

Successful Aging in Memphis Requires a Proactive Approach

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Introduction

Despite the youthful portrayals of most adults in popular media, America is not getting any younger. In fact, by the year 2030, approximately 1 in 5 Americans will be at least 65 years old and account for a slightly greater percentage of the total U.S. population than those who are under age 18 (U.S. Census Bureau, 2010). While much of our society can be geared towards the interests of young people, these data suggest that it will become increasingly more important for members of this nation to consider the thoughts, wishes, and beliefs of the senior portion of our population within the next 15 years. Many seniors already contribute in valuable ways to their communities, and based on results from survey data of “Baby Boomers” who are currently on the verge of retirement, many of them plan to give back in useful ways in the future (AARP, 2002). In order for individuals and cities to benefit from their contributions, however, it is necessary for them to age well and to remain in the places in which they aim to serve. Understanding this population and the resources and services that are available to them, are only the beginning steps to preparing for an “older” future.

At some point in one’s life, it will likely be personally relevant to learn about the various resources and services that are available to senior citizens in the area. The decision to invest in a resource can involve oneself, a loved one, or both parties simultaneously, and often centers around a senior’s retirement status, the need to move into a long-term care facility, or the choice to remain in one’s home with or without the help of a caretaker, among other options. These decisions are often difficult to make, and can put substantial emotional and financial strain on a family depending on the senior’s need. In addition, the complexity of this decision-making process is largely determined

by the mental and physical health of the senior, as physical incapacities, neurodegenerative diseases, and forms of dementia such as Alzheimer's disease (AD) mandate a greater amount and variety of services available to the senior.

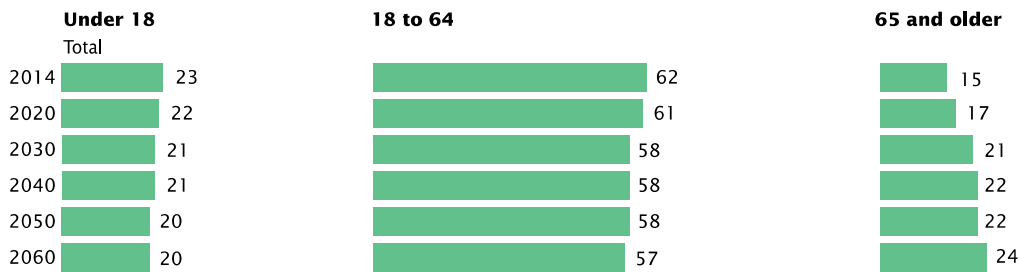
Barriers to a successful aging process—especially those related to a senior's cognitive and physical health—have created a demand among the American population for solutions to avoid symptoms of aging and function independently for as long as possible. This demand has led to an increase in research studies in these areas, as well as the success of pharmaceutical and health-related industries, such as the nutraceutical industry (Daffner, 2010). A healthy senior population is a vision for particular organizations across America and in Memphis, specifically, who cater to the elderly and who work to ensure that senior citizens in the area are able to live safely and independently in their own homes for as long as possible. Last year, the Plough Foundation granted \$12 million to organizations in Memphis such as Habitat for Humanity, Metropolitan Inter-Faith Association (MIFA), and the Southern College of Optometry, among others, to provide seniors with in-home repairs, meals, and eye care, respectively (The Plough Foundation, 2012). While the services these organizations provide are necessary for independent living and will help make the lives of seniors in the area easier, these organizations approach the need within the senior population from an intervention—rather than a prevention—focused approach. In doing so, it is likely that health problems and expenditures for both seniors and organizations such as these will become exacerbated in the future with the impending rise in the older adult population if a proactive approach to aging is not considered.

Results from medical and cognitive psychological research studies suggest that some of the most effective ways to age successfully, reduce the risk of acquiring dementia, and increase the chances of being able to live independently and comfortably for as long as possible involves engaging in cognitively- and physically-stimulating activities, and maintaining rewarding social relationships throughout the aging process. The purpose of this paper is twofold: (1) to outline the various ways in which older adults can age more successfully based on current empirical research and (2) to make specific recommendations for how agencies and individuals in Memphis can better our aging population.

America is Aging Rapidly

In the period directly following World War II, the population of the United States experienced an increase in the number of births between the years 1946 and 1964, and the generation of so-called “Baby Boomers” came into existence, as a result (Jones, 1980). This time of intense patriotism and economic resurgence produced 75 million new Americans who are now thought of as the best educated and wealthiest generation this country has ever seen (Jones, 1980). Now, almost seventy years after the beginning of this generation, this large cohort is entering the age of retirement, and the demand for services for seniors is increasing rapidly throughout the nation. The population of individuals who are at least 65 years old grew at a faster rate (15.1 percent) than the rest of the U.S. population (9.7 percent) between 2000 and 2010, and as mentioned previously, this group will constitute approximately 21 percent of the country’s total population in 2030 (U.S. Census Bureau, 2010):

Figure 4.
Age Distribution of the Population by Nativity: 2014 to 2060
 (Percent of group's total population)



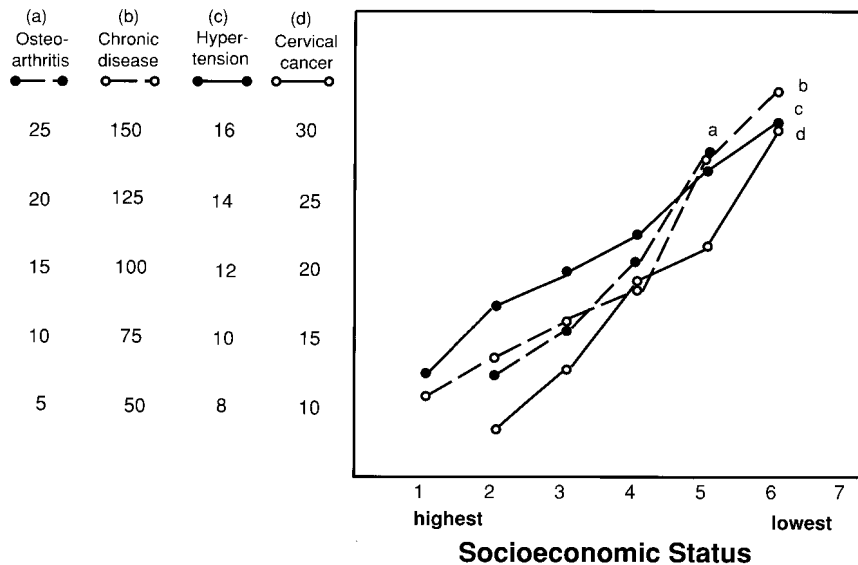
Note: The percentages for each group in each year may not add to 100 due to rounding.
 Source: U.S. Census Bureau, 2014 National Projections.

In 2060, when the youngest members of this generation will be 96 years old, the population of adults 65 years and older is projected to be 98 million—more than double in size from 2013 when this population consisted of 44.7 million adults (Profile of Older Americans, 2014). Because of these estimated population trends for older Americans, there will undoubtedly be a push for more services and organizations that cater to seniors in the coming years.

While most of the United States is experiencing similar issues with a dramatic increase in demand for senior services and resources, Memphis, in particular, is experiencing this increase with the addition of a major factor: a high poverty level among its older adult population. According to a report conducted by The Plough Foundation (2012), older adults in Shelby County are less financially secure and therefore at a higher risk for accessing proper resources that allow for successful aging than their counterparts in other “peer cities”—Atlanta, Birmingham, Charlotte, Dallas, Indianapolis, Louisville, and Nashville (selected by the Memphis Chamber of Commerce in 2005). Fourteen percent of the older adult population of the city of Memphis itself lives below the poverty level, which is substantially higher than both the national poverty rate among persons

65+ (8.9%) and the rate of older adults living in poverty in suburban Shelby County areas (approximately 3%) (American Community Survey, 2009; The Plough Foundation, 2012). In addition, compared to the rest of the state of Tennessee, Memphis is 3 percentage points lower in regard to persons aged 65 years and over (U.S. Census Bureau, 2010), and older adults in Shelby County, on average, live approximately 4 years less than older adults in the rest of the United States (Tennessee Department of Health, 2006).

Research shows that individuals with higher a socioeconomic status (SES) are generally healthier and have lower morbidity rates than their low-status peers (Huguet, Kaplan, & Feeny, 2008). There is also evidence for a strong and consistent “SES gradient” for specific diseases, such as cardiovascular disease, diabetes, metabolic syndrome, and arthritis, among others (Adler & Ostrove, 1999), with individuals on the lower end of the SES spectrum being more susceptible to health problems than individuals on the higher end:



While it is likely that more factors beyond one's socioeconomic status can affect one's likelihood of having poor health (e.g., external and social environments, frequency of performing healthy behaviors, etc.) (Adler & Ostrove, 1999), the presence of this gradient is an important cause for concern when dealing with a poor population, such as older adults in Memphis. Diseases related to low socioeconomic status can affect negatively one's quality of life, and likely result in an increase of both cost and amount of care needed by such individuals.

In addition to poor physical health, sustained economic hardship can result in poorer psychological health and cognitive functioning among older adults (Lynch, Kaplan, & Shema, 1997), both of which are necessary in order to age successfully. Results from a longitudinal study regarding the physical, psychological, social, and cognitive functioning of older adults of Alameda County demonstrated that, compared to their peers with no previous economic difficulties, subjects with the longest history of economic hardship over a period of time (approximately 18 years) had greater odds of having high levels of depressive symptoms (based on the scores of 12 items from symptom criteria outlined in the *Diagnostic and Statistical Manual of Mental Disorders*, third edition, revised), were more likely to be cynically hostile (measured with a 7-item subgroup of the Cook-Medley hostility scale), lacked optimism in greater proportions (measured with the Life Orientation Test), and had a greater number of self-reported difficulties with cognitive functioning (assessed by four Likert-type questions regarding difficulties in remembering things, paying attention, finding the right word, and remembering the location of placed objects) (Lynch, Kaplan, & Shema, 1997). These

findings have implications for senior citizens of Memphis who have likely experienced economic difficulty over one or more periods of time.

One important factor to consider when researching the older adult population of Memphis is the desire among the majority of seniors to remain in their current homes for as long as possible: approximately 94% of Shelby County older adults wish to “age in place” (The Plough Foundation, 2012). In order to do so, the following requirements must be met for each individual, at the very least: access to services and programs, neighborhood safety and security, financial security, and housing needs (The Plough Foundation, 2012). An even more important requirement, however, involves efforts to ensure that the older adult population in Memphis and Shelby County is aging *successfully*, which, in theory, cannot happen without proactive efforts in regard to the cognitive, physical, and psychological health of each individual in the population. These three aspects of a senior’s health are some of the most important components of a successful aging process.

Of the population of older adults in Shelby County, one quarter of individuals do not know about services and resources available to them or how to find the information they need about senior programs in the area, including those that are free of charge (The Plough Foundation, 2012). Considering the average life expectancy for citizens in the United States has been increasing steadily over the years and continues to rise (National Vital Statistics Reports, 2012), it is likely that basic needs of seniors that are not met at an early stage will become more urgent and critical as they continue to get older (The Plough Foundation, 2012). This reality implies that across the nation, but especially Memphis, efforts must be made in order to ensure that older individuals remain healthy

and have access to the resources they need, which will allow them to age well, and remain in their homes for as long as possible.

The Aging Process

The process of aging is complex, and involves many interactive developmental forces. Three of these forces include the biological, psychological, and sociocultural forces (Cavanaugh, 1999). Because of the complexity of the aging process itself and the differences that inherently exist among individuals, no single theory offers a comprehensive solution to or explanation of the aging process in its entirety. The biological forces include the various genetic, physiological, and health-related factors that affect and influence development, such as physical changes and changes in the functioning of major organ systems (Cavanaugh, 1999). The psychological forces include all perceptual, cognitive, emotional, and personality factors that affect development, and together make up the characteristics that people readily notice about a person that make him or her a unique individual (Cavanaugh, 1999). The sociocultural forces involve the interpersonal relations (i.e., the relationships individuals have with one another), as well as the ways in which the society and culture one experiences influence and become influenced by individuals as they age (Cavanaugh, 1999). These forces allow for diversity among individuals and among the networks of people with whom they interact (Cavanaugh, 1999). As a result of the uniqueness of every aging individual, each of these three forces plays a significant role in the success of the aging process for a particular senior both on its own and in connection with the other two forces.

Biologists and psychologists have both developed multiple theories that attempt to explain why cognitive and physical abilities decline as seniors age. Biological explanations range from theories of DNA-programmed cell death (Lockshin & Zakeri, 1990) and wear-and-tear (i.e., the human body simply “wears out” over time) (Whitbourne, 1996), while psychological explanations range from the social exchange theory (i.e., older adults invest in relationships that are advantageous to them and withdraw from those that are not) (Dowd, 1975) to declines in basic cognitive processes (Neisser, 1976). The former psychological theory has been evaluated empirically, and the frequency of “appraised” positive social interactions by older adults is associated with a greater sense of well-being and less psychological distress than if a similar number of negative social interactions had occurred (Newsom, Rook, Nishishiba, Sorkin, & Mahan, 2005). While no single theory provides all the detail necessary to deconstruct the aging process, it is important to consider an individual’s accumulated life experiences, as well as the interaction between various developmental forces, as significant contributors to a senior’s physical and cognitive abilities.

In relation to these developmental forces, there are three distinct ways to define an individual’s “age”—biologically, psychologically, and socioculturally (Birren & Cunningham, 1985). An individual’s biological age reflects the functioning of vital organ systems and physiological systems (Birren & Cunningham, 1985). One’s psychological age reflects the efficiency of the functioning of psychological abilities, such as memory, intelligence, feelings, motivations, and other abilities that allow one to adapt to an ever-changing environment (Birren & Cunningham, 1985). Lastly, one’s sociocultural age reflects the certain “unwritten expectations” members of a society have about how

individuals of a particular chronological age should behave; this definition includes the roles that an individual adopts in relation to other members of the society in which he or she belongs (e.g., a college student who enjoys knitting rather than partying is considered to have an older sociocultural age than his or her peers) (Birren & Cunningham, 1985).

While these three definitions of a senior's age can provide useful and accurate information about his or her ability to age well, research conducted at Duke University has recently revealed that individuals can actually age at different paces from one another based on the assessment of 18 different biomarkers (e.g., HDL-cholesterol levels, liver function, length of telomeres, etc.) (Belsky et al., 2015). This particular study further complicates the study of aging, as participants ranged between 0 years and 3 years in their "aging pace" for every one-year during this 12-year longitudinal study (Belsky et al., 2015). For the purpose of this research paper, I will mainly discuss topics related to the psychological and sociocultural aspects of the aging process, with an emphasis on the importance of cognitive engagement, physical health, and participation in social interactions as major hallmarks for a successful aging process.

Psychological Processes. Psychological aspects of aging are necessary to keep in mind, as they can largely impact the overall success of one's aging process. For example, shifts in "physical identity"—one's self-perception of his or her limitations, competence, and bodily appearance—occur with virtually every change in physical appearance, mobility, and vital and regulatory system ability (Whitbourne, 1999). Reduced muscle and bone strength, compiled with decreased joint mobility, places older adults at a higher risk for injury due to falling (Dargent & Breart, 1993), and can create a rather maladaptive "fear of falling" (Downton & Andrews, 1990) in seniors that affects other

aspects of their psychological well-being (e.g., lowered sense of self-efficacy, avoidance of physical activity, etc.) (Tinetti & Powell, 1993). In addition, as a result of internal physical changes to the functioning of the central nervous system over time, research by Park et al. (2002) demonstrates that older adults often experience changes in abilities related to cognitive functioning (e.g., processing speed, working memory, long-term memory, and reasoning), which are all necessary to live independently for as long as possible (as cited in Park & Bischof, 2013). Understanding the psychological implications that accompany physical changes in older adults is necessary for the planning and coordination of resources and services available for this population.

Sociocultural Factors. Additionally, it is important to consider the various sociocultural factors that can affect one's aging experience, as well. For example, Luborsky & McMullen (1999) discuss the ways in which some conceptions of aging held by older adults can be derived directly from the individualistic culture of America. As mentioned previously, many older adults in Memphis wish to "age in place" (i.e., live independently in their homes for as long as possible) (The Plough Foundation, 2012), which can largely be attributed to the desire among individuals in America to avoid being dependent on others and placing additional strain on their family members and caretakers (Albert & Cattell, 1994). Rather than having a mentality that allows for interdependence among the members of a given society—as is the case in most Eastern cultures, for example—older adults in most Western cultures want to maintain their sense of independence for as long as possible. The process of transitioning from one role to another as one ages—such as the role of the provider to the role of the one who relies on others to get what he or she needs—can be a significant source of unhappiness for seniors

(Eddington, Piper, Tanna, Hodkinson, & Salmon, 1990), and should be taken into consideration when discussing the ways in which they can give back to their communities in meaningful ways in the future.

Additionally, according to the Profile of Older Americans (2014), approximately 28% (12.5 million) of non-institutionalized older persons live alone, and a large proportion of this population is comprised of women (8.8 million). As a result of this statistic, it is not uncommon for older adults to feel a greater sense of social isolation compared to younger individuals, which can then lead to numerous negative physiological- and psychological-related health outcomes later in life (Nicholson, 2012). Older individuals who have a greater number of rewarding social relationships and interactions are more likely to have a greater sense of life satisfaction, to enjoy these interactions more, and to feel more self-assured in comparison to their less socially-satisfied peers (Nezlek, Richardson, Green, & Schatten-Jones, 2002). Understanding the importance of social involvement for older adults and the roles and environments they have experienced or will eventually experience in their lifetimes can provide a useful framework for treating and working with this population of individuals in a variety of settings.

Generational Differences

Apart from defining and understanding the aging process, and the various psychological changes and sociocultural influences that occur throughout this process, it is important to consider the specific historical, cultural, and societal events that have affected and shaped each cohort of older adults in America. These shared experiences can

influence an individual's working years, in addition to the ways in which he or she will view their retirement, or years spent working part-time later in life, as a result.

The individuals in the Greatest Generation (those born between the years 1912 and 1927) experienced hardship during the Great Depression, followed by economic reform with the New Deal, the attack on Pearl Harbor, the rise of Hitler, the end of World War II, the impact of the G.I. Bill, and the beginning of television, among other events (Temple University, 2008). The members of this generation, as a result of a life filled with patriotism and hard work, greatly anticipated the "Golden Years" of a leisurely and restful retirement. Because of the Greatest Generation's desires and worldview, retirement communities became more widespread throughout the country (Temple University, 2008).

The individuals in the next generation, the Post-War/Silent Generation, were born between 1928 and 1945 and were largely shaped by the Korean War, McCarthyism, life in suburbia, the Space Age, the beginning of the Cold War, and the emergence of Rock n' Roll music (Temple University, 2008). The individuals of this cohort share some of the same ideals about retirement as the previous generation, but many of the younger members believe that retirement is a time to be active, travel, learn and re-discover one's sense of freedom (Temple University, 2008). While the Greatest Generation members gave back to their communities significantly through civic engagement, the members of the Silent Generation share this new mentality about life after full-time work, which has been a large contributing factor to the high volunteer rates of this cohort.

The individuals in the next generation of "Baby Boomers" were born between 1946 and 1964, and belong to either the Leading Edge (1946-1954) or the Trailing Edge

(1955-1964) of the generation (Temple University, 2008). Along with other cultural and historical events, those in the Leading Edge experienced the inauguration and assassination of John F. Kennedy; Martin Luther King Jr.'s "I have a dream" speech during the March on Washington; King's assassination; the worldwide popularity of the Beatles; the first walk on the moon; the Vietnam War; and the arrival of the birth control pill (Temple University, 2008). The Trailing Edge members witnessed the Fall of Vietnam; the Watergate Scandal, Nixon's resignation from office; the Iranian Hostage Crisis; the Women's and Gay Rights Movements; the AIDS crisis; and the beginning of the late-night television program *Saturday Night Live* (Temple University, 2008).

As individuals who are now entering the age of retirement and can often be described as forward thinking and individualistic, not all "Boomers" are planning to retire from their jobs, and many are searching for ways to get involved and become valuable assets of their respective communities (Temple University, 2008). While the previous two generations also considered volunteering to be an important part of retirement, this generation of "Boomers" is volunteering at even higher rates than previous generations did at the same age (Temple University, 2008). Results from an AARP Work and Career Study (2002) indicated that the desire to work for enjoyment, to remain useful, to do something interesting, and to stay physically active after one's career trumped all other factors as the top motivators for working in retirement, apart from the need to continue making money. Over 70 percent of pre-retirees consider staying "mentally active" as a "very important" aspect of retirement, and many (approximately 27 percent) even wish to seek employment in areas that are very different from their previous careers or what they have otherwise experienced in the workforce (AARP, 2002). Additionally, many pre-

retirees are willing to fill roles in occupations that have experienced a rapid increase in growth, such as the role of a customer service representative, a teaching assistant, or a retail salesperson, among others (AARP, 2002). This concentrated interest allows for a win-win situation—businesses and organizations can continue to grow, and the demands and expectations of retired individuals can be met.

With considerable information from the population of pre-retiree “Boomers” about what they desire to gain out of their retirement years, it is important to consider the ways in which society as a whole can benefit from a population of experienced and motivated older adults. Even more importantly, it is imperative that the older adult population remains healthy for as long as possible in order to do the work they desire to do and to allow for this reciprocal benefit to take place. While there are many aspects of the aging process to consider when conducting research (e.g., 4 different forces of aging, 3 generations of individuals, etc.), for the purpose of this project, I will focus mostly on the psychological (cognitive and behavioral in particular), physical, and sociocultural forces surrounding successful aging and the ways in which the research conducted in these areas can benefit those on the brink of retirement (i.e., “Boomers”).

The Roles of Cognition, Physical Health, and Social Interaction in Successful Aging

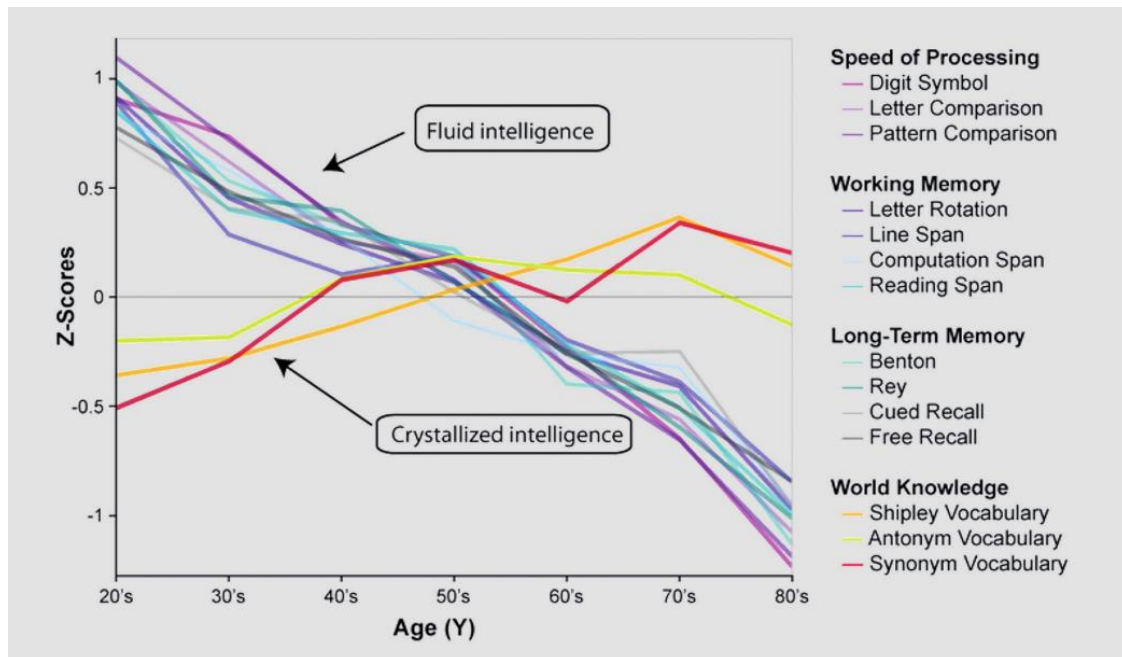
“Successful aging” is different for everyone, and can be defined as having only a few signs of aging occur throughout the lifespan, as opposed to having “usual patterns of aging” that reflect the typical developmental changes that occur as one ages (Cavanaugh, 1999). This concept can also be defined as avoiding disease (i.e., “non-pathological aging”) or as having only those changes in function that are “predictable” for older adults

(Daffner, 2010). Regardless of the precise definition, many research studies have been conducted that relate to this topic, and while there is promising evidence for multiple approaches to healthy aging (e.g., antioxidants, supplements, “super foods,” etc.), the only relatively conclusive lines of evidence for a successful aging process involve continued participation in cognitively-, physically- and socially-stimulating activities.

The concept of “everyday cognition”—the “ability to perform adequately those cognitively complex tasks of daily living considered essential for living on one’s own in this society”—includes abilities that range from operating the telephone and preparing meals to taking medication and managing one’s personal finances (Bosworth & Ayotte, 2009; Willis, 1996). The concept of “everyday cognition” is not limited to simply performing these tasks of daily living, however. In order to live independently, it is also necessary for a senior to be able to make decisions about his or her property and resources, which requires the effectiveness of the senior’s cognitive capacities, including processing speed; working, short-term, and long-term memory; and crystallized and fluid intelligence (Diehl, Willis, & Schaie, 1995).

Crystallized intelligence refers to the ability to use one’s skills, knowledge, and experience to solve problems and perform tasks, while fluid intelligence measures one’s ability to think logically and deal with novel situations (i.e., “think on one’s feet”). Some examples of activities that rely on this type of intelligence include taking a test in reading comprehension, arithmetic, or vocabulary, and reciting poetry. These actions involve using one’s accumulated knowledge over time or applying concepts learned in school to perform the tasks well. In comparison, examples of activities that rely on fluid intelligence include learning new concepts, solving problems, and recognizing or

comparing patterns (which are also some of the ways this type of intelligence can be measured or evaluated). Across the lifespan, fluid intelligence declines steadily with age (the type of intelligence that plays a large role in allowing one to carry out actions related to “everyday cognition”), while crystallized intelligence remains invariant or even shows improvement with age (Park & Bischof, 2013):



Individuals with poorer health are at risk of even faster cognitive decline than their healthier peers (Williams & Kemper, 2010; Wysocki et al., 2012), and Shelby County older adults, specifically, report having conditions that are highly associated with poor overall health (e.g., hypertension, high cholesterol, mobility problems, and diabetes) (The Plough Foundation, 2012). Given the importance of cognition in successfully carrying out activities of daily living and the reported health status of older adults in Shelby County, it is important for the older population of Memphis and the organizations that serve these individuals to think proactively about aging, and the ways in which seniors can maintain their cognitive functioning into old age. There is no prescriptive age to start

regularly engaging in cognitively-stimulating activities, but the graph above indicates that individuals in their mid-50's who are approaching the age of retirement (such as the "Baby Boomers") are likely a target audience for preventative measures related to cognitive decline.

While certain aspects of one's cognitive functioning are often expected to decline with age, researchers are now arguing that certain lifestyle factors can help maintain one's "cognitive vitality" later in life (Fillit et al., 2002). Research studies have shown that individuals who work in complex environments (Schooler, Mulatu, & Oates, 1999), and therefore have higher mental demands in the workplace on a regular basis, have higher rates of cognitive functioning and slower rates of cognitive decline after retirement than their peers in less-demanding occupations, even after controlling for socioeconomic status, education, and income (Fisher et al., 2014). In addition, certain leisure activities such as reading, playing chess or music, gardening, or cooking have been shown to be cognitively stimulating and can reduce the risk of acquiring dementia or slow the rate of cognitive decline for those who participate in such activities regularly (Tesky, Thiel, Banzer, & Pantel, 2011).

Epidemiological studies have revealed that the level of a senior's educational attainment, the degree to which his or her occupation is cognitively engaging, and the frequency of his or her participation in leisure activities collectively allow for the creation of "cognitive reserve" and a decreased risk of developing Alzheimer's disease (AD), as a result (Stern, 2012). Seniors with more than 8 years of education, high occupational roles (e.g., manager, business or government employee, professional, etc.), and participation in more than 6 leisure activities as week (e.g., walking; visiting friends or relatives; reading

magazines, newspapers, or books, etc.) have a significantly lower risk of developing dementia than seniors with less education and less stimulation in their work and leisure environments, comparatively (Stern, 2012). The concept of cognitive reserve partly explains the reason for individual differences in their susceptibility to brain changes throughout the aging process (including forms of dementia), as those with a greater amount of cognitive reserve due to stimulating lifelong experiences are able to resist greater amounts of damage in the brain that can occur as age-related declines in neurological functioning ensue over time (Stern, 2012).

In addition, there is also evidence that cognitive reserve can increase throughout one's lifespan, but largely depends on the environments one is exposed to regularly and the behaviors in which one chooses to engage (Stern, 2012). These findings are promising for the potential benefits of cognitively-stimulating interventions or productive changes in lifestyle for seniors, and are worth exploring in the process of planning senior programs or adjusting work environments for adults as they age. Unfortunately, even in light of positive results from many research studies, there is still a significant amount of information that remains unknown about the process of cognitive aging, and the ways to definitively offset decline. One of the more challenging aspects of this research, in particular, is determining the appropriate type and frequency of activity (i.e., "dosage") to engage in regularly (and at what age to begin this type of activity) in order to obtain the maximum cognitive benefits (Daffner, 2010). There has not been enough evidence from this area of research to make such conclusions that both clinicians and researchers are looking to give seniors and their families.

Research studies with animals have demonstrated the beneficial effects of physical exercise on neurobiological mechanisms (Daffner, 2010; Gligoroska & Manchevska, 2012). These studies have shown that physical training increases angiogenesis (i.e., the development of new blood cells), synaptogenesis (i.e., the development of new synapses between neurons), and neurogenesis (i.e., the development of new neurons) (Cotman, Berchtold, & Christie, 2007), all of which are important processes in maintaining one's cognitive ability. In addition, engaging in regular physical exercise decreases one's chances of developing peripheral risk factors for cognitive decline such as diabetes, hypertension, and cardiovascular disease, all of which can negatively influence brain function (Cotman, Berchtold, & Christie, 2007). Although there is a consensus among many researchers that physical exercise can serve as an important lifestyle factor in maintaining and ensuring successful brain function, there is still a substantial amount of research that is necessary to conduct to solidify this connection in terms of amount, type, and length of physical activity for maximum cognitive benefit (Daffner, 2010).

Lastly, as mentioned previously, both the amount and quality of social interactions that older adults engage in over a period of time can have beneficial effects on their sense of life satisfaction and for the success of the aging process overall. Related to this idea, research has shown that volunteering at moderate to high levels per week (i.e., 7 or more hours per week) is associated with higher life satisfaction and more positive affect in comparison to non-volunteers, and that these positive benefits are largely mediated by the extensiveness of the network of friends and family within which a particular senior lives and operates (Pilkington, Windsor, & Crisp, 2012).

Intergenerational programs exist throughout the country in which members of younger and older generations interact together and engage in mutually beneficial activities or discuss issues that exist in society (Generations United, 2002). The focus of these programs can range from discussing ways to deal with stress within one's family and understanding cultural and generational differences that exist between the two groups, to volunteering in the community or improving educational outcomes in urban city schools (Generations United, 2002). There is potential for a win-win situation with the latter type of program, in which both the senior who is doing the service and the individual or school that is receiving the service both benefit from the altruistic action. An example of this kind of symbiotic relationship exists with the Experience Corps® program.

Recognizing that social isolation is a common occurrence among older adults, and that these seniors have the capacity to contribute in valuable ways to their communities (i.e., increase social capital), a program called Experience Corps® trains older adult volunteers to serve as tutors in schools and mentor children who are struggling academically and/or behaviorally (Glass et al., 2004). This kind of intervention involves a series of steps that includes assessing and identifying the need within the particular school (such as reading skills and behavior management), determining the critical mass of volunteers needed by the school, requiring volunteers to dedicate a minimum of 15 hours of service per week within the school, allowing the volunteers to be trained and work in classrooms in teams (usually 7-10 individuals), and providing compensatory funds for seniors for expenses related to travel, meals, supplies (approximately \$200 per month) (Glass et al., 2004). Empirical results from the pilot study in Baltimore, Maryland with the first of these Experience Corps® programs revealed that, in comparison to

students in control schools, the students in schools with this program had higher standardized test scores and fewer office referrals for behavioral misconduct, and having seniors in the classroom was a help (rather than a burden) to school staff and administration (Rebok et al., 2004). In addition to these positive results documented for the students in the schools, there is reason to believe that the older adults benefit from the service, as well, based on the causal model outlined in the research by Glass et al. (2004):

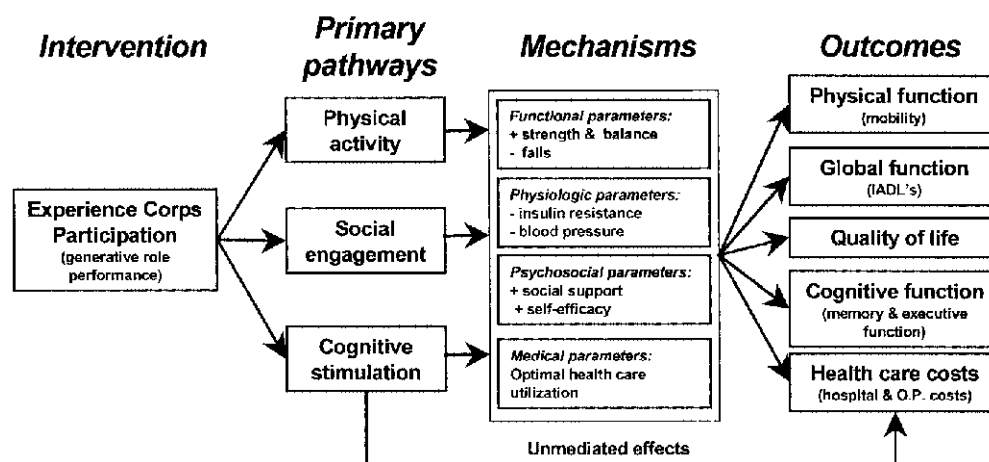


FIGURE 2. Causal model showing pathway through which Experience Corps participation has an impact on health in older adults

A follow-up experiment in which older adults were randomly assigned to either participate as Experience Corps® volunteers or remain on a wait-list for the 4-8 month period found that Experience Corps® volunteers improved in both executive function and memory, relative to control participants, and those with “impaired” executive function at baseline showed the greatest improvements (Carlson et al., 2008).

Apart from the potential of this program to address the need that exists within the Shelby County School District, another way in which Experience Corps® can be successful in a city like Memphis involves the group of seniors that contributed their time as volunteers in the schools. Termed a group of “nontraditional volunteers” by the

researchers, the Baltimore pilot study seniors were predominately African American (96%), high school educated or less (82%), had incomes of less than \$15,000 (69%), and reported an average of 2.5 chronic conditions per person (Glass et al., 2004). Despite any of these potential obstacles, however, the senior volunteers return in large percentages (80%) each year (Fried et al., 2004), which suggests that the program is successful in meeting the social and generativity (i.e., willingness to guide the next generation) needs of the senior volunteers (as cited in Glass et al., 2004). This program exists in 19 cities around the United States, and continues to make strides in promoting both social capital and successful aging within its respective communities.

Memphis' Approach to Aging: What Can be Improved?

From the research I have conducted this summer, not very many intergenerational programs that have the same potential for reciprocal gains as Experience Corps® can be found in Memphis. The most similar program that exists in the area is the Generations Program that exists at Porter-Leath, a non-profit organization that serves children and families in Memphis. Through this program seniors provide one-on-one emotional support, literacy tutoring, and mentoring to disadvantaged children and young adults. Apart from this program and possibly a partnership somewhere in the city between organizations of older and younger adults, the presence of this type of intergenerational interaction (and therefore its reciprocal benefits) is scarce.

As demonstrated by the success of the Experience Corps® program, there are many benefits for older adults that can result from intergenerational programming, including a greater sense of community engagement, expanded leadership opportunities

in a variety of environments, and increased social capital (i.e., the collective value of one's social networks and the resulting inclinations that arise from them to act altruistically toward one another) (Brown & Henkin, 2014). Beyond educational gains, intergenerational programs allow for children to obtain a greater understanding of older adults and their limitations, and can help them take more than one perspective when discussing their experiences interacting with seniors or reflecting upon their emotions in their writing (Fair & Delaplaine, 2015). The benefits of this type of interaction extend across many realms of the human condition, and there is undoubtedly potential in Memphis for benefits similar to those found in the literature to take place, as well.

From the research evidence that shows that one's cognitive abilities can be maintained with regular cognitive, physical, and social engagement, it is necessary for services and organizations that cater to seniors to consider taking a proactive approach to aging. That is, cognitively- and socially-stimulating activities must be pursued regularly and early on in the aging process, and one's physical health must be maintained in order to decrease one's chances of acquiring disease. Based on the interviews I have had with employees of senior services around Memphis this summer, not many organizations in the area seem to follow this proactively-focused approach to maintaining the cognitive and physical health of their seniors. Most services and organizations seem to approach issues surrounding aging in a very "reactive" way (i.e., after the seniors are unable to care for themselves) by focusing solely on providing tangible services such as transportation, meals, and in-home repairs, among others. These services are very useful, and there is substantial need for them among the senior population of Memphis, but as greater numbers of "Boomers" are quickly approaching the age of retirement and will likely

demand a greater number of resources from government-funded and non-profit organizations than ever before, these organizations will likely experience significant economic strain. And because a proactive approach to aging wasn't taken, the seniors will likely experience greater health-related issues in the future, as well. While some senior resources, such as the Baptist Memory Care Center, provide accurate information to seniors about how to remain cognitively active in order to delay decline, this information is provided after one visits the center for a memory assessment, and is classified as having some form of memory impairment. In addition, the center is located in Collierville, off the public transportation lines, and many lower-income seniors living in Memphis cannot access this information, as a result.

While a good proportion of Memphis seniors live in poverty and likely need the meals, in-home repairs, and transportation provided by government and non-profit organizations in order to survive and “age in place,” it is important to go one step further in regard to the aging population of Memphis and think about *how* these individuals are aging—especially in regard to their cognitive, physical, and psychological health—and how maintaining these three aspects of seniors' overall functioning, specifically, can help them remain valuable assets of the community for as long as possible.

Another program that has been successful for seniors' cognition is Senior Odyssey, a cognitively-stimulating program for older adults that is modeled partly from the Odyssey of the Mind program for children and young adults (Stine-Morrow, Parisi, Morrow & Park, 2008). In this program, seniors compete year-round on teams and prepare solutions to one “long-term problem” and strategize for solving “spontaneous problems” (Stine-Morrow, Parisi, Morrow & Park, 2008). An important characteristic of

this program is its strong emphasis on collaboration and creativity, as both “long-term problems” and “spontaneous problems” can range from musical performances that describe historical events in new ways to hands-on construction of light-bulb containers using a limited set of supplies, respectively (Stine-Morrow, Parisi, Morrow & Park, 2008). Results from this program revealed that the seniors who participated in Senior Odyssey over the scheduled course of 7-8 months had positive increases in processing speed, inductive reasoning, and divergent thinking, as evaluated by standard measurements of fluid ability (Stine-Morrow, Parisi, Morrow & Park, 2008). This study indicates that already, across the country, individuals are thinking about aging in a proactive manner, and they recognize that maintaining older adults’ cognition is a necessary part of a successful aging process.

Discussion – Why This Research Matters

United States Census population projections estimate that the older adult population of America is increasing steadily over the next 45 years (U.S. Census Bureau, 2010), which means that individuals of all ages across the country are going to have to start thinking of ways in which seniors can remain valuable members of society for as long as possible. In many ways, Shelby County seniors are already vital assets of their community, as they vote, donate to charity, and serve as caretakers for their friends and families in large proportions (The Plough Foundation, 2012). These same data also indicate that nearly 1 in 3 of these seniors were diagnosed with depression or anxiety within the last 5 years, a quarter do not know where to go to find out about information or services available to them, and many report having conditions associated with poor

overall health (The Plough Foundation, 2012). Studies outlined earlier in this paper have shown that intergenerational interactions, maintaining positive social relationships, and volunteering can have beneficial effects on the well-being of older adults. There is also potential for success of intergenerational programming in Memphis, specifically, as interest in this type of interaction was strongest among lower-income (58%) and African American (61%) seniors surveyed in Shelby County (The Plough Foundation, 2012). In order to ensure that these older adults can contribute in valuable ways to the community, however, it is necessary for organizations and services that cater these seniors to start taking a proactive approach to aging early on in the process.

As previously mentioned, many of the programs and organizations that cater to seniors in Memphis work to provide them with tangible goods and services in order to meet the needs of this demographic. In the coming years, however, these organizations may experience economic strain as more “Baby Boomers” approach the age of retirement and start qualifying for the services they provide. This impending demand on the resources and staff of these businesses provides an economic incentive to start thinking about the value of aging successfully, which involves engaging regularly in cognitively-stimulating and socially-rewarding activities and maintaining one’s physical health throughout the aging process. These 3 major hallmarks of successful aging apply mostly to older adults in the process of transitioning to retirement, however, as they must be addressed proactively in order to be effective.

Some ways in which older adults can benefit from this research in Memphis, particularly, include the creation of a narrative-sharing program at Story Booth in which older adults can share their life experiences with participating children and students, who

can then cultivate their skills related to collecting, organizing, and performing written testimonies. A program such as this one has the potential for reciprocal benefits, as older adults are brought into the fold of the community through the sharing of their stories, while children and students learn about their lives in fun and creative ways. Additionally, it could be useful to look into taking the initial steps to obtaining an Experience Corps® program in Memphis. Based on the documented success and widespread popularity of the program elsewhere across the country, it may have a similar beneficial effect here, as well. Lastly, getting this information and research out to caregivers and senior centers in Memphis is a logical initial step in helping older adults in the area age successfully. Providing this information to the people and organizations that care about the elderly in Memphis the most has great potential for both the seniors and the communities they serve and will continue to serve in the future.

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