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Examining Delayed Onset of Dementia in the Bilingual Geriatric Population

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Background:
Dementia is a neurodegenerative disorder that results in cognitive decline and a marked deterioration in the capacity to function independently (American Psychiatric Association [APA], 2013). Patients who are affected by this disease experience memory deficiencies, such as recognizing familiar places and people in their lives. The most common form of dementia is Alzheimer’s disease (AD).

According to World Health Organization (2017), dementia is the largest cause of dependency and disability in older adults, affecting nearly 50 million people worldwide with about 10 million new cases every year. This large, growing dementia population produces considerable economic burdens that will inevitably rise rapidly in coming years. In fact, this population is projected to triple by year 2050 (Roberts & Peterson, 2014).

Because the current treatments for dementia are deficient, research has recently shifted to examine a new aim of discovering methods to delay or prevent the onset of the disease (Gold, 2015). Recently, bilingualism, which refers to the ability to speak two languages, is being proposed as a significant agent to increase cognitive reserve to delay the development of dementia. Significant evidence has recently been found to suggest that being bilingual modifies the brain to enhance executive control and cognitive functioning (Bialystok, 2011).

Research Questions:
1. Can bilingualism increase cognitive reserve and delay the onset of dementia?
2. What significant differences in cognitive testing methods and definitions of bilingualism are used among clinical studies that investigate whether bilingualism delays the onset of dementia?
3. Do the different types of cognitive testing methods and definitions of bilingualism currently used in the clinical studies affect the validity and reliability of the study results?

Methods:
A computerized search of literature was conducted using PubMed, the Cumulative Index of Nursing and Allied Health (CINAHL) Complete, and OVID Medline. The search terms were as follows: dementia, Alzheimer Disease, Cognitive Impairment, Bilingualism, and Multilingualism.

Inclusion criteria: research articles published within journals in the last 5 years, available in English, focus on Alzheimer Disease and dementia and the relationship to bilingualism

Exclusion criteria: studies that were excluded focused on many other non-related factors concerning the dementia populations.

Results & Discussion:
Among the 6 studies reviewed, all but one study concluded that bilingualism does delay the onset of dementia, but at different amounts of delay. Most studies state that the protective effect of bilingualism against symptoms of dementia is that the lifelong use of two or more languages contributes to cognitive reserve, the idea that stimulating activities aid in the maintenance of brain and cognitive function. According to Perquin et al. (2013), the earlier one practices multilingualism, the more enhanced their cognitive reserve and protection effects of dementia.

There were significant differences in cognitive testing methods and definitions of bilingualism used among the studies. Two longitudinal studies and two cross-sectional compared monolingual and bilingual dementia patients, taking into account certain confounding factors, including education, occupation, immigration status, and/or sociocultural and lifestyle habits. Some studies obtained data differently that potentially changed the outcome of the results. For example, Lawton et al. (2015) used an objective method and determined age of dementia onset at the time of the first doctor contact that resulted in a dementia diagnosis. Conversely, Alladi et al. (2013) used a subjective method by diagnosing dementia from family members reporting first onset of dementia symptoms. However, since the same subjective standard was applied to all subjects, a systematic bias affecting the validity and reliability of Alladi et al.’s results is less likely. The bilingualism definition varied across the studies due to the defining factors used in each study. The studies that collected more detailed data on bilingualism provided a better control of the language variables. The most robust data collected by Perquin et al. (2013) included number of languages practiced, age of acquisition and duration of practice, emphasizing the temporal pattern of acquisition, and the resulting practice of several languages sequentially or concomitantly during various periods of life. Including the more detailed data of bilingualism has a great effect on increasing validity and reliability of the studies.

Nursing Practice Implications:
Even though studies may arrive at conflicting conclusions on bilingualism’s impact on the delay of onset of dementia, all can agree that learning new things and performing brain stimulating activities can not harm anyone. There are no adverse effects either. Also of note, Bialystok et al. (2014) found that the delay of dementia onset can be associated with a delay of medical treatment resulting in increased savings of health care costs to patients.