

African Americans and Alzheimer's Disease: Role of Health Educators in Addressing this Silent Epidemic

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Alzheimer's disease is a major public health crisis in the United States as well as a growing health disparity. African Americans suffer disproportionately from Alzheimer's disease (AD); they are twice as likely to have AD as white Americans. The Alzheimer's Association refers to AD as a "silent epidemic" in the African-American community due to its increased prevalence, scope, and nature. There is growing evidence that diabetes, hypertension, cardiovascular disease, and high cholesterol are significant risk factors for AD. As such, it is quite conceivable that African Americans, who suffer disproportionately with these diseases, would be more at risk of having AD. The genetic risk factors reportedly work differently in African Americans than in whites. African Americans tend to be diagnosed later and less reported than their white counterparts, giving them less time for effective use of therapeutics. Moreover, African Americans remain underrepresented in research and clinical trials in Alzheimer's disease studies causing an information gap in the effectiveness of pharmaceuticals in underrepresented populations. African Americans tend to be less knowledgeable about AD than whites and are more likely to believe that dementia is a normal part of aging. Health education strategies are needed to improve prevention, early detection, and diagnosis of Alzheimer's disease among African Americans.

According to the Alzheimer's Association (2011), Alzheimer's disease (AD) is the most under recognized public health crisis of this century. The number of people with AD is growing drastically. This number is expected to more than double by 2025 (Herbert, Scherr, Bienias, Bennett, & Evans, 2003; Mount & Downton, 2006) and will increase to more than 16 million by 2050, as the nation's baby boomers are living longer. The first wave of baby boomers (those born between 1946 and 1964) turned 65 in 2011, and in 2029 all baby boomers will be at least 65 years old. This group of more than 70 million individuals will be one of the largest groups to have a significant impact on America's health care system. There is widespread belief that even these numbers are underestimated due to underreporting of AD deaths on death certificates, both in the community and in nursing homes (Alzheimer's Association [AA], 2011).

Alzheimer's disease most often occurs in individuals in their 50s and 60s. This is referred to as late onset Alzheimer's disease (LOAD) and is most common. However AD may also occur in individuals who are in their late 30s and early 40s. This is referred to as early-onset AD. Most often, the disease is diagnosed with a thorough medical history, testing for a person's mental status, a physical and neuro-

logical examination, and a series of blood tests and image analyses to rule out other causes of dementia-like symptoms. In addition, new diagnostic criteria include the identification of three stages of AD and the incorporation of biomarker analyses, according to the Alzheimer's Association (AA, 2013a).

Today, Alzheimer's disease is the 6th leading cause of death for Americans and the 5th leading cause of death in persons 65 and older (AA, 2012a). Deaths from AD increased 66 percent between 2000 and 2008. Whereas deaths from AD are increasing, the death rate for heart disease, the number one cause of death in the United States, has been decreasing over the past few years. In addition to health-related problems, Alzheimer's disease has a tremendous financial impact on American society. For example, the estimated cost associated with AD for 2012 will be \$200 billion, with \$140 billion costs to Medicare and Medicaid. During the 40-year period between 2010 and 2050, the total cost of care for Americans age 65 and older with AD is expected to increase from \$172 billion to \$1.08 trillion per year (AA, 2012a; Gurland et al., 1999; Hendrie et al., 2006; & Tang et al., 2001).

In racial minority communities, the prevalence of AD among individuals aged 65 years and older is estimated to be higher than in the non-Hispan-

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ic white counterparts (AA, 2012a; Gurland et al., 1999; Hendrie et al., 2006; & Tang et al., 2001). According to the AA (2010), African Americans are about twice as likely as non-Hispanic whites to have AD. The AA published a report entitled African Americans and Alzheimer's Disease: The Silent Epidemic (2012b). This report revealed that the prevalence, incidence, and cumulative risk for AD seem to be higher among African Americans than white Americans. Further, it was estimated that age-specific prevalence of dementia may be 14% to 100% higher among African Americans (AA, 2012b).

The "silent epidemic" of Alzheimer's is expected to increase significantly among African Americans as the proportion of older African Americans is projected to grow in the coming years. By 2030, more than 6 million African Americans over the age 65 years and 638,000 over the age of 85 years are estimated to be at risk for AD (AA, 2012a). Freels, Nyehuis, and Gorelick (2002) reported that African-American elders have a greater risk of dying from AD than any other type of dementia. This higher risk could be due to genetic factors as well as environmental factors such as stress and lifestyle that increase the risk for hypertension, metabolic disorders, and cardiovascular disease.

Currently, there are five FDA-approved medications that temporarily reduce symptoms for some individuals with AD, although there is still no cure (AA, 2011). Because there is no known cure for AD, or any disease-modifying drug which slows its progression, the best that one can expect from the available drugs is to be able to temporarily improve certain symptoms. These may include: (1) helping to maintain thinking, memory, and speaking skills, (2) assisting with the management of behavioral symptoms such as wandering, sleeplessness, depression, anxiety and agitation, and (3) improving the quality of life, in general. Increasingly more non-pharmacologic interventions are also used to enhance patient quality of life by improving mood, cognition and performance of daily activities (National Institute on Aging [NIA], 2012a).

Recent research studies indicate that the risk for developing Alzheimer's disease can be lowered or reduced with lifestyle changes and early drug therapies (Eskelinen, Ngandu, Tuomilehto, Soininen, & Kivipelto, 2011; Miller, 2012). Thus, there is a role for health educators to play in reducing the risk for developing Alzheimer's disease among Americans. With the continuous increase in the number of Americans, particularly African Americans, developing Alzheimer's disease, it is imperative that the health education professional literature includes information on AD and the role of health educators in addressing this disease. The aim of this paper is to provide health educators with an overview of AD and factors associated with the health disparity of AD in the African-American community. Finally, the paper will discuss strategies for health educators in addressing Alzheimer's disease among African

Americans.

OVERVIEW OF ALZHEIMER'S DISEASE

Alzheimer's disease is a degenerative, irreversible, progressive disease that gradually renders the patient devoid of memory and cognitive ability (Dubois et al., 2007). Although not certain, researchers believe that damage to the brain from AD starts at least ten years or more before a person shows any signs (NIA, 2012a). Two major hallmarks that occur in AD patients are the occurrence of tangles and the accumulation of amyloid plaques in the brain (American Health Assistance Foundation [AHA], 2012). As a consequence, many of the normal 100 billion nerve cells (neurons) deteriorate and eventually die. Images of brains in patients who have severe AD show significant shrinkage of the brain, as well as debris from dead and dying brain cells. In addition, increasing numbers of the 100 trillion synapses (connections between neurons) lose connectivity; neuronal cell communication is halted and the cellular basis of memory and skills known as cognitive abilities are lost as well (NIA, 2012b).

Whereas AD is the most common form of dementia, there are several other types, including: (1) vascular dementia, which is also referred to as multi-infarct or post-stroke dementia, or vascular cognitive impairment; (2) mixed dementia, which is the combination of Alzheimer's and one other type of dementia; (3) dementia with Lewy bodies, where individuals may hallucinate and experience rigid muscles and tremors and accumulate Lewy deposits in the brain; (4) Parkinson's disease, where persons experience movement disorders and also accumulate Lewy deposits in the brain; (5) Frontotemporal dementia, where persons experience damage to brain cells in the front and side regions of the brain and experience behavioral and speech challenges; (6) Creutzfeldt-Jakob disease, where persons experience memory, coordination and behavioral challenges; and (7) Normal pressure hydrocephalus, where there is a buildup of fluid in the brain and persons experience memory problems and the inability to control urination (AA, 2012a).

SIGNS, SYMPTOMS, AND STAGES OF ALZHEIMER'S DISEASE

Increasingly, studies are indicating that most people who have dementia have more than one type of brain disease (Schneider, Arvanitakis, Bang, & Bennett, 2007). These findings are leading investigators to believe that the delineations among the different types are blurred at best. The hallmark of dementia is the loss of memory or other cognitive abilities. Other lost abilities include the inability to generate coherent speech or written language, recognize or identify objects, execute motor abilities, think in abstract ways, and the inability to make sound judgments to plan and carry out complex tasks. Patients with AD tend to progressively suffer from memory

deterioration, progressive decline in cognition, insidious onset of memory loss, emergence of neuropsychiatric symptoms and behavioral disturbances, along with the inability to carry out daily life functions and eventually independent functioning (AA, 2012a).

As described earlier, the centers in the brain that are responsible for recent memory deteriorate and die in a person with Alzheimer's disease. Consequently, one of the most common earliest signs of AD is memory loss; however, as shown in Table 1, there are other early signs that are noticeable with people who have AD (AA, 2011).

Alzheimer is an irreversible and progressive disease that moves through stages (mild, moderate, and severe). The mild stage is characterized with the following symptoms: memory loss, poor judgment, mood and personality changes, longer time to complete daily tasks, and getting lost. Moderate Alzheimer's disease includes the following signs: increasing memory loss and confusion, shortened attention span, inappropriate outburst of anger, repetitive statements or movement, and difficulty with recognizing friends and family members. In the final stage, severe AD, patients tend to exhibit the following characteristics: problems swallowing, seizures, skin infections, increased sleeping, and loss of bladder and bowel control (NIA, 2012a).

Table 1. Early Signs and Examples of Alzheimer's Disease

Sign	Explanation
Memory loss that disrupts daily life	Forgetting recent information, repeating, asking the same information over and over, relying on lists or aids to remember, asking others to do things they did
Challenges in planning or solving problems	Having problems paying bills, or following a recipe, or concentrating.
Difficulty Completing familiar tasks at home, at work or at leisure	Having trouble driving to familiar locations, managing a budget at home or work, or difficulty remembering the rules of a game.
Confusion with time or place	Losing track of dates, seasons, and passage of time. They find it difficult to know where they are or how they got there.
Trouble understanding visual images and spatial relationships	Having difficulty reading, judging distances or color or contrast. They may not realize they are the person in the mirror.
New problems with words in speaking or writing	Having trouble following or joining a conversation. They have difficulty with vocabulary and call a common object by another name. They will repeat.
Misplacing things and losing the ability to retrace steps	Having difficulty putting things in the right place. They may not be able to retrace steps and might accuse a loved one of stealing from them.
Decreased or poor judgment	Having difficulty with decision making or judgment such as giving large amounts of money to telemarketers. They may not want to groom themselves properly.
Withdrawal from work or social activities	Removing themselves from hobbies, sports or work related activities. They may feel insecure about socializing because of the changes they are experiencing.
Changes in mood and personality	Having issues with confusion, suspicion, depression, fear and anxiety. They become easily upset at home, work, with friends or in areas outside of their comfort zone.

Source: Alzheimer's Association (2012a).

RISK FACTORS FOR ALZHEIMER'S DISEASE

The exact cause of Alzheimer's disease is not clearly known. However, there are risk factors that are associated with the development of AD. Advancing age is the greatest risk factor for AD, although this disease is not an inevitable part of the aging process. As seen in transgenic mice models, behaviors that maintain vascular health, such as regular exercises and healthy diet, are associated with lower risk for Alzheimer's disease and other forms of dementia (Costa et al., 2007; Hu et al., 2010). These studies suggest that regular physical activity and attention to heart health may reduce the risk of developing AD and benefit individual's cognitive health (Costa et al., 2007; Hu et al., 2010). Non-modifiable risk factors for AD include age, family history, and genetic factors (Bassil & Grossberg, 2009). The modifiable risk factors that are associated with AD include: hypertension, diabetes mellitus, high cholesterol, smoking, alcohol, metabolic syndrome and head trauma (Bassil & Grossberg, 2009). Among these risk factors are several health disparities that plague minority communities such as hypertension and diabetes. The clustering of these risk factors increases the incidence of the disease in minority communities (Luchsinger et al., 2005).

Factors Associated with Increased Risks for African Americans

Age is the strongest risk factor for Alzheimer's disease, regardless of race or ethnicity. Aside from age, there are biological, lifestyle and socio-cultural factors that may put African Americans at a greater risk for developing AD. This section will discuss these factors that seem to increase African Americans risk of developing AD.

Biological and Personal Factors *Genetics and family history.* As mentioned early, Alzheimer's disease has two forms, early-onset and late-onset Alzheimer disease. Early-onset is rare, as only about five percent of the people with AD have this form. Additionally, early-onset AD tends to cluster within families. Most Americans with AD are aged 65 or older. Both forms have specific genes associated with the risk of developing AD (AA, 2010). Reports by Gatz et al. (2006) indicated the heritability for AD to be as high as 79 percent.

According to genome-wide association studies, there are approximately 10 gene variants that are closely associated with susceptibility to Alzheimer's disease (Mayeux, 2011). Mutations in three dominant genes (PSEN1, PSEN2 and APP) were shown to account for increased risk in early-onset AD (Levy-Lahad, Lahad, Wijsman, Bird, & Schellenberg, 1995; Sherrington et al., 1995; Sleegers & van Duijn, 2001; Tanzi & Bertram, 2001).

For many years, the apolipoprotein E gene

(APOE) was the only gene recognized as being associated with LOAD (Corder et al., 1993; Farrer et al., 1997). Apolipoprotein E (APOE) is a plasma protein that plays a role in the transport of lipids. The presence and concentration of this gene is reported to be a risk factor for LOAD. Until recently, the presence of APOE -e4 allele was believed to be a determinant of AD risk in white Americans; reports for the APOE status for African Americans were inconsistent (Evans et al., 2003; Tang et al, 2001). A study by Reitz et al. (2013) revealed that the genes APOE -e4 and ABCA7 demonstrate genetic risk for LOAD among African Americans.

To date, this study is the largest analysis to determine the genetic risk associated with LOAD among African Americans. A total of 5896 African Americans 60 years or older participated in the study. A major finding of the study indicated that ABCA7 gene has a much stronger association for LOAD among African Americans than individuals of European ancestry (Reitz et al., 2013). Although not conclusive, this study provides the strongest evidence of the genetic risk of AD among African Americans. Researchers (Reitz et al, 2013) recommended that the study be replicated to validate the results.

In addition to the genetic basis for AD among African Americans, it seems that African Americans have a stronger familial risk of Alzheimer's disease than white Americans. Green et al. (2002) found that first-degree relatives of African Americans with AD have a higher cumulative risk of dementia than do those of white Americans with AD. Logue et al. (2011) explained that the increased familial risk among African Americans may be due to higher rates of risk factors for AD, such as poor education, diabetes mellitus, hypertension, and smoking.

In summary, the genetic risk factor alone does not explain the disproportionately presence of AD among African Americans. Other factors such as the presence of vascular diseases may be major risk factors to consider, along with family history, regarding the prevalence of AD among African Americans.

Relationship of certain diseases and prevalence of AD. There is an emerging body of evidences that suggest an association between vascular diseases and Alzheimer's disease (Kirbach & Mintzer, 2008; Tsigoulis et al., 2009; Vermeer et al., 2003; Viswanathan, Rocca, & Tzourio, 2009). In this context, vascular diseases refer to diseases/conditions that damage the heart and blood vessels, including blood vessels for the brain (AA, 2008). Vascular diseases/conditions, such as high blood pressure, stroke, diabetes, and high cholesterol, are believed to be major risk factors for the development of AD (Costa et al., 2007; Tsigoulis et al., 2009). Thus, these diseases/conditions are highly prevalent among African Americans, which may increase their risk for developing AD (AA, 2010). Further, stroke is thought to be one of the main causes of dementia in later life. A population study of 658 non-demented elderly par-

ticipants suggests that silent strokes or brain infarcts and hippocampus volume are associated with impaired memory and lower performance on tasks related to language, processing speed, and visuo-spatial functioning (Blum et al., 2012).

Social Determinants

Perception of risks and cultural beliefs. There is a growing body of literature that indicates there are differences in the knowledge, perceptions and beliefs about Alzheimer's disease across racial and ethnic groups in America (Connell, Roberts, & McLaughlin, 2007; Roberts et al.; 2003). Roberts et al. (2003) surveyed a small sample of African Americans and Whites to understand cultural differences in perceptions of AD. African Americans were less knowledgeable about certain facts of AD such as the risk factors, cause of disease and available resources. The study also revealed that African Americans were less worried about developing AD than their white counterparts. African Americans were more likely than Whites to believe that AD is "just part of growing older." Connell et al. (2007) also noted that significantly more African Americans than Whites believed memory loss is a normal part of the aging process. The findings from these studies may help to explain the delay of African Americans in seeking treatment for AD. These findings also support the need to implement Alzheimer's educational outreach efforts that will specifically target the African American community.

Under- and late- diagnoses of AD in African Americans. According to the AA (2013), many Americans are diagnosed too late and miss the opportunity to receive the best medical care that is available today. Further, late- and under-diagnoses are of greater concern among African Americans, because they are more likely to develop AD than white Americans. African Americans are less likely than Whites to have a formal diagnosis for AD. Delay in diagnosis indicates a delay for individuals to start drug treatment in the earlier stages of AD, when treatments are more likely to be effective. Also, earlier diagnosis allows individuals to make plans for their medical, financial, and legal care while they still have some cognitive abilities (AA, 2010; AA, 2012a).

Late diagnoses or misdiagnoses are even more common among people who live alone. For racial minority groups, this stark level of under-diagnosis only adds to the growing challenges of managing AD, both for the patient and the caregiver. In addition to under diagnosis for the elderly, it is estimated that 15% of individuals with dementia live alone, and that African American men older than 65 are more likely than Asian or non-Hispanic white men in the same age range to live alone (AA, 2012a). Alzheimer's disease prevalence among African Americans is exacerbated by the growing evidence that this population, as well as older non-white Hispanics, is misdiagnosed more often than in older Whites (Fitten, Ortiz, & Ponton, 2001). Given that these two

populations are expected to grow significantly in the next few years, under-diagnosis in these groups will be a major national concern.

As stated earlier, by 2050, the number of people who have Alzheimer's disease in America is expected to increase from 5.4 million to 16 million, unless there is a cure or major intervention (AA, 2012). Without interventions in the African-American community, such as education, awareness, and improved literacy, it stands to reason that either misdiagnosis or late-diagnosis will continue to contribute to the growing health disparity of AD among African-American elders. Researchers (Corbie-Smith, Thomas, & St. George, 2002; Corbie-Smith, Thomas, Williams, & Moody-Ayers, 1999) have noted that African Americans tend to lack trust in the medical community and clinical research due to a history of racial discrimination, inequity of health care, and unethical research practices, such as found in the Tuskegee Syphilis Study. Chin, Negash, & Hamilton (2011) suggested that medical discriminatory practices may still exist and possibly play a role in the diagnosis and treatment of AD among minority patients.

Underrepresentation of African Americans in research and clinical trials. The population of the United States is more than 12% African-American; in some states, African Americans comprise more than 30% of the total population (U.S. Census Bureau, 2010). In addition, more than 45% of the population is now considered as non-white. This number is expected to increase 50% by 2050 (U.S. Census Bureau, 2010). In spite of efforts by the federal government to increase minority recruitment into health related research studies, African Americans and other minorities are still underrepresented in clinical research trials (Areal & Gallagher-Thompson, 1996; Brawley & Tejada, 1995; Yancey, Ortega, & Kumanyika, 2006). This low inclusion rate ultimately impedes drug development and the design of specific treatments of illnesses that disproportionately affect minority populations, including African Americans (Byrd et al., 2006).

Williams et al. (2010) conducted a study to examine the barriers and facilitators of Alzheimer's disease research participation among African Americans. The study found that mistrust was the main barrier for nonparticipation. Other barriers of the study included inconvenience, lack of sufficient information about the research, and reputation of both the researcher and research institution. In addition, the study revealed that the key facilitators for getting African Americans to participate in research included the following: relevance of research to them, moral obligation, desire to learn more about the disease, and positive reputation of the research institution (Williams et al., 2010).

Research by Byrd et al. (2011) showed that African Americans do participate in research and that barriers to research participation must be addressed to improve participation by minorities. It is espe-

cially important for African-American males to be well-represented in future research studies, given that they have the worst age-adjusted health outcomes of any ethnic, racial or gender group (Rich & Ro, 2002). Byrd et al.'s (2011) study revealed that African-American males are willing to participate in several types of studies, even those that require human samples; however, they are still mistrustful about research. Further, their decisions to participate in research were motivated by issues such as civic duty, monetary compensation, and whether a relative has had the disease of interest (Byrd et al, 2011).

In general, African Americans' participation in health related research studies will require intentionality on the part of investigators. Multifaceted approaches that provide this group with a better awareness and sustained presence in the community will be needed to increase the number of African Americans who participate in studies (Lang et al., 2013). Whereas the approach is costly and time consuming, in some cases, it is necessary to improve racial, ethnic and gender inclusion, to reduce generalization of study results about Alzheimer's disease.

TRANSLATION TO HEALTH EDUCATION PRACTICE

Increased education among African Americans about this growing epidemic is a major first step toward understanding its signs and symptoms, risk factors, management and ultimate prevention. Efforts that raise awareness among underrepresented groups should become major priorities for governmental and private funding agencies across the country. Reducing the number of people with AD will require the disease to be considered and addressed as a public health issue. The following public health education strategies are recommended to lower African Americans' risk for developing Alzheimer's disease and for early detection of the disease:

- Increase awareness and knowledge about Alzheimer's disease among African Americans, including preventative strategies. Enacted in 2011, the National Alzheimer's Project Act includes the establishment of a national plan to address AD (U.S. Department of Health and Human Services [USDHHS], 2012). The National Alzheimer's Plan, a historic achievement, provides goals, strategies, and actions designed to prevent and effectively treat Alzheimer's disease by 2025. One of the goals of the plan is to create greater public awareness and engagement regarding AD. Schools and faith-based institutions may be the most culturally appropriate places to reach African Americans for public awareness and education about AD. Schools should include lessons on Alzheimer's disease in the health education curriculum as one of the chronic diseases like heart disease and cancer. In addition, faith-based activities and programs on Alzheimer's disease should be created and implemented in the African-American churches.

- Promote actions that preserve healthy

brain aging such as regular exercise and physical activity, healthy diet that includes plenty of vegetables and fruits, intellectually stimulating activities, and healthy levels of blood cholesterol and blood pressures (AHAF, 2012). Scarmeas et al. (2009) conducted a study to investigate the combined association of diet and physical activity with AD risk. They concluded that both a Mediterranean-type diet and physical activity were independently associated with reduced risk for developing AD. Eskelinen et al. (2011) found that obesity at mid-life is associated with an increased risk of AD later in life. Several studies (Blum et al., 2012; Gorelick, 2004; Helzner, Luchsinger, & Scarmeas, 2009; Kivipelto et al., 2005) indicate that risk factors such as high cholesterol, diabetes, hypertension and obesity are associated with a higher risk of developing Alzheimer's disease and other dementia.

- Encourage African Americans to participate in clinical trials for Alzheimer's disease. Emphasize the importance of knowing how genetics, treatments, drugs and alternative therapies work in different ethnic groups. Also, the National Alzheimer's Plan calls for strategies to increase participation of racial and ethnic minorities in AD studies (USDHHS, 2012). Researchers must make more of an effort to have racially diverse samples and recruit minorities to AD studies.

- Advocate for policies that support underserved families impacted by AD. The National Alzheimer's Plan recognizes that racial/ethnic minorities are disproportionately burdened by Alzheimer's disease (USDHHS, 2012). They are more likely to face barriers in obtaining a diagnosis for AD. In addition, racial/ethnic minorities tend to have more difficulties in receiving services after the onset of AD. These families need assistance in providing care to their loved one who is suffering from AD. Perhaps, a policy that addresses the following will improve the care to underserved families: providing accurate and timely diagnosis to all populations, providing access to care for all AD patients, and requiring education on AD for practitioners who do not generally specialize in the care of patients with AD.

In conclusion, health educators have a role to play in the National Alzheimer's Plan for addressing the health disparity of AD among African Americans. All seven Roles and Responsibilities of a health educator are applicable for addressing AD. This paper will highlight Responsibilities IV, VI, and VII. Responsibility IV states that health educators "conduct evaluation and research related to health education" (National Commission for Health Education Credentialing [NCHEC], 2012). To close the health disparity gap regarding Alzheimer's disease and African Americans, more socio-cultural and behavioral studies are needed to understand the impact of lifestyle, cultural beliefs and stigma in the development of AD. In addition, larger studies of African Americans are needed to assess their AD knowledge, attitudes, and perception of risk to develop appropriate

interventions. Lastly, more studies of African Americans, which consist of larger sample sizes, should be conducted to determine the role of genetics and family history in the development of Alzheimer's disease amongst this population.

Responsibility VI states that health educators "serve as health education resource person" (NCH-EC, 2012). Health educators need to disseminate information that is culturally relevant for African Americans on Alzheimer's disease, including ways to manage vascular diseases and other risk factor factors for AD. It is important to emphasize recommendations for keeping numbers for both blood pressure and diabetes in the healthy range so as to lower risk for developing AD.

Responsibility VII indicates that health educators should "communicate and advocate for health and health education" (NCHEC, 2012). Thus, health educators should create and tailor messages that are culturally relevant for the African-American community on: warning signs and symptoms of AD, their risks for developing AD, ways to promote brain health, and strategies to prevent or reduce behaviors associated with developing AD. Also, health educators should advocate that physician test high risk patients for AD so as to start them on treatment early in the disease process, which may help to slow the progression of the disease.

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