Mather institute

Northwestern

THE AGE WELL STUDY:

Investigating Factors Associated with Happiness & Life Satisfaction in Residents of Life Plan Communities

YEAR 3 REPORT

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INTRODUCTORY LETTER

Dear Colleague,

It's hard to believe we are more than halfway through the five-year Age Well Study. This groundbreaking longitudinal research continues to provide insights into the health and wellness of residents of Life Plan Communities. Year 1 of the study, released in 2018, found that residents tend to have greater emotional, social, physical, intellectual, and vocational wellness than their counterparts in the community at large. In 2019, researchers focused on specific personality traits and other characteristics that are associated with residents' healthy behaviors and overall health. The study revealed that residents with higher scores on personality traits of openness to experience and extroversion reported the highest levels of healthy behaviors, and those who form strong bonds within their community tend to have better overall health.

Here, in the Year 3 report, the focus is on factors associated with residents' happiness and life satisfaction—both of which are associated with important outcomes including better physical and mental health and more positive social interactions. (Most of the data for this report was collected in the early part of 2020, before the pandemic changed our lives.) It is our hope that, by identifying factors related to residents' happiness and life satisfaction, senior living providers can use these findings to guide them in developing or customizing programs and resources to support residents' emotional wellness.

Thank you to all participating Life Plan Communities, and to the 4,100+ residents who participated in the 2019–2020 study. Thank you, too, to our valued research partners: Northwestern University, National Investment Center, LeadingAge, ASHA, Ziegler, Life Care Services, and Novare.

Regards,

Mary Leary
CEO and President
Mather

PS: If you haven't read the previous reports from the Age Well Study, I encourage you to do so. You can download them from TheAgeWellStudy.com.

KEY FINDINGS

YEAR 3 PARTICIPANTS

4,191

RESIDENTS FROM

122

LIFE PLAN COMMUNITIES AROUND THE US PARTICIPATED IN THE STUDY

The primary purpose of the five-year Age Well Study is to gain a greater understanding of the impact of residing in a Life Plan Community on residents' health and wellness over time. The focus of the Year 3 study was to examine factors that may be related to happiness and life satisfaction among residents. Happiness and life satisfaction are both subjective assessments of one's own well-being. Happiness concerns one's state of well-being, while life satisfaction refers to the extent to which one's life has met one's expectation.

Year 3 study findings are based on responses from 4,191 residents from 122 Life Plan Communities throughout the United States. Life Plan Communities with at least 100 residents residing in independent living were eligible to enroll in Years 1 or 2, and a staff member at each community was asked to complete a survey regarding organizational characteristics. Residents residing in independent living at enrolled communities were invited to complete annual surveys on their health and wellness as well as other individual characteristics. Year 3 of the Age Well Study was administered in January to May 2020 in the midst of a global pandemic.

Approximately one-half of respondents were ages 85+ (51%), and two-thirds were female (67%). Respondents were predominantly white/Caucasian (97%) and non-Hispanic/Latino (88%). In terms of marital status, one-half of respondents were married (51%) and one-third were widowed (37%). Respondents tended to be highly educated, with 76% having a bachelor's degree or higher, and approximately one-half of respondents reported annual household incomes of $100,000 or higher (49%). More than one-half of respondents identified as Protestants (57%). In addition, respondents were fairly evenly distributed across the four regional areas, with one-third of respondents residing in Southern states (33%), a quarter in the West (25%) and Midwest (24%), and 17% of respondents from the Northeast.

Analyses investigated resident characteristics associated with happiness and life satisfaction, including

- personality traits
- psychological resources
- social/communal factors
- health

Analyses accounted for the effects of residents' age, gender, income, education, marital status, depressive symptoms, number of chronic health conditions, and length of residence. Table 1 provides an overview of resident characteristics associated with happiness and life satisfaction. The teal boxes and upward arrows indicate positive outcomes, while the orange boxes and downward arrows indicate negative outcomes.

Table 1. Factors Associated with Happiness and Life Satisfaction among Life Plan Community Residents

	Happiness	Life Satisfaction
Personality Traits		
Openness to experience		
Conscientiousness		
Extroversion	↑	↑
Agreeableness	↑	↑
Neuroticism	↓	↓
Psychological Resources		
Higher optimism	↑	↑
Higher perceived control	↑	↑
Greater purpose	↑	↑
More positive perceptions of aging		↑
Higher resilience	↑	↑
Social/Communal Factors		
Higher loneliness	↓	↓
Greater social cohesion	↑	↑
Greater community belonging	↑	↑
Higher religiosity		↑
Higher spirituality	↑	
Health & Healthy Behaviors		
Self-reported health	↑	↑
Physical activity	↑	
Healthy diet	↑	↑

Positive Outcomes
Negative Outcomes

BACKGROUND & SIGNIFICANCE

The Age Well Study is a five-year, nationwide study examining the impact of residing in a Life Plan Community on residents' health and wellness. Year 1 of the longitudinal study established baseline measures of residents' health and wellness. Compared to a sample of older adults in the community at large, residents of Life Plan Communities displayed greater social, emotional, physical, vocational, and intellectual wellness, but lower spiritual wellness. Year 2 of the Age Well Study focused on factors associated with residents' physical health and healthy behaviors.

Building upon the first two years, Year 3 of the Age Well Study investigated factors associated with residents' emotional wellness, specifically their happiness and life satisfaction. Happiness and life satisfaction are both subjective assessments of one's own well-being, which means that residents evaluated their happiness and life satisfaction based on their personal experiences rather than objective criteria. The standards that people use to decide whether they are a happy person or whether their life has met their expectations may vary from person to person. In other words, people set their own idiosyncratic standards for what it means to be happy and satisfied. For brevity, happiness will be used as an umbrella term that also includes life satisfaction throughout this section.

Happiness is important... not only because it feels good, but because it's associated with other important outcomes, such as better physical and mental health, more positive social interactions, and greater creativity.

Senior living professionals can use the results of the study to develop strategies and programs aimed at supporting residents' emotional wellness.

Happiness is important, not only because it feels good, but because it's associated with other important outcomes, such as better physical and mental health, more positive social interactions, and greater creativity (Baas, De Dreu, & Nijstad, 2008; Diener, Kanazawa, Suh, & Oishi, 2015; Kushlev et al., 2020). Evidence suggests that positive emotions broaden thoughts and behaviors in a way that leads people to try new things, engage in more social interactions, and be more creative and flexible. As a result of this broader, positive mindset, people develop greater skills, resources, and relationships that enable them to respond more resiliently to challenges (Fredrickson, 2001; Tugade & Fredrickson, 2004).

Happiness is based on many factors, including one's genetics and personality, situational factors, and day-to-day thoughts and behaviors (Lyubomirsky, Sheldon, & Schkade, 2005). This means that some people naturally have happier dispositions than others; however, it's also possible to engage in activities to increase one's happiness. Ironically, happiness-seeking can sometimes be related to lower levels of happiness (e.g., Mauss, Tamir, Anderson, & Savino, 2011; Sheldon, Corcoran, & Prentice, 2019). Pursuing activities solely for the sake of happiness may not have the intended consequence. Instead, engaging in meaningful activities, helping others, cultivating feelings of gratitude, and other activities of more intrinsic value may ultimately be more effective at enhancing happiness (e.g., Friedman, Ruini, Foy, Jaros, Sampson, & Ryff, 2017; Otake, Shimai, Tanaka-Matsumi, Otsui, & Fredrickson, 2006; Seligman, Steen, Park, & Peterson, 2005).

Year 3 of the Age Well Study examined the relationship between a wide range of factors and resident happiness. There's a strong relationship between some personality traits and happiness (Steel, Schmidt, & Schultz, 2008), and the current report focuses on residents' level of openness to experience, conscientiousness, extroversion, agreeableness, and neuroticism. Social factors are also important to happiness (e.g., Diener et al., 2015), and this study focuses on belonging and social cohesion within the Life Plan Community as well as spirituality and religious beliefs. As mentioned above, higher levels of happiness may be related to greater psychological resources, such as resilience and optimism, as well as better physical health (Kushlev et al., 2020; Tugade & Fredrickson, 2004). In addition, the study examined how satisfaction with specific life domains, such as leisure activities and health, as well as satisfaction with one's senior living community, relate to overall resident happiness. Senior living professionals can use the results of the study to develop strategies and programs aimed at supporting residents' emotional wellness.

STUDY OVERVIEW & METHODOLOGY



The purpose of the Age Well Study is to provide insights into the impact of living in a Life Plan Community on residents' health and wellness. This study also aims to identify which organizational factors, such as number of residents or location, are associated with better resident wellness outcomes.

As outlined at the beginning of this five-year effort, the Age Well Study includes four main components:

1) self-administered organizational surveys completed by one staff member from each participating Life Plan Community
2) self-administered surveys completed annually by residents of Life Plan Communities for five years
3) semi-structured interviews with a subset of residents from three communities
4) secondary data analysis with a comparison sample of older adults living in the community at large

Together, these components provide multiple sources of data to assess objective questions of health and wellness and enable a closer examination of residents' experiences. This report describes the results of an analysis of survey responses from Year 3.

STUDY ELIGIBILITY & RECRUITMENT

Life Plan Communities and residents were enrolled in the Age Well Study during Years 1 and 2, and the study was then closed to enrollment. The reports for Years 1 and 2 provide a detailed overview of the study eligibility and recruitment procedures. Those efforts are summarized here, in addition to Year 3 recruitment procedures.

LIFE PLAN COMMUNITIES. Organizations were eligible to participate if they reported being a Life Plan Community with at least 100 residents residing in independent living. Life Plan Community was defined as a residence providing at least independent living and skilled nursing care, following the National Investment Center definition. Across Years 1 and 2, a total of 122 eligible organizations returned completed resident surveys. A staff member knowledgeable about the characteristics of the community completed an online survey designed to gather organizational details, such as number of residents, location, for-profit vs. nonprofit status, amenities, and services. Eighty-one participating organizations completed a Year 3 organizational survey. Remaining communities did not return the survey, so responses from the Year 2 organizational survey were used for those communities.

RESIDENTS. All individuals who resided in independent living at participating Life Plan Communities were eligible to enroll in the Age Well Study in Years 1 or 2. All respondents with valid mailing or email addresses who participated in Years 1 or 2 were invited to participate in the Year 3 survey (n = 7,393). Participants were given an option of receiving an online or paper survey, which was mailed to them. A total of 4,295 Year 3 resident surveys were submitted. These were screened for quality, and 104 were excluded because residents either submitted duplicate surveys or they completed less than 70% of the survey items. Analyses included responses from 4,191 Life Plan Community residents (a 57% response rate). Out of the total respondents, 2,037 participated in both Years 1 and 2, 1,687 joined in Year 2, and 467 participated in Year 1 but missed Year 2.

SURVEY DEVELOPMENT

The organizational and resident surveys were developed by Mather Institute with input from an industry advisory group. In order to compare residents of Life Plan Communities with older adults from the community at large, many of the psychosocial and health measures on the resident survey were drawn from a comparative sample from the Health and Retirement Study (HRS), a longitudinal survey that includes more than 22,000 Americans over the age of 50. Prior to implementation, the survey was reviewed with several residents of Life Plan Communities to identify areas of ambiguity and improve clarity. For a list of specific measures discussed in this report, see Appendix A.

STATISTICAL ANALYSES

Averages (mean scores) or percentages are presented throughout the report as noted. Percentages are rounded to the nearest whole number, and thus total percentages may not always add up to 100%.

A statistical procedure called multilevel modeling was used to test the associations among respondent or organizational characteristics and happiness outcomes. Survey responses from residents of the same Life Plan Community are likely to have more in common with each other than with responses from residents of other Life Plan Communities due to shared living environments. Multilevel modeling accounts for this clustering in the data, i.e., individual residents within their respective Life Plan Communities, so that results do not assume that resident experiences in all Life Plan Communities are equal. Analyses controlled for the effects of residents'

age, gender, income, education, marital status, depressive symptoms, number of chronic health conditions, and length of residence. The only exceptions are analyses where average differences between groups or percentages are reported for respondent and organizational characteristics. Statistical significance was set at a *p*-value of less than .05 ($p < .05$), which indicates that there is less than a 5% likelihood that the effect is due to chance. Also, causal relationships cannot be conclusively determined from these results, because the analyses test for correlations among the study variables. This is discussed further in the Caveats section.

Note: In observational studies, "controlling for" a variable during analysis is the attempt to eliminate any effect of other extraneous variables that may affect the outcome. For example, in assessing the relationship between personality and happiness, gender is controlled for, among other factors, because previous research has noted gender differences in happiness. Additional factors that were controlled for include age, education, marital status, income, depressive symptoms, chronic health conditions, and length of residence in the community. The analysis allows for examination of the relationship between a variety of characteristics (personality, personal resources, social/communal) and happiness, independent of any influence these other control variables may have. The individual effects of these control variables on happiness are included separately in the Detailed Findings section.

DESCRIPTION OF STUDY PARTICIPANTS

Table 2 presents the demographic characteristics of the residents of Life Plan Communities who participated in Year 3 of the Age Well Study, and Table 3 presents the organizational characteristics of participating Life Plan Communities, as reported by staff representatives. Category totals may not sum to 100% due to rounding.

Table 2. Respondent Characteristics

Number of respondents	4,191
Age	
Younger than 80	23%
80 to 84	25%
85 or better	**51%**
Not reported	0%
Gender	
Female	**67%**
Male	33%
Not reported	0%
Ethnicity	
Hispanic/Latino	<1%
Not Hispanic/Latino	**88%**
Not reported	12%
Race	
White/Caucasian	**97%**
Black/African-American	<1%
All other races	2%
Not reported	<1%

Marital status	
Married	**51%**
Widowed	37%
Divorced	6%
Never married	4%
Partnered	1%
Separated	<1%
Not reported	0%
Education	
No degree	<1%
GED	<1%
High school	11%
Associate's	8%
Bachelor's	**31%**
Master's	30%
Doctorate	15%
Other	3%
Not reported	<1%

Religion	
Protestant	**57%**
Catholic	14%
Jewish	6%
None/No preference	14%
Other	7%
Not reported	1%
Income	
Less than $20,000	1%
$20,000 to less than $40,000	5%
$40,000 to less than $60,000	9%
$60,000 to less than $80,000	12%
$80,000 to less than $100,000	12%
$100,000 to less than $120,000	15%
$120,000 to less than $140,000	7%
$140,000 to less than $160,000	6%
$160,000 or more	**20%**
Not reported	11%
Region	
South	**33%**
West	25%
Midwest	24%
Northeast	17%

Table 3. Organizational Characteristics

Number of organization respondents	122
Profit status	
Not-for-profit	**79%**
For-profit	21%
Fee structure	
Entrance fee	**90%**
No entrance fee	10%
Religious affiliation	
No religious affiliation	**70%**
Religious affiliation	30%
Number of communities	
Single-site	**66%**
Multisite[1]	34%

Community size	
1–300 residents in independent living	49%
301+ residents in independent living	**51%**
Levels of care	
Independent living	**100%**
Assisted living	94%
Skilled nursing[2]	99%
Memory support	86%
Home care	53%
Hospice	31%
Adult day program	10%
Community location	
Suburban	**63%**
Urban	21%
Rural	16%

Region[3]	
South	**38%**
Northeast	22%
Midwest	20%
West	20%
Average age of residents	
Younger than 80	4%
80 to 84	**50%**
85 or better	46%
Age of community	
Less than 10 years	4%
10 to 19 years	**30%**
20 to 29 years	16%
30 to 39 years	21%
40 to 49 years	7%
50 years and greater	22%

1 Communities whose parent organization has other communities

2 One community provides skilled nursing immediately adjacent to the community.

3 See Appendix B for a map of geographic regions.

DETAILED FINDINGS

STUDY RESULTS ARE PRESENTED IN SEVEN SECTIONS:

1. Overall happiness and life satisfaction
2. Differences related to personality characteristics
3. Differences related to psychological resources
4. Differences related to social and communal factors
5. Differences related to health and healthy behaviors
6. Satisfaction with life domains
7. Satisfaction with senior living community

The first section provides an overview of resident happiness and life satisfaction, including differences associated with demographic and organizational characteristics. Sections 2 through 5 focus on different groups of resident characteristics and their association with happiness and life satisfaction. Sections 6 and 7 examine more specific types of life satisfaction, including satisfaction with life domains, such as family and leisure activities, as well as satisfaction with one's senior living community.

OVERALL HAPPINESS & LIFE SATISFACTION

Even among respondents in the bottom 25%, average happiness and life satisfaction scores are still above the scale midpoints.

Respondents completed four items to assess the extent to which they view themselves as a happy person (Subjective Happiness Scale; Lyubomirsky & Lepper, 1999). The average level of happiness across all respondents is 5.8 on a scale that could range from 1 to 7. We grouped participants into four groups, or quartiles, based on their happiness scores (i.e., Top 25%, Upper Middle, Lower Middle, and Bottom 25%). Figure 1 displays the average happiness scores for each quartile.

Life satisfaction is an evaluation of the quality of one's life as a whole, and it was measured using the five-item Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Overall, the average life satisfaction for respondents is 5.9 on a seven-point scale. Figure 2 presents the average life satisfaction score for each quartile—or quarter of the entire group—of respondents.

These findings are consistent with previous research, which has found that people are generally happy as long as basic needs are met (Diener, Diener, Choi, & Oishi, 2018). Across the entire sample, average happiness and life satisfaction scores are near the top of the range. Even among respondents in the lowest quartile (bottom 25%), average happiness and life satisfaction scores are still above the scale midpoints.

Figure 1. Average Happiness Scores by Quartile

Female respondents reported greater happiness compared to males.

Respondents with a college degree or more education reported higher life satisfaction compared to people without a college degree.

Figure 2. Average Life Satisfaction Scores by Quartile

DEMOGRAPHIC DIFFERENCES IN OVERALL HAPPINESS AND LIFE SATISFACTION

There were small, but statistically significant, differences in happiness and life satisfaction associated with respondent demographics and background characteristics:

- **GENDER**: Female respondents reported greater happiness compared to males (see Figure 3).
- **AGE**: Respondents in the oldest age range (90+) reported lower happiness and life satisfaction than younger age groups (see Figure 4).
- **DEPRESSIVE SYMPTOMS**: Happiness and life satisfaction levels varied greatly based on the number of depressive symptoms reported (see Figure 5). Examples of depressive symptoms include feeling sad, lonely, or having restless sleep much of the time during the last week.
- **CHRONIC DISEASE**: Respondents with a higher number of chronic diseases tended to report lower happiness as well as lower life satisfaction (see Figure 6).
- **EDUCATION**: Respondents with a college degree or more education reported higher life satisfaction compared to people without a college degree (college degree = 6.0; no college degree = 5.8).
- **INCOME**: Greater household income was related to higher life satisfaction, and the greatest average differences in life satisfaction occurred between residents with household incomes less than $40,000 compared to residents with household incomes of $80,000 or more (see Figure 7).
- **MARITAL STATUS**: Respondents who are married or partnered reported higher life satisfaction compared to other marital statuses (married or partnered = 6.0; other marital status = 5.9).

- Average happiness levels did not significantly differ based on income, college education, being married/partnered, and length of residence.
- Average life satisfaction scores did not significantly differ based on gender and length of residence.

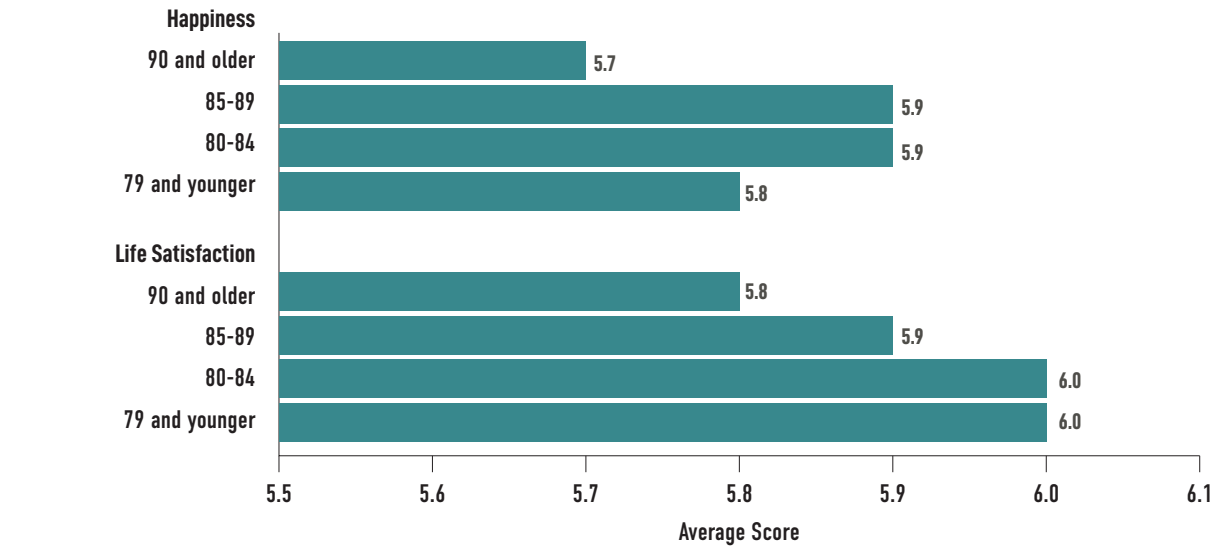
The relationships between demographic characteristics and happiness and life satisfaction are generally consistent with past research. Female respondents reported greater happiness than male participants. Previous research has reported mixed results on gender difference in happiness. Some studies have reported greater happiness for women (Pierewan & Tampubolon, 2015), whereas other studies have found that men report greater happiness (Richards et al., 2015). Among older adults, however, men typically report greater happiness than women (Inglehart, 2002); but across studies this difference is relatively small (Pinquart & Sörensen, 2001).

Among older adults, however, men typically report greater happiness than women.

Figure 3. Gender Differences in Average Happiness

Life satisfaction tends to increase from middle age to one's early 70s, at which point it begins to decline (Baird, Lucas, & Donnellan, 2010); a similar pattern has also been found for happiness in other research (Pierwan & Tampubolon, 2015; Wikman, Wardle, & Steptoe, 2011). Among Age Well Study participants, life satisfaction and happiness were lower in the oldest age group (90+).

Figure 4. Age Differences in Happiness and Life Satisfaction



As might be expected, Age Well Study participants with more depressive symptoms or more chronic health conditions tended to report lower happiness and life satisfaction. This fits with past studies that have found similar results (Rosella, Fu, Buajitti, & Goel, 2019; van Hemert, van de Vijver, & Poortinga, 2002; Wikman et al., 2011).

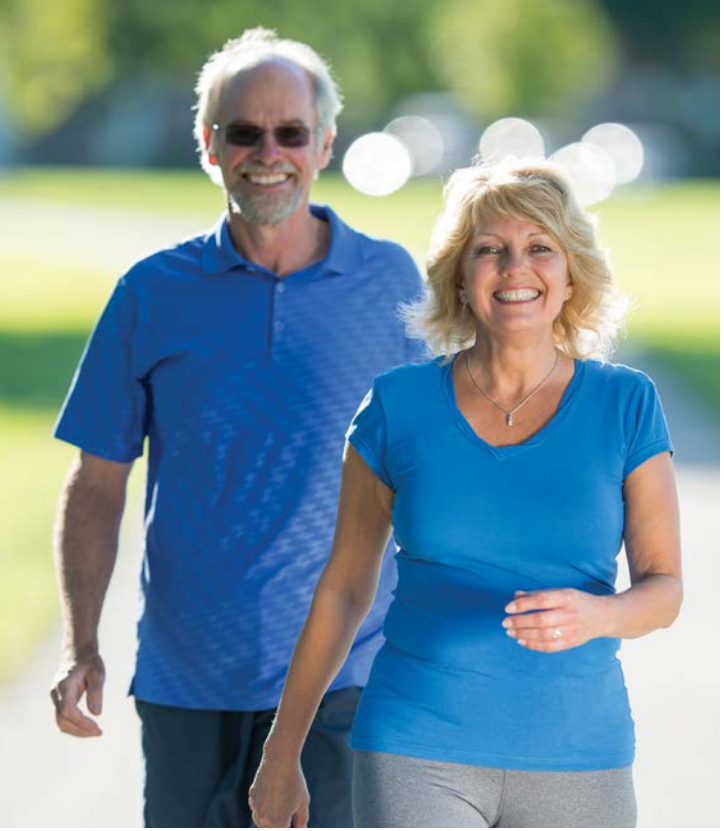


Figure 5. Relationship between Number of Depressive Symptoms and Average Happiness and Life Satisfaction

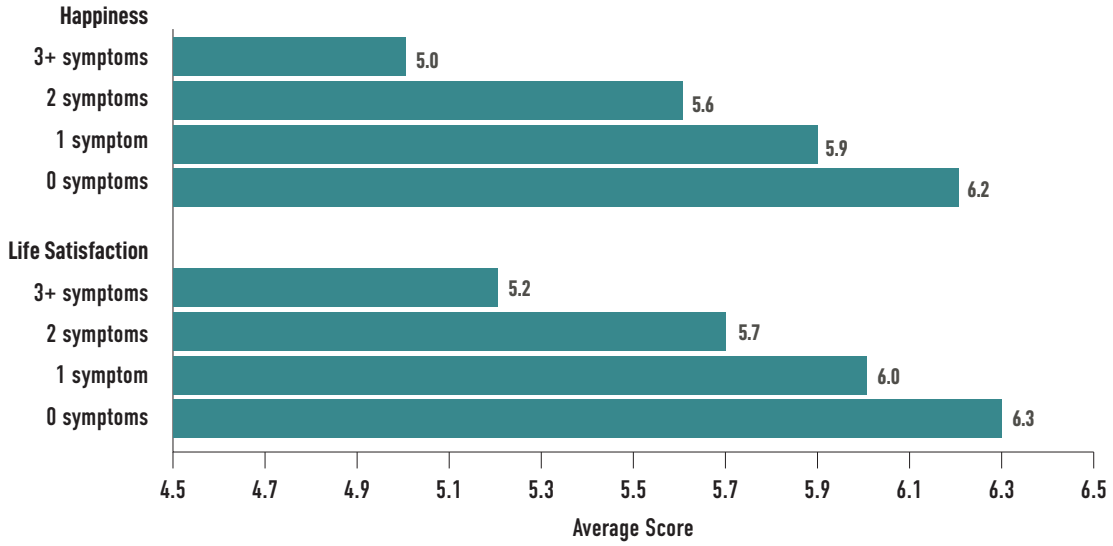
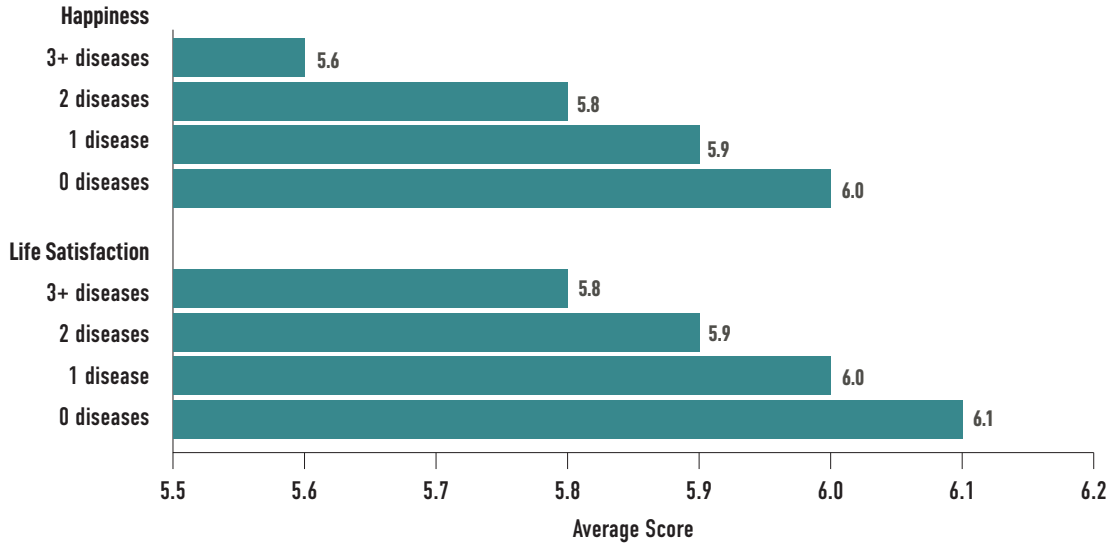


Figure 6. Relationship between Number of Chronic Diseases and Average Happiness and Life Satisfaction

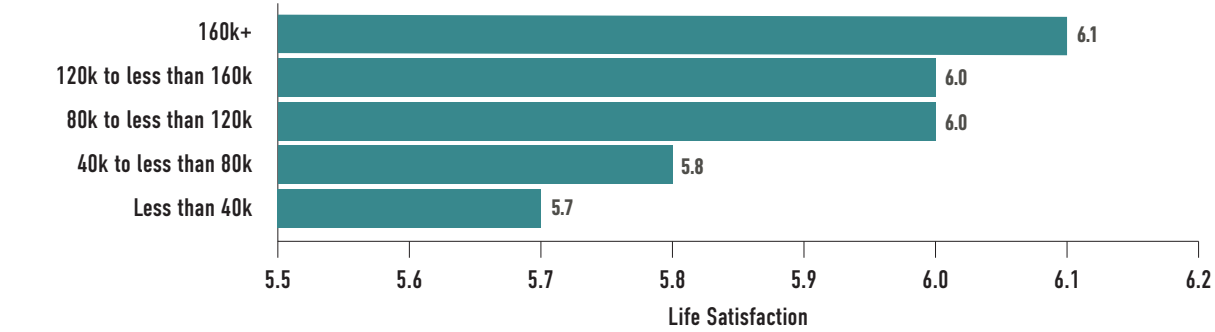


Higher income and more education tend to be related to greater happiness and life satisfaction (Pierewan & Tampubolon, 2015; Purol, Keller, Oh, Chopik, & Lucas, 2020; Wikman, Wardle, & Steptoe, 2011). However, Age Well Study participants with higher income or more education only reported greater life satisfaction. This may be explained in part by the relatively higher incomes reported by most participants, in that evidence suggests that income is related to better happiness up to a point, but starts to level out at higher incomes (Myers & Diener, 2018), probably around $100,000 (Jebb, Tay, Diener, & Oishi, 2018).

Most organizational characteristics measured in this study were unrelated to resident happiness.

Higher life satisfaction among married individuals was also consistent with past research. For example, one study found being consistently married throughout life was associated with greater life satisfaction among older adults, compared to consistently single older adults (Purol et al., 2020). Past research has also found a similar association with happiness in the general population (Pierewan & Tampubolon, 2015; Meyers & Diener, 2018), but this was not the case for the older adults in the Age Well Study sample.

Figure 7. Relationship between Income and Average Life Satisfaction



ORGANIZATIONAL CHARACTERISTICS & HAPPINESS AND LIFE SATISFACTION

Most organizational characteristics measured in this study were unrelated to resident happiness; however, there were small differences in happiness for two organizational characteristics, and a small difference in life satisfaction for one characteristic:

- **PROFIT STATUS**: Residents of for-profit communities were slightly happier on average compared to residents in not-for-profit communities (see Figure 8). There were no significant differences between residents of for-profit and not-for-profit communities on life satisfaction.
- **COMMUNITY SIZE**: Residents of larger communities (300 or more residents in Independent Living) were slightly more satisfied with life compared to residents of communities with fewer than 300 residents in Independent Living (see Figure 9). However, community size was not significantly related to happiness.
- **REGION**: Residents of communities located in the South and West reported greater happiness than residents in the Northeast or Midwest regions (see Figure 10). There were no significant regional differences in life satisfaction.
- There were no significant differences associated with having an entrance fee, religious affiliation, single- or multi-site, area type (i.e., rural, suburban, or urban), average age of residents, and age of the community.

Figure 8. Relationship between Profit Status and Average Happiness

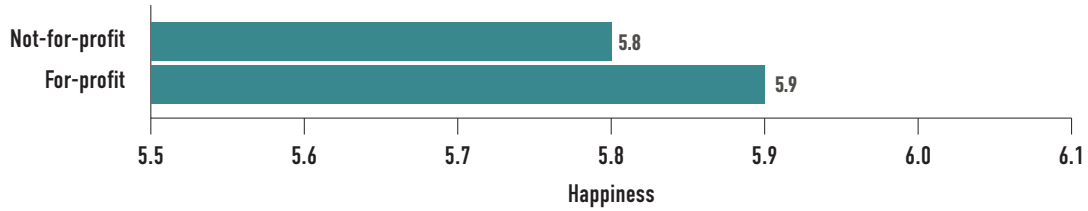


Figure 9. Relationship between Community Size and Average Life Satisfaction

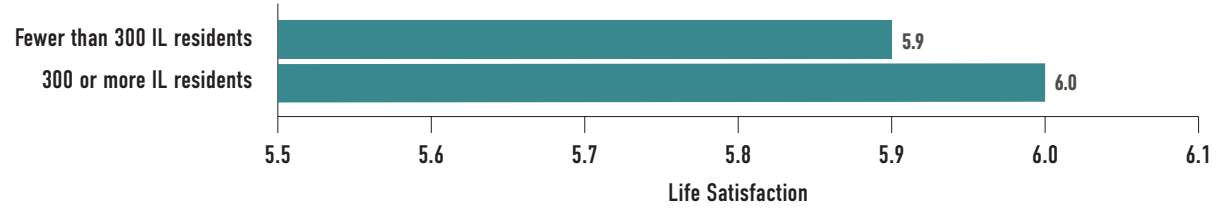
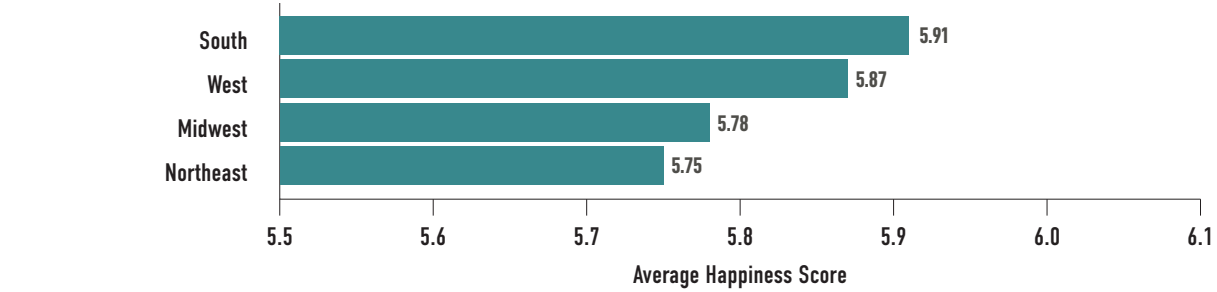


Figure 10. Relationship between Region and Average Happiness



PERSONALITY TRAITS & HAPPINESS AND LIFE SATISFACTION

Personality traits are among the strongest predictors of happiness (Steel et al., 2008). The "Big Five" personality traits include Openness to Experience, Conscientiousness, Extroversion, Agreeableness, and Neuroticism. Each describes patterns of behavior, thoughts, and feelings that typically don't change much over time. Age Well Study findings on the relationship between Big Five personality traits and happiness and life satisfaction are shown in Table 4.

Table 4. Relationship between Personality Traits & Happiness and Life Satisfaction

	Happiness	Life Satisfaction
Openness to experience		
Conscientiousness		
Extroversion	↑	↑
Agreeableness	↑	↑
Neuroticism	↓	↓

Positive Outcomes
Negative Outcomes

Openness to new experience was not significantly related to resident happiness or life satisfaction.

- **OPENNESS TO EXPERIENCE**: Individuals who exhibit high levels of openness usually enjoy new experiences. They tend to be creative, appreciate beauty, enjoy intellectual activities, and understand their emotions. Openness to new experience was not significantly related to resident happiness or life satisfaction.
- **CONSCIENTIOUSNESS**: Persons who rate high on conscientiousness are generally disciplined, dependable, and detail oriented. Conscientiousness was not significantly related to resident happiness or life satisfaction.
- **EXTROVERSION**: Extroverts are outgoing and often like to be the center of attention. More extroverted residents tended to be happier and more satisfied with life than less extroverted residents.

- **AGREEABLENESS**: Persons who rate high on agreeableness value getting along well with others. They tend to be warm, helpful, empathic, and generous. Residents with higher (vs. lower) levels of agreeableness were happier and more satisfied with life.
- **NEUROTICISM**: Individuals with higher levels of neuroticism tend to be less emotionally stable and frequently feel sad, anxious, or angry. In contrast to other personality types, residents with higher levels of neuroticism were less happy and less satisfied with life.

The relationships between the personality traits and happiness and personality traits and life satisfaction were similar (see Table 4). Extroversion and agreeableness were both associated with greater happiness and life satisfaction, whereas greater neuroticism was associated with lower happiness and life satisfaction. Openness to experience and conscientiousness were not related to happiness and life satisfaction.

Of the Big Five traits, extroversion and neuroticism tend to be most strongly linked to well-being (Steel et al., 2008). Consistent with Age Well Study findings, previous research has shown that extroversion and neuroticism are connected to happiness and life satisfaction, such that high levels of extroversion are linked to greater happiness and life satisfaction, while high neuroticism is associated with lower happiness and life satisfaction (Steel, Schmidt, & Schultz, 2008). Age Well Study findings on well-being and agreeableness, conscientiousness, and openness to experience differ from some previous research. While not all previous studies have found a significant relationship between agreeableness and well-being and conscientiousness and well-being, the results of a meta-analysis of 223 studies found that high levels of agreeableness and high conscientiousness were significantly related to both happiness and life satisfaction (Steel et al., 2008). In contrast, we found that conscientiousness was not significantly related to resident happiness or life satisfaction. The same study also found that openness to experience was significantly related to happiness but not life satisfaction (Steel et al., 2008), whereas we found that openness to experience was not related to either outcome.

We found that conscientiousness was not significantly related to resident happiness or life satisfaction.

PSYCHOLOGICAL RESOURCES & HAPPINESS AND LIFE SATISFACTION

...individuals can work to strengthen psychological resources.

Psychological resources, associated with numerous benefits, are valuable assets in our lives. Many studies have shown that psychological resources are strongly linked to positive emotion, happiness, and life satisfaction (Carver, Scheier, & Segerstrom, 2010; Hausknecht, Low, O'Loughlin, McNab, & Clemson, 2019; de Quadros-Wander, McGillivray, & Broadbent, 2014; Irving, 2017; MacLeod, Musich, Hawkins, Alsgaard, & Wicker, 2016). While some psychological resources have a genetic component, individuals can work to strengthen psychological resources. Age Well Study findings on psychological resources and their relationship to happiness and life satisfaction are displayed in Table 5.

Table 5. Relationship between Psychological Resources & Happiness and Life Satisfaction

	Happiness	Life Satisfaction
Higher optimism	↑	↑
Higher perceived control	↑	↑
Greater purpose	↑	↑
More positive perceptions of aging		↑
Higher resilience	↑	↑

Positive Outcomes
Negative Outcomes

Residents with higher optimism were happier and more satisfied with life.

- **OPTIMISM**: People who are optimistic have positive expectations for the future. Residents with higher optimism were happier and more satisfied with life.
- **PERCEIVED CONTROL**: Perceived control refers to the degree to which an individual believes they have control over their activities and their lives. Residents with a higher sense of perceived control were happier and more satisfied with life.
- **PURPOSE IN LIFE**: Individuals with a strong sense of purpose are goal-directed and feel their life is meaningful. Residents with a greater sense of purpose in life were happier and more satisfied with life.

...more positive perceptions of aging were not related to happiness.

- **PERCEPTIONS OF AGING**: Perceptions of aging are a reflection of one's attitudes, experiences, and internalized stereotypes about getting older. Residents with more positive perceptions of aging were more satisfied with life; however, perceptions of aging were not significantly related to happiness.
- **RESILIENCE**: Highly resilient individuals are able to cope with and recover from difficult events and stressors. Residents with greater resilience were happier and more satisfied with life.

Higher levels of psychological resources were generally associated with higher levels of happiness and life satisfaction (Table 5). There was one exception: more positive perceptions of aging were not related to happiness. Age Well Study findings were fairly consistent with prior research studies (Carver et al., 2010; de Quadros-Wander et al., 2014; Hausknecht et al., 2019; Irving, 2017; MacLeod et al., 2016). While positive perceptions of aging have usually been associated with measures of well-being in prior studies, limited research has looked at happiness specifically (Hausknecht et al., 2019).

SOCIAL/COMMUNAL FACTORS & HAPPINESS AND LIFE SATISFACTION

Social and communal factors are measures of relationships and connections—to others, the community, the spirit, and a higher power. Previous studies demonstrate that social and communal factors play a role in feelings of happiness and life satisfaction (Cowlishaw, Niele, Teshuva, Browning, & Kendig, 2013; Cramm, Van Dijk & Nieboer, 2013; Helliwell, Huang, Norton, & Wang, 2019; Myers, 2008; VanderWeele, Hawkley & Cacioppo, 2012). Table 6 displays the relationship between social and communal factors and happiness.

Table 6. Relationship between Social/Communal Factors & Happiness and Life Satisfaction

	Happiness	Life Satisfaction
Higher loneliness	↓	↓
Greater social cohesion	↑	↑
Greater community belonging	↑	↑
Higher religiosity		↑
Higher spirituality	↑	

Positive Outcomes
Negative Outcomes

More religious residents were more satisfied with life, but religiosity was not significantly related to happiness.

- **LONELINESS**: Loneliness is a feeling of isolation and desire for greater social connection. Residents with greater loneliness were less happy and less satisfied with life.
- **SOCIAL COHESION**: Social cohesion refers to the degree of closeness and trust among community members. Residents with a greater sense of social cohesion in their communities were happier and more satisfied with life.
- **COMMUNITY BELONGING**: Community belonging describes a sense of fit and belonging to a community. Residents with a greater sense of community belonging were happier and more satisfied with life.
- **RELIGIOSITY**: Religiosity is the adherence to an organized system of beliefs and practices related to a higher power and community. More religious residents were more satisfied with life, but religiosity was not significantly related to happiness.

- **SPIRITUALITY**: Spirituality is the search for meaning and the relationship to a higher power that may be independent from religion (Koenig, 2000). More spiritual residents were happier, but spirituality was not significantly related to life satisfaction.

As shown in Table 6, the pattern of results for loneliness, social cohesion, and community belonging were similar. Higher levels of loneliness were associated with less happiness and less life satisfaction, while higher levels of social cohesion and community belonging were linked to greater happiness and life satisfaction. The pattern differed for spirituality and religion. High religiosity was associated with greater life satisfaction, but was not significantly related to happiness. This was reversed for high spirituality, which was related to greater happiness but not greater life satisfaction.

While higher levels of social cohesion and community belonging have been associated with happiness at all ages, research suggests they are particularly important for older adults.

Most of the Age Well Study results were consistent with those from prior studies. By and large, the literature shows the importance of social and communal factors, with many different social and communal factors contributing to happiness and life satisfaction (Cowlishaw et al., 2013; Cramm et al., 2013; Helliwell et al., 2019; Myers, 2008; VanderWeele et al., 2012). While higher levels of social cohesion and community belonging have been associated with happiness at all ages, research suggests they are particularly important for older adults. For example, research has shown that high levels of community belonging result in greater gains in life satisfaction after age 55 (Helliwell et al., 2019). In addition, social cohesion appears to have a protective effect against other risk factors among older adults (Cramm et al., 2013).

In contrast to Age Well Study findings, the majority of prior studies demonstrate a positive association between religiosity and happiness (Myers, 2008). However, some of the benefits of religiosity on happiness appear to be related to the social nature of religion (such as churchgoing), which was not assessed through the Age Well Study (Lim, 2016; Lim & Putnam, 2010). A second finding that contrasted with previous research is the relationship between spirituality and life satisfaction. Previous research has generally shown positive relationships between spirituality and life satisfaction (Cowlishaw et al., 2013; Lawler-Row & Elliott, 2009). The reason for this difference between the Age Well Study and prior research findings is unclear. As measurement of spirituality varies from study to study, the difference may be related to how spirituality was measured.

HEALTH & HAPPINESS AND LIFE SATISFACTION

There is a strong connection between the mind and body. The Age Well Study focused on three components of health: self-reported health, physical activity, and healthy diet. Table 7 displays the relationship between health-related factors and happiness and life satisfaction.

Table 7. Relationship between Health & Happiness and Life Satisfaction

	Happiness	Life Satisfaction
Self-reported health	↑	↑
Physical activity	↑	
Healthy diet	↑	↑

Positive Outcomes
Negative Outcomes

Greater physical activity was associated with greater happiness, but it was not related to life satisfaction.

- **SELF-REPORTED HEALTH**: Residents with better self-reported health reported greater happiness and higher life satisfaction.
- **PHYSICAL ACTIVITY**: Greater physical activity was associated with greater happiness, but it was not related to life satisfaction.
- **HEALTHY DIET**: Residents who indicated that they have healthier diets tended to be happier and more satisfied with life.

Consistent with previous research, better self-reported health, more physical activity, and a healthier diet were associated with greater happiness among Age Well Study participants. Studies have shown that older adults report greater happiness when they have better self-reported health (Angner, Ray, Saag, & Allison, 2009) and are free from debilitating health conditions (Angner, Ghandhi, Purvis, Amante, & Allison, 2013). Increases in physical activity levels in both young and older adults are associated with corresponding increases in the likelihood of feeling happy (Richards et al., 2015). Engagement in more physical activity, even spending more than one hour per week walking, was associated with greater happiness and mental well-being in adults age 60 to 64 (Black, Cooper, Martin, Brage, Kuh, & Stafford, 2015). Participation in physically active leisure

activities, compared to sedentary activities, was associated with greater happiness among older adults (Yamashita, Bardo, & Liu, 2019). The influence of diet on happiness has been less thoroughly researched; however, one study suggested that consumption of more fruits and vegetables was related to greater happiness and life satisfaction, across young, middle-age, and older adults (Blanchflower, Oswald, & Stewart-Brown, 2013).

Better self-reported health has been associated with higher life satisfaction in both younger and older adults.

The finding that among Age Well Study participants, higher life satisfaction was associated with better self-reported health and a healthier diet is also consistent with findings from other studies. In a large cross-cultural sample of young adults, higher life satisfaction was associated with a healthier diet (Grant, Wardle, & Steptoe, 2009). Better self-reported health has been associated with higher life satisfaction in both younger and older adults (Lombardo, Jones, Wang, Shen, & Goldner, 2018; Puvill, Lindenberg, de Craen, Slaets, & Westendorp, 2016; Steverink, Westerhof, Bode, & Dittman-Kohli, 2001). Past research has also established a link between greater physical activity and higher life satisfaction (e.g., Grant et al., 2009); however, this association was not observed in Age Well Study participants. This may be due to how physical activity was measured. One study found that on days that older adults were more physically active, they tended to report greater life satisfaction (Maher, Pincus, Ram, & Conroy, 2015). Another study also found that older adults' daily self-reported physical activity was related to life satisfaction; however, consistent with findings from the Age Well Study sample, self-reported typical levels of physical activity were not related to their life satisfaction (Maher & Conroy, 2017).

...self-reported typical levels of physical activity were not related to their life satisfaction.

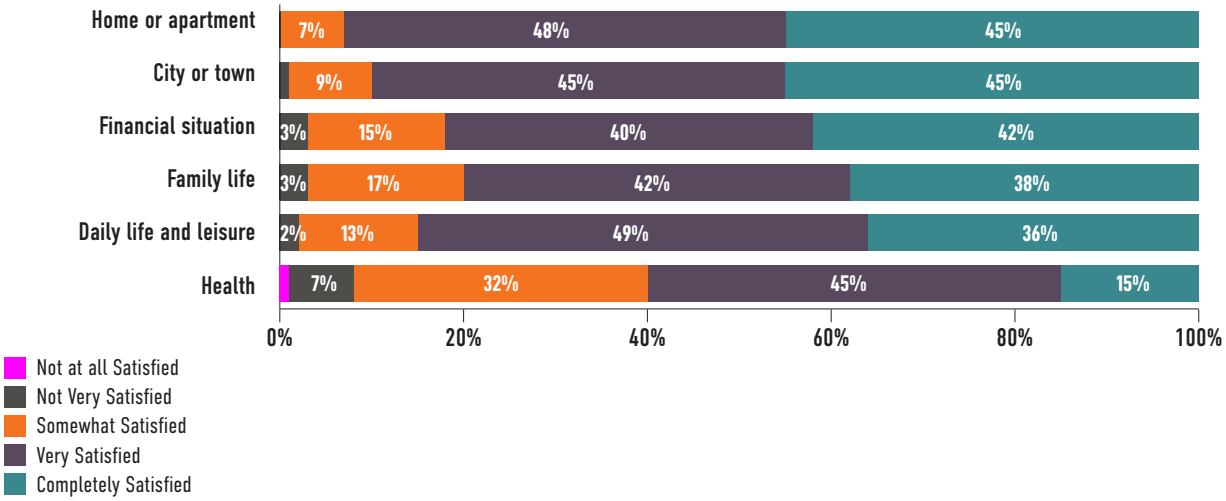
SATISFACTION WITH LIFE DOMAINS

In addition to overall life satisfaction, respondents rated their satisfaction with six life domains:

- the condition of the place where they live (home or apartment)
- the city or town in which they live
- their daily life and leisure activities
- their family life
- their present financial situation
- their health

The results are presented in Figure 11.

Figure 11. Satisfaction with Life Domains



APPROXIMATELY

92%

OF RESPONDENTS WERE HIGHLY SATISFIED, I.E., EITHER "VERY SATISFIED" OR "COMPLETELY SATISFIED," WITH THE PLACE WHERE THEY LIVE.

Approximately 92% of respondents were highly satisfied, i.e., either "very satisfied" or "completely satisfied", with the place where they live, and 90% were highly satisfied with the city or town where they reside. Most respondents were also highly satisfied with their daily life and leisure (85%), financial situation (82%), and family life (79%). Respondents reported lower satisfaction with health, with 60% highly satisfied.

Additional analyses examined the relationship between satisfaction with life domains and overall happiness and life satisfaction, controlling for the effects of residents' age, gender, income, education, marital status, depressive symptoms, number of chronic health conditions, and length of residence. Satisfaction with one's city or town was not significantly related to overall life satisfaction or happiness, and satisfaction with one's current financial situation was unrelated to happiness. There were significant associations between satisfaction with the other life domains and overall happiness and life satisfaction. Out of all the life domains, satisfaction with daily life and leisure activities had the strongest relationship with overall happiness and life satisfaction.

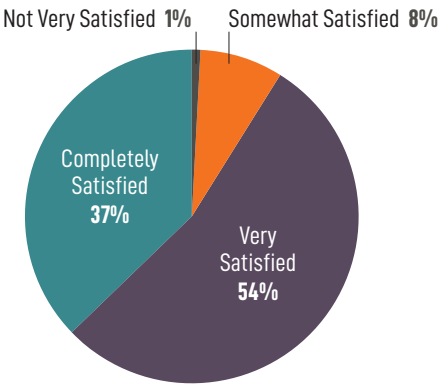
SATISFACTION WITH SENIOR LIVING COMMUNITY & HAPPINESS AND LIFE SATISFACTION

91%

OF RESPONDENTS WERE "COMPLETELY" OR "VERY" SATISFIED WITH THEIR SENIOR LIVING COMMUNITY.

The Year 3 Age Well Study survey included a new question about residents' satisfaction with their senior living community. Satisfaction was measured on a five-point scale, anchored at "completely satisfied" and "not very satisfied." Overall, 91% of respondents were "completely" or "very" satisfied with their senior living community (see Figure 12). Residents who were more satisfied with their senior living community also tended to be happier and more satisfied with their life as a whole.

Figure 12. Satisfaction with Senior Living Community



Additional analyses were conducted to identify resident and organizational factors that are associated with resident satisfaction.

- **RESIDENT CHARACTERISTICS**: Satisfaction with one's senior living community did not vary based on gender, age, household income, length of residence, college education, or marital status. However, residents with more depressive symptoms were less satisfied with their senior living community (no symptoms = 4.4; 1 symptom = 4.3; 2 symptoms = 4.2; 3+ symptoms = 3.9). Satisfaction was also somewhat lower among residents who have three or more chronic health conditions (no chronic conditions = 4.3; 1 chronic condition = 4.3; 2 chronic conditions = 4.3; 3+ chronic conditions = 4.2).

Higher levels of extroversion, conscientiousness, and agreeableness were associated with greater satisfaction with the senior living community. In contrast, higher neuroticism and openness to experience were related to less satisfaction.

- **ORGANIZATIONAL CHARACTERISTICS**: There were no significant differences in satisfaction with one's senior living community associated with the community's profit status, entrance fee requirement, religious affiliation, single- or multi-site, area type (i.e., rural, suburban, or urban), average age of residents, age of the community, size of the community, or region of the country.
- **PERSONALITY TRAITS**: Higher levels of extroversion, conscientiousness, and agreeableness were associated with greater satisfaction with the senior living community. In contrast, higher neuroticism and openness to experience were related to less satisfaction.
- **PSYCHOLOGICAL RESOURCES**: Similar to the findings for overall happiness, residents with greater optimism, perceived control, purpose, and resilience tended to report greater satisfaction with their senior living community.
- **SOCIAL/COMMUNAL FACTORS**: Residents with greater community belonging also reported higher satisfaction with their senior living community, whereas loneliness was associated with less satisfaction. Social cohesion, spirituality, and religiosity were not significantly related to satisfaction with one's senior living community.

DISCUSSION

Year 3 of the Age Well Study built on findings from the previous years by focusing on factors associated with resident happiness and life satisfaction. The results of this study, which identified factors associated with happiness as well as characteristics of residents who may be at risk of being less happy, can inform the development and implementation of efforts to support residents' emotional wellness.

It is interesting to note that many of the characteristics associated with resident happiness are also associated with better resident health and healthy behaviors (see the Year 2 Age Well Study report). For example, higher levels of extroversion, sense of purpose, optimism, and social cohesion are related to both greater happiness and better health. In addition, previous research indicates that there's a bidirectional relationship between happiness and health (e.g., Kushlev et al., 2020; Steptoe, 2019). In other words, happiness contributes to better health, and health, in turn, promotes greater happiness. This suggests that many of the programs and resources offered by Life Plan Communities to enhance residents' physical wellness may also support their emotional wellness.

Happiness and life satisfaction scores tended to be lower for respondents with greater depressive symptoms, higher loneliness, greater neuroticism, and poorer health. Other factors, such as extroversion, community belonging, and optimism, are associated with greater happiness.

Overall, respondents tended to report high levels of happiness and life satisfaction. However, there was variation across individuals, with some respondents reporting lower emotional wellness. Happiness and life satisfaction scores tended to be lower for respondents with greater depressive symptoms, higher loneliness, greater neuroticism, and poorer health. As mentioned above, other factors, such as extroversion, community belonging, and optimism, are associated with greater happiness. It's important to take into account the full constellation of psychological resources, personality traits, social factors, and other background and situational characteristics, because a strength in one area of life may help compensate for a limitation in another area.

These findings have several implications for Life Plan Communities:

- The specific aspects of life that contribute to happiness may vary from person to person. A source of joy for one resident may be of no interest to another. Solicit feedback from residents on their needs and interests and offer a variety of programs to support those areas.
- It is not surprising that loneliness and depressive symptoms are associated with lower happiness. These are areas in which some residents require additional support. Educate employees on the signs and symptoms of depression and loneliness, as well as the process for alerting management (or appropriate personnel) if they believe a resident is in distress. In addition, provide residents

with access to mental health resources within the Life Plan Community as well as a list of external services.

- There's a strong connection between the body and mind. Continuing to support residents' physical wellness contributes to their health as well as their happiness. Interest is likely to be greatest for wellness programs that are both effective and enjoyable. People are more likely to continue with wellness behaviors that they enjoy.
- Supporting residents' social connections is a particularly high priority, given the physical distancing efforts that were established in many Life Plan Communities during the Coronavirus pandemic to protect the health and safety of the community. Communication technologies have played a large role in enabling people to connect with family and friends. However, access and ability to use these technologies may vary across residents.
- There is a core set of psychological resources, such as optimism and resilience, that appear to be beneficial in many aspects of life. People may naturally differ in their level of these resources; however, evidence suggests that these resources can also be learned (e.g., Treichler et al., 2020). Life Plan Communities can provide residents with programs, coaching, or other opportunities to enhance these skills.

CAVEATS

Participants self-selected into the Age Well Study, and their responses may not be representative of all residents of Life Plan Communities. For instance, residents who chose to enroll and to continue participating in this study may be more interested in wellness-related activities than those who chose not to participate. Similarly, participating Life Plan Communities may also be more likely than non-participating communities to prioritize wellness and offer greater wellness resources.

Although the study demonstrated associations between various factors and happiness, it should be noted that these relationships may not be causal in nature. For example, the study indicates that higher physical activity is associated with greater happiness among residents of Life Plan Communities; however, previous research suggests that the relationship between health and happiness may be bidirectional (e.g., Kushlev et al., 2020; Steptoe, 2019).

Finally, a common limitation of survey research is that the data are obtained through self-report measures rather than objective assessments, such as step counts or blood pressure ratings. The responses rely on the respondents' ability to accurately report their thoughts, feelings, and behaviors. Because of potential error in memory or tendency to inflate scores for positive behaviors and characteristics, data may contain inaccuracies that could affect the results of the analysis. In addition, the survey may not have captured the entirety of participants' experience with these factors and outcomes. Responses may be more strongly influenced by recent experiences.

FUTURE STUDY

The Age Well Study Year 1 results indicated that residents of Life Plan Communities reported better physical, social, intellectual, vocational, and emotional wellness compared to older adults residing in the community at large, but they were lower on spiritual wellness. The Year 2 report deepened our understanding of resident wellness by identifying a diverse set of factors associated with healthy behaviors and health outcomes. In Year 3, we examined another facet of resident wellness—factors associated with greater happiness and life satisfaction. Age Well Study surveys will be administered annually for the next two years with the ultimate goal of exploring changes in wellness outcomes over time among residents of Life Plan Communities compared to older adults in the community at large.

REFERENCES

Angner, E., Ghandhi, J., Purvis, K. W., Amante, D., & Allison, J. (2013). Daily functioning, health status, and happiness in older adults. *Journal of Happiness Studies, 14*(5), 1563-1574.

Angner, E., Ray, M. N., Saag, K. G., & Allison, J. J. (2009). Health and happiness among older adults: A community-based study. *Journal of Health Psychology, 14*(4), 503-512.

Baas, M., De Dreu, C. K. W., & Nijstad, B. A. (2008). A meta-analysis of 25 years of mood-creativity research: Hedonic tone, activation, or regulatory focus? *Psychological Bulletin, 134*(6), 779-806.

Baird, B. M., Lucas, R. E., & Donnellan, M. B. (2010). Life satisfaction across the lifespan: Findings from two nationally representative panel studies. *Social Indicators Research, 99*(2), 183-203.

Black, S. V., Cooper, R., Martin, K. R., Brage, S., Kuh, D., & Stafford, M. (2015). Physical activity and mental well-being in a cohort aged 60–64 years. *American Journal of Preventive Medicine, 49*(2), 172-180.

Blanchflower, D. G., Oswald, A. J., & Stewart-Brown, S. (2013). Is psychological well-being linked to the consumption of fruit and vegetables? *Social Indicators Research, 114*(3), 785-801.

Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical Psychology Review, 30*(7), 879-889.

Cowlishaw, S., Niele, S., Teshuva, K., Browning, C., & Kendig, H. (2013). Older adults' spirituality and life satisfaction: A longitudinal test of social support and sense of coherence as mediating mechanisms. *Ageing & Society, 33*(7), 1243-1262.

Cramm, J. M., van Dijk, H. M., & Nieboer, A. P. (2013). The importance of neighborhood social cohesion and social capital for the well being of older adults in the community. *The Gerontologist, 53*(1), 142-152.

de Quadros-Wander, S., McGillivray, J., & Broadbent, J. (2014). The influence of perceived control on subjective wellbeing in later life. *Social Indicators Research, 115*(3), 999-1010.

Diener, E., Diener, C., Choi, H., & Oishi, S. (2018). Revisiting "most people are happy" – and discovering when they are not. *Perspectives of Psychological Science, 13*, 166-170.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49*, 71-75.

Diener, E., Kanazawa, S., Suh, E. M., & Oishi, S. (2015). Why people are in a generally good mood. *Personality and Social Psychology Review, 19*(3), 235-256.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*, 218–226.

Friedman, E. M., Ruini, C., Foy, C. R., Jaros, L., Sampson, H., & Ryff, C. D. (2017). Lighten UP! A community-based group intervention to promote psychological well-being in older adults. *Aging and Mental Health, 21*(2), 199-205.

Grant, N., Wardle, J., & Steptoe, A. (2009). The relationship between life satisfaction and health behavior: A cross-cultural analysis of young adults. *International Journal of Behavioral Medicine, 16*(3), 259-268.

Hausknecht, S., Low, L.-F., O'Loughlin, K., McNab, J., & Clemson, L. (2019). Older adults' self-perceptions of aging and being older: A scoping review. *The Gerontologist*. https://doi.org/10.1093/geront/gnz153

Helliwell, J. F., Huang, H., Norton, M. B., & Wang, S. (2019). Happiness at different ages: The social context matters. In M. Rojas (Eds.), *The economics of happiness* (pp. 455-481). Springer, Cham.

Inglehart, R. (2002). Gender, aging, and subjective well-being. *International Journal of Comparative Sociology, 43*(3-5), 391-408.

Irving, J. (2017). Aging with purpose: A review of the literature [Conference presentation abstract]. *Innovation in Aging, 1*(Suppl 1), 1181. https://doi.org/10.1093/geroni/igx004.4303

Jebb, A. T., Tay, L., Diener, E., & Oishi, S. (2018). Happiness, income satiation and turning points around the world [Letter to the editor]. *Nature Human Behavior, 2*, 33–38.

Kushlev, K., Heintzelman, S. J., Lutes, L. D., Wirtz, D., Kanippayoor, J. M., Leitner, D., & Diener, E. (2020). Does happiness improve health? Evidence from a randomized control trial. *Psychological Science, 31*(7), 807-821.

Lawler-Row, K. A., & Elliott, J. (2009). The role of religious activity and spirituality in the health and well-being of older adults. *Journal of Health Psychology, 14*(1), 43-52.

Lim, C. (2016). Religion, time use, and affective well-being. *Sociological Science, 3*, 685-709.

Lim, C., & Putnam, R. D. (2010). Religion, social networks, and life satisfaction. *American Sociological Review, 75*(6), 914-933.

Lombardo, P., Jones, W., Wang, L., Shen, X., & Goldner, E. M. (2018). The fundamental association between mental health and life satisfaction: Results from successive waves of a Canadian national survey. *BMC Public Health, 18*, Article 342. https://doi.org/10.1186/s12889-018-5235-x

Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, *46*(2), 137-155.

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology, 9*(2), 111-131.

MacLeod, S., Musich, S., Hawkins, K., Alsgaard, K., & Wicker, E. R. (2016). The impact of resilience among older adults. *Geriatric Nursing, 37*(4), 266-272.

Maher, J. P., & Conroy, D. E. (2017). Daily life satisfaction in older adults as a function of (in) activity. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 72*(4), 593-602.

Maher, J. P., Pincus, A. L., Ram, N., & Conroy, D. E. (2015). Daily physical activity and life satisfaction across adulthood. *Developmental Psychology, 51*(10), 1407-1419.

Mauss, I. B., Tamir, M., Anderson, C. L., & Savino, N. S. (2011). Can seeking happiness make people happy? Paradoxical effects of valuing happiness. *Emotion, 11*(4), 807-815.

Myers, D. G., & Diener, E. (2018). The scientific pursuit of happiness. *Perspectives on Psychological Science, 13*(2), 218-225.

Myers, D. G. (2008). Religion and human flourishing. In M. Eid & R. J. Larsen (Eds.), *The science of subjective well-being* (pp. 323-343). The Guilford Press.

Otake, K., Shimai, S., Tanaka-Matsumi, J., Otsui, K., & Fredrickson, B. L. (2006). Happy people become happier through counting kindnesses intervention. *Journal of Happiness Studies, 7*(3), 361-375.

Pierewan, A. C., & Tampubolon, G. (2015). Happiness and health in Europe: A multivariate multilevel model. *Applied Research in Quality of Life, 10*(2), 237-252.

Pinquart, M., & Sörensen, S. (2001). Gender differences in self-concept and psychological well-being in old age: A meta-analysis. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 56*(4), P195-P213.

Purol, M. F., Keller, V. N., Oh, J., Chopik, W. J., & Lucas, R. E. (2020). Loved and lost or never loved at all? Lifelong marital histories and their links with subjective well-being. *The Journal of Positive Psychology.* Advance online publication. https://doi.org/10.1080/17439760.2020.1791946

Puvill, T., Lindenberg, J., de Craen, A. J., Slaets, J. P., & Westendorp, R. G. (2016). Impact of physical and mental health on life satisfaction in old age: A population based observational study. *BMC Geriatrics, 16*, Article 194. https://doi.org/10.1186/s12877-016-0365-4

Richards, J., Jiang, X., Kelly, P., Chau, J., Bauman, A., & Ding, D. (2015). Don't worry, be happy: Cross-sectional associations between physical activity and happiness in 15 European countries. *BMC Public Health, 15*, Article 53. https://doi.org/10.1186/s12889-015-1391-4

Rosella, L. C., Fu, L., Buajitti, E., & Goel, V. (2019). Death and chronic disease risk associated with poor life satisfaction: A population-based cohort study. *American Journal of Epidemiology, 188*(2), 323-331.

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*, 410-421.

Sheldon, K. M., Corcoran, M., & Prentice, M. (2019). Pursuing eudaimonic functioning versus pursuing hedonic well-being: The first goal succeeds in its aim, whereas the second does not. *Journal of Happiness Studies, 20*, 919-933.

Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin, 13*4(1), 138–161.

Steptoe, A. (2019). Happiness and health. *Annual Review of Public Health, 40*, 339-359.

Steverink, N., Westerhof, G. J., Bode, C., & Dittmann-Kohli, F. (2001). The personal experience of aging, individual resources, and subjective well-being. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 56*(6), P364-P373.

Treichler, E. B. H., Glorioso, D., Lee, E. E., Wu, T., Tu, X. M., Daly, R., O'Brien, C., Smith, J. L., & Jeste, D. V. (2020). A pragmatic trial of a group intervention to increase resilience in residents of senior housing communities. *International Psychogeriatrics, 32*, 173-182.

Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology, 86*, 320–333.

VanderWeele, T. J., Hawkley, L. C., & Cacioppo, J. T. (2012). On the reciprocal association between loneliness and subjective well-being. *American Journal of Epidemiology, 176*(9), 777-784.

van Hemert, D. A., van de Vijver, F. J., & Poortinga, Y. H. (2002). The Beck Depression Inventory as a measure of subjective well-being: A cross-national study. *Journal of Happiness Studies, 3*(3), 257-286.

Wikman A., Wardle J., & Steptoe A. (2011). Quality of life and affective well-being in middle-aged and older people with chronic medical illnesses: A cross-sectional population based study. *PLoS One, 6*(4), e18952.

Yamashita, T., Bardo, A. R., & Liu, D. (2019). Experienced subjective well-being during physically active and passive leisure time activities among adults aged 65 years and older. *The Gerontologist, 59*(4), 718-726.

APPENDIX A – STUDY MEASURES

HAPPINESS AND LIFE SATISFACTION

HAPPINESS: Measures the global happiness of an individual (Subjective Happiness Scale; Lyubomirsky & Lepper, 1999). Happiness was assessed using four items in which participants selected the point on the scale that describes themselves (e.g., 1 = Not a very happy person, 7 = A very happy person). A composite score of happiness, ranging from 1 to 7, was calculated from the average of all four items.

LIFE SATISFACTION: An overall evaluation of one's life (Diener, Emmons, Larsen, & Griffin, 1985). Participants rated the extent to which they agreed with five items (1 = Strongly disagree, 7 = Strongly agree). Scores on the five items were averaged together to form a composite score of life satisfaction, which could range from 1 to 7. [Included from HRS]

PERSONALITY CHARACTERISTICS

PERSONALITY: Measures the "Big 5" dimensions of personality (Lachman & Weaver, 1997; IPIP, http://ipip.ori.org/). Participants rated the extent to which 31 personality traits describe themselves (1 = Not at all, 4 = A lot). Four to ten items were averaged together for each dimension of personality to produce composite scores (ranging from 1 to 4) for neuroticism, extroversion, openness to experience, agreeableness, and conscientiousness. [Included from HRS]

PSYCHOLOGICAL RESOURCES

OPTIMISM: Measures the extent to which people expect positive outcomes in the future (Scheier, Carver, & Bridges, 1994). Participants rated their level of agreement with six items (1 = Strongly disagree, 6 = Strongly agree). A composite score for optimism was calculated by averaging the three items associated with each scale. Composite scores could range from 1 to 6. [Included from HRS]

PERCEIVED CONTROL: Measures participants' sense of control or agency over their own lives and activities (Lachman & Weaver, 1998; Pearlin & Schooler, 1978). Participants rated the extent to which they agreed or disagreed with five statements regarding their confidence in controlling their

own lives (1 = Strongly disagree, 6 = Strongly agree). Responses to the five items were averaged together for a composite score that could range from 1 to 6. [Included from HRS]

PERCEPTIONS OF AGING: Measures attitudes toward aging (Kotter-Grühn, Kleinspehn-Ammerlahn, Gerstorf, & Smith, 2009; Lawton, 1975; Liang & Bollen, 1983). Participants rated the extent to which they agreed or disagreed with eight statements (1 = Strongly disagree, 6 = Strongly agree). Items were averaged together for a composite score that could range from 1 to 6. [Included from HRS]

PURPOSE IN LIFE: Measures an individual's feelings of worth and accomplishment in life (Ryff, 1989; 1995). Participants rated their agreement with seven statements regarding their feelings of purpose and sense of direction in life (1 = Strongly disagree, 6 = Strongly agree). Responses to each item were averaged together for a composite score that could range from 1 to 6. [Included from HRS]

RESILIENCE: Measures an individual's ability to "bounce back" or recover from stressful events. It was assessed using the six-item Brief Resilience Scale (Smith et al., 2008). Participants rated the extent to which they agreed or disagreed with each statement (1 = Strongly disagree, 7 = Strongly agree), and items were averaged together for a composite score that could range from 1 to 7.

SOCIAL AND COMMUNAL FACTORS

COMMUNITY BELONGING: Adapted from a measure of neighborhood belonging, measures participants' sense of belonging as a member of their senior living community (Buckner, 1988; Fone, Dunstan, Lloyd, Williams, Watkins, & Palmer, 2007; Robinson & Wilkinson, 1995). Participants rated the extent to which they agreed with six statements about their feelings toward the senior living community (1 = Strongly disagree, 6 = Strongly agree). Responses were averaged together for a composite score that could range from 1 to 6.

LONELINESS: Measures feelings of isolation and lack of social contact/connections (Hughes, Waite, Hawkley, & Cacioppo, 2004). Administered as an 11-item scale that asks participants how often they feel lonely or isolated from others (1 = Hardly ever or never, 2 = Some of the time, 3 = Often). Item responses were averaged together for a composite score that could range from 1 to 3. [Included from HRS]

RELIGIOSITY: Measures religious beliefs and values separate from religious affiliation (Levin, 2003). Participants rated the extent to which they agree/disagree with four statements regarding their religious beliefs (1 = Strongly disagree, 6 = Strongly agree). Responses to the items were averaged together for a composite score that could range from 1 to 6. [Included from HRS]

SOCIAL COHESION: Adapted from a measure of neighborhood cohesion, measures an individual's perceptions of cohesion and closeness with others living in their senior living community, focusing more on social relationships than on being part of the community overall (Buckner, 1988; Fone et al., 2007; Robinson & Wilkinson, 1995). Administered as an eight-item scale that asks participants to rate the extent to which they agree/disagree with statements about their relationships with others within the senior living community (1 = Strongly disagree, 6 = Strongly agree). Responses to each item were averaged together for a composite score that could range from 1 to 6.

SPIRITUALITY: Administered as a single item, participants were asked "To what extent do you consider yourself a spiritual person?" (1 = Not spiritual at all, 2 = Slightly spiritual, 3 = Moderately spiritual, 4 = Very spiritual). [Included from HRS]

HEALTH

HEALTH OF OVERALL DIET: Participants were asked to rate how healthy their diet is overall using a single-item measure (1 = Poor, 5 = Excellent).

PHYSICAL ACTIVITY: Participants were asked three questions assessing how often they engage in vigorous, moderate, or mildly energetic activities (1 = Hardly ever or never, 2 = One to three times a month, 3 = Once a week, 4 = More than once a week, 5 = Every day). Scores on the three items were averaged together for an overall physical activity score, ranging from 1 to 5. [Included from HRS]

SELF-REPORTED HEALTH: Participants rated their own health status using a single-item measure (1 = Poor, 2 = Fair, 3 = Good, 4 = Very good, 5 = Excellent). [Included from HRS]

SATISFACTION WITH LIFE DOMAINS

SATISFACTION WITH LIFE DOMAINS: Measures the level of satisfaction with various aspects of one's life (Campbell, Converse, & Rodgers, 1976). Participants rated their level of satisfaction with six items (home, city/town, daily life, family life, financial situation, and health) from 1 = Not at all satisfied to 5 = Completely satisfied. [included from HRS]

SATISFACTION WITH SENIOR LIVING COMMUNITY

SATISFACTION WITH SENIOR LIVING COMMUNITY: One item that asked "how satisfied are you with your senior living community?" on a scale from 1 (not at all satisfied) to 5 (completely satisfied).

OTHER

CHRONIC HEALTH CONDITIONS: Participants indicated (Yes/No) if a doctor has ever informed them that they have one of the chronic health conditions listed (high blood pressure; diabetes or high blood sugar; heart attack, coronary heart disease, angina, congestive heart failure, or other health problems; stroke; emotional, nervous, or other psychiatric problems; arthritis or rheumatism; memory problems). An overall score was calculated by adding together the number of chronic conditions for each participant, and scores could range from 0 to 7. [Included from HRS]

DEPRESSION: A measure of depressive symptoms experienced by older adults (Lewinsohn, Seeley, Roberts, & Allen, 1997). Participants completed an eight-item version of the Center for Epidemiological Studies-Depression scale (CES-D; Radloff, 1977). Participants indicated (Yes/No) if they experienced each depressive symptom "much of the time" during the past week. The number of depressive symptoms experienced were added together, and composite scores could range from 0 to 8. [Included from HRS]

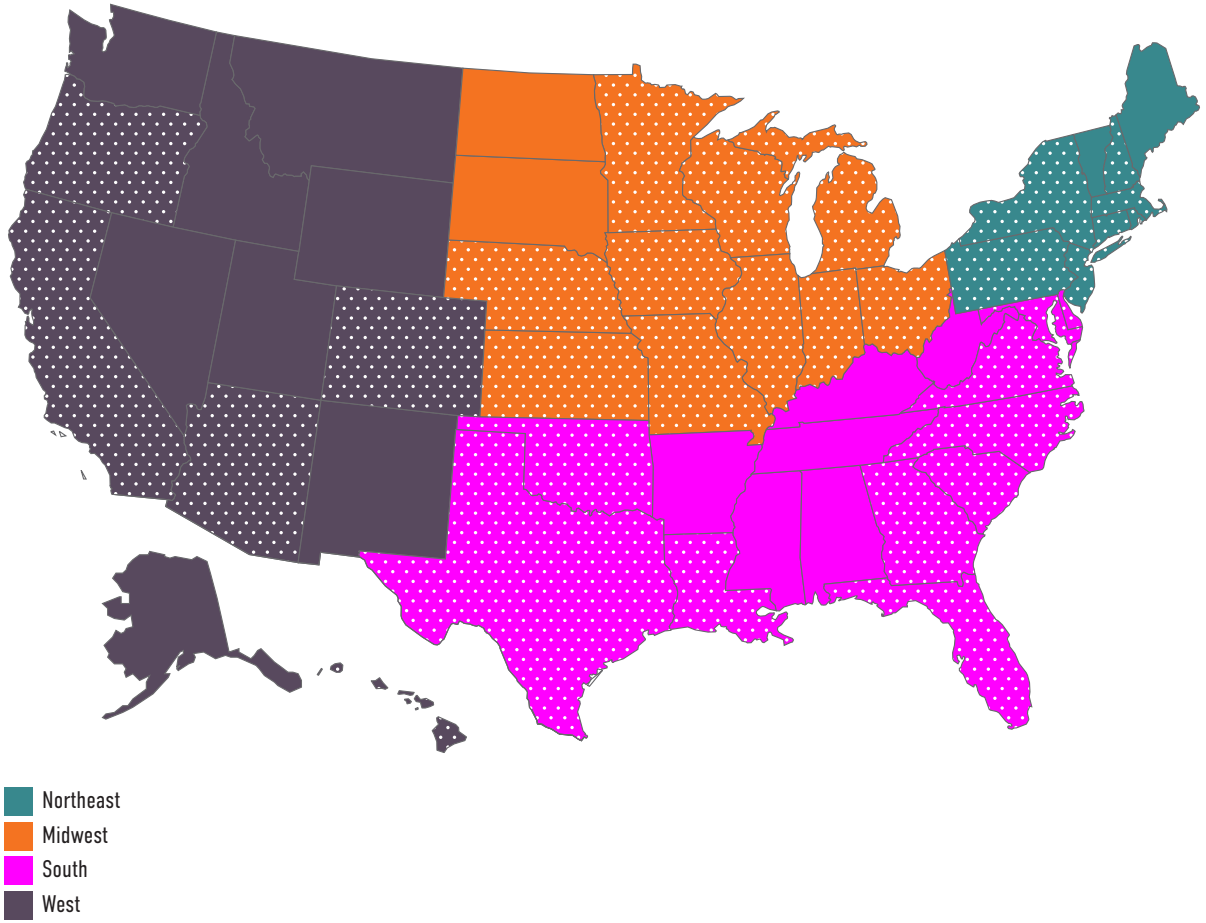
Table 8. Descriptive Statistics for Select Measures

	Average	Range
Happiness	5.8	1 - 7
Life satisfaction	5.9	1 - 7
Personality		
Openness to experience	3.1	1 - 4
Conscientiousness	3.4	1 - 4

	Average	Range
Extroversion	3.3	1 - 4
Agreeableness	3.5	1 - 4
Neuroticism	1.9	1 - 4
Psychological Resources		
Optimism	4.8	1 - 6
Perceived control	4.6	1 - 6
Purpose in life	4.7	1 - 6
Perceptions of aging	3.7	1 - 6
Resilience	5.5	1 - 7
Social/Communal		
Loneliness	1.4	1 - 3
Social cohesion	4.0	1 - 5
Community belonging	4.5	1 - 5
Religiosity	4.3	1 - 6
Spirituality	2.8	1 - 4
Health/behaviors		
Self-reported health	3.5	1 - 5
Physical activity	3.4	1 - 5
Healthy diet	3.8	1 - 5
Life Domain Satisfaction		
Home or apartment	4.4	1 - 5
City or town	4.3	1 - 5
Financial situation	4.2	1 - 5
Family life	4.1	1 - 5
Daily life and leisure	4.2	1 - 5
Health	3.7	1 - 5
Satisfaction with Senior Living Community	4.3	1 - 5
Other		
Age	84.3	58 - 103
Chronic conditions	1.8	0 - 7
Depressive symptoms	1.2	0 - 8
Length of residence (months)	81.9	8 - 447

APPENDIX B – MAP OF GEOGRAPHIC REGIONS

Organizations and residents were categorized based on the US geographic region in which they are located. Regions are based on HRS definitions. The figure below displays the states included in Northeast, Midwest, South, and West regions. Life Plan Communities that are participating in the Age Well Study are located in the states marked with dots.



Dots indicate states where participating Life Plan Communities are located.

Mather Institute is a respected resource for research and information about wellness, aging, trends in senior living, and successful aging service innovations. Whether conducting new research or interpreting the latest studies for professionals who serve older adults, the Institute is dedicated to supporting ways for older adults to Age Well.

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