



The Hennepin County Aging Initiative

Research highlights: Social factors and healthy aging

Healthy. People are healthy, have access to quality health care and live in a clean environment. Healthy is a goal Hennepin County has for all its residents.

Top research findings

1. Researchers have found that half of an individual's overall health outcomes can be explained by social factors such as income and race and environmental factors such as air quality.
2. Consistent research demonstrates that socially disadvantaged individuals are prone to higher rates of disability, disease, and mortality.
3. Individuals with higher education and income live longer, have lower rates of disease and disability regardless of income and health insurance.
4. Self-rated health, a significant predictor of mortality, is lower among individuals who have low education levels and who live in poverty.
5. Nationally, white populations live longer than populations of color. A recent study, however, demonstrated that the difference in life expectancy at birth between whites and blacks has narrowed to its smallest gap ever.
6. As populations age, some research demonstrates that the health gaps between Blacks and Whites 'cross over.' For instance, Black mortality rates are higher than Whites until approximately age 80 when Black mortality rates become lower than Whites.
7. Because older persons of color are among the fastest growing population, higher disease rates among an aging population will be of increasing concern. The Census Bureau projects the number of older adults who are persons of color will grow from 9.3 million in 2000 to 19.5 million in 2030.
8. The majority of research studies show that women have higher rates of diseases such as arthritis, asthma, and depression that may be debilitating but are not fatal.
9. Low-income older adults are also more likely to have unmet care needs related to vision, dental, or hearing because Medicare does not cover related conditions.
10. Researchers do not fully understand how social factors impact healthy aging, but theorize that childhood and cumulative life experiences are important.

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Social Factors and Healthy Aging

Researchers believe an individual's health is determined by complex interactions between their genetics, environment, healthy behaviors, and the social conditions in which they live and work.¹ Researchers have found that half of an individual's overall health outcomes can be explained by social factors such as income and race and environmental factors such as air quality.² Just 30 percent of an individual's overall health can be explained by healthy behaviors and only 20 percent can be explained by medical care.³

Consistent research demonstrates that socially disadvantaged individuals are prone to high rates of disability, disease, and mortality.^{4,5,6} Researchers are currently trying to understand the underlying reasons for these disparities and their relationship with aging. The National Institute on Aging recently created the Resource Centers for Minority Aging Research to support research on reducing health disparities among older adults.⁷ The following literature review describes the available research on how social factors, such as education, income, and race, impact older adults and aging well.

How do social factors influence healthy aging?

The World Health Organization defines social determinants of health as the political, social, and economic forces under which people live.⁸ Researchers believe these forces create inequalities related to race, income, and education that result in health disparities. Specifically, researchers propose that "inequality creates psychological stress through social comparisons which may impact the immune and

other systems."⁴ The majority of researchers believe that chronic stress, caused by negative social forces, causes inflammation and high cortisol levels which ultimately, cause disability, disease, and mortality.^{9,10}

Research demonstrates that social factors such as race, income, and education are among the strongest predictors of health and mortality.^{6,11} For example, white individuals live an average of 5.3 years longer than black individuals.¹² In general, populations with higher education and income live longer than populations with low education and income.¹³ However, some socioeconomic differences disappear as populations age. For instance, among Blacks and White populations, a crossover effect occurs around age 80 when mortality rates decrease among Blacks and increase among Whites.¹⁴

Researchers do not fully understand age-related patterns of health inequities, and evidence thus far does not demonstrate "crossover effects" for all social factors and health outcomes as populations age. For example, education disparities related to physical impairment have been shown to continue as populations age whereas income disparities level off. Although age-related patterns connected to social factors are still unclear, two primary findings have emerged. The first pattern demonstrates socioeconomic differences disappearing at older ages and the second demonstrates consistent differences at older ages.^{6,7}

Despite a strong association between social factors and health outcomes, there is little research on how these factors impact healthy aging. Some

public health researchers believe understanding how social factors impact healthy aging will provide insight into how health issues can be prevented and improved among older adults. These researchers also believe that reducing health inequities is “the most promising opportunity for improving overall population health.”²² Researchers have proposed the following theories for how social factors impact healthy aging.¹²

Childhood impact

There is some research to suggest that an individual’s health is impacted by social forces during the prenatal period and childhood years. Such exposures to social forces early in life may not demonstrate immediate effects but may influence risks later in life.^{10,15} Public health researchers believe that “understanding how early life shapes late life will be important for identifying groups and communities at risk in old age.”¹⁶

Cumulative impact

The majority of research suggests that the cumulative affects of social forces impacts an individual’s health. Researchers suggest that health disparities increase during a person’s lifetime due to increased exposure to risk factors associated with low socio-economic status and protective factors associated with high socio-economic status. Self-rated health, for example, does not fall as quickly for those with high education.^{10,17,18}

Life trajectories

The theory of a “life trajectory” is defined as a combination of childhood and cumulative impact theories. Researchers theorize that individuals are born into socially disadvantaged

positions, placing them at a health disadvantage. These individuals then have increased exposure to risk factors such as being less likely to have access to education and health care.^{4,19}

Double jeopardy hypothesis

Also similar to cumulative advantage, the double jeopardy hypothesis proposes that individuals may be at a double disadvantage when they age due to age and low socioeconomic status.^{12,19}

What are the social factors that influence healthy aging?

Although it is not clear how social factors impact healthy aging, consistent evidence demonstrates that social factors such as race, income, and education play a significant role in how well individuals age. These factors are among the strongest predictors of health and mortality.^{5,6,12} Although numerous social factors may influence health outcomes, in American society researchers typically examine how individual characteristics such as race, education, and income, influence health outcomes because the major causes of inequity are formed by race and class.²⁰ In recent years, researchers have also begun to review how social factors such as neighborhoods and systems, such as health care, influence health. The summary below provides a review of current research on these primary social factors that impact healthy aging. Social factors’ independent influence on healthy aging is detailed; however the intersection between race, income, gender, and education is also addressed where relevant.

Education

Individuals with high education live longer and have lower rates of disease and disability regardless of income and health insurance.¹⁰ Between 1990 and 2000, mortality rates increased among older adults with lower education levels and decreased among older adults with higher education levels. Educational disparities related to functional limitations and disability have also increased substantially among older adults ages 55-86 since the 1990s.^{21,22} Evidence demonstrates that low education levels impact the onset of disability more so than low income. Low income, on the other hand, has been demonstrated to affect the progression of disability more so than low education.²²

Additional research has shown that individuals with low education are less likely to report healthy behaviors such as having never smoked cigarettes, drinking alcohol in moderation, having normal body mass index, and being physically active.²³

In Hennepin County, adults age 65 and older who have less than a high school education reported a significantly higher rate of “poor” or “fair” health than individuals with higher education levels.²⁴ Additionally, older adults who have less than a high school education have a lower rate of preventive care use.²⁵

A recent study found that early educational advantages persist through adulthood even after controlling for adult educational attainment.²⁵ In addition, for persons of color, education does not necessarily result in similar health outcomes when compared to whites.²⁶

It is unclear how education improves health, but some researchers theorize that individuals with higher education have better access to healthy food, opportunities for physical activity, and knowledge about healthy behaviors.¹⁰ An individual's educational background is the primary path to social and economic success because it increases access to higher income, Social Security benefits, and health insurance, and healthy environments. Additionally, education is associated with protective factors for disease and mortality including better social relationships, larger social networks, better psychological dispositions, and productive activities.²²

Income

The association between income and health is well documented.²⁷ Researchers have found that living in poverty is associated with poor health and propose that poverty reduction is an effective method for improving health inequities.¹⁰ Research also demonstrates that stable employment is a protective factor for health and longevity likely due to its connection to financial resources such as social security benefits, health insurance, and pensions.²⁸ However, there is limited research on how employment impacts health.⁴

As with low education levels, mortality rates are higher among individuals who live in poverty.^{4,29} This is particularly true among individuals ages 45-65 with the mortality risk among those in poverty declining with age.^{30,31} In addition, lower income individuals experience health declines and chronic disease sooner than individuals with higher incomes.¹⁴

Disability rates are also higher among low income older adults. Although disability rates among high income older adults declined in the 1990s, older adults living in poverty have experienced increasing disability rates regardless of age, gender, education, and race status.^{4,32} In Hennepin County, adults age 65 and older with household income under 200 percent of the federal poverty level are 2.3 times more likely to report an activity limitation than older adults with a higher household income. Additionally, older adults with a household income less than 200 percent below the Federal Poverty Level are more likely to have asthma, diabetes, arthritis, heart trouble or angina, anxiety attacks, and having 3 or more chronic diseases.²⁵

Many researchers believe that the Federal Poverty Level for older adults understates the financial need for low-income older adults. A recent study found that for older adults living under 200 percent of the Federal Poverty Level, the percentage of older adults who do not have money to make ends meet grows significantly.²⁴

Self-rated health, a significant predictor of mortality, is lower among individuals who live in poverty.³³ Individuals who rate their health as poor or fair have higher mortality rates. Older adults who rate their health

as poor or fair are also more likely to have lower incomes than older adults who rate their health as excellent or good.⁶ In Hennepin County, older adults with an income below 200 percent the Federal Poverty Level report a significantly higher rate of "poor" or "fair" health than older adults with a higher household income.²⁵

Research demonstrates that an individual's income status interacts with race and gender to affect health outcomes. For instance, older women and persons of color are more likely to live in poverty. A 2010 study found that half of non-Latino black older adults and Latino older adults have incomes under 200 percent of the Federal Poverty Level.³⁴ Table 1 demonstrates the intersection between poverty, income and race. A greater percentage of individuals living in poverty rated their health as poor or fair. Additionally, a greater percentage of black and Latino individuals living in poverty rated their health as poor or fair.⁴

Race

Research has clearly documented race as an important social factor impacting health. Nationally, white populations live longer than populations of color. White individuals live an average of 5.3 years longer than black individuals. Nationally, the life expectancy at birth

Table 1. Self-assessed health fair/poor, age 65 and over, by household income as percentage of poverty (Federal Poverty Level) 2006-8⁴

	<100% FPL	100%-199% FPL	>200% FPL
Non-Latino white	39.7%	31.5%	19.1%
Non-Latino black	49.3	35.6	28.0
Latino	41.9	40.5	29.1

Source: National Center for Health Statistics

and at age 65 for white men and white women is higher than for black men and black women (Table 2). A recent study, however, demonstrated that the difference in life expectancy at birth between whites and blacks has narrowed to its smallest gap ever. Researchers suggest this may be due to an increase in drug and heart disease related deaths among whites.³⁵

In Hennepin County, Asian and Latino women have the highest life expectancy at birth and at age 65 (Table 3). Latino and white men have the highest life expectancy at birth. However, at age 65 Latino men in Hennepin County have a higher life expectancy than white men. White and black men have a similar life expectancy at age 65. American Indian men and women have the lowest life expectancy at birth and at age 65 in Hennepin County.

As populations age, some research demonstrates that the health gaps between Blacks and Whites “crosses over.”³⁶ For instance, Black mortality rates are higher than Whites until approximately age 80 when Black

mortality rates become lower than Whites. As discussed previously, age-related health patterns are unclear. Researchers theorize that social factors such as race, income, and education produce higher mortality rates among disadvantaged populations causing “early mortality among the frailest members of society so that at older ages, all that remains are very robust individuals who are healthy regardless of race or class.”^{37,38} However, other research has found that mortality disparities persist among blacks and whites with some less pronounced differences among Latinos, Asians, and Pacific Islanders.⁴⁵ Some research also demonstrates that racial health disparities among are eliminated when education are comparable among black and white men.^{12,39} Most studies continue to find differences regardless of income.⁴

Although cross-over effects can occur at older ages, African-American older adults have higher rates of hypertension, diabetes, dementia, and functional limitations.⁴ As with life expectancy rates, research demonstrates that Latino

populations experience lower rates of heart disease and some cancers than white populations although they have higher rates of diabetes and obesity.^{4,40,41} In Hennepin County, adults aged 65 and older who are Hispanic/Latino or non-white are more likely than those who are non-Hispanic white to have diabetes, hypertension, and three or more chronic diseases.²⁵ Dementia is of particular concern among older persons of color. Racial and ethnic risk status has been shown to be a significant risk factor for Alzheimer’s disease; African-American and Latinos are 2-3 times more likely to develop Alzheimer’s disease than whites.⁴²

Self-rated health racial disparities remain among older adults. Black populations are more likely than all other racial groups to report their health as poor or fair.⁴³ Latinos also rate their health as poor or fair more frequently when compared to white populations. Some researchers speculate that these racial differences in self-rated health may be due to cultural differences.⁴⁴

Table 2. United States life expectancy, 2009

	All races		White		Black	
	Men	Women	Men	Women	Men	Women
At birth	75.7	80.6	76.2	80.9	70.9	77.4
At age 65	82.3	85	82.4	85	80.5	83.9

Source: Centers for Disease Control

Table 3. Hennepin County life expectancy, 3 year average 2008-2010^a

	All races		White		Black		American Indian		Asian		Latino	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
At birth	78.6	82.6	79.0	83.1	76.8	78.8	68.1	68.4	76.3	84.2	85.4	85.8
At age 65	84.4	86.1	84.5	86.9	84.9	85.7	79.8	80.9	85.1	88.9	90.1	89.1

^a Please note the life expectancy calculation used data across a 3 year period, between 2008-2010.

Source: Minnesota Center for Health Statistics, Hennepin County Assessment Unit

Because older persons of color are among the fastest growing population, higher disease rates among an aging population will be of increasing concern. The Census Bureau projects the number of older adults who are persons of color to grow from 9.3 million in 2000 to 19.5 million in 2030.^{44,45} For this reason, researchers recommend that policy makers need to understand how to address racial and ethnic disparities among older adults.

Gender

For many years, researchers believed men were generally in better health than women, despite women having a higher life expectancy. Recently, however, researchers have found, due to improved research methods, that women and men's health differs depending on the health dimension.^{46,47,48} Additional research has demonstrated that women's health has improved over time.^{12,47}

Nationally and in Hennepin County, women experience a higher life expectancy than men at birth and at age 65 (Tables 2 and 3). However, the majority of research demonstrates that women have higher rates of diseases, such as arthritis, asthma, and depression that may be debilitating but are not fatal.⁴⁷ Men on the other hand have higher rates of heart disease. Most research does not demonstrate significant rate differences of diabetes among men and women. Women are more likely to experience disability and dementia, particularly at older ages. The prevalence of dementia is higher in women than men in every age group and the gap widens at older ages.⁴⁹ Although the research is mixed, women tend to be more likely to experience stroke after

the age of 85.^{47,50} Following national trends, women aged 65 and older in Hennepin County, are more likely to have arthritis and depression than their male counterparts.²⁵ Increased disease rates at older ages may be due to women's higher life expectancy.⁴⁷

Researchers believe health differences among men and women are due to biological, social and behavioral factors.⁵¹ For instance, some researchers propose that hormone differences or their smaller size may influence why women live longer. Other researchers theorize that because men are typically engaged in risky behaviors, such as occupational hazards, alcohol consumption, and smoking, they do not live as long.⁵² Women's social status may also play a role in impacting health. Although women's social status has changed significantly in the United States among current baby boomers, historically, women have had less access to education and employment leading to less financial resources.⁴⁷

Medical care system

Social factors such as education, income, race, and gender, influence an individual's ability to access systems such as medical care. For instance, researchers theorize that persons of color and low-income populations are at a disadvantage because they have less access to education attainment, and consequently, financial and health care resources.^{4,20,45} An individual's inability to access medical care inevitably impacts health.

Although Medicare increases access to health care among socially disadvantaged groups, it does not alleviate all barriers to receiving care. Factors such as income and race play

a role in accessing Medicare. For example, research has found that older adults of a specific race or ethnicity may experience barriers due to a lack of language and cultural competence among health care providers.^{52,53} Additionally, low-income older adults experience difficulty paying for Medicare premiums, deductibles, copays, or prescription drug costs. In Hennepin County, 18 percent of adults age 65 and older reported having difficulty paying for a premium, co-pay, or deductible. Twenty percent reported having trouble for prescription medication.⁵⁴ Persons of color who are 65 and older are more likely to have difficulty paying for health insurance premiums, copays, deductibles than Whites in Hennepin County. Among Hennepin County seniors age 65 and older who regularly taking prescription medications, 20 percent of whites reported having trouble paying for monthly prescription drug costs compared with 35 percent of non-white or Latino older adult residents.²⁵

Low-income older adults are also more likely to have unmet care needs related to vision, dental, or hearing because Medicare does not cover related conditions (Table 4).⁴ These individuals are then at risk for falls and car accidents due to uncorrected hearing and vision.⁴ Six percent of Hennepin County residents over the age of 65 reporting having an unmet medical care need in the past 12 months.⁵⁵ Adults aged 65 and older who are low-income and are persons of color living in Hennepin County are less likely to have a regular source of care.²⁵ Eighteen percent of adults older than 65 who are non-White or Latino reported lacking a regular source of care compared with 9 percent of white and non-Latino adults 65 and older.²⁵

Table 4. Preventive and health services use, by household income as percentage of poverty FPL (Federal Poverty Level), age 65 and older⁴

	<100% FPL	100%-199% FPL	200-299% FPL	300%+ FPL
Eye exam in past year	55.9%	60.8%	63.7%	67.1%
Could not afford needed dental care past year (CA)	23.1	17.5	10.9	4.3
Influenza vaccination within the past year, US	50.6	51.8	65.5	70.8
Delay care due to cost, US	8.8	7.6	5.4	2.4

Source: United States—Agency for Healthcare Research and Quality, 2010 and UCLA Center for Health Policy Research, 2010.

Neighborhood and community

Individuals living in neighborhoods with high poverty rates have higher mortality rates than individuals living in neighborhoods with low poverty rates.⁵⁵ Extensive research exists documenting the relationship between neighborhoods with low socioeconomic status and high rates of mortality, disability, and poor self-rated health.^{56,4,57,58,59} Individuals living in neighborhoods with high poverty rates have higher

mortality rates than individuals living in neighborhoods with low poverty rates.⁶⁰ For instance, older adults living in low-income neighborhoods may have less access to grocery stores and medical services. Low-income neighborhoods also have higher crime rates and lower quality housing.⁴ In Hennepin County, 28 percent of adults aged 65 and older reported feeling afraid to go out at night due to violence and 11 percent reported that gangs are a serious issue in their neighborhood.⁵⁵

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