

The population of Americans aged 65 and older –numbered 50.9 million in 2017 (U.S. Census Bureau, 2019a) and is projected to more than double to 98 million in 2060. By 2040, there will be about 82.3 million older persons, over twice their number in 2000 (U.S. Administration on Community Living [ACLA] and Administration on Aging [AOA], 2018).

The older population itself is increasingly older as well. Persons reaching age 65 have an average life expectancy of an additional 19.4 years; a child born in 2016 could expect to live 78.6 years, approximately 30 years longer than a child born in 1900. The 85+ population is projected to grow from 6.9 million in 2016 to 14.6 million in 2040. These significant changes are not only relevant to those that are 65 years of age and older, but also to the remainder of society (ACLA and AOA, 2018).

People 65 years and older make up 15.6% of the United States population, or one in every seven people; in Texas, they make up 12.3% of the population (U.S. Census Bureau, 2019a). The following table shows the percentage of persons per county in the San Antonio area that are 65 and older:

| COUNTY                      | % OF POPULATION<br>65 AND OLDER IN 2017 |
|-----------------------------|---|
| Bandera                     | 26.5%                                   |
| Bexar                       | 11.8%                                   |
| Comal                       | 18.1%                                   |
| Kendall                     | 18.8%                                   |
| (U.S. Census Bureau, 2019a) |   |

This inevitable shift to an older population has a number of implications, and indicates a wider

spectrum of change already ongoing in American culture such as:

- changes in the perception of aging
- the overall quality of life for the elderly
- the practice of elder care
- the role of medicine for the elderly

With healthcare and technology in a constant state of advancement, the elderly population in the U.S. will continue to grow at high rates. “The older population in Texas grew at a faster rate than in the nation from 2000 to 2014. Among all states, Texas has the third largest elderly population” (Texas Demographic Center, 2016, p.1).

Additionally, the elder population itself is aging. In 2016 the 65-74 year old population was over 13 times larger than in 1900, the 75-84 range was 18 times larger and the 85 and older category was 52 times larger. There were also 81,896 persons aged 100 or older in 2016, more than twice the 32,194 from 1980 (ACLA and AOA, 2018).

#### THE AGING PROCESS

Aging is a process of gradual maturation. Senescence is the biological process by which the capacity for cell division and the capacity for growth and function are lost over time, ultimately leading to death (Goldsmith, 2014).

Changes that occur during aging can affect individuals differently – some may develop diseases and impairments commonly associated with aging and others may not.

During the aging process a number of physiological changes begin to take place that

not only affect appearance but also how the body functions and responds to daily living. Overall, the changes in most elderly involve a slowing down of all organ systems due to a decline in cellular activity (National Institute on Aging [NIA], n.d.). Normal physiological changes include:

**Body Shape-** Body fat increases up to 33% toward the center of the body (including the abdominal organs) as muscle and bone mass decreases. Changes in bones, muscles, and joints result in the tendency to become shorter, typically 1 cm (0.4 inches) for every 10 years after age 40. After turning 70, height loss occurs faster and an individual may lose a total of 1 to 3 inches in height (National Institutes of Health [NIH], 2019a).

**Skin-** Among the most visible signs of aging are wrinkles, sagging skin and graying hair. The skin gets thinner and more fragile and the layer of fat beneath the skin also thins. The result is a proneness to skin injury, and more than 90% of the elderly population has some kind of skin disorder (NIH, 2019e).

**Senses-** Taste, smell, touch, hearing, and vision all degrade with age. “Nearly 25 percent of those aged 65 to 74 and 50 percent of those who are 75 and older have disabling hearing loss” (National Institute on Deafness and other Communication Disorders [NIDCD], 2016b).

While almost all adults over 60 experience some visual loss, 8.4% of adults age 65+ in the state of Texas reported blindness or severe difficulty seeing in 2016 (Centers for Disease Control and Prevention [CDC], n.d.).

Problems with taste also increase with age. A recent study showed that more than one in four (27%) adults aged 80 and older reported having had a problem with their sense of taste, including changes in taste sensation over time (NIDCD, 2016a).

Taste bud decreases can result in a lack of interest in eating, while the diminishing sense of smell can lead to less awareness of personal hygiene. Touch sensation changes with age, which increases risk of frostbite, hypothermia, and burns. Reduced ability to perceive where the body is in relation to the floor increases the risk of falling (NIH, 2019d).

**Nervous System-** Normal changes include loss of nerve cells and weight in the brain and spinal cord as well as waste product build-up that causes abnormal structures to form. Normal decline of mental functions includes slowing of thought, memory and thinking (NIH, 2019c).

**Cardiovascular System-** Reduced blood flow through the body due to normal atrophy of the heart muscle, calcification of the heart valves, loss of elasticity in artery walls (arteriosclerosis) and intra-artery deposits (atherosclerosis) leads to a slower rate of healing, lower response to stress and increased risk of drug toxicity in addition to risk of hypertension, stroke, heart attack, or congestive heart failure (NIA, 2018).

**Skeletal System-** Loss of bone calcium occurs in both men and women and can result in osteoporosis with increased risk of fracture. Arthritis is the degenerative inflammation of the joints, and is the most common chronic condition within the elderly population. Osteoarthritis (joint cartilage wear) is the most common type of arthritis, and can inhibit mobility and daily activities (NIH, 2019b).

**Muscular System-** Loss of muscle tone and strength often manifests as a reduced ability to breathe deeply and/or reduced gastrointestinal activity, which can lead to constipation and bladder incontinence, particularly in women (Besdine, 2017).

**Digestive System-** While less affected by aging than other organ systems, certain digestive problems are more likely to develop in older adults, including conditions related to a decrease in muscular strength and elasticity: gastroesophageal reflux (GERD); difficulty swallowing; and constipation. Lactose intolerance results from decrease in enzyme levels and excessive growth of bacteria leads to pain, bloating, and weight loss as well as decreased absorption of vitamin B12, iron, and calcium (Ruiz, 2017).

**Endocrine System-** Hormone levels and activity decrease leading to decreased muscle mass and increased risk of dehydration and type 2 diabetes (Besdine, 2017).

**PHYSICAL HEALTH**

In its report on aging and health, the Centers for Disease Control and Prevention (CDC) (2016a) noted that while Americans could expect a longer life, they could also expect to develop any one of a number of chronic diseases and conditions associated with aging.

Approximately three quarters of older adults have multiple chronic conditions (CDC, 2018a). Although the mortality rates from heart disease, stroke, and cancer have been declining for several years, the incidence of those diseases is directly proportionate to age. The following table shows the percentage of selected chronic diseases for various age groups (most recent data available):

| PERCENT OF POPULATION WITH CHRONIC DISEASE (2017) |           |           |         |
|---|-----------|-----------|---------|
| Chronic Disease                                   | Age 45-64 | Age 65-74 | Age 75+ |
| Hypertension                                      | 34.8      | 53.7      | 59.8    |
| Arthritis   | 30.3      | 48.4      | 55.4    |
| Hearing Trouble                                   | 17.2      | 27.3      | 45.1    |
| Heart Disease                                     | 6.4       | 14.0      | 23.8    |
| Cancer  | 9.9       | 23.0      | 29.2    |
| Diabetes  | 13.2      | 20.1      | 19.8    |
| Vision Trouble                                    | 13.1      | 13.4      | 18.9    |
| Stroke  | 3.3       | 6.4       | 12.0    |
| Kidney Disease                                    | 2.0       | 4.7       | 6.8     |
| Emphysema   | 1.7       | 3.1       | 4.6     |

(CDC, 2018b)

The difference between the 45-64 age group and the elderly age groups signifies the higher prevalence of chronic disease that occurs within older people.

In general, the percentage of adults with good health declined with age. Those with higher education reported better health as did married adults and those living in a Metropolitan Statistical Area. Among adults aged 65 and over, 54.9% of those who had Medicare and Medicaid had fair or poor health compared with 22.4% of those with only Medicare and 17% of those with private health insurance (CDC, 2018b).

*Nutrition*

As people age, food insecurity and hunger increase health risks. Research has demonstrated that seniors with low food

security experienced more depression, lower quality of life, and reduced physical performance. In fact, the higher the level of food insecurity, the more issues with general health/functioning, pain, and mental health. Seniors are also more likely to have nutrient deficiencies and obesity (National Council on Aging [NCOA], n.d.).

Reports show that the food insecurity rate for all senior households was 7.8% in 2016, up from 5.5% in 2001. “At the same time, the percentage of seniors facing the threat of hunger has more than doubled” (NCOA, n.d.).

One study found that a large portion of older adults do not get adequate amounts of nutrition from their diet and even 20% to 50% of those who use nutritional supplements still fell significantly short of the recommended amounts of folate, vitamin E, and magnesium (Sebastian, Cleveland, Goldman, Moshfegh, 2007). Vitamin D deficiency is the highest in the elderly, especially in those who have limited sun exposure (Denio, 2012).

**MENTAL HEALTH**

For at least the last decade, mental health has been recognized to be as important as physical health to the well-being of older Americans. It has been estimated that “over 20% of adults aged 60 and over suffer from a mental or neurological disorder” and “6.6% of all disability among over 60s is attributed to neurological and mental disorders” (World Health Organization [WHO], 2017).

*Social Isolation*

People need people. “Adequate social and emotional support is associated with reduced risk of mental illness, physical illness, and mortality” (CDC, 2008, p. 3). Additionally, “various factors, such as disability and major life events (e.g., loss of spouse) can put older adults at risk of experiencing social isolation” (Menec, 2016).

Social support includes emotional support such as sharing problems or venting emotions as well as soliciting advice and guidance. Other aspects include physical assistance such as transportation for shopping or doctor visits or even help with household chores. Seniors who

live alone are more likely to succumb to depression as a result of social isolation.

According to America’s Health Rankings (2018) risk of social isolation includes six factors related to seniors’ health and well-being:

- Divorced, separated, or widowed
- Never married
- Poverty
- Disability
- Independent living difficulty
- Living alone

| Percentage Population (65+) At Risk of Social Isolation in 2017 |          |        |
|---|----------|--------|
| Risk Factor   | U.S. (%) | TX (%) |
| <b>Households with seniors 65+</b>                              | 28.1     | 23.7   |
| <b>Seniors 65+ Living Alone</b>                                 | 37.5     | 34.0   |
| <b>Living in Poverty</b>  | 9.3      |        |
| <b>Living with a Disability</b>                                 |          |        |
| Ages 65-74  | 25.4     | 29.1   |
| Ages 75+  | 49.7     | 53.6   |
| <b>Marital Status</b>   |          |        |
| Divorced  |          |        |
| Males 65+   | 11.5     | 11.2   |
| Females 65+   | 14.7     | 15.2   |
| Separated   |          |        |
| Males 65+   | 1.3      | 1.5    |
| Females 65+   | 1.2      | 1.4    |
| Widowed   |          |        |
| Males 65+   | 11.7     | 11.7   |
| Females 65+   | 35.2     | 35.7   |
| Never Married   |          |        |
| Males 65+   | 5.4      | 3.9    |
| Females 65+   | 5.3      | 4.1    |
| <b>Independent Living Difficulty</b>                            |          |        |
| Ages 65-74  | 7.6      | 9.0    |
| Ages 75+  | 24.9     | 27.4   |
| (U.S. Census Bureau, 2019a,b,c,&d)                              |          |        |

The table at the end of this brief shows the most recently available Household Characteristics of seniors 65 and over in the U.S., Texas, and the KCF counties of interest.

*Depression*

Late-onset depression is common in the elderly but only about 10% of depressed elderly receive treatment. Symptoms of depression include depressed mood, diminished interest or

pleasure in activities, significant weight loss or gain, change in sleep patterns, fatigue or loss of energy, diminished ability to think or concentrate, or indecisiveness. Unfortunately, “depression in the elderly is also frequently confused with the effects of multiple illnesses and the medicines used to treat them” (Goldberg, 2018).

Many risk factors for depression exist at all age levels but some appear to be unique to aging, such as:

- Stroke, heart disease, diabetes, cancer, thyroid disorders, and chronic pain
- Parkinson’s and Alzheimer’s disease
- Side effects of medications
- Psychological risk factors such as loneliness, impaired social supports, bereavement, and loss of independence

(Berger, 2016; Goldberg, 2018)

In addition to the obvious decline in lifestyle, if left untreated, depression can adversely affect the course of treatment for other chronic diseases. “Older adults with depression may have higher health care costs due to a higher likelihood of multiple comorbid conditions, higher medication use and longer hospital stays” (America’s Health Rankings, 2018, p.98).

Despite the fact that depression is more often diagnosed in women, the highest suicide rate for the elderly is in men. Among men aged 65-74 years the suicide rate in 2016 was 25.9 per 100,000, compared to the female suicide rate of 6.2 per 100,000 in the same age range. Moreover, the suicide rate for men continued to increase with age while the rate for women decreased with age (CDC, 2017):

| Deaths by Suicide (2016)<br>(Rate per 100,000) |      |        |
|--|------|--------|
| Age  | Male | Female |
| 65-74  | 25.9 | 6.2    |
| 75-84  | 36.0 | 4.5    |
| 85+  | 48.0 | 3.5    |
| (CDC, 2017)                                    |      |        |

**OTHER ISSUES AFFECTING THE ELDERLY**

*Elder Abuse*

Elder abuse generally refers to intentional actions that cause harm or create a serious risk

of harm (whether or not harm is intended) to a vulnerable elder by a caregiver or other person who stands in a trust relationship to the elder whether in the home or an institutional setting (National Center on Elder Abuse [NCEA], n.d.). Elder abuse laws vary from state to state, but most abuse cases fall under the following categories:

- Physical abuse
  - Emotional or psychological abuse
  - Financial or material exploitation
  - Neglect or abandonment by caregivers
  - Sexual Abuse
  - Self-neglect
- (NCEA, n.d.)

Many factors contribute to elder abuse by the caregiver including:

- Using drugs or alcohol, especially drinking heavily
  - High levels of stress and low or ineffective coping resources
  - Lack of social support
  - High emotional or financial dependence on the older adult
  - Lack of training in taking care of older adult
  - Depression
- (CDC, 2016b)

In 2018, Texas Adult Protective Services completed 84,439 investigations of abuse, neglect, or exploitation involving adults living at home, 7,657 of which were in the KCF counties of interest. Of the total, 49,284 were confirmed (4,385 in the KCF counties) (Texas Department of Family and Protective Services [DFPS], 2019).

*Financial Independence*

With a longer lifespan comes the challenge of maintaining financial independence. Many seniors struggle to make ends meet. The average income in 2017 for males (living alone) over 65 was \$44,612 and for females (living alone) was \$31,745 (U.S. Census Bureau, n.d.a). Major sources of income for seniors in 2017 were reported as social security (84%), income from assets (66%), retirement income (39%) and earnings (24%) (U.S. Census Bureau, n.d.b).

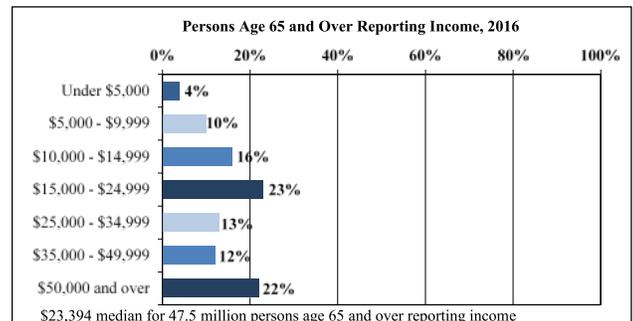
Social security benefits in 2017 extended to 67 million people (55% women) from programs administered by the Social Security Administration (SSA). Most (59 million)

received old-age, survivors, and disability insurance benefits only. 5 million received Supplemental Security Income (SSI) only, and 3 million received payments from both programs (SSA, 2018, p.32).

“Over 4.6 million people age 65 and over (9.3%) were below the poverty level in 2016. Another 2.4 million or 4.9% of older adults were classified as "near-poor" (income between the poverty level and 125% of this level)” (ADCL and AOA, 2018, p.10). Using the U.S. Census Bureau’s Supplemental Poverty Measure (SPM) the poverty level for persons 65 and older was 14.5%.

Older women had a higher poverty rate (10.6%) than older men (7.6%). Older persons living alone were much more likely to be poor (17.3%) than were older persons living with families (5.3%). The highest poverty rates were experienced among older Hispanic women (39.5%) who lived alone (ADCL and AOA, 2018, p.10).

The following chart represents income reported by seniors in 2016 (ADCL and AOA, 2018, p.9):



*Living Arrangements*

The majority (59%) of persons aged 65 and older (16 million or 72% of older men, and 12.9 million or 48% of older women) lived with their spouse in 2017. Approximately 28% (4.5 million or 20% of older men, and 9.3 million or 34% of older women) lived alone (ADCL and AOA, 2018, p.5).

A relatively small number (1.5 million or 3.1%) of the 65+ population in 2016 lived in institutional settings. Among those who did, 1.2 million lived in nursing homes. However, the percentage increases dramatically with age, ranging (in 2016) from 1% for persons 65-74 years to 3% for persons 75-84 years and 9% for persons 85+ (ADCL and AOA, 2018, p.5).

Although the majority of elderly persons do not require long-term assistance at any given time, most will require assistance at some point in their lives. Independent living programs are an alternative to nursing home placement for many seniors. They are designed to enable seniors to live and thrive in their own homes with the assistance of a network of supportive services. Often referred to as *Retirement Communities* or *Senior Apartments*, independent living communities are generally designed with housing that is friendlier to older adults (easier to access and navigate) and many include more support and recreational options than are readily available to seniors in regular communities (Robinson, Saisan & White, 2018).

Assisted living facilities offer alternatives for seniors that cannot live on their own, but do not need intensive medical or nursing care. While varying in services provided, meals, housing, personal care/support, social activities, security, transportation, and health care management are usually present (Robinson, Saisan & White, 2018).

Nursing homes are the most recognized option of facilities that provide a wide range of long-term care services designed to assist the elderly. Meals, medical, and personal care are all provided, and many provide short-term stays following a hospitalization (Robinson, Saisan & White, 2018).

Continuing Care Retirement Communities (CCRCs) are facilities that offer more than one kind of housing and different levels of care all in the same place to meet the changing needs of the elderly. In the same community, there may be individual homes or apartments for residents who still live on their own, an assisted living facility for people who need some help with daily care, and a nursing home for those who require higher levels of care (Robinson, Saisan & White, 2018).

In 2016, 93% of persons age 65+ were covered by Medicare, which covers mainly acute care services but requires beneficiaries to pay part of the cost, leaving about half of health spending to be covered by other sources (ADCL and AOA, 2018, p.13).

### *Caregivers for the elderly*

There were approximately 34.2 million individuals caring for someone over the age of 50 in 2015. Caregivers include family, friends and neighbors, with an adult child being the person most likely to be providing care (National Alliance for Caregiving [NAC], 2015).

Caregivers provide assistance to those who need aid in some way. In 2017, “16.1 million family and other unpaid caregivers of people with Alzheimer’s or other dementias provided an estimated 18.4 billion hours of unpaid car” (Alzheimer’s Association, 2018, p.34).

More women than men are caregivers (60% women) and the average age of a female caregiver is 50.3 years old. Most caregivers (59%) are employed and work either full or part-time. Many caregivers (60%) report having to decrease hours, rearrange their schedule, or take unpaid leave in order to meet their caregiving obligations. 17% of caregivers reported fair or poor health as compared to 10% of the general population reporting the same conditions (NAC, 2015).

Agencies that provide support to Texas caregivers include the National Family Caregiver Support Program, Texas Department of Aging and Disability Services (DADS), and Area Agencies on Aging. Working in partnership, these agencies provide five basic services for family caregivers:

- Information about available services
- Assistance in gaining access to supportive services
- Individual counseling, support groups, and caregiver training to assist caregivers in making decisions and solving problems relating to their roles
- Respite services to temporarily relieve caregivers of their responsibilities
- Supplemental services, on a limited basis, to complement the care provided by caregivers

(Administration for Community Living [ACL], 2019; Texas Health and Human Services [HHS], n.d.)

Several centralized sources exist to help seniors find the services that are available:

➤ *The Eldercare Locator* is a free national service administered by the U.S. Administration on Aging (AOA) and the National Association of Area Agencies on Aging that can help seniors and their families locate local agencies in every community within the U.S. (AOA, n.d.)

➤ *Ageing and Disability Resource Center* is a service of Texas Health and Human Services (HHS) to locate services in Texas (HHS, n.d.)

➤ *Alamo Area Council of Governments (2019)* provides a variety of services to support older adults through the Area Agencies on Aging Resources.

| Household Characteristics, 2017        |               |            |            |            |           |            |         |            |         |            |         |            |
|--|---------------|------------|------------|------------|-----------|------------|---------|------------|---------|------------|---------|------------|
|  | United States |            | Texas      |            | Bexar     |            | Bandera |            | Comal   |            | Kendall |            |
|  |               | % of total |            | % of total |           | % of total |         | % of total |         | % of total |         | % of total |
| <b>Total Population</b>                | 325,719,178   |            | 28,304,596 |            | 1,958,578 |            | 22,351  |            | 141,009 |            | 44,026  |            |
| <b>Population 65 years &amp; over</b>  | 50,858,679    | 15.6%      | 3,472,712  | 12.3%      | 231,882   | 11.8%      | 5,915   | 26.5%      | 25,531  | 18.1%      | 8,254   | 18.8%      |
| <b>Total Households</b>                | 118,825,921   |            | 9,430,419  |            | 627,889   |            | 8,278   |            | 47,253  |            | 13,691  |            |
| <b>With one or more 65 &amp; older</b> | 33,348,891    | 28.1%      | 2,234,753  | 23.7%      | 149,890   | 23.9%      | 3,386   | 40.9%      | 15,361  | 32.5%      | 4,674   | 34.1%      |
| <b>Householder 65+ living alone</b>    | 12,510,531    | 37.5%      | 759,886    | 34.0%      | 51,935    | 34.6%      | 1,011   | 29.9%      | 4,129   | 26.9%      | 1,384   | 29.6%      |

(U.S. Census Bureau, 2019a&c)

**REFERENCES**

Alamo Area Council of Governments. (n.d.). *Area agencies on aging resources*. Retrieved February 19, 2019, from <https://www.aacog.com/173/Area-Agencies-on-Aging-Resources>

Alzheimer’s Association. (2018). *2018 Alzheimer’s disease facts and figures*. Retrieved from <https://www.alz.org/media/HomeOffice/Facts%20and%20Figures/facts-and-figures.pdf>

America’s Health Rankings. (2018). *Senior Report 2018*. Retrieved from <https://assets.americashealthrankings.org/app/uploads/ahrsenior18-finalv1.pdf>

Berger, F. (2016). *Depression- older adults*. Retrieved from <https://medlineplus.gov/ency/article/001521.htm>

Besdine, R. (2017). *Changes in the body with aging*. Retrieved from <http://www.merckmanuals.com/home/older-people%e2%80%99s-health-issues/the-aging-body/changes-in-the-body-with-aging>

Centers for Disease Control and Prevention [CDC]. (2008). *The state of mental health and aging in America issue brief 1: What do the data tell us?* Retrieved from [http://www.cdc.gov/aging/pdf/mental\\_health.pdf](http://www.cdc.gov/aging/pdf/mental_health.pdf)

Centers for Disease Control and Prevention [CDC]. (n.d.). *Vision & eye health data & maps*. Retrieved February 14, 2019, from <https://www.cdc.gov/visionhealth/visionhealthdata/index.html>

Centers for Disease Control and Prevention [CDC]. (2016a). *Healthy aging: Helping older Americans achieve healthy and high-quality lives*. Retrieved from <http://www.cdc.gov/chronicdisease/resources/publications/aag/healthy-aging.htm>

Centers for Disease Control and Prevention (CDC). (2016b). *Understanding elder abuse*. Retrieved from <https://www.cdc.gov/violenceprevention/pdf/em-factsheet-a.pdf>

Centers for Disease Control and Prevention (CDC). (2017). *Health, United States, 2017: Table 030*. Retrieved from <https://www.cdc.gov/nchs/hus/contents2017.htm?search=Suicide>

Centers for Disease Control and Prevention (CDC). (2018a). *Multiple chronic conditions*. Retrieved from <https://www.cdc.gov/chronicdisease/about/multiple-chronic.htm>

Centers for Disease Control and Prevention [CDC]. (2018b). *Summary health statistics for U.S. adults: National health interview survey, 2017*. Retrieved from <https://www.cdc.gov/nchs/nhis/SHS/tables.htm>

Denio, A. (2012). *Vitamin D deficiency: the silent epidemic of the elderly*. Retrieved from <http://www.iscd.org/publications/osteoflash/vitamin-d-deficiency-the-silent-epidemic-of-the-elderly/>

Goldberg, J. (2018). *Depression in the elderly*. Retrieved from <http://www.webmd.com/depression/guide/depression-elderly>

Goldsmith, T. (2014). *An introduction to biological aging theory (2nd ed.)*. Retrieved from [http://www.azinet.com/aging/aging\\_theory\\_introduction.pdf](http://www.azinet.com/aging/aging_theory_introduction.pdf)

Menec, V. (2016). *Loneliness and social isolation are important health risks in the elderly. The Bottom line*. Retrieved from <https://www.mcmasteroptimalaging.org/blog/detail/professionals-blog/2016/04/08/loneliness-and-social-isolation-are-important-health-risks-in-the-elderly>

National Alliance for Caregiving (NAC). (2015). *Caregiving in the U.S. 2015: Focused look at caregivers of adults age 50+*. Retrieved from <http://www.caregiving.org/caregiving2015/>

- National Center on Elder Abuse [NCEA]. (n.d.). *FAQs: What is elder abuse?* Retrieved February 19, 2019, from <https://ncea.acl.gov/fag/index.html#faq1>
- National Council on Aging [NCOA]. (n.d.). *SNAP and senior hunger facts*. Retrieved February 15, 2019, from <https://www.ncoa.org/news/resources-for-reporters/get-the-facts/senior-hunger-facts/>
- National Institute on Aging [NIA]. (n.d.). *Biology of aging*. Retrieved February 14, 2019, from <https://www.nia.nih.gov/about/budget/biology-aging-0>
- National Institute on Aging (NIA). (2018). *Heart health and aging*. Retrieved from <https://www.nia.nih.gov/health/heart-health-and-aging>
- National Institute on Deafness and other Communication Disorders [NIDCD]. (2016a). *Problems with ability to smell or taste common in middle-aged and older adults*. Retrieved from <https://www.nidcd.nih.gov/news/2015/problems-ability-smell-taste-middle-aged-older-adults>
- National Institute on Deafness and other Communication Disorders [NIDCD]. (2016b). *Quick statistics about hearing*. Retrieved from <https://www.nidcd.nih.gov/health/statistics/quick-statistics-hearing>
- National Institutes of Health (NIH): Medline Plus. (2019a). *Aging changes in body shape*. Retrieved from <https://www.nlm.nih.gov/medlineplus/ency/article/003998.htm>
- National Institutes of Health (NIH): MedlinePlus. (2019b). *Aging changes in bones, muscles, joints*. Retrieved from <http://www.nlm.nih.gov/medlineplus/ency/article/004015.htm>
- National Institutes of Health (NIH): Medline Plus. (2019c). *Aging changes in the nervous system*. Retrieved from <https://www.nlm.nih.gov/medlineplus/ency/article/004023.htm>
- National Institutes of Health (NIH): MedlinePlus. (2019d). *Aging changes in the senses*. Retrieved from <http://www.nlm.nih.gov/medlineplus/ency/article/004013.htm>
- National Institutes of Health [NIH]: MedlinePlus. (2019e). *Aging changes in skin*. Retrieved from <http://www.nlm.nih.gov/medlineplus/ency/article/004014.htm>
- Robinson, L., Saisan, J., and White, M. (2018). *Senior housing: Your guide to assisted living facilities, independent living, and other housing options*. Retrieved from <https://www.helpguide.org/articles/alzheimers-dementia-aging/senior-housing.htm>
- Ruiz, A. (2017). *Effects of aging on the digestive system*. Retrieved from <http://www.merckmanuals.com/home/digestive-disorders/biology-of-the-digestive-system/effects-of-aging-on-the-digestive-system#v752160>
- Sebastian, R., Cleveland, L., Goldman, J., and Moshfegh, A. (2007). *Older adults who use vitamin/mineral supplements differ from nonusers in nutrient intake adequacy and dietary attitudes*. Retrieved from <http://hdl.handle.net/10113/23063>
- Texas Demographic Center [TDC]. (2016). *Aging in Texas: Introduction*. Retrieved from [https://demographics.texas.gov/Resources/publications/2016/2016\\_06\\_07\\_Aging.pdf](https://demographics.texas.gov/Resources/publications/2016/2016_06_07_Aging.pdf)
- Texas Department of Family and Protective Services [DFPS]. (2019). *Adult protective Services: DFPS data book*. Retrieved from [http://www.dfps.state.tx.us/About/DFPS/Data\\_Book/Adult\\_Protective\\_Services/default.asp](http://www.dfps.state.tx.us/About/DFPS/Data_Book/Adult_Protective_Services/default.asp)
- Texas Health and Human Services (HHS). (n.d.). *Aging and disability resource center*. Retrieved February 19, 2019, from <https://hhs.texas.gov/services/aging/long-term-care/aging-disability-resource-center>
- U.S. Administration on Aging [AOA]. (n.d.). *Eldercare locator: About*. Retrieved February 14, 2019, from <https://eldercare.acl.gov/Public/About/Index.aspx>
- U.S. Administration on Community Living [ACL] and Administration on Aging [AOA]. (2018). *Profile of older Americans: 2017*. Retrieved from <https://acl.gov/aging-and-disability-in-america/data-and-research/profile-older-americans>
- U.S. Administration on Community Living [ACL]. (2019). *National family caregiver support program*. Retrieved from <https://www.acl.gov/programs/support-caregivers/national-family-caregiver-support-program>
- U.S. Census Bureau. (n.d.a). *HINC-02. Age of householder-households, by total money income, type of household, race and Hispanic origin of householder*. Retrieved February 19, 2019, from <https://www.census.gov/data/tables/time-series/demo/income-poverty/cps-hinc/hinc-02.2017.html>
- U.S. Census Bureau. (n.d.b). *PINC-08. Source of income-people 15 years old and over, by income of specified type, age, race, Hispanic origin, and sex*. Retrieved February 19, 2019, from <https://www.census.gov/data/tables/time-series/demo/income-poverty/cps-pinc/pinc-08.html>
- U.S. Census Bureau. (2019a). *Annual estimates of resident population for selected age groups by sex for the United States, States, Counties, and Puerto Rico Commonwealth and Municipios: April 1, 2010 to July 1, 2017: 2017 population estimates: Table PEPAGESEX*. Retrieved from [https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP\\_2015\\_PEPAGESEX&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2015_PEPAGESEX&prodType=table)
- U.S. Census Bureau. (2019b). *Disability characteristics: 2013-2017 5-year estimates: Table S1810*. Retrieved from [https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_17\\_5YR\\_S1810&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_S1810&prodType=table)
- U.S. Census Bureau. (2019c). *Households by presence of people 65 years and over, household size and household type: 2013-2017 5-year estimates: Table B11007*. Retrieved from [https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_17\\_5YR\\_B11007&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B11007&prodType=table)
- U.S. Census Bureau. (2019d). *Marital status: 2013-2017 5-year estimates: Table S1201*. Retrieved from [https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_17\\_5YR\\_S1201&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_S1201&prodType=table)
- U.S. Social Security Administration SSA). (2018). *Fast facts and figures about social security, 2018*. Retrieved from [https://www.ssa.gov/policy/docs/chartbooks/fast\\_facts/2018/fast\\_facts18.pdf](https://www.ssa.gov/policy/docs/chartbooks/fast_facts/2018/fast_facts18.pdf)
- World Health Organization [WHO]. (2017). *Mental health and older adults*. Retrieved from <http://www.who.int/mediacentre/factsheets/fs381/en/>