals who are younger are emerging into adulthood and the ageing process, as with the consequences associated with ageing, are far into the future and likely not a concern to younger adults. Younger individuals are also preferred in contemporary societies leading to the dismissal of older adults (Yoon et al., 2017). It is possible that the preference of younger adults in society may lead younger individuals to have positive perceptions towards their contemporaries and have negative perceptions towards older individuals, resulting in higher ageist attitudes among younger adults. However, as individuals age and time passes, middle-aged individuals become more aware of their own ageing process and realize that they are not too far behind older members of society. This realization of their own skills and abilities, along with the ageing process, may recast their mental representation of ageing and lead to less negative attitudes towards older adults. Overall, the results of the current study support age-related differences in ageist attitudes, where younger adults scored higher on overall, benevolent, and hostile ageist attitudes. Therefore, it is recommended that interventions targeting ageism should consider age-related differences.

Researchers have found that gender is a significant predictor of ageist attitudes. For example, those who identify as cisgender men (Boswell, 2012; Chonody et al., 2014; Galton et al., 2020; Herrington & Both, 2022) scored higher on ageist attitudes compared to cisgender women. In accordance with the literature, cisgender men scored higher than cisgender women on overall ageist attitudes and hostile ageist attitudes in the *t*-test analyses. However, cisgender men also scored higher than cisgender women on

benevolent ageist attitudes in the *t*-test analyses. Moreover, gender was found to be a significant predictor of overall and benevolent ageist attitudes in the major regression analyses. These results are congruent with previous research findings. Chonody and colleagues (2014) found that men score higher than women on discomfort with and fear of older adults, which may lead to increased hostility and negative attitudes towards older adults. Moreover, Herrington and Both (2022) found that cisgender men score higher than cisgender women on overall ageist attitudes. However, the current study also found significant relations between gender and benevolent ageist attitudes, where cisgender men again scored higher than cisgender women. The gender bias in benevolent ageism scores may be attributed to participants considering the gender of older adult targets when responding to ageism measures (Hawkins, 1996; Sublett et al., 2022). For example, Sublett and colleagues (2022) investigated benevolent ageist behaviours towards an older adult target to examine the roles of age and gender on an act of benevolent ageism. Sublett and colleagues found that male participants were more likely to help a female target regardless of age. Since willingness to help is a characteristic of benevolent ageism (Cuddy et al., 2005; Ma et al., 2023) and women live longer than men (Government of Canada, 2014), cisgender male participants in the current study may have conceptualized older adults as being female in gender which could explain the gender differences in benevolent ageism scores. Future research is recommended to have participants consider the gender of the older adult target when assessing benevolent, hostile, and overall ageist attitudes. Moreover, interventions surrounding ageist attitudes should consider the role of gender differences.

Contact Theory and Ageist Attitudes

According to contact theory, intergenerational contact is a predictor of ageist attitudes. Specifically, quantity of intergenerational contact (North & Fiske, 2012; Stewart et al., 2005; Van Dussen & Weaver, 2009) and quality of intergenerational contact (Allan & Johnson, 2008; Bousfield & Hutchison, 2010; Herrington & Both, 2022; Schwartz & Simmons, 2001) have been highlighted as predictors of ageist attitudes, although there has been controversy as to whether quality or quantity of contact is more germane to the prediction of ageist attitudes.

The results of the correlational analyses suggest that past and present quality of contact and current frequency of contact were negatively correlated with overall ageist attitudes, corroborating previous research findings (Allan & Johnson, 2008; Bousfield & Hutchison, 2010; Herrington & Both, 2022; North & Fiske, 2012; Schwartz & Simmons, 2001; Stewart et al., 2005; Van Dussen & Weaver, 2009). When the sample was filtered for younger adults, a significant negative correlation also emerged between past frequency of intergenerational contact and overall ageist attitudes. The results of the correlational analysis suggest that both frequency and quality of contact are associated with overall ageism; especially among younger respondents as both past and present quality and frequency of contact were found to be important predictors of overall ageist attitudes. These results may be explained by interactions within the family structure (North & Fiske, 2012). In line with contact theory, ageist attitudes may be reduced by facilitating intergroup contact between young and older individuals (Allport, 1954; Caspi, 1984). For many younger adults, these interactions may be attributed to facilitating frequent contact with grandparents. Hardwood and colleagues (2005) found

that frequent contact with grandparents predicts positive changes in attitudes towards older adults. Moreover, higher levels of self-disclosure to grandparents (i.e., an aspect of a high-quality intergenerational encounter), leads to more positive explicit attitudes towards older adults (Tam et al., 2006). Intergenerational contact with non-related older adults has also been associated with reduced ageist attitudes (Herrington & Both, 2022; North & Fiske, 2012), which may be more relevant to middle-aged participants who have since lost their grandparents. Overall, the results for the correlational analysis for overall ageism support the influence of both quality and quantity of contact on ageist attitudes.

Similarly, past and present quality of contact significantly negatively correlated with hostile ageist attitudes. However, frequency of intergenerational contact was not found to correlate with hostile ageism. These findings suggest that quality of contact may be more important than frequency of contact when discussing hostile ageist attitudes in relation to contact theory. These results may be attributed to the conditions in which intergenerational contact is facilitated (North & Fiske, 2012; Schwartz & Simmons, 2001). For example, contact with older adults under less than favorable conditions have been suggested to intensify negative stereotyping of older adults (Schwartz & Simmons, 2001). For example, intergenerational contact that is non-voluntary or that only involves interactions with sick or frail older adults are often considered to be unfavorable and are ill advised. Therefore, the conditions, or rather the quality of the intergenerational encounters, seems to be an important associate of negative (i.e., hostile) ageist attitudes.

In the regression analyses, with respect to contact theory, only the quality of present intergenerational contact was a significant predictor of overall and hostile ageist attitudes. In other words, quality of intergenerational contact was found to contribute to the prediction of ageism, whereas frequency of contact was not found to be a significant predictor of ageist attitudes. These results suggest that emphasizing meaningful intergenerational interactions could be important factors to minimize ageist attitudes. For example, some researchers recommend integrating extended contact theory into educational programs to reduce ageist attitudes (Drury et al., 2016; Lytle & Levy, 2019; Lytle et al., 2021). Extended contact theory emphasizes the importance of sharing knowledge of close intergenerational relationships to lead to more positive intergroup attitudes without necessitating in-person contact with out-group members (Drury et al., 2016; Wright et al., 1997). This approach negates increasing direct frequency of contact with older adults, which could protect individuals who may experience anxieties surrounding social interactions and could be used in place for when in-person contact may not be feasible or ideal. Therefore, extended contact theory may serve as an important intervention for ageist attitudes in curriculum by increasing quality of intergenerational contact through sharing of positive intergenerational encounters and experiences.

It is important to note that no correlations were found between the measures of contact theory and benevolent ageism. Moreover, contact theory did not contribute to the prediction of benevolent ageist attitudes in the regression analyses. Contact theory seems to influence negative stereotyping (i.e., hostile ageist attitudes) of older adults, as opposed to positive stereotyping (i.e., benevolent ageist attitudes) of older adults. As

previously mentioned, the conditions under which intergenerational contact is facilitated can influence the negative stereotyping of older individuals (Schwartz & Simmons, 2001). However, benevolent ageism involves the positive stereotyping of seniors, such as characterizing older adults as sweet, trustworthy, and wise (Chonody, 2016), and does not seem to be influenced by intergenerational contact. However, the influence of contact theory on benevolent ageist attitudes is widely understudied. Future research regarding contact theory and benevolent ageist attitudes is recommended so that interventions targeting ageist attitudes may be developed.

Personality Factors and Ageist Attitudes

Researchers have found that personality factors are significant predictors of ageist attitudes; however, there is a discrepancy in the literature to which personality factors are important in predicting ageist attitudes. Some researchers have found that higher scores on Agreeableness (Allan et al., 2014; Galton et al., 2020; Herrington & Both, 2022) and Openness (Allan et al., 2014; Galton et al., 2020) negatively correlated with ageist attitudes. Other researchers have found that Conscientiousness (Allan et al., 2014) and Extraversion (Galton et al., 2020) were also significant negative predictors of ageist attitudes.

The current study found that Agreeableness, Openness, Extraversion, and Conscientiousness were negatively correlated with overall ageist attitudes, which is in accordance with the literature. However, in the regression analysis predicting overall ageist attitudes, only Extraversion, Agreeableness, and Openness contributed to the prediction of overall ageism. Since Extraversion, Agreeableness, and Openness are

related to being outgoing, being good-natured, and have willingness to consider and seek new experiences (McCrae & John, 1992), it is unsurprising that participants scoring low on these characteristics reported higher on overall ageist attitudes. For example, an individual scoring lower on Extraversion and Openness may not be outgoing nor willing to engage in new experiences, such as participating in unfamiliar social interactions like intergenerational contact. Therefore, it is possible that individuals scoring lower on these personality traits may be unfamiliar with older adults through limited contact, which could lead to increased scores on overall ageist attitudes (Schwartz & Simmons, 2001). Moreover, individuals scoring lower on Agreeableness may be less empathetic and altruistic towards others (McCrae & John, 1992), including older adults. In turn, these individuals may also develop biases and overall ageist attitudes towards older individuals.

Similarly, Agreeableness, Conscientiousness, and Openness were negatively correlated with benevolent ageist attitudes. However, only Openness was a significant negative predictor of benevolent ageist attitudes in the hierarchical linear regression analysis. As previously mentioned, individuals scoring high on Openness are willing to engage in new experiences and ideas (McCrae & John, 1992). Since many societies are age-segregated (Hagestad & Uhlenberg, 2005), favour younger adults (DeTavernier et al., 2019), and perceive older adults as a burden (Yoon et al., 2017), an individual scoring low on Openness may adopt the standard societal idea of older adults without considering alternative perspectives. In turn, because of their unwillingness to engage in new ideas, an individual scoring low on Openness may be more likely to view older adults as outcasts, a burden, and paternalistically; they may view older adults as

incompetent and in constant need of assistance due to their age (Chonody, 2016; Levy & Macdonald, 2016). Therefore, lower Openness scores may explain higher scores on benevolent ageism.

As found with benevolent ageist attitudes, Agreeableness, Conscientiousness, and Openness were negatively correlated with hostile ageist attitudes. However, only Agreeableness was a significant negative predictor of hostile ageist attitudes in the hierarchical linear regression analysis. As previously mentioned, individuals with higher Agreeableness are empathetic and good-natured towards others (McCrae & John, 1992). In turn, hostile ageism perpetuates stereotypic beliefs about older adults that undermines older individuals' personal dignity (Butler, 1980) and has been associated with engaging in negative discriminatory practices towards older adults, such as in the workplace (Bal et al., 2011) and in healthcare settings (Levy & Macdonald, 2016). In stark contrast to the empathetic and good-natured tendencies associated with the personality factor Agreeableness, it is unsurprising that individuals scoring lower on Agreeableness were found to score higher on hostile ageist attitudes.

Overall, the results of the current study suggest that Agreeableness, Openness, and Conscientiousness may be valuable predictors of overall ageist attitudes; however, Openness may be a valuable predictor for benevolent ageism and Agreeableness may be an important predictor for hostile ageist attitudes. Due to the contradictions in the literature pertaining to personality factors, more research is needed assessing the influence of personality factors on the three types of ageist attitudes.

SIT and Ageist Attitudes

The current study proposed that SIT would be associated with ageist attitudes. Specifically, researchers have suggested that age group identification is an important predictor of ageist attitudes; young adults who strongly identify with their age group score higher on overall ageist attitudes (Packer & Chasteen, 2006) and benevolent ageism (Taşdemir, 2020). In contrast to the literature, age group identification was not correlated with any of the three types of ageist attitudes nor did it predict any of the ageism types in the regression models. In addition, the current study predicted that collective self-esteem among young adults would positively correlate with ageist attitudes, since collective self-esteem is associated with social identity and age group membership (Luhtanen & Crocker, 1992). In contradiction with the literature, the current study found a significant negative correlation between collective self-esteem among young adults and overall ageist attitudes. In other words, younger adults with lower collective self-esteem scored higher on overall ageist attitudes. Similarly, in middle-aged adults, participants with lower collective self-esteem also scored higher on overall and hostile ageist attitudes which also contradicts previous research findings. Although an individual may not experience a bolster in their self-concept from the value they place on affiliating with members within their respective social age group, they may still perceive differences in social categorization. For example, an individual with low collective self-esteem may still perceive individuals as either in-group or out-group members relative to their social systems. Therefore, a young adult or a middle-aged adult may view older adults as irrelevant to their social network and categorize them as out-group members. As there is theoretical evidence suggesting that perceiving older

adults as out-group members could lead to increased ageist attitudes (Luhtanen & Crocker, 1992; Packer & Chasteen, 2006; Taşdemir, 2019), this could explain why individuals with lower collective self-esteem could still report higher scores on ageism.

In the regression models, collective self-esteem did not predict any of the three types of ageist attitudes. Therefore, the current study failed to provide evidence of SIT in relation to ageist attitudes. Although theoretical evidence of in-group versus out-group membership has been well established in relation to ageist attitudes (Luhtanen & Crocker, 1992; Packer & Chasteen, 2006; Taşdemir, 2019), there is very little empirical data investigating the influence of SIT in relation to ageist attitudes. To my knowledge, this is the first study to investigate measures of SIT in relation to overall, hostile, and benevolent ageist attitudes. The results of the current study suggest that SIT is not a significant predictor of ageist attitudes. Although there were significant correlations between collective self-esteem and ageist attitudes, these correlations were weak and in the opposite direction to what previous research has shown. In the regressions, there may have been shared variance with age, which was entered on the first step. Overall, future research is needed to investigate the influence of SIT in relation to ageist attitudes.

TMT and Ageist Attitudes

Researchers have found that TMT is associated with ageist attitudes. Specifically, ageing anxiety (Allan et al., 2014; Allan & Johnson, 2008; Boswell, 2012; Harris & Dollinger, 2001; Herrington & Both, 2022) and fear of death (Galton et al., 2020; Martens et al., 2004) have been found to positively correlate with ageist attitudes. TMT suggests that individuals with higher awareness of mortality may experience

higher levels of ageing anxiety and fear of death, in turn leading individuals to project greater hostility and negative attitudes towards older adults (Becker, 1997; Boswell, 2012; Martens et al., 2004). In accordance with the literature, the current study found that ageing anxiety significantly positively correlated and contributed to the prediction of overall ageist attitudes, and positively correlated with hostile ageist attitudes. In contrast to the literature pertaining to TMT, ageing anxiety was also found to positively correlate with benevolent ageism. Similarly, fear of death positively correlated with and contributed to the prediction of benevolent ageist attitudes. The positive associations found between the measures of TMT with benevolent ageist attitudes may be explained by the Stereotype Content Model (Cuddy et al., 2005). This model suggests that individuals with ageing stereotypes may also experience feelings of pity towards older adults, which in turn could lead to increased helping behaviours towards stereotyped aged adults (Cuddy et al., 2005; Ma et al., 2023). The stereotype content model could explain how individuals scoring higher on fear of death and ageing anxiety also scored higher on benevolent ageist attitudes. Furthermore, some researchers have suggested there is a moderation effect between fear of death, ageing anxiety, and overall ageist attitudes (Bodner et al., 2015); however, the current study failed to find evidence of a moderation effect. Future research should continue to consider moderation effects between measures of TMT and ageist attitudes. Overall, the results of the regression analyses suggest that fear of death and ageing anxiety are important predictors of ageist attitudes. Therefore, strategies to minimize fear of death and ageing anxiety may be important interventions to minimize ageist attitudes.

Modernization Theory and Ageist Attitudes

Modernization theory suggests that older adults are seen as a burden and obsolete in modernized societies (Herrington & Both, 2022; Yoon et al., 2017), since the status of older adults is suggested to be inversely related to the degree of modernization in a society (Cowgill & Holmes, 1972 as cited in De Tavernier et al., 2019). Researchers have found that measures of modernization theory have been associated with ageist attitudes (Ayalon, 2013; Herrington & Both, 2022). For example, Herrington and Both (2022) found that modernization scores for undergraduate students positively predicted overall ageist attitudes. In accordance with Herrington and Both's findings, the current study found that modernization scores positively correlated and predicted overall ageist attitudes, as well as benevolent and hostile ageist attitudes. The findings of the current study support modernization theory; as society becomes more modern, older adults are likely to be seen more negatively and as a burden (De Tavernier et al., 2019). Moreover, modernized societies are more likely to dismiss the skills of older adults, preferring the skills of people in the younger generation. Therefore, the associations found between modernization scores and the three types of ageist attitudes are in accordance with the ageing aspect of modernization theory.

The current study also investigated the influence of religiosity, a micro-level predictor of modernization theory, in relation to ageist attitudes. Ayalon and colleagues (2013) found that religiosity was a significant predictor of overall ageist attitudes; individuals scoring lower on religiosity had more positive feeling towards younger adults than older adults. In contradiction to the literature, the current study did not find evidence of religiosity correlating with nor contributing to the prediction of overall

ageist attitudes. However, Yoon and colleagues (2017) also did not find evidence of religiosity being a significant predictor of overall ageist attitudes. Therefore, there are mixed findings in the literature pertaining to overall ageist attitudes and religiosity suggesting that the role of religiosity should be further investigated. Moreover, the current study found that religiosity was a significant positive predictor of benevolent and hostile ageist attitudes, which is in contradiction to the literature. Research by Johnson and colleagues (2013) highlighted that religious entities are malleable and variable and can influence social attitudes, such as aggression and prosocial behaviors. For instance, religious individuals can affiliate with different kinds of religious entities, such as Benevolent (i.e., loving, caring, kind, protecting) or Authoritarian (i.e., punishing) Gods. Johnson and colleagues found that individuals affiliating with a Benevolent God were more likely to be willing to help an out-group member compared to individuals who believed in an Authoritarian God. Since benevolent ageism is associated with increased willingness to help (Ma et al., 2023), the positive relation found between religiosity and benevolent ageist attitudes in the current study may be attributed to how participants are conceptualizing their religious affiliation (i.e., to a Benevolent God). Likewise, participants reporting higher religiosity scored higher on ageist attitudes may be conceptualizing their religious entity as an Authoritarian God. Therefore, future research examining the influence of religion on ageist attitudes should consider assessing the type of religious entity in addition to religious affiliation.

Overall, the current study found evidence to support modernization theory in the prediction of the three types of ageist attitudes. To my knowledge, this is the first study to quantify and assess the influence of modernization, as well as religiosity, in relation to

benevolent and hostile forms of ageist attitudes. The current study found that modernization scores contributed the most unique variance compared to all other predictors in the regressions predicting overall and hostile ageist attitudes. Religiosity, a measure of modernization, also contributed the most unique variance along with age to benevolent ageism. Since Western and Eastern societies are becoming more modernized (De Tavernier et al., 2019; Herrington & Both, 2022; Yoon et al., 2017), future research should continue to assess the influence of modernization in relation to ageist attitudes.

Summary of Overall, Hostile, and Benevolent Ageism Results

The current study found that overall ageism was predicted by being younger, being cisgender male, having lower scores on present quality of intergenerational contact, lower scores on Agreeableness, Extraversion, and Openness, and higher scores on anxiety about ageing and modernization. Benevolent ageism was predicted by being younger, being cisgender male, having lower scores on Openness, and higher scores on religiosity, fear of death, and modernization. Lastly, hostile ageism was predicted by being younger, having lower scores on present quality of intergenerational contact and Agreeableness, and higher scores on religiosity and modernization.

Overall, the current study found support for predictors of the three types of ageist attitudes and offered various avenues for intervention. Specifically, strategies informed by contact theory, TMT, and modernization theory are recommended to reduce ageist attitudes. Based on the results of the current study, interventions targeting contact theory are suggested to have practical significance in reducing overall and hostile ageism. Increasing intergenerational contact may encourage and foster opportunities for positive

intergenerational encounters, which has been associated with reduced hostility and negative perceptions towards older adults (North & Fiske, 2012; Schwartz & Simmons, 2001). Therefore, strategies incorporating intergenerational contact into educational programs and curriculum are recommended to help reduce overall and hostile ageist attitudes (Lytle & Levy, 2019; Lytle & Levy, 2021). Furthermore, interventions targeting TMT are recommended to help reduce overall and benevolent ageist attitudes. Ageing anxiety and fear of death were found to be important predictors of overall and benevolent ageism, respectively. Therefore, strategies targeting individuals' anxieties about ageing and dying may serve practical significance to reducing these forms of ageist attitudes (Allan et al., 2014; Galton et al., 2020). Specifically, addressing anxieties surrounding progressive frailty and the loss of abilities and functions as we age, as well as an increased susceptibility to death and dying may help to reduce stereotypic beliefs that older adults are weak, incompetent, and in constant need of assistance. In turn, these interventions may also serve to reduce overaccommodative behaviors towards older adults when they are not warranted nor welcomed, thereby decreasing benevolent ageist attitudes. Across all three types of ageism, modernization was a significant predictor of ageist attitudes suggesting that this ageism theory may be a robust target for ageism interventions. The process of modernization casts older adults as obsolete, outdated, and irrelevant to society (Herrington & Both, 2022; Yoon et al., 2017). Therefore, interventions emphasizing the inclusion or the involvement of older adults in society may help to alleviate ageist attitudes. It is recommended that older adults are encouraged and welcomed into societal events where they can share their experiences, be relevant, and contribute to their surroundings so that ageist attitudes may be reduced.

COVID-19 Associations with Ageist Attitudes

Researchers have argued the COVID-19 pandemic influenced perceptions, attitudes, and actions towards older adults (Aronson, 2020; Ayalon, 2020; Ayalon et al., 2021; Swift & Chasteen, 2021; Vale et al., 2020; Visintin, 2021). Through the influence of media, older adults have been conceptualized as vulnerable, a burden, and of less value than younger adults (Aronson, 2020; Ayalon, 2020; Ayalon et al., 2021). In this regard, the COVID-19 pandemic may have influenced ageist attitudes (Vale et al., 2020; Visintin, 2021).

Pandemic-Related Behaviour Change

Researchers have suggested that pandemic-related behaviour change is associated with ageist attitudes (Vale et al., 2020; Visintin, 2021). For example, Visintin (2021) found that respondents who displayed negative attitudes towards older adults were less likely to adhere to containment behaviours during the pandemic to reduce the spread of the COVID-19 virus. On the contrary, individuals who scored higher on benevolent ageism were found to be more likely to follow behavioural guidelines and use protective devices. However, Vale and colleagues (2020) found that respondents scoring higher on benevolent ageism also scored lower on pandemic-related behaviour modification but suggested evidence of a potential suppression effect. Due to the inconsistency in the research, the current study explored the association between pandemic-related behavioural change and ageist attitudes without specific hypotheses nor predictions. The current study found that individuals scoring lower on pandemic-related behaviour change scored higher on overall, hostile, and benevolent ageist

attitudes. These findings suggest that individuals with ageist attitudes may interpret public messaging regarding COVID-19 in a biased manner, which can influence their actions towards the pandemic (Vale et al., 2020). For example, an individual with overall or hostile ageist attitudes might respond to such public messaging with less intention to change their behaviours to protect older adults. In contrast, an individual with benevolent ageist attitudes may interpret and respond to a similar public message by being paternalistic or belittling to the behaviours of older adults. Therefore, it is important for professionals and media to be considerate to how older adults are represented in relation to the COVID-19 pandemic since these messages may have indirect effects on how older adults are viewed and treated, which can lead to negative health outcomes (Ayalon et al., 2021; Swift & Chasteen, 2021; Vale et al., 2020).

Attitudes Towards COVID-19 Vaccine

The current study also investigated the influence of attitudes towards the COVID-19 vaccine in relation to ageist attitudes. In conjunction with the literature (Vale et al., 2020; Visintin, 2021), the current study found that negative attitudes towards the COVID-19 vaccine were significantly correlated with overall ageist attitudes. People with more negative attitudes towards the COVID-19 vaccine may view older adults more negatively by blaming them for COVID-19 guidelines and regulations, including vaccinations (Ayalon et al., 2021; Cohn-Schwartz & Ayalon, 2020; Swift & Chasteen, 2021; Vale et al., 2020; Visintin & Tasso, 2022). The vulnerability narrative that was emphasized in pandemic media suggested that older adults were vulnerable to the effects of the COVID-19 virus, whereas younger adults were not as susceptible or were more

resilient to the effects of COVID-19 pandemic (Swift & Chasteen, 2021). Given that the vulnerability of older adults to COVID-19 has been highlighted in media, and that the vaccination may contribute to reducing the spread of COVID-19 and protect the health of older adults, ageist attitudes may underly the negative attitudes towards the COVID-19 vaccine.

The current study found negative attitudes towards the COVID-19 vaccine correlated with benevolent ageist attitudes. This result contradicts Visintin (2021) who found that individuals scoring higher on benevolent ageism were more likely use COVID-19 protective devices. However, since some countries including Canada made COVID-19 vaccinations mandatory by denying travel or entrance into public spaces for individuals without the vaccination (Government of Canada, 2022; Visintin & Tasso, 2022), individuals with benevolent ageist attitudes may have also viewed the COVID-19 vaccination negatively resulting in paternalistic and belittling attitudes towards older adults. Future research is recommended to examine the influence of ageist attitudes in relation to attitudes towards the COVID-19 vaccination.

Pandemic-Related Fear

Researchers have suggested that pandemic-related fear is associated with ageist attitudes (Vale et al., 2020). Vale and colleagues found that individuals scoring higher on pandemic-related fear also scored higher on benevolent ageist attitudes. In conjunction with the literature, the current study found a positive association between pandemic-related fear and benevolent ageist attitudes. This finding suggests that individuals who are more fearful of COVID-19 have higher paternalistic and belittling

attitudes towards older adults. Moreover, the current study also found positive associations between pandemic-related fear and overall and hostile ageist attitudes. It is possible that the relations between pandemic-related fear and ageist attitudes may have been attributed to blaming older adults for their vulnerabilities and prolonging societies' lockdowns.

Political Party Affiliation

The COVID-19 pandemic and its associated regulations and guidelines have been emphasized in political discourse (Visintin & Tasso, 2022). Vale and colleagues (2020) suggested that political affiliation would influence ageist attitudes. Vale and colleagues found that participants reporting Republican (i.e., conservative) political affiliation scored higher on overall ageist attitudes compared to individuals with other political affiliations. However, the current study found no evidence of group differences between Conservative, Liberal, and New Democratic Party on ageist attitudes. One possible explanation is that the Vale and colleagues research was conducted in the United States, whereas the current study was conducted in Canada. In the United States, the COVID-19 pandemic contributed to growing political divides (Canes-Wrone et al., 2020). Specifically, Canes-Wrone and colleagues found political affiliation to be the single strongest predictor of behaviour and attitudes about the COVID-19 pandemic compared to other predictors such as local infection rates, age, and health status. It is possible that attitudes towards the COVID-19 pandemic were not as strongly shaped by political affiliation in Canada compared to the United States. Since researchers have suggested the influence of political affiliation in relation to ageist attitudes, future

research is recommended to understand these associations. Implications of this research may be beneficial to mitigating public and political messaging in relation to the COVID-19 pandemic.

Loss of Employment

The current study conceptualized that loss of employment due to the pandemic could influence attitudes towards COVID-19, which in turn could influence ageist attitudes. In conjunction with the hypothesis, the current study found that respondents who reported experiencing a prolonged loss of employment (i.e., 2-weeks or longer) due to the COVID-19 pandemic had higher overall, hostile, and benevolent ageist attitudes compared to respondents who did not report having loss of employment. Since the media emphasized that COVID-19 regulations and guidelines were tailored to protecting members of the older generation (Ayalon, 2020; Ayalon et al., 2021), it makes sense that loss of employment due to COVID-19 could have been associated with increased ageist attitudes. These correlational results provide insight to possible implications of the COVID-19 pandemic on ageist attitudes. Although currently understudied, future research is recommended to continue to investigate these associations in relation to benevolent, hostile, and overall ageist attitudes.

Limitations and Future Research Directions

A limitation in the current study includes the characteristics of the sample. The sample included undergraduate university students and members of the general public. However, the sample included predominantly women and younger adults. These sample characteristics limit the generalizability of the findings in the current study. Since age

(Allan & Johnson, 2008; Gellis et al., 2003; Herrington & Both, 2022; Kimuna et al., 2005; Van Dussen & Weaver, 2009) and gender (Boswell, 2012; Chonody et al., 2014; Galton et al., 20020; Herrington & Both, 2022) have been found to be important predictors of ageist attitudes, future research should continue to investigate predictors of ageist attitudes with a more balanced gender distribution and wider age range. Moreover, the current study was a cross-sectional, self-reported online survey which poses further limitations, such as poorer response rates (Lefever et al., 2007) and issues with causal inference (Rindfleisch et al., 2008). Future studies are recommended to employ more intense interactive methods while collecting data, such as interviews and longitudinal studies. Moreover, future research is recommended to investigate ageist attitudes in relation to forms of age-based discrimination within institutions such as healthcare and employment settings since these results may be able to inform future policy practices.

In addition, the current study also investigated the influence of contact theory on ageist attitudes by forming composite scores for both frequency and quality of present and past intergenerational contact. However, researchers have suggested that the types of intergenerational relationships can be important to the prediction of ageist attitudes (Herrington & Both, 2022). For example, Herrington and Both found that quality of contact with grandparents during childhood and current quality of contact with non-related older adults were significant predictors of overall ageist attitudes. Since the majority of middle-aged respondents in the current study could not report on current quality nor frequency of relations with grandparents, this led to data sparsity resulting in the current study's inability to assess the types of intergenerational relationships on

ageist attitudes. Since there is evidence suggesting the influence of contact theory on ageist attitudes (Allan & Johnson, 2008; Bousfield & Hutchison, 2010; Herrington & Both, 2022; Schwartz & Simmons, 2001; Stewart et al., 2005; Van Dussen & Weaver, 2009), future research is recommended to consider and design studies which could assess the influence of types of intergenerational contact on ageist attitudes.

Although the results of the canonical correlations were not employed in the development of the final models predicting ageist attitudes, noteworthy findings can be drawn from the canonical correlational analysis and can inform future research directions. For the first canonical correlation, higher quality of present and past intergenerational contact, higher scores on Extraversion, Agreeableness, Openness and lower scores on modernization and ageing anxiety were associated with less overall, benevolent, and hostile ageist attitudes. The results of the first canonical correlation support the predictors associated with each of the three forms of ageist attitudes. Moreover, each of the types of ageism were contributing to the dependent variate, thereby suggesting that each of the three types of ageist attitudes are uniquely important to the construct of ageism and should each continue to be investigated in future studies. In turn, the results of the second canonical correlation showed that being older in age, being female, and having lower scores on religiousness, age group identification, and fear of death were associated with lower benevolent ageism scores. However, there were issues with multicollinearity in combining all measures of ageism in the variate of criteria. These results suggest that some predictors, such as fear of death, may be unique to the prediction of benevolent ageism compared to overall and hostile ageist attitudes. Researchers measuring ageist attitudes are recommended to quantify ageism in its three

forms of overall, benevolent, and hostile ageism to further the understanding of ageist attitudes and their associated predictors. Although the current study employed comprehensive models to assess each of the types of ageist attitudes, the results of the canonical correlations served practical significance and should be used to guide future research practices.

To my knowledge, this is the first study to consider the influence of multiple predictors and theories of ageism in relation to overall, benevolent, and hostile ageist attitudes. Moreover, I believe this is also the first study to investigate the influence of COVID-19 pandemic on the types of ageist attitudes. Although SIT was not found to be a significant predictor of ageist attitudes, significant findings were found for demographic characteristics and personality factors, contact theory, TMT, modernization theory, as well as significant associations between measures of the COVID-19 pandemic with the types of ageist attitudes. Therefore, this research is considered to be relatively new and preliminary. Since the types of ageist attitudes have been associated with negative consequences in older adults (Chonody, 2016; Levy & Macdonald, 2016), research investigating predictors of overall, hostile, and benevolent ageist attitudes is of utmost importance. Moreover, since Canada is experiencing a rapidly ageing population (Government of Canada, 2014; Statistics Canada, 2021), understanding attitudes towards older adults is becoming increasingly important. Overall, more research is needed investigating the predictors of the types of ageist attitudes so that interventions for ageism may be developed.

Conclusion

In conclusion, the results of the current study support that ageism is a multidimensional construct. Overall, ageist attitudes were found to be predicted by age (younger), gender (male), lower present quality of intergenerational contact, lower Agreeableness, Openness, and Extraversion, and higher ageing anxiety and modernization (i.e., viewing older adults as obsolete and as a burden to society). Similarly, hostile ageist attitudes were also found to be predicted by age (younger), lower present quality of intergenerational contact and Agreeableness, and higher modernization and religiosity. Lastly, benevolent ageist attitudes were found to be predicted by age (younger), gender (male), lower Openness, and higher religiosity, fear of death, and modernization scores. Overall, modernization theory contributed the most unique variance to overall and hostile ageist attitudes compared to other theories tested within the models. On the other hand, age and religiosity (i.e., a measure of modernization) each contributed the most unique variance to benevolent ageist attitudes.

This research adds to the growing body of literature that accounts for why the various types of ageist attitudes may exist and highlights potential avenues for intervention. For example, interventions targeting contact theory may be beneficial to help reduce overall and hostile ageist attitudes. Researchers have suggested that integrating intergenerational contact, such as through volunteer work or course curriculum, may be beneficial to help reduce ageist attitudes among students and future employees (Drury et al., 2016; Lytle & Levy, 2019). Furthermore, interventions targeting overall and hostile ageist attitudes should especially consider the influence of modernization theory in their development. On the contrary, interventions targeting

TMT, such as addressing anxieties about ageing (Allan & Johnson, 2008; Allan et al., 2014; Boswell, 2012) or fears regarding death (Galton et al., 2020; Martens et al., 2004), may be beneficial to reduce overall and benevolent ageist attitudes. Moreover, interventions should consider the influence of demographic factors, including age and gender, when developing strategies to reduce benevolent ageist attitudes.

The current study also investigated associations between the COVID-19 pandemic and ageist attitudes. Pandemic-related behaviour change, pandemic-related fear, and loss of employment due to COVID-19 were found to have significant correlations with the three types of ageist attitudes. In addition, attitudes towards the COVID-19 vaccine were found to be significant predictors of overall and benevolent ageist attitudes. The results of the current study support that the COVID-19 pandemic may have shaped people's attitudes towards older adults. Since older adults subjected to ageist attitudes have been found to experience negative physical, mental, and social consequences (Levy & Macdonald, 2016), future research is recommended to continue to investigate the influence of the pandemic on ageist attitudes. Furthermore, results of this research may be beneficial for media representatives to inform the discussion of the pandemic in relation to older adults without encouraging ageist attitudes among consumers (Vale et al., 2020).

Overall, ageism is a growing concern that is associated with health and well-being consequences among older adults (Levy & Macdonald, 2016). The results of the current study support that ageism is a multidimensional construct. Specifically, overall, hostile, and benevolent ageist attitudes were each uniquely predicted by different sets of predictor variables and ageism theories. Therefore, interventions targeting ageism may

be developed and tailored to the specific type of ageist attitude that one is trying to reduce. Future research is recommended to continue to investigate predictors of ageist attitudes so that interventions targeting ageism may be developed.

Table 1*Hypotheses and Predictions with Supporting Research*

Hypotheses	Predictions		
	Overall Ageism	Negative Ageism	Positive Ageism
Demographic Variables			
1. There will be gender differences in ageist attitudes.	Cisgender men will score higher on overall ageist attitudes (Boswell, 2012; Chonody et al., 2014; Galton et al., 2020; Herrington & Both, 2022).	Cisgender men will score higher on hostile ageist attitudes (Theoretical reasoning using Levy & Macdonald, 2016; Butler, 1969).	-
2. Age will correlate with ageist attitudes.	Age will negatively correlate with overall ageist attitudes (Allan & Johnson, 2008; Herrington & Both, 2022; Van Dussen & Weaver, 2009).	Age will negatively correlate with hostile ageist attitudes (Theoretical reasoning using Levy & Macdonald, 2016; Butler, 1969).	-
Personality			
3. Personality will correlate with ageist attitudes.	Higher scores on Agreeableness will negatively correlate with overall ageist attitudes (Allan et al., 2014; Galton et al., 2020; Herrington & Both, 2022). Higher scores on Openness will negatively correlate with overall ageist attitudes (Allan et al., 2014; Galton et al., 2020).	Higher scores on Agreeableness and Openness will negatively correlate with hostile ageist attitudes (Theoretical reasoning using Levy & Macdonald, 2016; Butler, 1969).	Higher scores on Agreeableness and Openness will positively correlate with benevolent ageist attitudes (Theoretical reasoning using Levy & Macdonald, 2016; Butler, 1969).

Hypotheses	Predictions		
	Overall Ageism	Negative Ageism	Positive Ageism
Contact Theory			
4. Intergenerational contact will correlate with ageist attitudes.	Younger adults with higher quality of intergenerational contact will score lower on overall ageist attitudes (Bousfield & Hutchison, 2010; Herrington & Both, 2022).	Younger adults with higher quality of intergenerational contact will score lower on hostile ageist attitudes (Theoretical reasoning using Levy & Macdonald, 2016; Butler, 1969).	Younger adults with higher quantity of intergenerational contact will score higher on benevolent ageist attitudes (Levy & Macdonald, 2016; North & Fiske, 2012).
Social Identity Theory (SIT)			
5. Age identification will correlate with ageist attitudes.	Greater young age group identification will positively correlate with overall ageist attitudes (Packer & Chasteen, 2006).	Greater young age group identification will positively correlate with hostile ageist attitudes (Theoretical reasoning using Levy & Macdonald, 2016; Butler, 1969).	Greater young age group identification will positively correlate with benevolent ageist attitudes (Taşdemir, 2019).
6. Collective self-esteem will correlate with ageist attitudes.	Higher collective self-esteem among young adults would positively correlate with overall ageist attitudes (Luhtanen & Crocker, 1992).	-	-
Terror Management Theory (TMT)			
7. Fear of death will correlate with ageist attitudes.	Fear of death will positively correlate with overall ageist attitudes (Galton et al., 2020; Martens et al., 2004).	Fear of death will positively correlate with hostile ageist attitudes (Theoretical reasoning using Levy & Macdonald,	-

Hypotheses	Predictions		
	Overall Ageism	Negative Ageism	Positive Ageism
		2016; Butler, 1969).	
8. Ageing anxiety will correlate with ageist attitudes.	Ageing anxiety will positively correlate with overall ageist attitudes (Allan et al., 2014; Allan & Johnson, 2008; Boswell, 2012; Harris & Dollinger, 2001; Herrington & Both, 2022).	Ageing anxiety will positively correlate with overall ageist attitudes (Theoretical reasoning using Levy & Macdonald, 2016; Butler, 1969).	-
Modernization Theory			
9. Modernization will correlate with ageist attitudes.	Individuals who score lower on religiosity will score higher on overall ageist attitudes (Ayalon, 2013). Individuals with higher overall modernization scores will score higher on overall ageist attitudes (Herrington & Both, 2022).	Individuals who score lower on religiosity will score higher on overall ageist attitudes (Theoretical reasoning using Levy & Macdonald, 2016; Butler, 1969).	-
Regression Models			
10. Measures of modernization theory, terror management theory, and social identity theory will contribute over and above demographics, personality factors,	Overall ageism will be predicted by measures of modernization theory, terror management theory, and social identity theory over and above demographics,	-	-

Hypotheses	Predictions		
	Overall Ageism	Negative Ageism	Positive Ageism
and contact theory to ageist attitudes.	<p>personality factors, and contact theory (Herrington & Both, 2022; Packer & Chasteen, 2006; Taşdemir, 2019; Theoretical reasoning using Luhtanen & Crocker, 1992).</p> <p>The relation between fear of death and overall ageism will be moderated by ageing anxiety (Bodner et al., 2015).</p>		
COVID-19			
11. Perceived attitudes towards the COVID-19 vaccine will correlate with ageist attitudes.	Negative attitudes towards the COVID-19 vaccine will positively correlate with overall ageist attitudes (Theoretical reasoning using Vale et al., 2020; Visintin, 2021).	Negative attitudes towards the COVID-19 vaccine will positively correlate with hostile ageist attitudes (Theoretical reasoning using Vale et al., 2020; Visintin, 2021).	Negative attitudes towards the COVID-19 vaccine will negatively correlate with benevolent ageist attitudes (Theoretical reasoning using Vale et al., 2020; Visintin, 2021).
12. Pandemic-related fear will correlate with ageist attitudes.	-	-	Pandemic-related fear will positively correlate with benevolent ageist attitudes (Vale et al., 2020)
13. Political affiliation will correlate with ageist attitudes	Individuals with conservative political affiliation will score higher on overall ageist	-	-

Hypotheses	Predictions		
	Overall Ageism	Negative Ageism	Positive Ageism
	attitudes (Vale et al., 2020).		
14. Loss of employment will correlate with ageist attitudes	Individuals reporting a prolonged loss of employment due to COVID-19 will score higher on overall ageist attitudes (Theoretical reasoning using Vale et al., 2020; Visintin, 2021).	-	-

Table 2*Descriptive Statistics for Demographics, Predictor Variables, and Measures of Ageism*

Characteristics	<i>M</i>	<i>SD</i>	Min	Max	%	<i>n</i>
Age (in years)	28.37	13.64	18	64		389
Gender						
Female					81.2	316
Male					17.7	69
Transgender Male					.8	3
Two-Spirited					.3	1
Religiosity	3.50	3.10	0	10		
Loss of Employment						
Yes					32.9	128
No					54.0	210
N/A					13.1	51
Political Party						
Liberal					30.5	116
Conservative					25.5	97
New Democratic					30.3	115
Bloc Québécois					0.5	2
Green					13.2	50
Lived with Grandparents						
Yes					35.4	135
No					64.6	246
Present Frequency	5.42	1.80	0	8		389
Present Quality	7.75	1.78	2	10		389
Past Frequency	5.54	1.56	.50	8		388
Past Quality	7.91	1.59	2	10		389
AGI	5.05	1.19	1.40	7		389
CSES	4.67	0.83	2.50	6.94		389
AAS	2.62	0.55	1	4.10		389
BFI-2						
Extraversion	3.35	0.68	1.25	5.00		389
Agreeableness	3.87	0.56	2.08	5.00		389
Conscientiousness	3.65	0.66	1.92	5.00		389
Negative Emotionality	3.04	0.79	1.00	5.00		389
Open Mindedness	3.60	0.62	1.92	5.00		389

Characteristics	<i>M</i>	<i>SD</i>	Min	Max	%	<i>n</i>
CLFDS	3.49	0.90	1.29	5.00		389
Modernization	0.33	0.25	.00	1.22		388
ATV-COVID-19	2.05	0.88	1	5		386
PRBC	5.87	1.11	2.60	9		386
PRF	2.62	2.51	0	10		386
FSA	1.90	0.38	1.07	3.10		388
Benevolent	3.05	1.13	1	6.20		389
Hostile	2.85	1.13	1	6.00		389

Note. AGI = Age Group Identification; CSES = Collective Self-Esteem Scale; AAS Anxiety About Ageing Scale; BFI-2 = Big Five Inventory-2; CLFDS = Collett- Lester Fear of Death Scale; ATV-COVID-19 = Attitudes Towards COVID-19; PRBC = Pandemic Related Behaviour Change; PRF = Pandemic Related Fear; FSA = Fraboni Ageism Scale.

Table 3*Gender Differences*

Variable	Men			Women			<i>t</i> -test (<i>p</i> value)
	N	Mean	<i>SD</i>	N	Mean	<i>SD</i>	
Present Frequency	69	5.36	1.66	316	5.42	1.83	.26 (.79)
Present Quality	69	7.61	1.85	316	7.79	1.77	.76 (.45)
Past Frequency	69	5.52	1.37	315	5.54	1.60	.08 (.94)
Past Quality	69	7.83	1.41	316	7.94	1.64	.51 (.61)
AGI	69	4.81	1.11	316	5.11	1.20	1.92 (.06)
CSES	69	4.45	0.83	316	4.73	0.82	2.56 (.01)
AAS	69	2.47	0.51	316	2.64	0.56	2.32 (.02)
Extraversion	69	3.42	0.63	316	3.35	0.68	-.83 (.41)
Agreeableness	69	3.58	0.58	316	3.94	0.54	4.97 (<.001)
Conscientiousness	69	3.44	0.62	316	3.70	0.66	2.96 (.003)
Negative Emotionality	69	2.85	0.75	316	3.07	0.79	2.15 (.03)
Openness	69	3.56	0.64	316	3.62	0.61	.78 (.43)
CLFDS	69	3.20	0.87	316	3.55	0.90	2.99 (.003)
Modernization	69	0.42	0.30	315	0.31	0.23	-2.97 (.004)
ATV-COVID-19	67	2.21	0.89	315	2.02	0.88	-1.62 (.11)
PRBC	67	5.80	1.02	315	5.88	1.12	.51 (.61)
PRF	67	2.68	2.88	315	2.57	2.41	-.28 (.78)
FSA	69	2.05	0.39	315	1.87	0.37	-3.65 (<.001)
Benevolent	69	3.63	1.18	316	2.92	1.09	-4.84 (<.001)
Hostile	69	3.20	1.26	316	2.76	1.09	-2.91 (.004)

Note. Alpha level of .01 was used. Significant differences are bolded. AGI = Age Group Identification; CSES = Collective Self-Esteem Scale; AAS = Anxiety About Ageing Scale; BFI-2 = Big Five Inventory-2; CLFDS = Collett- Lester Fear of Death Scale; ATV-COVID-19 = Attitudes Towards COVID-19; PRBC = Pandemic Related Behaviour Change; PRF = Pandemic Related Fear; FSA = Fraboni Ageism Scale.

Table 4*Age Group Differences*

Variable	Young Adult (18-35 years)			Middle Age (36-65 years)			<i>t</i> -test (<i>p</i> value)
	N	Mean	<i>SD</i>	N	Mean	<i>SD</i>	
Present Frequency	299	5.28	1.73	90	5.91	1.95	-2.93 (.004)
Present Quality	299	7.67	1.85	90	8.01	1.50	-1.76 (.08)
Past Frequency	298	5.56	1.54	90	5.47	1.66	.47 (.64)
Past Quality	299	7.89	1.60	90	7.98	1.56	-.46 (.64)
AGI	299	5.07	1.20	90	4.99	1.15	.57 (.57)
CSES	299	4.58	0.85	90	4.98	0.66	-4.69 (<.001)
AAS	299	2.65	0.54	90	2.52	0.59	1.95 (.05)
Extraversion	299	3.32	0.68	90	3.47	0.65	-1.82 (.07)
Agreeableness	299	3.82	0.56	90	4.03	0.54	-3.12 (.002)
Conscientiousness	299	3.56	0.62	90	3.96	0.67	-5.19 (<.001)
Negative Emotionality	299	3.09	0.78	90	2.87	0.81	2.42 (.02)
Openness	299	3.57	0.61	90	3.70	0.63	-1.79 (.08)
CLFDS	299	3.61	0.88	90	3.11	0.86	4.75 (<.001)
Modernization	298	0.37	0.25	90	0.20	0.18	6.81 (<.001)
ATV-COVID-19	296	2.09	0.89	90	1.92	0.83	1.52 (.13)
PRBC	296	5.74	1.07	90	6.29	1.15	-4.14 (<.001)
PRF	296	2.45	2.47	90	3.17	2.58	-2.40 (.02)
FSA	298	1.95	0.39	90	1.76	0.30	4.83 (<.001)
Benevolent	299	3.22	1.12	90	2.47	0.98	6.16 (<.001)
Hostile	299	2.97	1.15	90	2.44	0.99	4.28 (<.001)

Note. Alpha level of .01 was used. Significant differences are bolded. AGI = Age Group Identification; CSES = Collective Self-Esteem Scale; AAS = Anxiety About Ageing Scale; BFI-2 = Big Five Inventory-2; CLFDS = Collett- Lester Fear of Death Scale; ATV-COVID-19 = Attitudes Towards COVID-19; PRBC = Pandemic Related Behaviour Change; PRF = Pandemic Related Fear; FSA = Fraboni Ageism Scale.

Table 5*Zero-Order Correlations for Age, Religion, Contact, and Personality Factors*

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Age	-	.12	.15*	.08	-.03	.02	.14*	.19**	.28**	-.19**	.11
2. Rel.		-	.06	.09	.06	.07	.09	.09	.09	-.14*	.05
3. Pr. Freq			-	.47**	.42**	.23**	.09	.18**	.10	-.08	-.00
4. Pr. Qual				-	.21**	.61**	.16*	.28**	.19**	-.15*	.01
5. P. Freq					-	.39**	.04	.05	.08	-.06	-.03
6. P. Qual						-	.17**	.22**	.09	-.12	.01
7. E							-	.19**	.23**	-.35**	.25**
8. A								-	.42**	-.37**	.36**
9. C									-	-.28**	.13
10. NE										-	-.13*

Variable	1	2	3	4	5	6	7	8	9	10	11
11. O											-

Note. * = $p < .01$, ** = $p < .001$; Rel. = Religion; Pr. Freq = Present Frequency of Contact; Pr. Qual = Present Quality of Contact; P. Freq = Past Frequency of Contact; P. Qual = Past Quality of Contact; E = Extraversion; A = Agreeableness; C = Conscientiousness; NE = Negative Emotionality; O = Openness.

Table 6*Zero-Order Correlations for Age, Religion, Contact, Personality Factors, SIT, TMT, Modernization and Dependent Ageism Measures*

Variable	AGI	CSES	AAS	CLFDS	MOD	FSA	BEN	HOS
Age	-.01	.22**	-.10	-.25**	-.27**	-.21**	-.28**	-.21**
Rel.	.13	.12	-.00	-.02	-.03	.08	.28**	.18**
Pr. Freq	.03	.05	-.17*	-.01	-.19**	-.19**	-.10	-.10
Pr. Qual	.12	.12	-.32**	-.02	-.31**	-.36**	-.12	-.22**
P. Freq	.07	.02	-.05	.09	-.12	-.11	-.01	-.05
P. Qual	.12	.12	-.24**	.04	-.25**	-.27**	-.08	-.15*
E	.15*	.25**	-.22**	-.13	-.16*	-.25**	-.12	-.11
A	.19**	.30**	-.26**	-.04	-.38**	-.42**	-.24**	-.30**
C	.10	.26**	-.13	-.08	-.31**	-.22**	-.16*	-.18**
NE	-.19**	-.24**	.38**	.35**	.14*	.09	.05	.08

Variable	AGI	CSES	AAS	CLFDS	MOD	FSA	BEN	HOS
O	.00	.13	-.07	-.00	-.21**	-.29**	-.24**	-.19**

Note. * = $p < .01$, ** = $p < .001$; Rel. = Religion; Pr. Freq = Present Frequency of Contact; Pr. Qual = Present Quality of Contact; P. Freq = Past Frequency of Contact; P. Qual = Past Quality of Contact; E = Extraversion; A = Agreeableness; C = Conscientiousness; NE = Negative Emotionality; O = Openness. AGI = Age Group Identification; CSES = Collective Self Esteem Scale; AAS = Anxiety About Ageing Scale; BFI-2 = Big Five Inventory-2; CLFDS = Collett- Lester Fear of Death Scale; MOD = Modernization; FSA = Fraboni Ageism Scale (Overall Ageism); BEN = Benevolent; HOS = Hostile.

Table 7*Zero-Order Correlations for Intergenerational Contact and Ageism Measures Filtered for Young Adults (i.e., 18-35 years)*

Variable	Pr. Freq	Pr. Qual	P. Freq	P. Qual	FSA	BEN	HOS
Pr. Freq	-	.49**	.51**	.26**	-.17*	-.09	-.10
Pr. Qual		-	.26**	.67**	-.34**	-.10	-.22**
P. Freq			-	.39**	-.15*	-.06	-.10
P. Qual				-	-.31**	-.11	-.19**

Note. * = $p < .01$, ** = $p < .001$; Pr. Freq = Present Frequency of Contact; Pr. Qual = Present Quality of Contact; P. Freq = Past Frequency of Contact; P. Qual = Past Quality of Contact; FSA = Fraboni Ageism Scale (Overall Ageism); BEN = Benevolent; HOS = Hostile.

Table 8

Zero-Order Correlations for SIT and Ageism Measures Filtered for Young Adults (i.e., 18-35 years)

Variable	AGI	CSES	FSA	BEN	HOS
AGI	-	.71**	-.05	.13	-.00
CSES		-	-.16*	.02	-.08

Note. * = $p < .01$, ** = $p < .001$; AGI= Age Group Identification; CSES = Collective Self-Esteem; FSA = Fraboni Ageism Scale (Overall Ageism); BEN = Benevolent; HOS = Hostile.

Table 9*Zero-Order Correlations for SIT, TMT, Modernization, and Dependent Ageism Measures*

Variable	1	2	3	4	5	6	7	8
1. AGI	-	.68**	-.14*	.13	-.08	-.04	.13	.00
2. CSES		-	-.20**	-.02	-.25**	-.21**	-.05	-.14*
3. AAS			-	.44**	.35**	.38**	.15*	.31**
4. CLFDS				-	.10	.11	.23**	.13
5. MOD					-	.66**	.35**	.55**
6. FSA						-	.58**	.65**
7. BEN							-	.63**
8. HOS								-

Note. * = $p < .01$, ** = $p < .001$; AGI = Age Group Identification; CSES = Collective Self-Esteem Scale; AAS = Anxiety About Ageing Scale; CLFDS = Collett- Lester Fear of Death Scale; MOD = Modernization; FSA = Fraboni Ageism Scale (Overall Ageism); BEN = Benevolent; HOS = Hostile.

Table 10*Canonical Correlations Between Sets of Predictor Variables and Ageism Measures*

Characteristics	First Canonical Variate		Second Canonical Variate	
	C. Load. ^a	ST. COEFF. ^b	C. Load. ^a	ST. COEFF. ^b
<u>Predictor Set</u>				
Age	.27	.05	.38	.35
Gender	-.23	-.06	-.35	-.36
Religion	-.14	-.19	-.55	-.54
Pr. Freq	.24	-.08	-.02	.12
Pr. Qual	.47	.22	-.22	-.09
P. Freq	.15	.08	-.15	-.05
P. Qual	.34	-.05	-.21	.05
AGI	.05	-.11	-.38	-.16
CSES	.27	.07	-.20	-.07
AAS	-.51	-.22	.22	.34
E	.30	.13	-.03	-.01
A	.55	.20	-.03	-.05
C	.29	-.08	.05	.04
NE	-.20	.16	.01	-.04
O	.36	.13	.19	.25
CLFDS	-.15	.00	-.40	-.51
MOD	-.89	-.66	.13	.22
% Variance ^c	.14		.07	
<u>Outcome Set</u>				
FSA	-.98	-.83	-.01	.56
BEN	-.59	.08	-.81	-1.32
HOS	-.79	-.29	-.18	.29
% Variance ^c	.64		.23	
Canonical Correlation	$r = .77, p < .001$		$r = .50, p < .001$	

Note. ^aCanonical Loadings, ^bUnique Contribution of each variable to its canonical

variate, ^cVariance extracted by a canonical variate from its set of variables. Pr. Freq = Present Frequency of Contact; Pr. Qual = Present Quality of Contact; P. Freq = Past Frequency of Contact; P. Qual = Past Quality of Contact; E = Extraversion; A = Agreeableness; C = Conscientiousness; NE = Negative Emotionality; O = Openness. AGI = Age Group Identification; CSES = Collective Self-Esteem Scale; AAS = Anxiety About Ageing Scale; BFI-2 = Big Five Inventory-2; CLFDS = Collett- Lester Fear of Death Scale; MOD = Modernization; FSA = Fraboni Ageism Scale (Overall Ageism); BEN = Benevolent; HOS = Hostile.

Table 11*Hierarchical Regression for Predictors of Overall Ageist Attitudes*

Variable	B	SE	β	<i>t</i>	<i>p</i>	<i>AdjR</i> ²	ΔR^2	ΔF	<i>p</i>
Block 1	--	--	--	--	--	.07	.08	10.67	<.001
Age	-.01	.00	-.20	-3.98	<.001	--	--	--	--
Gender	.16	.05	.16	3.17	.002	--	--	--	--
Religion	.01	.01	.10	1.92	.06	--	--	--	--
Block 2	--	--	--	--	--	.19	.13	15.40	<.001
Pr. Freq	.00	.01	.00	.05	.96	--	--	--	--
Pr. Qual	-.06	.01	-.31	-4.71	<.001	--	--	--	--
P. Freq	-.01	.01	-.04	-.74	.46	--	--	--	--
P. Qual	-.02	.02	-.06	-.96	.34	--	--	--	--
Block 3	--	--	--	--	--	.32	.13	15.07	<.001
E	-.09	.03	-.15	-3.20	.001	--	--	--	--
A	-.18	.04	-.27	-4.88	<.001	--	--	--	--
C	.00	.03	.01	.13	.90	--	--	--	--
NE	-.06	.02	-.13	-2.53	.012	--	--	--	--
O	-.10	.03	-.16	-3.44	<.001	--	--	--	--
Block 4	--	--	--	--	--	.55	.22	37.67	<.001
AGI	.03	.02	.09	1.84	.07	--	--	--	--
CSES	-.03	.02	-.06	-1.12	.26	--	--	--	--
AAS	.10	.03	.15	3.33	<.001	--	--	--	--
CLFDS	.01	.02	.01	.27	.79	--	--	--	--
MOD	.74	.07	.48	11.35	<.001	--	--	--	--
Block 5	--	--	--	--	--	.55	.00	1.97	.16
Interaction	.02	.01	.05	1.41	.16	--	--	--	--

Note. Gender was dummy coded 1 = female and 2 = male. Pr. Freq = Present Frequency of Contact; Pr. Qual = Present Quality of Contact; P. Freq = Past Frequency of Contact; P. Qual = Past Quality of Contact; E = Extraversion; A = Agreeableness; C = Conscientiousness; NE = Negative Emotionality; O = Openness. AGI = Age Group Identification; CSES = Collective Self-Esteem Scale; AAS = Anxiety About Ageing Scale; BFI-2 = Big Five Inventory-2; CLFDS = Collett- Lester Fear of Death Scale; MOD = Modernization.

Table 12*Hierarchical Regression for Predictors of Benevolent Ageism*

Variable	B	SE	β	<i>t</i>	<i>p</i>	<i>AdjR</i> ²	ΔR^2	ΔF	<i>p</i>
Block 1	--	--	--	--	--	.21	.21	34.49	<.001
Age	-.03	.00	-.30	-6.44	<.001	--	--	--	--
Gender	.55	.14	.19	4.04	<.001	--	--	--	--
Religion	.11	.02	.30	6.55	<.001	--	--	--	--
Block 2	--	--	--	--	--	.22	.02	1.81	.13
Pr. Freq	-.02	.04	-.03	-.43	.67	--	--	--	--
Pr. Qual	-.07	.04	-.10	-1.59	.11	--	--	--	--
P. Freq	.00	.04	.00	.04	.97	--	--	--	--
P. Qual	-.01	.05	-.01	-.14	.89	--	--	--	--
Block 3	--	--	--	--	--	.23	.05	5.45	<.001
E	-.08	.08	-.05	-.97	.34	--	--	--	--
A	-.16	.12	-.08	-1.37	.17	--	--	--	--
C	-.01	.09	-.00	-.07	.94	--	--	--	--
NE	-.03	.07	-.02	-.42	.67	--	--	--	--
O	-.34	.09	-.18	-3.74	<.001	--	--	--	--
Block 4	--	--	--	--	--	.34	.09	9.83	<.001
AGI	.11	.06	.11	1.82	.07	--	--	--	--
CSES	-.00	.09	-.00	-.03	.98	--	--	--	--
AAS	-.07	.11	-.04	-.63	.53	--	--	--	--
CLFDS	.26	.07	.20	3.95	<.001	--	--	--	--
MOD	.99	.24	.21	4.20	<.001	--	--	--	--

Note. Gender was dummy coded 1 = female and 2 = male. Pr. Freq = Present Frequency of Contact; Pr. Qual = Present Quality of Contact; P. Freq = Past Frequency of Contact; P. Qual = Past Quality of Contact; E = Extraversion; A = Agreeableness; C = Conscientiousness; NE = Negative Emotionality; O = Openness. AGI = Age Group Identification; CSES = Collective Self-Esteem Scale; AAS = Anxiety About Ageing Scale; BFI-2 = Big Five Inventory-2; CLFDS = Collett- Lester Fear of Death Scale; MOD = Modernization.

Table 13*Hierarchical Regression for Predictors of Hostile Ageism*

Variable	B	SE	β	<i>t</i>	<i>p</i>	<i>AdjR</i> ²	ΔR^2	ΔF	<i>p</i>
Block 1	--	--	--	--	--	.09	.10	13.87	<.001
Age	-.02	.00	-.23	-4.62	<.001	--	--	--	--
Gender	.31	.15	.11	2.16	.03	--	--	--	--
Religion	.07	.02	.19	3.92	<.001	--	--	--	--
Block 2	--	--	--	--	--	.14	.05	5.75	<.001
Pr. Freq	.03	.04	.05	.84	.40	--	--	--	--
Pr. Qual	-.15	.04	-.23	-3.33	<.001	--	--	--	--
P. Freq	-.04	.04	-.05	-.85	.40	--	--	--	--
P. Qual	-.01	.05	-.01	-.19	.85	--	--	--	--
Block 3	--	--	--	--	--	.18	.06	5.43	<.001
E	-.04	.09	-.03	-.50	.62	--	--	--	--
A	-.41	.12	-.20	-3.31	.001	--	--	--	--
C	-.03	.09	-.01	-.27	.79	--	--	--	--
NE	-.07	.08	-.05	-.87	.39	--	--	--	--
O	-.19	.09	-.11	-2.06	.04	--	--	--	--
Block 4	--	--	--	--	--	.36	.17	20.63	<.001
AGI	.05	.06	.05	.86	.39	--	--	--	--
CSES	-.03	.09	-.02	-.40	.69	--	--	--	--
AAS	.28	.11	.14	2.55	.011	--	--	--	--
CLFDS	.03	.06	.03	.51	.61	--	--	--	--
MOD	1.94	.23	.42	8.37	<.001	--	--	--	--

Note. Gender was dummy coded 1 = female and 2 = male. Pr. Freq = Present Frequency of Contact; Pr. Qual = Present Quality of Contact; P. Freq = Past Frequency of Contact; P. Qual = Past Quality of Contact; E = Extraversion; A = Agreeableness; C = Conscientiousness; NE = Negative Emotionality; O = Openness. AGI = Age Group Identification; CSES = Collective Self-Esteem Scale; AAS = Anxiety About Ageing Scale; BFI-2 = Big Five Inventory-2; CLFDS = Collett- Lester Fear of Death Scale; MOD = Modernization.

Table 14

Zero-Order Correlations for Pandemic-Related Behaviour Change, Pandemic-Related Fear, Attitudes Towards COVID-19 Vaccine, and Dependent Ageism Measures

Variable	PRBC	PRF	ATV-COVID-19	FSA	BEN	HOS
PRBC	-	.25**	-.23**	-.15*	-.18**	-.15*
PRF		-	-.21**	.17*	.22**	.21**
ATV-COVID-19			-	.15*	.15*	.11

Note. * = $p < .01$, ** = $p < .001$; PRBC= Pandemic-Related Behaviour Change; PRF = Pandemic-Related Fear; ATV COVID-19 = Attitudes Towards COVID-19 Vaccine; FSA = Fraboni Ageism Scale (Overall Ageism); BEN = Benevolent; HOS = Hostile.

Table 15*ANOVA for Political Affiliation Predicting Ageism Measures*

Variable	<i>n</i>	M	SE	<i>SS</i> _{Total}	<i>df</i> ₁	<i>df</i> ₂	<i>F</i>	<i>p</i>
FSA	--	--	--	47.12	2	324	.08	.92
LIB	116	1.92	.04	--	--	--	--	--
CPC	96	1.90	.04	--	--	--	--	--
NDP	115	1.91	.04	--	--	--	--	--
BEN	--	--	--	411.81	2	325	1.71	.18
LIB	116	3.17	.11	--	--	--	--	--
CPC	97	3.06	.11	--	--	--	--	--
NDP	115	2.90	.10	--	--	--	--	--
HOS	--	--	--	415.14	2	325	.60	.55
LIB	116	2.91	.10	--	--	--	--	--
CPC	97	2.74	.12	--	--	--	--	--
NDP	115	2.80	.10	--	--	--	--	--

Note. FSA = Fraboni Ageism Scale (Overall Ageism); BEN = Benevolent; HOS = Hostile; LIB = Liberal Party; CPC = Conservative Party of Canada; NDP = New Democratic Party. No significant group differences were found between political affiliation and ageism.

Table 16*Loss of Employment Differences on Ageism Measures*

Variable	Yes			No			<i>t</i> -test (<i>p</i> value)
	N	Mean	<i>SD</i>	N	Mean	<i>SD</i>	
FSA	128	1.97	.41	209	1.84	.36	2.93 (= .004)
BEN	128	3.36	1.29	210	2.80	1.02	4.16 (< .001)
HOS	128	3.09	1.31	210	2.63	1.01	3.41 (< .001)

Note: Alpha level of .01 was used. Significant differences are bolded. FSA = Fraboni Ageism Scale; BEN = Benevolent Ageism; HOS = Hostile Ageism.

References

- Allan, L. J., & Johnson, J. A. (2008). Undergraduate attitudes toward the elderly: The role of knowledge, contact and aging anxiety. *Educational gerontology, 35*(1), 1-14.
- Allan, L. J., Johnson, J. A., & Emerson, S. D. (2014). The role of individual difference variables in ageism. *Personality and Individual Differences, 59*, 32-37.
- Allen, J. O. (2016). Ageism as a risk factor for chronic disease. *The Gerontologist, 56*(4), 610-614.
- Allport, G. W., Clark, K., & Pettigrew, T. (1954). *The nature of prejudice*. Addison-Wesley.
- Angel, HF. (2013). Religiosity. In A.L.C. Runehov & L. Oviedo (Eds), *Encyclopedia of sciences and religions*. (pp. 2012-2015). Springer, Dordrecht.
https://doi.org/10.1007/978-1-4020-8265-8_1503
- Aronson, L. (2020, March 28). Ageism is making the pandemic worse. The Atlantic.
<https://www.theatlantic.com/culture/archive/2020/03/americas-ageism-crisis-is-helping-the-coronavirus/608905/>
- Ayalon, L. (2013). Feelings towards older vs. younger adults: Results from the European Social Survey. *Educational Gerontology, 39*(12), 888-901.
- Ayalon, L. (2020). There is nothing new under the sun: Ageism and intergenerational tension in the age of the COVID-19 outbreak. *International Psychogeriatrics, 32*(10), 1221-1224.

- Ayalon, L., Chasteen, A., Diehl, M., Levy, B. R., Neupert, S. D., Rothermund, K., ... & Wahl, H. W. (2021). Aging in times of the COVID-19 pandemic: Avoiding ageism and fostering intergenerational solidarity. *The Journals of Gerontology: Series B*, 76(2), e49-e52.
- Bai, X., Lai, D. W., & Guo, A. (2016). Ageism and depression: Perceptions of older people as a burden in China. *Journal of Social Issues*, 72(1), 26-46.
- Bal, A. C., Reiss, A. E., Rudolph, C. W., & Baltes, B. B. (2011). Examining positive and negative perceptions of older workers: A meta-analysis. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 66(6), 687-698.
- Bazińska, R. (2015). Validation of the Polish version of the collective self-esteem scale. *Current Issues in Personality Psychology*, 3(2), 125-137.
- Becker, E. (1997). *The denial of death*. Simon and Schuster.
- Benton, J. P., Christopher, A. N., & Walter, M. I. (2007). Death anxiety as a function of aging anxiety. *Death Studies*, 31(4), 337-350.
- Bodner, E., Shrira, A., Bergman, Y. S., Cohen-Fridel, S., & Grossman, E. S. (2015). The interaction between aging and death anxieties predicts ageism. *Personality and Individual Differences*, 86, 15-19.
- Boduroglu, A., Yoon, C., Luo, T., & Park, D. C. (2006). Age-related stereotypes: A comparison of American and Chinese cultures. *Gerontology*, 52(5), 324-333.
- Boswell, S. S. (2012). Predicting trainee ageism using knowledge, anxiety, compassion, and contact with older adults. *Educational Gerontology*, 38(11), 733-741.

- Bousfield, C., & Hutchison, P. (2010). Contact, anxiety, and young people's attitudes and behavioral intentions towards the elderly. *Educational Gerontology, 36*(6), 451-466.
- Branscombe, N. R., & Wann, D. L. (1994). Collective self-esteem consequences of outgroup derogation when a valued social identity is on trial. *European Journal of Social Psychology, 24*(6), 641-657.
- Brewer, M. B., & Gardner, W. (1996). Who is this "We"? Levels of collective identity and self representations. *Journal of Personality and Social Psychology, 71*(1), 83-93.
- Butler, R. N. (1969). Age-ism: another form of bigotry. *The Gerontologist, 9*(4), 243–246.
- Butler, R. N. (1980). Ageism: A foreword. *Journal of Social Issues, 36*(2), 8-11.
- Canadian Charter of Rights and Freedoms, s 15, Part 1 of the Constitution Act, 1982, being Schedule B to the Canada Act 1982 (UK), 1982, c11. <https://laws-lois.justice.gc.ca/eng/const/page-12.html>
- Canes-Wrone, B., Rothwell, J. T., Makridis, C. (2020, June 30). Partisanship and policy on an emerging issue: Mass and elite responses to COVID-19 as the pandemic evolved. SSRN. <https://ssrn.com/abstract=3638373>
- Carmel, S., Cwikel, J., & Galinsky, D. (1992). Changes in knowledge, attitudes, and work preferences following courses in gerontology among medical, nursing, and social work students. *Educational Gerontology: An International Quarterly, 18*(4), 329-342.

- Cary, L. A., Chasteen, A. L., & Remedios, J. (2017). The ambivalent ageism scale: Developing and validating a scale to measure benevolent and hostile ageism. *The Gerontologist*, 57(2), e27-e36.
- Caspi, A. (1984). Contact hypothesis and inter-age attitudes: A field study of cross-age contact. *Social Psychology Quarterly*, 47(1), 74-80.
- Çelik, M. Y. (2022). The thoughts of parents to vaccinate their children against COVID-19: An assessment of situations that may affect them. *Journal of Child and Adolescent Psychiatric Nursing*, 35(2), 189-195.
- Chasteen, A. L., Schwarz, N., & Park, D. C. (2002). The activation of aging stereotypes in younger and older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 57(6), P540-P547.
- Cheung, C. K., Kam, P. K., & Man-hung Ngan, R. (2011). Age discrimination in the labour market from the perspectives of employers and older workers. *International Social Work*, 54(1), 118-136.
- Chiu, S., & Yu, S. A. M. (2001). An excess of culture: the myth of shared care in the Chinese community in Britain. *Ageing & Society*, 21(6), 681-699.
- Chonody, J. M. (2016). Positive and negative ageism: The role of benevolent and hostile sexism. *Affilia*, 31(2), 207-218.
- Chonody, J. M., Webb, S. N., Ranzijn, R., & Bryan, J. (2014). Working with older adults: Predictors of attitudes towards ageing in psychology and social work students, faculty, and practitioners. *Australian Psychologist*, 49(6), 374-383.
- Chow, N. (2007). Aging and the family in Hong Kong. *International Journal of Sociology of the Family*, 33(1), 145-155.

- Chow, N., & Bai, X. (2011). Modernization and its impact on Chinese older people's perception of their own image and status. *International Social Work*, 54(6), 800-815.
- Chrisler, J. C., Barney, A., & Palatino, B. (2016). Ageism can be hazardous to women's health: Ageism, sexism, and stereotypes of older women in the healthcare system. *Journal of Social Issues*, 72(1), 86-104.
- Cohn-Schwartz, E., & Ayalon, L. (2021). Societal views of older adults as vulnerable and a burden to society during the COVID-19 outbreak: Results from an Israeli nationally representative sample. *The Journals of Gerontology: Series B*, 76(7), e313-e317.
- Cuddy, A. J., Norton, M. I., & Fiske, S. T. (2005). This old stereotype: The pervasiveness and persistence of the elderly stereotype. *Journal of Social Issues*, 61(2), 267-285.
- De Tavernier, W., Naegele, L., & Hess, M. (2019). A critical perspective on ageism and modernization theory. *Social Inclusion*, 7(3), 54-57.
- Dobrowolska, B., Jędrzejkiwicz, B., Pilewska-Kozak, A., Zarzycka, D., Ślusarska, B., Deluga, A., ... & Palese, A. (2019). Age discrimination in healthcare institutions perceived by seniors and students. *Nursing Ethics*, 26(2), 443-459.
- Doğan, U. (2022). Determination of the relationship between health literacy and attitudes towards COVID-19 vaccine in adult individuals. *Int J Acad Med Pharm*, 4(1), 51-56.
- Donizetti, A. R. (2019). Ageism in an aging society: The role of knowledge, anxiety about aging, and stereotypes in young people and adults. *International Journal of*

Environmental Research and Public Health, 16(8), 1329.

<https://doi.org/10.3390/ijerph16081329>

- Duncan, C., & Loretto, W. (2004). Never the right age? Gender and age-based discrimination in employment. *Gender, Work & Organization*, 11(1), 95-115.
- Drury, L., Hutchison, P., & Abrams, D. (2016). Direct and extended intergenerational contact and young people's attitudes towards older adults. *The British Journal of Social Psychology*, 55(3), 522–543.
- Forlenza, S. T., Bourassa, D., Lyman, M., & Coughlin, M. (2019). Ageism, priming, and working with older adults among undergraduate exercise science students. *Physical & Occupational Therapy in Geriatrics*, 37(1), 50-66.
- Fraboni, M., Saltstone, R., & Hughes, S. (1990). The Fraboni Scale of Ageism (FSA): An attempt at a more precise measure of ageism. *Canadian Journal on Aging/La revue 134canadienne du vieillissement*, 9(1), 56-66.
- Fraser, S., Lagacé, M., Bongué, B., Ndeye, N., Guyot, J., Bechard, L., ... & Tougas, F. (2020). Ageism and COVID-19: What does our society's response say about us? *Age and Ageing*, 49(5), 692-695.
- Gallagher, S., Bennett, K. M., & Halford, J. C. (2006). A comparison of acute and long-term health-care personnel's attitudes towards older adults. *International Journal of Nursing Practice*, 12(5), 273-279.
- Galton, N., Hammond, N. G., & Stinchcombe, A. (2020). Personality traits and fears of death and dying predict ageism. *Death Studies*, 1-7.

- Garstka, T. A., Schmitt, M. T., Branscombe, N. R., & Hummert, M. L. (2004). How young and older adults differ in their responses to perceived age discrimination. *Psychology and Aging, 19*(2), 326-335.
- Gellis, Z. D., Sherman, S., & Lawrance, F. (2003). First year graduate social work students' knowledge of and attitude toward older adults. *Educational Gerontology, 29*(1), 1-16.
- Geniş, B., Gürhan, N., Koç, M., Geniş, Ç., Şirin, B., Çırakoğlu, O. C., & Coşar, B. (2020). Development of perception and attitude scales related with COVID-19 pandemic. *Pearson Journal of Social Sciences-Humanities, 5*(7), 306-328.
- Government of Canada (2014). *Action for seniors report*.
<https://www.canada.ca/en/employment-social-development/programs/seniors-action-report.html>
- Government of Canada (2022). *Suspension of the mandatory vaccination requirement for domestic travellers and federally regulated transportation workers*.
<https://www.canada.ca/en/transport-canada/news/2022/06/suspension-of-the-mandatory-vaccination-requirement-for-domestic-travellers-and-federally-regulated-transportation-workers.html>
- Government of New Brunswick (2017). *We are all in this together: An aging strategy for New Brunswick*. <https://www2.gnb.ca/content/dam/gnb/Departments/sds/pdf/Seniors/AnAgingStrategyForNB.pdf>
- Hagestad, O., & Uhlenberg, P. (2005). The social separation of old and young: A root of ageism. *Journal of Social Issues, 61*(2), 343-360.

- Harwood, J., Hewstone, M., Paolini, S., & Voci, A. (2005). Grandparent-grandchild contact and attitudes toward older adults: Moderator and mediator effects. *Personality and Social Psychology Bulletin, 31*(3), 393-406.
- Harris, K., Krygsman, S., Waschenko, J., & Laliberte Rudman, D. (2018). Ageism and the older worker: A scoping review. *The Gerontologist, 58*(2), e1-e14.
- Harris, L. A., & Dollinger, S. (2001). Participation in a course on aging: Knowledge, attitudes, and anxiety about aging in oneself and others. *Educational Gerontology, 27*(8), 657-667.
- Harwood, J. (1999). Age identification, social identity gratifications, and television viewing. *Journal of Broadcasting & Electronic Media, 43*(1), 123-136.
- Hawkins, M. J. (1996). Colleges students' attitudes toward elderly persons. *Educational Gerontology: An International Quarterly, 22*(3), 271-279.
- Hehman, J. A., & Bugental, D. B. (2015). Responses to patronizing communication and factors that attenuate those responses. *Psychology and Aging, 30*(3), 552.
- Henley, J. (2020, August 13). Surge in Covid-19 cases across Europe linked to young people. The Guardian. <https://www.theguardian.com/world/2020/aug/13/global-report-covid-19-spikes-across-europe-linked-to-young-people>
- Herrington, M., & Both, L. E. (2022). Examining attitudes towards ageing. In C. Pracana, & M. Wang (Eds.), *Psychological Applications and Trends 2022*, (pp 240-244). InScience Press.
- Hogg, M. A., & Abrams, D. (1988). *Social identifications: A social psychology of intergroup relations and group processes*. Routledge.

- Holder, J. (2022, June 12). Tracking Coronavirus vaccinations around the world. The New York Times. <https://www.nytimes.com/interactive/2021/world/covid-vaccinations-tracker.html>
- Johnson, K. A., Li, Y. J., Cohen, A. B., & Okun, M. A. (2013). Friends in high places: The influence of authoritarian and benevolent God-concepts on social attitudes and behaviors. *Psychology of Religion and Spirituality*, 5(1), 15–22.
- Kemper, S. (1994). Elderspeak: Speech accommodations to older adults. *Aging and Cognition*, 1(1), 17-28.
- Khanum, S., & Ahmad, R. (2021). Urdu translation and adaptation of the English version of Collective Self Esteem Scale in Pakistan: Reliability and validity analysis. *Pakistan Journal of Clinical Psychology*, 20(2), 51-66.
- Kimuna, S. R., Knox, D., & Zusman, M. (2005). College students' perceptions about older people and aging. *Educational Gerontology*, 31(7), 563-572.
- Kite, M. E., Stockdale, G. D., Whitley Jr, B. E., & Johnson, B. T. (2005). Attitudes toward younger and older adults: An updated meta-analytic review. *Journal of Social Issues*, 61(2), 241-266.
- Kluge, A., & Krings, F. (2008). Attitudes toward older workers and human resource practices. *Swiss Journal of Psychology*, 67(1), 61-64.
- Kolawole, M. S., & Olusegun, A. K. (2008). The reliability and validity of revised Collett—Lester Fear of Death Scale (Version 3) in a Nigerian population. *OMEGA-Journal of Death and Dying*, 57(2), 195-205.

- Lai, D. W. (2009). Older Chinese' attitudes toward aging and the relationship to mental health: An international comparison. *Social Work in Health Care, 48*(3), 243-259.
- Lasher, K. P., & Faulkender, P. J. (1993). Measurement of aging anxiety: Development of the anxiety about aging scale. *The International Journal of Aging and Human Development, 37*(4), 247-259.
- Lefever, S., Dal, M., & Matthíasdóttir, Á. (2007). Online data collection in academic research: Advantages and limitations. *British Journal of Educational Technology, 38*(4), 574-582.
- Lester, D., & Abdel-Khalek, A. (2003). The Collett-Lester fear of death scale: A correction. *Death Studies, 27*(1), 81-85.
- Levy, B. (2009). Stereotype embodiment: A psychosocial approach to aging. *Current Directions in Psychological Science, 18*(6), 332-336.
- Levy, B. R., Ferrucci, L., Zonderman, A. B., Slade, M. D., Troncoso, J., & Resnick, S. M. (2016). A culture–brain link: Negative age stereotypes predict Alzheimer's disease biomarkers. *Psychology and Aging, 31*(1), 82-88.
- Levy, B. R., & Myers, L. M. (2005). Relationship between respiratory mortality and self-perceptions of aging. *Psychology & Health, 20*(5), 553-564.
- Levy, B. R., Pilver, C. E., & Pietrzak, R. H. (2014). Lower prevalence of psychiatric conditions when negative age stereotypes are resisted. *Social Science & Medicine, 119*, 170-174.

- Levy, B. R., Slade, M. D., & Gill, T. M. (2006). Hearing decline predicted by elders' stereotypes. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *61*(2), 82-87.
- Levy, B. R., Slade, M. D., Kunkel, S. R., & Kasl, S. V. (2002). Longevity increased by positive self-perceptions of aging. *Journal of Personality and Social Psychology*, *83*(2), 261-270.
- Levy, B. R., Slade, M. D., May, J., & Caracciolo, E. A. (2006). Physical recovery after acute myocardial infarction: Positive age self-stereotypes as a resource. *The International Journal of Aging and Human Development*, *62*(4), 285-301.
- Levy, B. R., Zonderman, A. B., Slade, M. D., & Ferrucci, L. (2009). Age stereotypes held earlier in life predict cardiovascular events in later life. *Psychological Science*, *20*(3), 296-298.
- Levy, B. R., Zonderman, A. B., Slade, M. D., & Ferrucci, L. (2012). Memory shaped by age stereotypes over time. *Journals of Gerontology: Series B*, *67*(4), 432-436.
- Levy, S. R., & Macdonald, J. L. (2016). Progress on understanding ageism. *Journal of Social Issues*, *72*(1), 5-25.
- Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's social identity. *Personality and Social Psychology Bulletin*, *18*(3), 302-318.
- Luo, B., Zhou, K., Jin, E. J., Newman, A., & Liang, J. (2013). Ageism among college students: A comparative study between US and China. *Journal of Cross-Cultural Gerontology*, *28*(1), 49-63.

- Lytle, A., & Levy, S. R. (2019). Reducing ageism: Education about aging and extended contact with older adults. *The Gerontologist*, 59(3), 580-588.
- Lytle, A., Macdonald, J., Apriceno, M., & Levy, S. R. (2021). Reducing ageism with brief videos about aging education, ageism, and intergenerational contact. *The Gerontologist*, 61(7), 1164-1168.
- Ma, G., Chen, Z., Zou, W., & Zhang, X. (2023). To help or not: Negative aging stereotypes held by younger adults could promote helping behaviors toward older adults. *Current Psychology*. <https://doi.org/10.1007/s12144-023-04371-0>
- Macdonald, J. L., & Levy, S. R. (2016). Ageism in the workplace: The role of psychosocial factors in predicting job satisfaction, commitment, and engagement. *Journal of Social Issues*, 72(1), 169-190.
- Martens, A., Greenberg, J., Schimel, J., & Landau, M. J. (2004). Ageism and death: Effects of mortality salience and perceived similarity to elders on reactions to elderly people. *Personality and Social Psychology Bulletin*, 30(12), 1524-1536.
- McAllister, I. (1988). Religious change and secularization: The transmission of religious values in Australia. *Sociological Analysis*, 49(3), 249-263.
- McCrae, R. R., & Costa, P. T. (1997). Personality trait structure as a human universal. *The American Psychologist*, 52(5), 509–16.
- McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality*, 60(2), 175-215.
- Meisner, B. A. (2012). A meta-analysis of positive and negative age stereotype priming effects on behavior among older adults. *The Journals of Gerontology Series B Psychological Sciences and Social Sciences*, 67B(1), 13–17.

- Mikołajczyk, B. (2015). International law and ageism. *Polish Yearbook of International Law*, (35), 83-108.
- Monahan, C., Macdonald, J., Lytle, A., Apriceno, M., & Levy, S. R. (2020). COVID-19 and ageism: How positive and negative responses impact older adults and society. *American Psychologist*, 75(7), 887-896.
- Musaiger, A. O., & D'Souza, R. (2009). Role of age and gender in the perception of aging: A community-based survey in Kuwait. *Archives of Gerontology and Geriatrics*, 48(1), 50-57.
- Nelson, T. D. (2005). Ageism: Prejudice against our feared future self. *Journal of Social Issues*, 61(2), 207-221.
- Nelson, T. D. (2016). Promoting healthy aging by confronting ageism. *American Psychologist*, 71(4), 276.
- North, M. S., & Fiske, S. T. (2012). An inconvenienced youth? Ageism and its potential intergenerational roots. *Psychological Bulletin*, 138(5), 982-997.
- O'Connor, B. P., & Rigby, H. (1996). Perceptions of baby talk, frequency of receiving baby talk, and self-esteem among community and nursing home residents. *Psychology and Aging*, 11(1), 147-154.
- Ozel Bilim, I., & Kutlu, F. Y. (2021). The psychometric properties, confirmatory factor analysis, and cut-off value for the Fraboni Scale of Ageism (FSA) in a sampling of healthcare workers. *Perspectives in Psychiatric Care*, 57(1), 9-19.
- Packer, D. J., & Chasteen, A. L. (2006). Looking to the future: How possible aged selves influence prejudice toward older adults. *Social Cognition*, 24(3), 218-247.
- Palmore, E. (1990). *Ageism: Negative and positive*. New York: Springer.

- Palmore, E. (1999). *Ageism: Negative and positive, 2ed.* New York: Springer.
- Palmore, E. B. (2004). Research note: Ageism in Canada and the United States. *Journal of Cross-Cultural Gerontology, 19*(1), 41-46.
- Peacock, E. W., & Talley, W. M. (1984). Intergenerational contact: A way to counteract ageism. *Educational Gerontology, 10*, 13–24.
- Phelan, A. (2008). Elder abuse, ageism, human rights and citizenship: Implications for nursing discourse. *Nursing Inquiry, 15*(4), 320-329.
- Rindfleisch, A., Malter, A. J., Ganesan, S., & Moorman, C. (2008). Cross-sectional versus longitudinal survey research: Concepts, findings, and guidelines. *Journal of Marketing Research, 45*(3), 261–279.
- Rupp, D. E., Vodanovich, S. J., & Credé, M. (2005). The multidimensional nature of ageism: Construct validity and group differences. *The Journal of Social Psychology, 145*(3), 335-362.
- Schwartz, L. K., Simmons, J. P. (2001). Contact quality and attitudes toward the elderly. *Educational Gerontology, 27*(2), 127-137.
- Snyder, M., & Miene, P. K. (1994). Stereotyping of the elderly: A functional approach. *British Journal of Social Psychology, 33*(1), 63-82.
- Soto, C. J., & John, O. P. (2017a). The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and predictive power. *Journal of Personality and Social Psychology, 113*(1), 117-143.

- Soto, C. J., & John, O. P. (2017b). Short and extra-short forms of the Big Five Inventory–2: The BFI-2-S and BFI-2-XS. *Journal of Research in Personality*, 68, 69-81.
- Statistics Canada (2017). *A portrait of the population aged 85 and older in Canada in 2016 in Canada*. <https://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016004/98-200-x2016004-eng.cfm>
- Statistics Canada (2021). *Canada's population estimates: Age and sex, July 1, 2021*. <https://www150.statcan.gc.ca/n1/daily-quotidien/210929/dq210929d-eng.htm>
- Statistics Canada (2022). *Map 4 the populations of the Atlantic provinces are aging quickly*. <https://www150.statcan.gc.ca/n1/daily-quotidien/220427/mc-a004-eng.htm>
- Stewart, J. J., Giles, L., Paterson, J. E., & Butler, S. J. (2005). Knowledge and attitudes towards older people: New Zealand students entering health professional degrees. *Physical & Occupational Therapy in Geriatrics*, 23(4), 25-36.
- Sublett, J. F., Vale, M. T., & Bisconti, T. L. (2022). Expanding benevolent ageism: Replicating attitudes of overaccommodation to older men. *Experimental Aging Research*, 48(3), 220-233.
- Swift, H. J., & Chasteen, A. L. (2021). Ageism in the time of COVID-19. *Group Processes & Intergroup Relations*, 24(2), 246-252.
- Swift, H. J., Abrams, D., Lamont, R. A., & Drury, L. (2017). The risks of ageism model: How ageism and negative attitudes toward age can be a barrier to active aging. *Social Issues and Policy Review*, 11(1), 195-231.

- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics, 5th ed.* Boston: Pearson.
- Tajfel, H. & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin, & S. Worchel (Eds.). *The social psychology of intergroup relations*, (pp. 33-37).
- Tam, T., Hewstone, M., Harwood, J., Voci, A., & Kenworthy, J. (2006). Intergroup contact and grandparent–grandchild communication: The effects of self-disclosure on implicit and explicit biases against older people. *Group Processes & Intergroup Relations*, 9(3), 413-429.
- Tarus, H. A., Ölmez Yalazı, R., Öz, T., & Demirci, N. (2022). Effects of Covid-19 fear on the attitudes toward Covid-19 vaccination in reproductive women. *Health Care for Women International*, 43(4), 398-412.
- Taşdemir, N. (2020). Young group identification and motives as predictors of ageism, aging anxiety, and life satisfaction. *The Journal of Genetic Psychology*, 181(5), 375-390.
- Thomas, M. H. (2019). Ageing and modernization theory. *ASIAN REVIEW*, 32(3), 53-62.
- Tomás-Sábado, J., Limonero, J. T., & Abdel-Khalek, A. M. (2007). Spanish adaptation of the Collett-Lester Fear of Death Scale. *Death Studies*, 31(3), 249-260.
- Turan, G. B., Aksoy, M., Özer, Z., & Demir, C. (2022). The association between coronaphobia and attitude towards COVID-19 Vaccine: A sample in the east of Turkey. *L'encephale*, 48(1), 38-42.

- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Basil Blackwell.
- United Nations (2019). *World population ageing 2019 highlights*.
<https://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2019-Highlights.pdf>
- Vale, M. T., Bisconti, T. L., & Sublett, J. F. (2020). Benevolent ageism: Attitudes of overaccommodative behavior toward older women. *The Journal of Social Psychology, 160*(5), 548-558.
- Vale, M. T., Stanley, J. T., Houston, M. L., Villalba, A. A., & Turner, J. R. (2020). Ageism and behavior change during a health pandemic: A preregistered study. *Frontiers in Psychology, 11*, 587911. <https://doi.org/10.3389/fpsyg.2020.587911>
- Van Dussen, D. J., & Weaver, R. R. (2009). Undergraduate students' perceptions and behaviors related to the aged and to aging processes. *Educational Gerontology, 35*(4), 342-357.
- Venegas, M. E., Alvarado, O. S., & Barriga, O. (2011). Validation of Collett-Lester's Fear of Death Scale in a sample of nursing students. *Revista Latino-Americana de Enfermagem, 19*, 1171-1180.
- Visintin, E. P. (2021). Contact with older people, ageism, and containment behaviours during the COVID-19 pandemic. *Journal of Community & Applied Social Psychology, 31*(3), 314-325.
- Visintin, E. P., & Tasso, A. (2022). Are you willing to protect the health of older people? Intergenerational contact and ageism as predictors of attitudes toward

the COVID-19 vaccination passport. *International Journal of Environmental Research and Public Health*, 19(17), 11061.

Vowels, M. R., & Crandall, K. J. (2014). A descriptive study of exercise science students' knowledge of, and attitudes toward, older adults. *Kentucky Association of Health, Physical Education, Recreation and Dance*, 51(2), 66-73.

Watkins, R. E., Coates, R., & Ferroni, P. (1998). Measurement of aging anxiety in an elderly Australian population. *The International Journal of Aging and Human Development*, 46(4), 319-332.

Whaley (2021). Ageism and the law in Canada. WEL Newsletter.

https://welpartners.com/blog/2021/06/ageism-and-the-law-in-canada/#_ftn17

White, D. B., & Lo, B. (2020). A framework for rationing ventilators and critical care beds during the COVID-19 pandemic. *Jama*, 323(18), 1773-1774.

Williams, K. N., Herman, R., Gajewski, B., & Wilson, K. (2009). Elderspeak communication: Impact on dementia care. *American Journal of Alzheimer's Disease & Other Dementias*, 24(1), 11-20.

World Health Organization (2015). *10 facts on ageing and the life course*.

<http://www.who.int/features/factfiles/ageing/en/>

World Health Organization (2021). *Ageing and health*. [https://www.who.int/news-](https://www.who.int/news-room/fact-sheets/detail/ageing-and-health#:~:text=By%202030%2C%201%20in%206,will%20double%20(2.1%20billion).)

[room/fact-sheets/detail/ageing-and-](https://www.who.int/news-room/fact-sheets/detail/ageing-and-health#:~:text=By%202030%2C%201%20in%206,will%20double%20(2.1%20billion).)

[health#:~:text=By%202030%2C%201%20in%206,will%20double%20\(2.1%20b](https://www.who.int/news-room/fact-sheets/detail/ageing-and-health#:~:text=By%202030%2C%201%20in%206,will%20double%20(2.1%20billion).)

[illion\).](https://www.who.int/news-room/fact-sheets/detail/ageing-and-health#:~:text=By%202030%2C%201%20in%206,will%20double%20(2.1%20billion).)

- Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology*, 73(1), 73-90.
- Xiang, X., Lu, X., Halavanau, A., Xue, J., Sun, Y., Lai, P. H. L., & Wu, Z. (2021). Modern senicide in the face of a pandemic: An examination of public discourse and sentiment about older adults and COVID-19 using machine learning. *The Journals of Gerontology: Series B*, 76(4), e190-e200.
- Yan, E., So-Kum, C., & Yeung, T. D. (2002). No safe haven: A review on elder abuse in Chinese families. *Trauma, Violence, & Abuse*, 3(3), 167-180.
- Yang, Y. (2012). Is adjustment to retirement an individual responsibility? Socio-contextual conditions and options available to retired persons: The Korean perspective. *Ageing & Society*, 32(2), 177-195.
- Yoon, Y., Witvorapong, N., & Pothisiri, W. (2017). Perceptions towards the elderly among the Thai working-age population: A structural equation modeling analysis. *International Journal of Economics & Management*, 11, 271-286.
- Yun, S., & Maxfield, M. (2020). Correlates of dementia-related anxiety: self-perceived dementia risk and ageism. *Educational Gerontology*, 46(9), 563-574.

Appendix A

Consent Form – University of New Brunswick Students

Title: Examining Attitudes Towards Ageing

Researchers: Madison Herrington, MA student, Psychology Dept. UNB Saint John

Phone: 506-648-5640

Email: mherring@unb.ca

Dr. Lilly Both, Supervisor, Psychology Dept. UNB Saint John

Phone: 506-648-5769

Email: lboth@unb.ca

Purpose: The purpose of this study is to examine attitudes towards ageing in young and middle-aged adults. Since members of the general public may experience caring for an ageing adult, such as a family member or friend, or may find themselves employed caring for ageing persons at some point in the future, it is important to investigate attitudes and predictors in the general public. The findings of this study will determine the attitudes of university students and the general public towards ageing adults. You do not need to have experience working with the elderly to participate in this study.

Procedure: If you volunteer to participate in this study you will complete an online survey that will measure demographic variables, such as age, gender, religiosity, contact with grandparents and non-related seniors. As well, measurements of social groups and age identification, aging anxiety, personality, and modernization will be collected. In addition, a fear about death scale will be administered. We will also ask questions about your perception and behaviours during COVID-19 pandemic.

Time Period: This questionnaire will take approximately 40 minutes to complete.

Voluntary Participation: Your participation is voluntary. **You do not have to answer any questions that you do not want to answer.** You may withdraw from the study or skip questions you do not want to answer at any time without penalty. If you choose to skip questions and/or withdraw from the study at any time, you will still be eligible to receive your 1 bonus point.

Confidentiality: We will not collect identifiable personal data. The survey will be set to “anonymize responses” which prevents researchers from collecting IP addresses.

Although we will make every reasonable attempt to protect your privacy and not associate your name or email with your data in any way, complete anonymity and privacy cannot be 100% guaranteed because the data is being collected over the internet.

We will be using the Qualtrics platform and data is collected on a Canadian server.

For more information regarding Qualtrics privacy and security policies you may visit one of the links below <http://www.qualtrics.com/privacy-statement/>

<http://www.qualtrics.com/security-statement/>

Benefits: If you participate in this study your answers will help us understand the factors of attitudes towards ageing. These results may be of interest to long-term care staff or indirect caregivers for seniors. In addition, these results may be useful to Human Resources departments of healthcare facilities to help in hiring procedures.

Risks: Some participants may be uncomfortable answering questions about ageing and death, such as the fear of death scale. However, you can refuse to answer any questions and if you feel that this scale will cause you anxiety, please feel free not to participate.

You may also want to contact student services for counselling: sjcounsellor@unb.ca or 506-648-2308.

Incentives: If you are currently registered in introductory psychology or other eligible psychology classes at UNB-SJ you will earn 1 bonus mark for your participation.

Publication of results: The results of this study may be reported at conferences and in articles that are published in journals. Only overall group results will be reported, and your name will never appear.

Contact Information: The study had been reviewed by the Research Ethics Board at the University of New Brunswick in Saint John and is on file as REB#2022-103. If you have any questions or concerns, please contact anyone of us, via the phone numbers or emails listed above. If you would like to speak to someone not directly involved with this research, then feel free to contact the chair of the research ethics board, at 506-648-5994 or REB@unb.ca.

Feedback: Upon completion of the study, you will have the choice of being directed to a secure page, where you will have the option to email us if you are interested in receiving the results of the study via email. Please note that because we did not collect any identifying information, we cannot give individual feedback; only overall group results will be reported. Email addresses will be stored on a separate file that is only accessible by Madison Herrington on her computer that is password protected until the study is complete. Therefore, your email address will not be connected to the data. Following completion of the study, you will be contacted if you opted to receive feedback. The file containing the list of email addresses will then be deleted.

Consent:

If you are not between 18 and 65, or do not wish to participate, please exit the survey now.

____ By selecting this box, I indicate that I have read and understood the above form, that I am 18 years of age or older, not above the age of 65 years, and I consent to participate voluntarily in this study.

Thank you for your participation.

Appendix B

Consent Form – General Public and Community Members

Title: Examining Attitudes Towards Ageing

Researchers: Madison Herrington, MA student, Psychology Dept. UNB Saint John

Phone: 506-648-5640

Email: mherring@unb.ca

Dr. Lilly Both, Supervisor, Psychology Dept. UNB Saint John

Phone: 506-648-5769

Email: lboth@unb.ca

Purpose: The purpose of this study is to examine attitudes towards ageing in young and middle-aged adults. Since members of the general public may experience caring for an ageing adult, such as a family member or friend, or may find themselves employed caring for ageing persons at some point in the future, it is important to investigate attitudes and predictors in the general public. The findings of this study will determine the attitudes of university students and the general public towards ageing adults. You do not need to have experience working with the elderly to participate in this study.

Procedure: If you volunteer to participate in this study you will complete an online survey that will measure demographic variables, such as age, gender, religiosity, contact with grandparents and non-related seniors. As well, measurements of social groups and age identification, aging anxiety, personality, and modernization will be collected. In addition, a fear about death scale will be administered. We will also ask questions about your perception and behaviours during COVID-19 pandemic.

Time Period: This questionnaire will take approximately 40 minutes to complete.

Voluntary Participation: Your participation is voluntary. **You do not have to answer any questions that you do not want to answer.** You may withdraw from the study or skip questions you do not want to answer at any time without penalty. If you choose to skip questions and/or withdraw from the study at any time, you will still be eligible to be entered into the draw for one of two \$50 (Canadian) Amazon gift cards.

Confidentiality: We will not collect identifiable personal data. The survey will be set to “anonymize responses” which prevents researchers from collecting IP addresses.

Although we will make every reasonable attempt to protect your privacy and not associate your name or email with your data in any way, complete anonymity and privacy cannot be 100% guaranteed because the data is being collected over the internet.

We will be using the Qualtrics platform and data is collected on a Canadian server.

For more information regarding Qualtrics privacy and security policies you may visit one of the links below <http://www.qualtrics.com/privacy-statement/>

<http://www.qualtrics.com/security-statement/>

Benefits: If you participate in this study your answers will help us understand the factors of attitudes towards ageing. These results may be of interest to long-term care staff or indirect caregivers for seniors. In addition, these results may be useful to Human Resources departments of healthcare facilities to help in hiring procedures.

Risks: Some participants may be uncomfortable answering questions about ageing and death, such as the fear of death scale. However, you can refuse to answer any questions and if you feel that this scale will cause you anxiety, please feel free not to participate.

You may also want to contact a helpline in your area, such as the Chimo helpline for New Brunswick residents at 1-800-667-5005, or mental health support from Wellness Together Canada at 1-866-585-0445.

Incentives: In exchange for your participation, you will have the opportunity to be entered into a draw for one of two \$50 (Canadian) Amazon gift cards. The odds of winning a gift card depend on the number of people who participate in the survey. We expect about 300 people will participate. If that is the case, then the odds of winning a gift card are 1/150. However, depending on the actual number of participants, the odds may increase or decrease.

Publication of results: The results of this study may be reported at conferences and in articles that are published in journals. Only overall group results will be reported, and your name will never appear.

Contact Information: The study had been reviewed by the Research Ethics Board at the University of New Brunswick in Saint John and is on file as REB#2022-103. If you have any questions or concerns, please contact anyone of us, via the phone numbers or emails listed above. If you would like to speak to someone not directly involved with this research, then feel free to contact the chair of the research ethics board, at 506-648-5994 or REB@unb.ca.

Feedback: Upon completion of the study, you will have the choice of being directed to a secure page, where you will have the option to email us, if you are interested in being entered into the Amazon gift card draw and/or if you are interested in receiving the results of the study via email. Please note that because we did not collect any identifying information, we cannot give individual feedback; only overall group results

will be reported. Email addresses will be stored on a separate file that is only accessible by Madison Herrington on her computer that is password protected until the study is complete. Therefore, your email address will not be connected to the data. Following completion of the study, you will be contacted if you opted to receive feedback or if you were successful in one of the two draws. The file containing the list of email addresses will then be deleted.

Consent:

If you are not 19 years or older or over the age of 65, or choose not to participate, please exit the survey now.

____ By selecting this box, I indicate that I have read and understood the above form, that I am 19 years of age or older, not above the age of 65 years, and I consent to participate voluntarily in this study.

Thank you for your participation

Appendix C

Demographic Questionnaire

Please answer the questions below. Your participation is voluntary, so you do not have to answer any questions that you do not want to answer. You can skip those questions and move to the next ones.

What is your age in years?

What gender do you most closely identify with?

- _____ Female
- _____ Male
- _____ Transgender Female
- _____ Transgender Male
- _____ Two-Spirited
- _____ Non-binary
- _____ Fluid
- _____ Other

If Other please specify how you identify:

How religious are you on a scale from 0 (not at all) to 10 (extremely)?

0 Not at all	1	2	3	4	5	6	7	8	9	10 Extremely
--------------------	---	---	---	---	---	---	---	---	---	-----------------

Did you experience a prolonged loss of employment (i.e., loss of work for longer than 2-weeks) during the COVID-19 pandemic?

_____ Yes

_____ No

_____ Not applicable

If a federal election was held tomorrow, which respective political party would you vote for?

_____ Liberal Party

_____ Conservative Party

_____ New Democratic Party (NDP)

_____ Bloc Québécois

_____ Green Party

Appendix D

Contact Questionnaire

In this section you will rate interactions with grandparents and non-related older adults in **both** the past and present tense. There are no right or wrong answers; please answer as honest as possible.

Do you or have you ever lived with your grandparents?

_____ Yes

_____ No

During your childhood and early adolescence, did you have grandparents?

_____ Yes

_____ No

During your childhood and early adolescence, how often did you interact with your grandparents? Please circle the number (0-8) that best rates the frequency of interaction.

- 0 = Never
- 1 = Once every few years
- 2 = Once a year
- 3 = Two or Three times a year
- 4 = Once every 2 months
- 5 = Once a month
- 6 = Biweekly (once every 2 weeks)
- 7 = Weekly (once a week)
- 8 = Everyday

During your childhood and early adolescence, how would you rate the quality of interaction between you and your grandparents? Please circle the number (1-10) that best rates the quality of the interaction.

1	2	3	4	5	6	7	8	9	10
Not Good At All									Excellent

Currently, do you have grandparents?

_____ Yes
_____ No

Currently, how often do you interact with your grandparents? Please circle the number (0-8) that best rates the frequency of interaction.

- 0 = Never
- 1 = Once every few years
- 2 = Once a year
- 3 = Two or Three times a year
- 4 = Once every 2 months
- 5 = Once a month
- 6 = Biweekly (once every 2 weeks)
- 7 = Weekly (once a week)
- 8 = Everyday

Currently, how would you rate the quality of interaction between you and your grandparents? Please circle the number (1-10) that best rates the quality of the interaction.

1	2	3	4	5	6	7	8	9	10
Not									Excellent
Good At									
All									

During your childhood and early adolescence, how often did you interact with **non-grandparent older adults**? Please circle the number (0-8) that best rates the frequency of interaction.

- 0 = Never
- 1 = Once every few years
- 2 = Once a year
- 3 = Two or Three times a year
- 4 = Once every 2 months
- 5 = Once a month
- 6 = Biweekly (once every 2 weeks)

- 7 = Weekly (once a week)
- 8 = Everyday

During your childhood and early adolescence, how would you rate the quality of interaction between you and **non-grandparent older adults**? Please circle the number (1-10) that best rates the quality of the interaction.

1	2	3	4	5	6	7	8	9	10
Not Good At All									Excellent

Currently, how often do you interact with **non-grandparent older adults**? Please circle the number (0-8) that best rates the frequency of interaction.

- 0 = Never
- 1 = Once every few years
- 2 = Once a year
- 3 = Two or Three times a year
- 4 = Once every 2 months
- 5 = Once a month
- 6 = Biweekly (once every 2 weeks)
- 7 = Weekly (once a week)
- 8 = Everyday

Currently, how would you rate the quality of interaction between you and **non-grandparent older adults**? Please circle the number (1-10) that best rates the quality of the interaction.

1	2	3	4	5	6	7	8	9	10
Not Good At All									Excellent

Appendix E

Big Five Inventory - 2 (BFI-2; Soto & John, 2017)

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*?

Please choose a number for each statement to indicate the extent to which you agree or disagree with that statement.

	1 Disagree Strongly	2 Disagree a little	3 Neutral; no opinion	4 Agree a little	5 Agree Strongly
<i>I am someone who...</i>					
1. Is outgoing, sociable	1	2	3	4	5
2. Is compassionate, has a soft heart	1	2	3	4	5
3. Tends to be disorganized	1	2	3	4	5
4. Is relaxed, handles stress well	1	2	3	4	5
5. Has few artistic interests	1	2	3	4	5
6. Has an assertive personality	1	2	3	4	5
7. Is respectful, treats others with respect	1	2	3	4	5
8. Tends to be lazy	1	2	3	4	5
9. Stays optimistic after experiencing a setback	1	2	3	4	5
10. Is curious about many different things	1	2	3	4	5
11. Rarely feels excited or eager	1	2	3	4	5
12. Tends to find fault with others	1	2	3	4	5
13. Is dependable, steady	1	2	3	4	5
14. Is moody, has up and down mood swings	1	2	3	4	5

	1 Disagree Strongly	2 Disagree a little	3 Neutral; no opinion	4 Agree a little	5 Agree Strongly
15. Is inventive, finds clever ways to do things	1	2	3	4	5
16. Tends to be quiet	1	2	3	4	5
17. Feels little sympathy for others	1	2	3	4	5
18. Is systematic, likes to keep things in order	1	2	3	4	5
19. Can be tense	1	2	3	4	5
20. Is fascinated by art, music, or literature	1	2	3	4	5
21. Is dominant, acts as a leader	1	2	3	4	5
22. Starts arguments with others	1	2	3	4	5
23. Has difficulty getting started on tasks	1	2	3	4	5
24. Feels secure, comfortable with self	1	2	3	4	5
25. Avoids intellectual, philosophical discussions	1	2	3	4	5
26. Is less active than other people	1	2	3	4	5
27. Has a forgiving nature	1	2	3	4	5
28. Can be somewhat careless	1	2	3	4	5
29. Is emotionally stable, not easily upset	1	2	3	4	5
30. Has little creativity	1	2	3	4	5
31. Is sometimes shy, introverted	1	2	3	4	5
32. Is helpful and unselfish with others	1	2	3	4	5

	1 Disagree Strongly	2 Disagree a little	3 Neutral; no opinion	4 Agree a little	5 Agree Strongly
33. Keeps things neat and tidy	1	2	3	4	5
34. Worries a lot	1	2	3	4	5
35. Values art and beauty	1	2	3	4	5
36. Finds it hard to influence people	1	2	3	4	5
37. Is sometimes rude to others	1	2	3	4	5
38. Is efficient, gets things done	1	2	3	4	5
39. Often feels sad	1	2	3	4	5
40. Is complex, a deep thinker	1	2	3	4	5
41. Is full of energy	1	2	3	4	5
42. Is suspicious of others' intentions	1	2	3	4	5
43. Is reliable, can always be counted on	1	2	3	4	5
44. Keeps their emotions under control	1	2	3	4	5
45. Has difficulty imagining things	1	2	3	4	5
46. Is talkative	1	2	3	4	5
47. Can be cold and uncaring	1	2	3	4	5
48. Leaves a mess, doesn't clean up	1	2	3	4	5
49. Rarely feels anxious or afraid	1	2	3	4	5
50. Thinks poetry and plays are boring	1	2	3	4	5
51. Prefers to have others take charge	1	2	3	4	5
52. Is polite, courteous to others	1	2	3	4	5

	1 Disagree Strongly	2 Disagree a little	3 Neutral; no opinion	4 Agree a little	5 Agree Strongly
53. Is persistent, works until the task is finished	1	2	3	4	5
54. Tends to feel depressed, blue	1	2	3	4	5
55. Has little interest in abstract ideas	1	2	3	4	5
56. Shows a lot of enthusiasm	1	2	3	4	5
57. Assumes the best about people	1	2	3	4	5
58. Sometimes behaves irresponsibly	1	2	3	4	5
59. Is temperamental, gets emotional easily	1	2	3	4	5
60. Is original, comes up with new ideas	1	2	3	4	5

Appendix F

Age Group Identification (Garstka et al, 1997, as cited in Garstka et al., 2004)

Consider your chronological age group when responding to the following items. In general, people 18-35 are considered to belong to the young adult age group, people between 35-65 are considered to belong to the middle-aged adult group, and people aged 65 and over are considered to belong to the older adult age group.

	1 Strongly Disagree	2 Disagree	3 Slightly Disagree	4 Neutral; no opinion	5 Slightly Agree	6 Agree	7 Strongly Agree
1. I like being a member of my age group.	1	2	3	4	5	6	7
2. I am a proud member of my age group.	1	2	3	4	5	6	7
3. My age group membership is central to who I am.	1	2	3	4	5	6	7
4. I believe that being a member of my age group is a positive	1	2	3	4	5	6	7

	1 Strongly Disagree	2 Disagree	3 Slightly Disagree	4 Neutral; no opinion	5 Slightly Agree	6 Agree	7 Strongly Agree
experie- nce	1	2	3	4	5	6	7
5. I have a clear sense of my age group identity and what it means to me.	1	2	3	4	5	6	7

Appendix G

Collective Self-Esteem Scale (CSES; Luhtanen & Crocker, 1992)

Consider your chronological age group when responding to the following items. In general, people 18-35 are considered to belong to the young adult age group, people between 35-65 are considered to belong to the middle-aged adult group, and people aged 65 and over are considered to belong to the older adult age group. Use the scoring below.

1 Strongly Disagree	2 Disagree	3 Slightly Disagree	4 Neutral; no Opinion	5 Slightly Agree	6 Agree	7 Strongly Agree
---------------------------	---------------	---------------------------	--------------------------------	------------------------	------------	------------------------

Item	1	2	3	4	5	6	7
1. I am a worthy member of the age group I belong to.	1	2	3	4	5	6	7
2. I often regret that I belong to the age group that I do.	1	2	3	4	5	6	7
3. Overall my age group is considered good by others.	1	2	3	4	5	6	7
4. Overall, my age group membership has very little to do with how I feel about myself.	1	2	3	4	5	6	7
5. I feel I don't have much to offer to the age group I belong to.	1	2	3	4	5	6	7
6. In general I'm glad to be a member of the age group I belong to.	1	2	3	4	5	6	7
7. Most people consider my age group, on average, to be more ineffective than other age groups.	1	2	3	4	5	6	7
8. The age group I belong to is an important reflection of who I am.	1	2	3	4	5	6	7
9. I am a cooperative participant in the age group I belong to.	1	2	3	4	5	6	7
10. Overall I often feel that the age group of which I am a member is not worthwhile.	1	2	3	4	5	6	7
11. In general others respect the age group that I am a member of.	1	2	3	4	5	6	7
12. The age group I belong to is unimportant to my sense of what kind of person I am.	1	2	3	4	5	6	7
13. I often feel I'm a useless member of my age group.	1	2	3	4	5	6	7
14. I feel good about the age group I belong to.	1	2	3	4	5	6	7
15. In general others think that the age group I am a member of is unworthy.	1	2	3	4	5	6	7
16. In general, belonging to my age group is an important part of my self image.	1	2	3	4	5	6	7

Appendix H

Collett-Lester Fear of Death Scale-3 (Lester & Abdel-Khalek, 2003)

How disturbed or anxious are you by the following aspects of death and dying? Read each item and answer it quickly. Don't spend too much time thinking about your response. We want your first impression of how you think right now. Circle the number that best represents your feeling.

I am disturbed or anxious about...

	Not at all 1	Slightly 2	Somewhat 3	Moderately 4	Very 5
Your own death					
1. The total isolation of death	1	2	3	4	5
2. The shortness of life	1	2	3	4	5
3. Missing out on so much after you die	1	2	3	4	5
4. Dying young	1	2	3	4	5
5. How it will feel to be dead	1	2	3	4	5
6. Never thinking or experiencing anything again	1	2	3	4	5
7. The disintegration of your body after you die	1	2	3	4	5
Your own dying					
1. The physical degeneration involved	1	2	3	4	5
2. The pain involved in dying	1	2	3	4	5
3. The intellectual degeneration of old age	1	2	3	4	5
4. That your abilities will be limited as you lay dying	1	2	3	4	5
5. The uncertainty as to how bravely you will face the process of dying	1	2	3	4	5
6. Your lack of control over the process of dying	1	2	3	4	5

	Not at all 1	Slightly 2	Somewhat 3	Moderately 4	Very 5
7. The possibility of dying in a hospital away from friends and family	1	2	3	4	5
The death of others					
1. Losing someone close to you	1	2	3	4	5
2. Having to see the person's dead body	1	2	3	4	5
3. Never being able to communicate with the person again	1	2	3	4	5
4. Regret over not being nicer to the person when they were alive	1	2	3	4	5
5. Growing old alone without the person	1	2	3	4	5
6. Feeling guilty that you are relieved that the person is dead	1	2	3	4	5
7. Feeling lonely without the person	1	2	3	4	5
The dying of others					
1. Having to be with someone who is dying	1	2	3	4	5
2. Having the person want to talk about death with you	1	2	3	4	5
3. Watching the person suffer from pain	1	2	3	4	5
4. Seeing the physical degeneration of the person's body	1	2	3	4	5
5. Not knowing what to do about your grief at losing the person when you are with them	1	2	3	4	5
6. Watching the deterioration of the person's mental abilities	1	2	3	4	5

	Not at all 1	Slightly 2	Somewhat 3	Moderately 4	Very 5
7. Being reminded that you are going to go through the experience also one day	1	2	3	4	5

Appendix I

Anxiety about Aging Scale (AAS; Lasher & Faulkender, 1993)

Please circle a number for each statement to indicate the extent to which you agree or disagree with that statement.

	1 Disagree Strongly	2 Disagree a little	3 Neutral; no opinion	4 Agree a little	5 Agree Strongly
1. I enjoy being around old people	1	2	3	4	5
2. I fear that when I am old all my friends will be gone	1	2	3	4	5
3. I like to go visit my older relatives	1	2	3	4	5
4. I have never lied about my age in order to appear younger	1	2	3	4	5
5. I fear it will be very hard for me to find contentment in old age	1	2	3	4	5
6. The older I become, the more I worry about my health	1	2	3	4	5
7. I will have plenty to occupy my time when I am old	1	2	3	4	5

	1 Disagree Strongly	2 Disagree a little	3 Neutral; no opinion	4 Agree a little	5 Agree Strongly
8. I get nervous when I think about someone else making decisions for me when I am old	1	2	3	4	5
9. It doesn't bother me at all to imagine myself as being old	1	2	3	4	5
10. I enjoy talking to old people	1	2	3	4	5
11. I expect to feel good about life when I am old	1	2	3	4	5
12. I have never dreaded the day I would look in the mirror and see gray hairs	1	2	3	4	5
13. I feel very comfortable when I am around old people	1	2	3	4	5
14. I worry that people will ignore me when I am old	1	2	3	4	5

	1 Disagree Strongly	2 Disagree a little	3 Neutral; no opinion	4 Agree a little	5 Agree Strongly
15. I have never dreaded looking old	1	2	3	4	5
16. I believe that I will still be able to do most things for myself when I am old	1	2	3	4	5
17. I am afraid that there will be no meaning in life when I am old	1	2	3	4	5
18. I expect to feel good about myself when I am old	1	2	3	4	5
19. I enjoy doing things for old people	1	2	3	4	5
20. When I look in the mirror, it bothers me to see how my looks have changed with age	1	2	3	4	5

Appendix J

2011 Survey of Knowledge and Attitudes on Elderly Issues (Yoon et al., 2017)

Please circle a number for each statement to indicate the extent to which you agree or disagree with that statement.

	Disagree 0	Not Sure 1	Agree 2
1. Older people are outdated	0	1	2
2. Older people are boring	0	1	2
3. Older people complain too much	0	1	2
4. Older people belong in nursing homes	0	1	2
5. Older people belong in institutions	0	1	2
6. Older people are not particularly useful or productive	0	1	2
7. Older people have useful experiences	0	1	2
8. Older people are a burden to their family	0	1	2
9. Older people set good examples for later generations	0	1	2
10. Older people deserve preferential treatment	0	1	2
11. Older people can contribute to the community and the society	0	1	2
12. Older people should be respected	0	1	2
13. Older people are useful to the society	0	1	2
14. Older people should be taken care of	0	1	2
15. Older people are unnecessarily argumentative	0	1	2
16. Older people are custodians of culture	0	1	2
17. Older people are difficult to please	0	1	2
18. Older people should have an important role in society	0	1	2

Appendix K

Fraboni Scale of Ageism (FSA; Fraboni et al., 1990)

Please circle a number for each statement to indicate the extent to which you agree or disagree with that statement

	Strongly Disagree 1	Disagree 2	Agree 3	Strongly Agree 4
1. Teenage suicide is more tragic than suicide among the old	1	2	3	4
2. There should be special clubs set aside within sport facilities so that old people can compete at their own level	1	2	3	4
3. Many old people are stingy and hoard their money and possessions	1	2	3	4
4. Many old people are not interested in making new friends preferring instead the circle of friends that they have had for years	1	2	3	4
5. Many old people just live in the past	1	2	3	4
6. I sometimes avoid eye contact with old people when I see them	1	2	3	4
7. I don't like it when old people try to make conversation with me	1	2	3	4
8. Old people deserve the same rights and freedoms as do other members of our society	1	2	3	4
9. Complex and interesting conversation cannot be expected from most old people	1	2	3	4
10. Feeling depressed when around old people is probably a common feeling	1	2	3	4
11. Old people should find friends their own age	1	2	3	4
12. Old people should feel welcome at the social gatherings of young people	1	2	3	4
13. I would prefer not to go to an open house at a senior's club, if invited	1	2	3	4

	Strongly Disagree 1	Disagree 2	Agree 3	Strongly Agree 4
14. Old people can be very creative	1	2	3	4
15. I personally would not want to spend much time with an old person	1	2	3	4
16. Most old people should not be allowed to renew their drivers licenses.	1	2	3	4
17. Old people don't really need to use our community sport facilities	1	2	3	4
18. Most old people should not be trusted to take care of infants	1	2	3	4
19. Many old people are happiest when they are with people their own age	1	2	3	4
20. It is best that old people live where they won't bother anyone	1	2	3	4
21. The company of most old people is quite enjoyable	1	2	3	4
22. It is sad to hear about the circumstances of the old in our society these days	1	2	3	4
23. Old people should be encouraged to speak out politically	1	2	3	4
24. Most old people are interesting, individualistic people	1	2	3	4
25. Most old people would be considered to have poor personal hygiene	1	2	3	4
26. I would prefer not to live with an old person	1	2	3	4
27. Most old people can be irritating because they tell the same stories over and over again	1	2	3	4
28. Old people complain more than other people do	1	2	3	4
29. Old people do not need much money to meet their needs	1	2	3	4

Appendix L

Ambivalent Ageism Scale (Cary et al., 2016)

Use the scoring below.

1 Strongly Disagree	2 Disagree	3 Slightly Disagree	4 Neutral; no Opinion	5 Slightly Agree	6 Agree	7 Strongly Agree
---------------------------	---------------	---------------------------	--------------------------------	------------------------	------------	------------------------

Item	1	2	3	4	5	6	7
1. It is good to tell old people that they're too old to do certain things; otherwise they may get their feelings hurt when they eventually fail.	1	2	3	4	5	6	7
2. Even if they want to, old people shouldn't be allowed to work because they have already paid their debt to society.	1	2	3	4	5	6	7
3. Even if they want to old people shouldn't be allowed to work because they're fragile and may get sick.	1	2	3	4	5	6	7
4. It is good to speak slowly to old people because it may take them awhile to understand things that are said to them.	1	2	3	4	5	6	7
5. People should shield older adults from sad news because they are easily moved to tears.	1	2	3	4	5	6	7
6. Older people need to be protected from the harsh realities of society.	1	2	3	4	5	6	7
7. It is helpful to repeat things to old people because they rarely understand the first time.	1	2	3	4	5	6	7
8. Even though they do not ask for help older people should always be offered help.	1	2	3	4	5	6	7
9. Even if they do not ask for help, old people should be helped with their groceries.	1	2	3	4	5	6	7
10. Most old people interpret innocent remarks or acts as being ageist.	1	2	3	4	5	6	7
11. Old people are too easily offended.	1	2	3	4	5	6	7
12. Old people exaggerate the problems they have at work.	1	2	3	4	5	6	7
13. Old people are a drain on the health care system and the economy.	1	2	3	4	5	6	7

Appendix M

Attitudes Towards the COVID-19 Vaccine Subscale

(ATV-COVID-19, Geniş et al., 2020)

	1 Disagree Strongly	2 Disagree a little	3 Neutral; no opinion	4 Agree a little	5 Agree Strongly
1. I want my family to have the COVID-19 vaccine.	1	2	3	4	5
2. I think everyone should have the COVID-19 vaccine.	1	2	3	4	5
3. I trust the explanations made for the COVID-19 vaccine to have been developed.	1	2	3	4	5
4. The COVID-19 vaccine may cause the spread of the disease.	1	2	3	4	5
5. I think the COVID-19 vaccine does not have a protective effect.	1	2	3	4	5
6. The COVID-19 vaccine is dangerous	1	2	3	4	5
7. I think the effectiveness of the COVID-19 vaccine has not been tested adequately.	1	2	3	4	5
8. I think I may survive the epidemic without the COVID-19 vaccine.	1	2	3	4	5

Appendix N

Pandemic-Related Behaviour Change (Vale et al., 2020)

How have you changed the following hygiene and safety-related habits since the outbreak of COVID-19 began in Canada. Please indicate on a scale from 1 (*extremely decreased*) to 9 (*extremely increased*).

1. Frequency of washing hands

1		2	3	4	5	6	7	8	9
Extremely Decreased									Extremely Increased

2. Duration of washing hands

1	2	3	4	5	6	7	8	9
Extremely Decreased								Extremely Increased

3. Frequency of visiting stores

1	2	3	4	5	6	7	8	9
Extremely Decreased								Extremely Increased

4. Amount of time spent inside stores

1	2	3	4	5	6	7	8	9
Extremely Decreased								Extremely Increased

5. Frequency of leaving your house/property

1	2	3	4	5	6	7	8	9
Extremely Decreased								Extremely Increased

Appendix O

Pandemic-Related Fear (Vale et al., 2020)

How afraid are you of contracting the coronavirus?

0 Not at all	1	2	3	4	5	6	7	8	9	10 Extremely
--------------------	---	---	---	---	---	---	---	---	---	-----------------

How often in the last week did you fear that you would contract coronavirus?

0 Not at all	1	2	3	4	5	6	7	8	9	10 Extremely Often
--------------------	---	---	---	---	---	---	---	---	---	--------------------------

How often in the past week did you fear one of your loved ones would contract the coronavirus?

0 Not at all	1	2	3	4	5	6	7	8	9	10 Extremely Often
--------------------	---	---	---	---	---	---	---	---	---	--------------------------

How often in the last week did you think about the coronavirus?

0 Not at all	1	2	3	4	5	6	7	8	9	10 Extremely Often
--------------------	---	---	---	---	---	---	---	---	---	--------------------------

Appendix P

Canonical Correlations

Canonical	Correlation	Eigenvalue	<i>F</i>	df ₁	df ₂	p
1	.77	1.43	10.75	51.00	1078.54	<.001
2	.50	.33	4.13	32.00	726.00	<.001
3	.22	.05	1.18	15.00	364.00	.29

Note. Significant correlations are bolded. First canonical correlation ($F_{(51.00,1078.54)} = 10.75, p < .001$) and the second canonical correlation ($F_{(32.00,726.00)} = 4.13, p < .001$) were statistically significant.

Appendix Q

Hierarchical Regression Guided by Canonical Correlation Predicting Overall Ageism

Variable	B	SE	β	<i>t</i>	<i>p</i>	<i>AdjR</i> ²	ΔR^2	ΔF	<i>p</i>
Block 1	--	--	--	--	--	.13	.14	29.71	<.001
Pr. Qual	-.07	.01	-.32	-5.29	<.001	--	--	--	--
P. Qual	-.02	.01	-.08	-1.24	.22	--	--	--	--
Block 2	--	--	--	--	--	.27	.15	25.90	<.001
E	-.06	.03	-.11	-2.46	.014	--	--	--	--
A	-.17	.03	-.26	-5.27	<.001	--	--	--	--
O	-.10	.03	-.17	-3.42	<.001	--	--	--	--
Block 3	--	--	--	--	--	.51	.23	91.10	<.001
AAS	.08	.03	.11	2.80	.01	--	--	--	--
MOD	.78	.06	.51	12.32	<.001	--	--	--	--

Note. Pr. Qual = Present Quality of Contact; P. Qual = Past Quality of Contact; E = Extraversion; A = Agreeableness; O = Openness; AAS = Anxiety About Ageing; MOD= Modernization.

Appendix R

Hierarchical Regression Guided by Canonical Correlation Predicting Benevolent Ageism

Variable	B	SE	β	<i>t</i>	<i>p</i>	<i>AdjR</i> ²	ΔR^2	ΔF	<i>p</i>
Block 1	--	--	--	--	--	.01	.01	2.76	.07
Pr. Qual	-.07	.04	-.12	-1.82	.07	--	--	--	--
P. Qual	-.00	.05	-.01	-0.07	.94	--	--	--	--
Block 2	--	--	--	--	--	.08	.08	10.42	<.001
E	-.07	.09	-.04	-.77	.44	--	--	--	--
A	-.30	.11	-.15	-2.66	.01	--	--	--	--
O	-.32	.10	-.18	-3.23	.001	--	--	--	--
Block 3	--	--	--	--	--	.14	.07	14.86	<.001
AAS	.04	.11	.02	.40	.69	--	--	--	--
Modernization	1.31	.25	.28	5.23	<.001	--	--	--	--

Note. Pr. Qual = Present Quality of Contact; P. Qual = Past Quality of Contact; E = Extraversion; A = Agreeableness; O = Openness; AAS = Anxiety About Ageing; MOD = Modernization.

Appendix S

Hierarchical Regression Guided by Canonical Correlations Predicting Hostile Ageism

Variable	B	SE	β	<i>t</i>	<i>p</i>	<i>AdjR</i> ²	ΔR^2	ΔF	<i>p</i>
Block 1	--	--	--	--	--	.05	.05	10.03	<.001
Pr. Qual	-.13	.04	-.21	-3.35	<.001	--	--	--	--
P. Qual	-.01	.05	-.02	-.31	.76	--	--	--	--
Block 2	--	--	--	--	--	.11	.07	10.20	<.001
E	-.03	.09	-.02	-.36	.72	--	--	--	--
A	-.44	.11	-.22	3.99	<.001	--	--	--	--
O	-.19	.10	-.10	-1.90	.06	--	--	--	--
Block 3	--	--	--	--	--	.31	.20	56.27	<.001
AAS	.27	.10	.13	2.75	.01	--	--	--	--
MOD	2.11	.22	.46	9.43	<.001	--	--	--	--

Note. Pr. Qual = Present Quality of Contact; P. Qual = Past Quality of Contact; E = Extraversion; A = Agreeableness; O = Openness; AAS = Anxiety About Ageing; MOD = Modernization.

Curriculum Vitae

Candidate's full name: Madison Amber Herrington

Universities attended: University of New Brunswick (2016-2020, Bachelor of Science), University of New Brunswick (2020-2021, Honours Degree Equivalent)

Peer Reviewed Publications:

Herrington, M., & Both, L. E. (2022). The role of personality, contact, modernization, and terror management in ageism. In C. Pracana & M. Wang (Eds.), *Psychology Applications & Developments VIII*, (pp. 17-26). Lisbon: InScience Press. ISBN: 978-989-53614-8-9. <https://doi.org/10.36315/2022padVIII02>

Lignos, N., McCloskey, R., Donovan, C., Ellis, K., Herrington, M., Kanic, M. (2022). The use of an ambient activity technology for long-term care residents with dementia. *Journal of Gerontological Nursing*, 48(1), 35-41. <https://doi.org/10.3928/00989134-20211206-05>

Peer Reviewed Published Abstracts:

Herrington, M., Speed, D., Both, L. E. (2023). The role of social support in seeking mental health consultations in people with mood disorders. In C. Pracana & M. Wang (Eds.), *Book of Abstracts of the International Psychological Applications Conference and Trends 2023*, (pp. 90-91). Lisbon: World Institute for Advanced Research and Science. ISBN: 978-989-53614-9-6.

Herrington, M., & Both, L. E. (2022). Examining attitudes towards ageing. In C. Pracana & M. Wang (Eds.), *Book of Abstracts of the International Psychological Applications Conference and Trends 2022*, (pp. 46-47). Lisbon: World Institute for Advanced Research and Science. ISBN: 978-989-53614-0-3.

Proceedings Papers:

Herrington, M., Speed, D., Both, L. E. (2023). The role of social support in seeking mental health consultations in people with mood disorders. In C. Pracana & M. Wang (Eds.), *Psychological Applications and Trends 2023*, (pp. 440-444). Lisbon: InScience Press, p-ISSN: 2184-2205; e-ISSN: 2184-3414; ISBN: 978-989-35106-0-5

Herrington, M., & Both, L. E. (2022). Examining attitudes towards ageing. In C. Pracana & M. Wang (Eds.), *Psychological Applications and Trends 2022*, (pp. 240-244). Lisbon: InScience Press, p-ISSN: 2184-2205; e-ISSN: 2184-3414; ISBN: 978-989-53614-1-0.

Conference Presentations:

Herrington, M., Speed, D., Both, L. E. (Accepted; June 23-25). Family and friends buffer the relation between stress and life satisfaction across the lifespan. CPA's 84th Annual National Convention 2023, Toronto, Canada.

Herrington, M., Speed, D., Both, L. E. (2023, April 22-24). The role of social support in seeking mental health consultations in people with mood disorders (virtual presentation). *International Psychological Applications Conference and Trends 2023*, Lisbon, Portugal.

Herrington, M. (2022, April 23-25). Examining attitudes towards ageing (virtual presentation). *International Psychological Applications Conference and Trends 2022*, Madeira Island, Portugal.

Mattie, A. & Herrington, M. (2019, November 6-7). Feasibility and Usability of the WellAssist System by Routinify for Self-Care and Caregiving. *New Brunswick Health Research Conference*, Saint John, Canada.

Lignos, N. & Herrington, M. (2019, November 6-7). Use of Ambient Activity
Technology in Residents Living with Dementia. New Brunswick Health
Research Conference, Saint John, Canada.