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## A Study of Dementia Assessment Practices in Ohio Prisons

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**A STUDY OF DEMENTIA ASSESSMENT PRACTICES IN OHIO PRISONS**

**PROFESSIONAL DISSERTATION**

**SUBMITTED TO THE FACULTY**

**OF**

**THE SCHOOL OF PROFESSIONAL PSYCHOLOGY  
WRIGHT STATE UNIVERSITY**

**BY**

**ELIZABETH K. TURNER, Psy.M.**

**IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE  
OF  
DOCTOR OF PSYCHOLOGY**

**Dayton, Ohio**

**July, 2019**

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July 5, 2018

I HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER MY SUPERVISION BY **ELIZABETH K. TURNER** ENTITLED **A STUDY OF DEMENTIA ASSESSMENT PRACTICES IN OHIO PRISONS** BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PSYCHOLOGY.

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## **Abstract**

Dementia is a chronic disorder of the mental processes generated by brain injury or disease, and is characterized by gradual, irreversible loss of memory, judgment, functional abilities, health, and identity. While dementia can occur in individuals that would not be considered “aging,” it primarily occurs in people over 60 (Christodoulou, 2012). Dementia recognition and assessment in prison is currently an overlooked issue in the United States. There are few examples of research regarding best practices for addressing dementia in corrections, including the standard protocols, policies, and procedures for screening and managing the needs of inmates with dementia. This qualitative study was designed to collect data that will inform best practice recommendations for dementia recognition and assessment in the prison population. Seven Ohio Department of Rehabilitation and Corrections employees from three correctional institutions were interviewed using a semi-structured format to gather data related to current dementia recognition and assessment practices. Participant responses were formed into themes using the thematic analysis model (Braun & Clarke, 2006) for data interpretation. Key themes identified include a lack of employee training, the utilization of screening tools for assessing dementia, and a lack of identified policies for dementia assessment. Best practice recommendations generated from this study include providing employee training on effective strategies for dementia identification and assessment, creating a standardized process for diagnosing dementia in prison, and dedicating more resources to this ever-increasing concern.

Key words: Aging inmates, dementia assessment, corrections, mental health in prison

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## **Dedication**

This study is dedicated to those inmates across the United States who are currently experiencing or will experience dementia while incarcerated. You have my unwavering support, and I hope my work can help make life a little easier for you.

## **Chapter I**

### **Statement of the Problem**

The 44th President of the United States of America, Barack Obama, said in his July 14, 2015, speech at the 106th NAACP national convention, “Our criminal justice system isn’t as smart as it should be. It’s not keeping us as safe as it should be. It is not as fair as it should be. Mass incarceration makes our country worse off, and we need to do something about it” (Hudson, 2015). Clearly, the state of the United States justice system is a rising, urgent issue, as exemplified by Former President Obama’s call to action. However, an area that was not discussed in Former President Obama’s address was the mental health of the prison population, including the mental health needs of inmates with dementia. While institutions, individuals, and organizations are beginning to recognize that there are issues in the penal system which need to be addressed, the resources needed to improve the system are limited and constrained. The training of prison officials that frequently interact with inmates with mental health issues is not being developed. Mental health issues in the prison population are simply not being addressed at the rate that is required. The needs of prison systems that care for inmates with dementia are not being identified or accommodated in a systemic manner. There is no universal plan of action for caring for inmates with dementia in the United States prison system. Given the current state of the United States criminal justice system, these problems will likely continue to grow and, with time, may avalanche into a conglomerate of larger problems. Unless

programs and initiatives are established to address this area of the criminal justice system, the mental health of the prison population, including inmates with dementia, will continue to negatively impact our communities and our nation. This information is especially true for areas such as Ohio, with large inmate populations and limited budgets. One specific issue regarding the mental health of the inmate population is the recognition and assessment of dementia symptoms. The issue of dementia assessment in prison is a problem that is increasingly too costly and inhumane to continue ignoring (Maschi et al., 2012).

### **Aging in Prison**

In some Western cultures, the age when individuals are considered “aging” or older is 65 years old. The United States Census Bureau defines the “elderly” population as those 65 and older (Chiu, 2010). According to the United Nations (2013), a person is considered “aging” at any time after 60. In comparison, according to the National Institute of Corrections, an inmate is aging or elderly at 50 years of age (Chettiar et al., 2012). The lack of appropriate healthcare in prison, limited access to means of healthy living before incarceration, and the significant number of stressors during incarceration accelerate the aging process (Chettiar et al., 2012). Inmates are becoming physically older than their chronological age and their general population counterparts. This information is important to note, because individuals can develop dementia before they would be considered to be “aging”. The greatest predictor for dementia is age (Feczko, 2014). Since inmates are aging faster than the general population, it is reasonable to

assume that inmates may also develop dementia at a younger age. For the rest of this study, the term “aging” will refer to inmates age 50 or older unless otherwise noted.

### **Dementia in Prison**

Dementia is a chronic disorder of the mental processes generated by brain injury or disease. While dementia can occur in individuals that would not be considered “aging,” it primarily occurs in people over 60. Individuals with dementia struggle with gradual, irreversible loss of memory, judgment, functional abilities, health, and threats to their identities as individuals. The prison environment presents increased risk factors for aging inmates to develop dementia, including physical and mental inactivity, depression, poor nutrition, violence, victimization, and social isolation (Christodoulou, 2012).

One challenge in addressing dementia concerns in the prison population is that prisons do not ordinarily screen for cognitive-related declines (Human Rights Watch, 2012). The early warning signs of dementia can be easily overlooked by the rigid routines in daily prison life. It usually takes an exhibition of bizarre or abnormal behavior, such as refusing to bathe, for prison staff members to recognize dementia in an inmate (Human Rights Watch, 2012). Correctional officers are usually the first to identify dementia in inmates; researchers found that correctional officers have reported cognitive impairment in aging inmates at five times the rate of other prison officials (Osborne Association, 2014). This discrepancy in understanding and awareness can have serious impacts on the likelihood of aging inmates getting the services they desperately need. Cognitive, visual, and audio impairments can create behaviors that may be mistaken for aggression or disobedience, which can lead to punishment and further compromise of an inmate’s well-

being. Aging inmates with dementia may be bullied by younger inmates, and their self-defense responses can lead to further consequences within the prison system, such as loss of privileges or solitary confinement. Individuals with severe dementia may not even understand they are incarcerated and what being incarcerated means (Osborne Association, 2014). Eventually, an inmate's dementia symptoms can become so severe, the inmate needs to be cared for in special medical settings or in geriatric-care units. While some prisons have special units specifically for inmates with dementia and other cognitive impairments, these are considered to be rare (Human Rights Watch, 2012). Only about 4% of state institutions provide any type of geriatric-specific healthcare services (Maschi, Kwak, Ko, & Morrissey, 2012). The first step in providing appropriate healthcare for inmates with dementia is accurate and timely recognition of dementia symptoms and cognitive decline, which is generally lacking in the United States prison system.

Dementia is a devastating disease that may be exacerbated by the correctional system environment (Feczko, 2014). Regardless of the crimes they committed, those in prison are entitled by law to appropriate treatment for their health conditions, including dementia. The lack of adequate assessment and care for aging inmates has consequences for the mental health and well-being of the inmate population, the financial state of the country, and the efficacy of the United States criminal justice system. This researcher examined what mental health professionals in the prison system describe as the current state of dementia assessment in prison, the needs for adequate assessment procedures for

inmates with dementia, and what future directions the United States prison system can take to ensure proper assessment for its aging inmates with dementia.

### **Aim and Purpose**

The purpose of this study is to address the current dearth of research and literature regarding dementia recognition and assessment in prison and to support prison efforts to address dementia assessment by offering best practice recommendations generated from practitioners and members of the correctional mental health field. These goals were achieved by utilizing a thematic analysis study using interviews, with data being gathered from those with experience interacting with inmates that exhibit dementia symptoms. The responses from the interviews assessed the current state of dementia assessment in the prison setting, the challenges of recognizing dementia patients in the prison setting, the needs of the inmates with dementia and the needs of the prison officials that handle dementia, and the future direction of dementia assessment in the United States prison system.

### **Significance of the Study**

The amount of money the United States spends each year on incarceration is \$80 billion dollars (Hudson, 2015). That number includes incarceration costs at the local, state, and federal level. In the Hamilton Project's "Ten Economic Facts about Crime and Incarceration in the United States", this monetary amount of \$80 billion supports the point that the "per capita expenditures on corrections has more than tripled over the past thirty years." While the Hamilton Project's research addresses serious issues and concerns with the judicial system and the significant economic costs, one area not

addressed is the impact of health costs on the overall cost of incarceration, and even more specifically, health costs of aging inmates. It is estimated that it costs about \$16 billion dollars per year to incarcerate the relatively small number of aging inmates over 50. Most states estimate that healthcare costs are two to three times higher for an aging inmate than a younger inmate (Chettiar et al., 2012). So, while there are not as many aging inmates as there are younger inmates, a disproportionate amount of money is being funneled to medical care for a small percentage of the prison population; a population that is generally low-risk in terms of violence, yet steadily increasing.

The United States prison system is a drain financially, and it continues to negatively impact the U.S. economy and its ability to improve other aspects of U.S. citizen's living and care. Still, with all of this money being spent on incarcerating individuals, including aging inmates, there are still shortcomings when it comes to their healthcare. Inmates are not getting the appropriate healthcare that they are guaranteed by law, and the mental health needs of inmates is one of the aspects that suffer the most. While lack of appropriate mental health services is a small fraction of the larger systemic problems of the prison system, it is a critical component that needs to be addressed. The prison system in the United States is in desperate need of better solutions to its problems.

Dementia recognition and assessment in prison is currently an overlooked issue in the United States. If this current trajectory remains, by 2050, the number of inmates in prison with dementia will increase, while the nation's ability to care for inmates with dementia will be hampered by lack of funds, resources, training, and research (Maschi et al., 2012). The domains of practice, policy, and the research priorities of dementia

recognition and assessment in the growing inmate population need to be addressed if this problem is to be prevented or addressed.

### **Research Questions**

In order to determine the current state of dementia assessment in Ohio prisons, as well as the needs and barriers of prison dementia assessment, several research questions that guided this study were:

- Is there a formal assessment process for inmates suspected of having dementia?
- Do staff members receive any training in regards to recognizing inmates with dementia?
- What are some issues that occur when assessing inmates with dementia?
- What are possible solutions to issues assessing inmates with dementia?
- What are possible barriers to these solutions?
- Will there be a difference in assessing dementia in prison based on gender?

## **Chapter II**

### **Literature Review**

Individuals in the United States are aging in record numbers. In 2012, the population of those 65 and older in the United States was estimated to be 43.1 million people. By the year 2050, that number is expected to almost double to 83.7 million people over 65 in this country (Ortman, Velkoff, & Hogan, 2014). The increase in the general aging population is also paralleled in the prison population. In 1981, there were 8,853 state and federal inmates age 55 and older. By 2012, state and federal prisons in the United States held about 124,900 inmates age 55 and older. Experts project that by 2030, that number will be over 400,000, amounting to one-third of inmates (Chettiar, Bunting, & Schotter, 2012). As an increasing number of individuals in the United States age, an increasing number of them will age in prison. Generally speaking, all aging individuals in the United States will experience similar significant issues, ailments, and concerns. However, aging in a prison setting presents a variety of physical, mental, and environmental factors that increase the risk of cognitive, physical, and emotional declines in individuals (Christodoulou, 2012). Prison systems are also affected by increases in aging inmates, including budget implications and safety concerns (Human Rights Watch, 2012). The United States federal and state prison system may not be equipped to support the needs of the increasingly geriatric prison population, especially in the domain of mental health identification and treatment. This information has specific implications for

inmates with dementia, as age is the primary predictive factor of dementia, and as the aging population in prison increases, so will the population of inmates with symptoms of dementia (Feczko, 2014). This literature review outlines a foundation of aging-related issues in corrections, the concept of dementia, and the current practices related to dementia and dementia assessment in correctional settings.

### **Aging in the United States Prison System**

Chettiar, Bunting, and Schotter (2012) indicates that the United States is the largest incarcerator in the world, with around 2.3 million people behind bars. From 1980 to 2010, the United States general population increased by 36%, while the state and federal prison population increased by over 400% (Chettiar et al., 2012). Between 2007 and 2010, the number of United States state and federal inmates age 65 or over grew at 94 times the rate of the total prison population. The number of inmates age 65 or older increased by 63%, while the total prison population during the same time increased by 0.7% (Human Rights Watch, 2012). Along with the general prison population, the rate of aging incarcerated individuals has and is predicted to grow.

The trend of increasingly older inmates in the U.S. started in the mid-1970s, when federal and state governments began to enact mandatory minimum provisions, three-strike laws, and restrictions on parole (Chettiar et al., 2012). State and federal legislators adopted laws that made some crimes ineligible for parole, while also increasing the number of crimes that are punished with life and life-without-parole sentences. In addition, truth-in-sentencing conditions, which require that 85% or more of the prison sentence be served before an inmate becomes eligible for release, and harsh parole-

revocation policies, have added to the increase in the prison population (Human Rights Watch, 2012). This tough-on-crime era produced a 377% increase in the number of people in United States prisons from 319,598 in 1980 to 1.5 million in 2009. In addition, inmates age 50 and above are much more likely to have served at least 20 years behind bars in 2012 than the inmates of the same age in the 1970s (Belluck, 2012; Chettiar et al., 2012). Younger adults are receiving longer prison sentences and receiving few or no parole options, and therefore are growing older in the prison system. Older adult first-time arrestees, though still a small percentage overall, also have increased, which in turn is resulting in an increase in older individuals entering the prison system and contributing to the aging prison population (Human Rights Watch, 2012).

### **Demographics of Aging Prison Population**

The demographics of the aging prison population are not homogenous. The elderly prison population is overwhelmingly male, with aging women inmates making up only 6% of the total aging prison population. In addition, aging inmates are mostly Caucasian; more specifically, 42% of the aging prison population identified as Caucasian, 33% identified as African-American, 15% identified as being of Hispanic origin, and 10% are included in other racial categories (Chettiar et al., 2012). However, the population of aging African-American and Hispanic inmates is overrepresented, meaning that they make up a higher percentage of the aging inmate population than their percentage in the general United States population. This reality seems to be a reflection of the skewed racial distribution of people in U.S. prisons in general (Chettiar et al., 2012).

## **Aging Healthcare in the United States Prison System**

The increase in aging inmates has significant ramifications for state and federal institutions. Essentially, it is expensive to care for incarcerated elderly inmates. Chettiar et al. (2012) found that it costs \$34,135 per year to house the average inmate; however, for an inmate aged 50 and older, the cost is an average of \$68,270. As inmates age, their health and care needs increase. Older inmates need more medical care than younger inmates, and their needs may be more chronic, severe, and numerous than those of younger inmates, therefore costing more. Older inmates are more likely to have physical disabilities, hearing and vision losses, major diseases, and mental illnesses than younger inmates (Chettiar et al., 2012). Health-related costs also may include hiring additional medical staff, training, medical devices such as walkers, and medications (Office of the Inspector General, 2015). In addition, hidden costs, such as renovating prisons to accommodate the increasing number of older inmates, rapidly add to increasing prison expenses. Older inmates cost three times more to care for than younger inmates (Williams, Stern, Mellow, Safer, & Greifinger, 2012). According to the Federal Bureau of Prisons Office of the Inspector General (2015), in 2013, \$1.1 billion of their \$6.5 billion budget was spent on medical costs of inmates. Health care and incarceration costs combined with the increasing amount of elderly inmates have created a major strain for correctional budgets across the nation (Office of the Inspector General, 2015). Aging inmates also affect communities outside correctional agencies. About 95% of all inmates are eventually released back into the community, where the health needs of the former inmate will be the concern of the family, community, and public health system (Kim &

Peterson, 2014). The impact of the healthcare needs of the aging inmate population and the costs of healthcare utilization are one of the major challenges facing correctional institutions today.

The healthcare system in correctional institutions is of particular importance and concern for those aging inmates in prison. In accordance with the Eighth Amendment to the United States Constitution, inmates have a right to timely access to an appropriate level of care for serious medical needs (Williams, Stern, et al., 2012). However, this protection may not always be followed, especially in cases of geriatric care. A study by Hollenbeak, Schaefer, Penrod, Loeb, & Smith (2015) examined the efficacy of health care in state correctional institutions found that correctional institutions with a larger number of older inmates were significantly less effective in their health care than other institutions.

Elderly inmates are five times more likely to visit health facilities per year than similarly aged people who are not incarcerated (Chiu, 2010). According to the Osborne Association (2014), aging inmates have a high prevalence of communicable and chronic diseases, as well as mental health concerns such as depression, anxiety, trauma, and stress. They determined that 40% of older inmates have a diagnosis of cognitive impairment, well exceeding the rate of the general aging population. The poor physical and mental health of inmates increases the risk for dementia and other cognitive impairments. Conditions associated with advancing age such as multi-morbidity, sensory impairment, disability, dementia, and end-of-life-care can lead to worsening health,

vulnerability to injury or victimization, and rising costs and subsequent cost-cutting measures in the correctional system (Rich, Allen, & Williams, 2015).

An increased amount of aging inmates presents a strain on the prison healthcare quality. There are limitations on care, and many inmates do not get the necessary depth of care that they require, including proper and attentive evaluations and diagnosis (Osborne Association, 2014). Many services are not provided at the prison institution, therefore necessitating medical trips outside the facility, which require security escorts, time, and money. Issues such as staffing shortages and coordination with outside resources coincide with inmates experiencing lengthy waiting periods for care (Office of the Inspector General, 2015). Inmates are dependent on staff for medication and appointments, and do not have many options when it comes to self-care. The Bureau of Justice Statistics indicates that only 1 in 3 inmates has access to adequate mental health treatment (Carson 2014). This discrepancy is a major concern, considering that the most common and costly geriatric condition in prison is cognitive impairment, which includes dementia (Williams, Goodwin, Baillargeon, Ahalt, & Walter, 2012).

The inmate population in the United States is increasing and aging at a concerning rate. The tough-on-crime attitudes and ensuing laws have not only created an overburdened criminal justice system, but also a population of older inmates who require increasing amounts of medical care. Housing the inmate population is expensive, but when the medical care costs are added, the financial strain on the United States is substantial. Aging in prison is a process that not only puts a strain on the physical health of the inmates, but also strains their mental health. Inmates experiencing symptoms of

dementia are at a unique intersection in the system, as they may be suffering from mental illness and complication from aging simultaneously.

### **Definition of Dementia**

The Diagnostic and Statistical Manual (DSM-5) is the primary reference for the diagnosis of dementia. Dementia is included under the label “neurocognitive disorder.” Under that label, dementia is divided into subtypes by etiology, and each subtype is considered separately in terms of diagnostic criteria and risk factors (Feczko, 2014). According to guidelines published by a collaboration of the National Institute on Aging and the Alzheimer’s Association,

“...dementia may be diagnosed when there are cognitive or neuropsychiatric symptoms that interfere with work or normal activities, reveal a decreased level of function from baseline, and cannot be explained by any other psychiatric disorder or delirium. This impairment must affect the patient in two of five domains: (a) ability to acquire and remember new information; (b) ability to reason, judge, and handle complex tasks; (c) visuospatial abilities; (d) language function, including speaking, reading, and writing; (e) changes in personality or behavior” (McKhann et al., 2011).

Dementia is a broad term used to describe numerous types of cognitive impairment, with the greatest predictor being age (Feczko, 2014). Some forms of dementia are more recognizable than others. The most common forms include: (a) Alzheimer’s disease (AD), which initially will impact someone’s short term memory. As it progresses it will impact communication skills, mobility skills, behavior, and long term

memory; (b) Vascular dementia is usually a result of ongoing, small stroke activity in different parts of the brain. Impact and presentation will depend on which area of the brain is affected; (c) Mixed dementia is considered a combination of vascular dementia and Alzheimer's disease; (d) Lewy Body dementia, which is a form of dementia that changes movement, thinking, and behaviors, and may include visual hallucinations. It is the second most common type of dementia after Alzheimer's disease; (e) Frontotemporal dementia includes significant behavioral and personality changes, in addition to loss of inhibition; (f) Alcohol and drug-related dementia, which is a result of long-term abuse of substances, impacts learning ability, personality, balance, and logical thinking; (g) Parkinson's disease, which greatly impacts movement (Alzheimer's Association, 2006). There is currently no indication of which type of dementia is most prevalent in prison settings.

### **Dementia Presentation and Progression**

Dementia can be diagnosed in two categories; possible dementia, and probable dementia. Possible dementia is characteristic of an atypical course, such as early onset, or includes evidence of mixed etiology. Probable dementia has a clear presentation, with insidious onset, pronounced deficits, and obvious decline in cognition. In order for a mental health clinician to make a probable dementia diagnosis, they must conduct at least two separate evaluations and document decline based on either cognitive testing or information from a knowledgeable, reliable informant (Feczko, 2014). Regardless of presentation, dementia is a terminal illness (Mitchell et al., 2009).

The progress of dementia can be examined in three stages. It is important to understand the stages of dementia progression as it applies to dementia in prison, as it is unlikely for dementia to be recognized in the early stages of incarceration without knowing the presentation of early dementia symptoms. The first stage is characterized by minor short term memory issues and concentration concerns. The second stage is associated with greater forgetfulness, such as names or dates, difficulties tracking and understanding conversations, and an increase in irritated or agitated expressions. The final stage includes the inability to recognize familiar faces, remember information that had been immediately stated, manage personal hygiene, and execute daily tasks (Moll, 2013). Prior to death, individuals with dementia experience pain, dyspnea, agitation, anxiety, choking, gurgling, and difficulty swallowing. The most frequent cause of death of individuals with dementia are cachexia with dehydration, pneumonia, and complications from cardiovascular disease (Mitchell et al., 2009).

### **Measures Used to Assess Dementia**

The key area of assessment for dementia is cognition, as cognitive impairment is the primary diagnostic criteria for dementia. Other aspects specific to dementia, such as functional impairments and behavior changes, are generally results of cognitive impairment (Sheehan, 2012). Please refer to Appendix A for a summary of the aforementioned information regarding dementia assessment tools.

Many mental health professionals utilize cognitive screening tools, as they are brief measures that can give indication there may be cognitive decline present. One screening tool that is commonly used is the Mini-Cog, a three minutes test that

incorporates a clock-drawing task and a delayed-word recall task. Another screening tool is the Mini-Mental State Examination (MMSE). The MMSE is one of the best known dementia screening tools, as it is easy to administer with minimal training. It takes about 10 minutes to administer, and it assesses cognitive functioning in the areas of orientation, memory, attention, language, and visual construction. The MMSE has a maximum of 30 points, with scores of 23 or 24 indicating significant cognitive impairment (Sheehan, 2012). The Montreal Cognitive Assessment (MoCA) is another common screening instrument. It takes about 10 minutes to administer, and it assesses the areas of attention/concentration, conceptual thinking, memory, language, calculation, executive functioning and orientation. The maximum score is 30, and a score of 25 or lower indicates significant cognitive impairment (Doerflinger, 2012; Sheehan, 2012).

There are longer cognitive assessments that are used to assess for dementia, including the Alzheimer's disease Assessment Scale-Cognitive Section (ADAS-Cog) and the Cambridge Assessment of Memory and Cognition (CAMC). The ADAS-Cog takes about 40 minutes to administer, covers all cognitive areas, and is sensitive to any possible changes in cognitive functioning. It is most often used in research settings due to the time it takes to administer (Mohs et al., 1997). The CAMC covers orientation, language, memory, attention, calculation, praxis, abstract thinking and perception. It takes 25 to 40 minutes to administer (Sheehan, 2012).

Two common instruments that are used to assess neuropsychological functioning and memory are the Wechsler Memory Scale-Fourth Edition (WMS-IV) and the Repeatable Battery for the Assessment of Neuropsychological Status Update (RBANS).

The WMS-IV is widely used to assess for memory concerns, and results in scores in five domains: Auditory Memory, Visual Memory, Visual Working Memory, Immediate Memory, and Delayed Memory. It also has an Older Adult Battery for adults ages 65-90 (Hoelzle, Nelson, & Smith, 2011; Wechsler, 2009). The RBANS Update was developed for the dual purposes of identifying abnormal cognitive decline in older adults and includes five cognitive domains: Immediate Memory, Visuospatial/Constructional, Language, Attention, and Delayed Memory (Randolph, 2012; Randolph, Tierney, Mohr, & Chase, 1998).

Another common instrument that is used is the Dementia Rating Scale, Second Edition (DRS-2). The DRS-2 assesses the mental status of someone who is possible exhibiting dementia symptoms. It was designed in a manner that would get more responses than cognitive measures that are not specifically tailored for older or impaired individuals. Subscales of the test assess for attention, initiation and perseveration, construction, conceptualization, and verbal and nonverbal short term memory (Mattis, Jurica, & Leitten, 2001; Strauss, Sherman, & Spreen, 2006).

Some measure can be self-administered or utilize an informant (a person who knows and has observed the individual in question). The Self-Administrated Gerocognitive Exam (SAGE) is self-administered and is used to detect early signs of cognitive, or memory impairments (Scharre, n.d.). The Neuropsychiatric Inventory Questionnaire (NPI-Q) is an informant-based interview that assess neuropsychiatric symptoms in ten domains over the previous month (Cummings, 1994).

Other common measures that are utilized in the domain of neuropsychology can indicate symptoms of dementia, but are not used solely for dementia assessment. These may include: The Boston Diagnostic Aphasia Examination, Third Edition (BDAE-3), the Buschke Selective Reminding Test (SRT), the Trails Test, The Boston Naming Test, and the Cognistat (Strauss, Sherman, & Spreen, 2006). There are varying other measures that cover more specific aspects of dementia, including quality of life, behavior, activities of daily functioning and executive functioning, depression, and dementia severity (Sheehan, 2012).

### **Dementia in the United States Prison System**

Researchers suggest that as many as half of inmates over 50 years old in prison are diagnosed with a mental illness, with major depressive disorder, schizophrenia, substance abuse, and dementia being the most diagnosed (Maschi, Suftin, & O'Connell, 2012). In addition, prisons have demonstrated a higher propensity for accelerated mental decline and intellectual disability among inmates, along with an increase in age-related health issues at a rate equivalent to at least a decade older than the general population (Baldwin & Leete, 2012). It is reasonable to suggest that dementia is an increasing concern for inmates. However, there are few studies that focus on the mental health of aging inmates, and even fewer that look at cognitive impairment, including dementia (Feczko, 2014). With such a lack of research, there is a lack of general information about dementia assessment and healthcare. Currently there are no national standards of assessment and healthcare for inmates with dementia. It is important to examine the characteristics of dementia and how it may interact with the prison system in order to

gain some insight into the dementia experience in prison and to provide recommendations for dementia assessment and healthcare practices.

**Dementia Prevalence in Prison.** It is estimated that 13% of adults age 65 and older have some form of dementia in the U.S. (Maschi et al., 2012). According to the Alzheimer's Association (2013), 5.2 million Individuals in the United States were living with AD in 2013, and by 2025 it is expected that 7.1 million Individuals in the United States will be affected by AD. In the general population, dementia is more common in women, and disproportionately affects African-American and Hispanic people compared to Caucasian people (Alzheimer's Association, 2013).

It is probable that since mental disorders and conditions in the United States are overrepresented in the aging inmate population compared to the general aging population, the rate of dementia would also be higher in the aging inmate population than in the general aging population (Osborne Association, 2014). However, there is currently no national study of prevalence of dementia in the United States inmate population. Multiple studies have estimated prevalence rates ranging from 1% to 44% (Maschi et al., 2012). Kingston, Le Mesurier, Yorston, Wardle & Heath (2011) surveyed 120 aging inmates and found that 15% of them displayed symptoms of cognitive impairment, but few of them had been formally recognized as having a mental disorder by the prison system or were prescribed medication. This information indicates that dementia, along with other disorders and conditions associated with aging inmates, often goes undetected, underreported, and untreated. According to Wilson and Barboza (2012), based on the community rates of dementia and the concept of accelerated aging in prison, there are

anywhere between 41,000 and 125,000 inmates currently in United States prisons with dementia. They estimate that number could increase to 380,000 by 2050. These estimations reiterate that the topic of dementia in prison is so overlooked that researchers are not even aware of the number of inmates with dementia, let alone knowing the optimal health care for them. There is no available information about the demographic characteristics of inmates with dementia, although it may reflect the demographic characteristics of older inmates in general, who tend to be Caucasian men (Chettiar et al., 2012).

**Risk Factors.** Risk factors are defined as characteristics at the biological, psychological, family, community, or cultural level that occur previous to an outcome, and are associated with a higher likelihood of that outcome being negative (SAMHSA, 2015). There are risk factors for developing dementia, and it is crucial to be knowledgeable of them in order to be able to recognize and assess for dementia, in addition to provide the best dementia care in prison settings. Barnes et al. (2009) found that the highest predictive factors for dementia include being between 80 and 100 years of age, low Modified Mini Mental Statue Examination (MMSE) score, low Digit Symbol substitution, and body mass index under 18.5. Additional risk factors include cardiovascular comorbidities, family history of dementia, chronic anticholinergic (medication used to treat conditions that involve contraction and relaxation of muscles) use, and lower educational level (Feczko, 2014). The educational level risk factor is particularly important when talking about aging inmates, as 41% of inmates in state and federal prisons have some high school or less levels of education, compared to 18.4% of

the general population. History of traumatic brain injury, poor dietary history, post-traumatic stress, and substance use are risk factors for dementia that are also prevalent in the inmate population (Feczko, 2014; Maschi et al., 2012; Williams, Goodwin, et al., 2012).

The prison environment itself presents risk factors for developing dementia while incarcerated. Lack of nutritional foods, exposure to prison violence, and inadequate service provisions are prison-specific risk factors for developing dementia. Additional aspects of the prison environment that can possibly impact the development of dementia includes loneliness, lack of cognitive stimulation, overcrowding, and lack of physical activity. (Christodoulou, 2012; Maschi et al., 2012; Practice, 2012). In addition, a diagnosis of depression, one of the most common mental health diagnosis for inmates, has been linked to a 70% increased risk of dementia (Christodoulou, 2012).

**Protective Factors.** Protective factors are defined as characteristics associated with a lower likelihood of negative outcomes, characteristics that reduce the impact of a risk factor, or positive countering events (SAMHSA, 2015). Potential protective factors for developing cognitive decline or dementia include higher levels of education, exercise, a healthy diet, and reduced consumption of tobacco and alcohol (Peters, 2009). As stated previously, inmates entering prison are less likely to have these protective factors, and even less likely to obtain them while incarcerated, thus leaving them vulnerable to physical, cognitive, and emotional impairment.

**Dementia Presentation in Prison.** Prison is its own system, and there are different rules, experiences, and perceptions in prison environments than in the general

population system. Therefore, it's important to examine the way dementia may be observed or experienced in prison, instead of relying on the dementia experience in the general population, to inform dementia assessment practices.

Functional impairments are strong indicators of aging-related issues, including dementia. The transitional measurement of functioning is called activities of daily living (ADLs). ADLs typically are classified as eating, bathing, toileting, dressing, and moving from room to room. These are everyday activities that, if a person is unable to accomplish, indicate functional impairment. However, in prison, where the functional requirements are different, these impairment indicators are not as effective. For example, if a person is unable to prepare a meal for themselves at home, an issue or impairment of some kind is indicated. In prison, meals are prepared for the inmates, so the measurement of preparing a meal is useless in measuring an inmate's functional ability. One study identified new ADLs customized for prison life. Prison ADLs (PADLs) include one's ability to climb onto one's assigned bunk, drop to the floor for alarms, hear orders from staff, get to the dining hall on time for meals, and stand for count (Williams, Goodwin et al., 2012; Williams, Lindquist, Sudore, Strupp, Willmott, & Walter, 2006). These are examples of everyday tasks in prison and are better displays of functional ability for inmates. Understanding the functional expectations of inmates will allow for a better comprehension of cognitive impairment and dementia presentation in prison settings. Identifying how the impact of dementia may appear in prison is crucial to properly assessing it in prison.

The prison environment itself presents challenges for inmates with dementia. In general, those with dementia have a lower stress tolerance, and their ability to handle crowds, noisy environments, or time constraints may be hindered. People with dementia may react in a disoriented, angry manner when they are feeling overwhelmed. Prisons tend to be very crowded places, with time pressures to be at a certain area at a certain time. Prisons can be loud places, with inmates and guards talking, alarms ringing, doors slamming and other noises occurring at any time of the day and night. Inmates with dementia may react to routine prison happenings with anger or confusion, and as a result, their behavior may be seen as “troublemaking” or insubordinate. These inmates may be treated with disciplinary action instead of concern, which further distances them from getting the help they need (Piccolino, n.d.). In addition, inmates with dementia who are experiencing confusion may wander into restricted areas or not comply with prison etiquette or hierarches, causing further issues (Baldwin & Leete, 2012).

It is important for those incarcerated in prison to adhere to all directions, stay vigilant and independent, and avoid discipline when possible. For those with dementia, these guidelines for prison life involve tasks that are too complex, as their condition has not only impacted their memory but their reasoning, language, executive functioning, and reaction times (Maschi et al., 2012). They may confuse directions, or react in anger and subsequently be punished for their acting-out. Their awareness of themselves and their surroundings diminish (Piccolino, n.d.). The prison infrastructure itself is not conducive to the needs of aging inmates. Some institutions were built over a century ago, and some prisons may not comply with handicap accessibility requirements (Office of the Inspector

General, 2015). While a more ideal environment for aging individuals with dementia may include a comfortable temperature or easy-to-navigate rooms and halls, these changes are unlikely to be accommodated in the existing prison system due to financial and structural concerns. Dementia significantly reduces one's ability to survive in the prison environment.

Inmates with dementia are vulnerable in numerous ways. Due to their memory issues, they may forget their identification numbers, bank account information, or their medications. They may be taken advantage of by other inmates or be swindled for their money or goods (Piccolino, n.d.). Inmates with dementia may be forced to forgo their personal items or money to buy protection from inmates who are targeting them (Baldwin, & Leete, 2012). They are likely to be bullied or sexually victimized because their cognitive and functional states make them easier targets (Piccolino, n.d.). Other inmates may antagonize someone with dementia or cognitive impairment, possibly resulting in a defensive, aggressive response from the inmate with dementia, thus incurring disciplinary action (Maschi et al, 2012). Dementia in prison might be perceived as an additional punishment in itself.

Prisons were designed for deterrence, punishment, rehabilitation, retribution, and incapacitation, not for long-term, nursing-home level care (Maschi et al., 2012). The function of the prison system does not necessarily apply to inmates with dementia. It is unlikely that rehabilitation will be effective for inmates with dementia, as their cognitive functioning may have declined to the point that they cannot conceptualize what they have done (Baldwin & Leete, 2012). Dementia is progressive and irreversible, so affected

inmates will never be able to return to their previous level of cognitive ability. This idea also presents a somewhat philosophical issue. Is it ethical to incarcerate an individual who is unable to understand what it means to be incarcerated, or why they were incarcerated? These questions, while important, are not generally the focus for prison staff when encountering inmates with dementia.

**Systemic Responses to Inmates with Dementia.** While aging inmates, including inmates with dementia, are increasing in the prison system, the system itself is slow to respond to this growing crisis. According to the 2000 Bureau of Justice Statistics Survey of State and Federal Correctional Facilities (the most recent publically available information), only 4%, or 38 state institutions, provided any type of geriatric-specific health care services (Carson, 2014). There was no data about dementia in correctional facilities included in the report (Maschi et al., 2012). While there is a legal mandate that all correctional institutes provide general medical services, there is no policy for geriatric-specific services, and no national institutions have enforceable laws that secure the provision of health care for older prisoners (Bretschneider, Elger, & Wangmo, 2013; Maschi et al., 2012). As noted previously, there are no formal training requirements for prison staff in regards to geriatric or dementia care, and few medical professionals working in prisons have the knowledge to recognize and treat dementia. Prisons are overcrowded and understaffed. The increase of inmates with dementia presents further challenges. The prison system's lack of funding and understanding of the needs of aging inmates, especially inmates with dementia or cognitive impairment, results in few quality programs for the aging inmate population.

Mental health concerns, especially symptoms that are associated with dementia, such as forgetfulness, irritability, and social withdrawal, are often observed as being a common result of aging, in addition to being common for individuals experiencing prison life (Moll, 2013). Even if aging inmates are vocal about their concerns of early dementia signs, they are not likely to be considered by prison staff as priority concerns. Inmates with dementia are usually not recognized until they are in the later stages of dementia, when their behavior is more obvious or erratic, such as refusing to bathe, blatantly or repeatedly refusing to follow directions, and/or fighting with other inmates (Human Rights Watch, 2012). At the point that inmates with dementia are no longer able to live in the general population, most are placed in an infirmary or other medical settings. However, this placement creates issues with the cost-effectiveness of infirmary beds, as dementia patients may live for some time after their admittance. In addition, the type of care that inmates with dementia may receive in a medical environment may not be as supportive or multidisciplinary as it needs to be. Inmates with dementia in medical facilities strain staff, and the frequent fluctuation of inmates in infirmaries may further agitate inmates with dementia (Mistry & Muhammad, 2015).

Not only are overall rising costs of prison management and operations a concern for the adult inmate population, but the increase in healthcare costs for aging inmates diagnosed with dementia means that less money is available for dementia education trainings, additional staff, activity programs, psychotherapy, dementia diagnostic assessments, and community transition support. The lack of these things is the most significant barrier to effective dementia healthcare in prison. As stated previously, the

cost to incarcerate aging inmates is much more expensive than it is for younger inmates; medical costs for aging inmates can range from three to nine times as much as the medical costs for younger inmates (Coleman et al., 2013). A contributing factor to the high cost of inmates with dementia is the slow rate of degeneration experienced with most individuals with dementia. Wilson and Barboza (2010) indicate that people live for an average of six years after being diagnosed with dementia, with 90% of cases eventually needing full-time nursing care. This means that one inmate with dementia will certainly accrue significant medical costs, and probably for several years after their diagnosis.

There are arguments for the early release of inmates with dementia. Some argue that once deterrence and rehabilitation is either fulfilled or unobtainable, then there is no reason to continue detaining an individual, as they will not recidivate, and they will no longer be a threat to the community. However, others insist that it is unjust to release a prisoner for any reason before their sentence is up (Baldwin & Leete, 2012). There are 15 states, and the District of Columbia, that define processes for releasing aging inmates, usually referred to as geriatric release. The processes, conditions, and the definitions of geriatric release vary from state to state. In most cases, the criteria for being released is related to the inmate's age, medical condition, and risk to the community. Most states set the minimum age range at 60-65, and require the presence of a chronic physical condition and/or long-term care. Some require that a certain amount of their sentences be served before they are eligible. There are exclusions, such as certain offenses or an extensive criminal history. Conditions and revocations of the release are outlined as well, adding to

an already extensive process. The few geriatric release laws that are available are not generally utilized. As of 2009, Maryland and Oklahoma have yet to release an inmate under their geriatric release process. Some states have released fewer than five inmates over several years. Missouri has utilized its geriatric release law the most, releasing 236 inmates in 10 years. There are quite a few factors involved in geriatric release effectiveness, including public and political considerations, eligibility requirements, application procedures, and the referral/review process (Chiu, 2010). Geriatric release is only an option for a few inmates in few states, and its extensive process and criteria eliminate the possibility for many inmates for release. It is unlikely inmates with dementia will utilize geriatric release laws, as they may be unable to attend to the application process themselves, and some states do not include mental illness as conditions for release. Inmates who cannot be released under geriatric release laws will continue aging in prison and increasing medical care costs.

If inmates with dementia are released, consequences of doing so fall onto the family and the community. The released inmate with dementia is unlikely to be employable, and is unlikely to be eligible for public health benefit programs. In the meantime before they can gain services, they must rely on costly emergency medical care for all their health care (Williams, Goodwin, et al., 2012). They may not have any family or social support, and if they do, they will be completely dependent on them. Aging inmates, especially aging inmates with dementia, experience more disadvantages when they are released from prison than younger inmates. If an inmate with dementia makes it to their release or is granted geriatric or compassionate release, they are unlikely to have

a chance at a quality life. Inmates with dementia are likely to remain in prison, an environment that is currently not able to properly accommodate or support them. While the prison system as an entity is not prepared to handle the increase of inmates with dementia, there are some programs in prisons across the United States that are working to provide proper care for inmates with dementia.

**Programs for Dementia Assessment and Care in United States Prisons.** While standards for dementia care in prison are not currently undertaken at a national level, there are some institutions across the United States that have created various types of programs for inmates with dementia. Most programs have certain characteristics, such as dementia sensitive environments, interdisciplinary staff, staff trainings, devices for inmates with dementia, and care for cognitive impairment at all stages. A few notable programs and initiatives established in the United States that provide specialized care for inmates with dementia include the True Grit program at the North Nevada Correctional Facility (NNCF) in Carson City, Nevada, the Gold Coat program at California Men's Colony (CMC) in San Luis Obispo, California, a staff training for correctional officers working with inmates with dementia created by the Kentucky Public Health Leadership Institute, Louisiana State Penitentiary (LSP) in Angola, Louisiana, State Correctional Institution-Laurel Highlands (SCI-LH) in Somerset, Pennsylvania, and the Deerfield Correctional Center (DOC) in Capron, Virginia (McCarthy & Rose, 2013; Coleman et al., 2013).

The Gold Coats program at CMC utilizes younger inmates to assist the aging dementia inmates. The Gold Coats are paid \$50 a month, are trained by the Alzheimer's

Association to recognize symptoms and learn how to care for individuals with dementia and handle many of the inmate's increased daily needs, such as showering, putting on clothes, shaving, and eating. This individualized care and attention cannot be managed by the current prison staff due to complications involved with the increased level of care while in a restrictive, budget-conscious prison system. Having the younger inmates assist the aging inmates has increased dementia recognition, as they are the first to notice the signs, such as putting shoes on the wrong feet or resistance when interacting with guards. The Gold Coats can also act as translators, communicating to prison staff what they are observing, or explaining why an inmate may be acting the way they are acting. The program has been effective thus far in reducing agitation and behavioral issues among the inmates (Feczko, 2014).

In 2013, the Kentucky Public Health Leadership Institute published a report to provide a basis of information and training for correctional officers working with inmates with dementia. The goal of the report was to create a training manual to increase effective communication, reduce "challenging behaviors" and serve as a guide for understanding inmates with dementia. Prior to the report, the Kentucky Department of Corrections did not have a process or established training for equipping their correctional officers with handling inmates with aging healthcare needs, including dementia. The manual provided quick references on dementia facts, defusing tactics, and communication strategies. It also included a treatment sheet and patient review sheet which would allow officers to be familiar with the procedures and accommodations associated with inmates with dementia, a resource guide for families of the inmate to assist in their transition to the community,

and evaluation forms for feedback on the effectiveness of the training and the manual. While it is unclear how effective this manual has been, it has outlined a potential process for training correctional officers and providing an increase in knowledge of the aging inmate population. A successfully implemented training program for correctional officers would assist in behavior issues, appropriate dementia diagnosis, and added protection for inmates with dementia (Coleman et al., 2013).

The Somerset State Hospital in Pennsylvania was converted into a special prison unit, the State Correctional Institution Laurel Highlands (SCI-LH). SCI-LH continued employing the former hospital staff and trained them in corrections, saving money and creating a staff that can better provide for aging inmates. Programs include hospice care, life skills, psychological assessments and treatment, and specialized recreational programs to accommodate the aging inmate's needs. SCI-LH is another example of the higher costs associated with housing aging inmates; it is reported that SCI-LH's annual per-inmate cost was \$45,993, 30% higher than the average cost per-inmate in 2011 (McCarthy & Rose, 2013).

Virginia's Deerfield Correctional Center (DOC) provides assisted living services, peer tutoring, horticulture, assisted living services including reality orientation to assess for dementia and overall cognitive ability, sex offender treatment, educational services, recreational services, and a library that can accommodate visually impaired inmates.

The programs and initiatives listed above are examples of what is currently being implemented in the area of dementia assessment and healthcare in the United States prison settings. While the prison systems discussed thus far are examples of the best

practices available for assessing inmates with dementia and age-related cognitive decline, this study will highlight Ohio prisons, which have varying locations, populations, issues, and approaches to dementia assessment in prison. The purpose of highlighting these prisons in Ohio is to get a broad sense of dementia assessment practices across a state prison system. In addition, the researcher can examine the unique needs of a state prison setting and make recommendations for similar prison facilities in the United States.

### **Dementia Recognition and Assessment in the United States Prison System.**

Dementia is difficult to recognize in the United States prison system for numerous reasons. Prisons do not regularly screen for cognitive decline in their inmates, so inmates in the early stages of dementia are not generally recognized as needing medical attention. Forgetfulness, confusion, indecision, loss of initiative, disorientation, and difficulty completing once familiar tasks are not typical reasons an inmate would submit a sick slip; in fact, it may be viewed by prison staff as typical aging (Human Rights Watch, 2012; Moll, 2013; Wilson and Barboza, 2012). The rigid structure of the prison system, in which prisoners are limited in their decisions, plans, or behaviors, assist in hiding early dementia symptoms. Prisons operate on regimented, sometimes fast-paced schedules, and many details about inmates and their conditions, unless obvious, go unnoticed by overworked or fluctuating prison staff. Some inmates with dementia may isolate themselves, and the resulting quiet, reserved behavior may be rewarded by the prison system instead of questioned. Prison staff tend to perceive older prisoners in general as being more compliant, and so they may not be given any attention at all (Baldwin, & Leete, 2012; Mistry & Muhammad, 2015). In addition, the assistance of other inmates

(whether it is offered by a cellmate or through a formal prison program) to complete tasks may mitigate the impact of dementia symptoms while in the early stages, and therefore make it difficult for observers to recognize the changes in functioning (Human Rights Watch, 2012). People with dementia may have symptoms that fluctuate in the early stages, meaning that some days their functioning may be normal, while other days it may be impaired (Gaydon, & Miller, 2007). With prison staff fluctuations due to the nature of shift work, it may be difficult to notice dementia presentation that is not consistent, as is usually the case with dementia symptoms. In addition, prison mental health services are in general more accessible to younger inmates, as they are more vocal about their needs and are more likely to engage in self-harming behaviors, therefore possibly gaining more clinical attention (Moll, 2013). Thus, the already-strained prison mental healthcare system is likely to miss the subtleties of the conditions and needs of the aging inmate population. This oversight includes inmates with dementia.

There are no nationally recognized formal trainings, practice standards, or policies that educate correctional officers, the prison employees who spend the most amount of time with inmates, on how to identify dementia, the process for reporting dementia, or how to manage inmates with dementia (Coleman, Crews, Hall, Ita, & Williams, 2013). Despite this lack of awareness training or information, one research study indicated that correctional officers identify cognitive impairment in inmates at five times the rate of other prison officials (Williams, Goodwin, et al., 2012). However, the same study stated that one-third of aging inmates were unknown to their assigned officers (Williams, Lindquist, Hill, Baillargeon, Mellow, Greifinger, & Walter, 2009). In addition, many

correctional officers and prison staff are wary of any potential malingering and/or secondary benefits that an inmate may be seeking, so legitimate complaints or concerns may be dismissed (Piccolino, n.d.). Lack of training and staff awareness may be the beginning of a vicious cycle, where inmates with dementia are not being identified and treated, while their symptoms continue to worsen from the compliance-based methods commonly used by prison settings (Baldwin, & Leete, 2012). Not only are prison staff and correctional officers lacking in training, but there are few medical professionals in prison, similar to the general population, whom are familiar with aging-related issues, including dementia. Prison healthcare professionals are usually not afforded the proper assessment tools or treatment options for aging inmates, further increasing the likelihood that an inmate with dementia will go unnoticed in the prison system (Moll, 2013). Dementia is challenging to recognize in prison settings due to the strict prison structure, and the fact that dementia tends to present differently in the prison context makes recognizing dementia more problematic.

### **The Ohio Prison System**

As of 2014, there were 51,519 inmates in Ohio's prison system (NIC State Statistics: Ohio, 2016). As of 2010, Ohio's inmate population was the seventh largest in the United States (Carson, 2014). In 2010, 86% of inmates in Ohio were male, and the median age at incarceration was 30 years old (Office of Criminal Justice Services, 2011). According to the 2010 census, 81% of Ohio's general population was Caucasian, while 52% of the incarcerated population are Caucasian. African-Individuals in the United States are overrepresented in Ohio prisons, with 43% of the incarcerated population

identifying as African-American, while only 12% of Ohio's general population identifying as African-American (Sakala, 2014). The crime rate in Ohio is about 6% higher than the national average rate. Property crime accounts for almost 91% of the crime rate, which is 10% higher than the national rate. Violent crimes make up 9%, and this statistic is 18% lower than other states (NIC State Statistics: Ohio, 2016). The three year recidivism rate for offenders released in 2007 was 34 percent, which was the lowest rate recorded since 2000 (Office of Criminal Justice Services, 2011). In 2012, the budget for the Ohio Department of Rehabilitation and Correction was \$1.27 billion, while their costs for that year were \$1.32 billion dollars. Annually, the cost of incarceration is \$25,814 per inmate in Ohio (Henrichson & Delaney, 2012). About 19% of Ohio's aging inmate population have sentences that are 20 years or more, meaning that many Ohio inmates will be experiencing age-related illness, including dementia, at some point in their incarceration (Chettiar, 2012).

### **Aging in the Ohio Prison System**

In 2000, there were about 884 inmates in Ohio prisons that were 55 and older. Nine years later, that number had increased to 3,414 aging inmates (Williams, Goodwin, et al., 2012). About 40% of these inmates are repeat offenders, and about 25% are offenders who enter prison for the first time after the age of 55 (Glaze & Kaeble, 2014).

The majority of inmates over age 50 in Ohio were being held at Hocking Correctional Facility (HCF) until 2018. At end of March 2018, HCF was closed due to rising costs. HCF was the most expensive prison unit in Ohio (Associated Press, 2018). The daily cost per inmate at HCF was \$82.10 (Correctional Institution Inspection

Committee, 2012). The ODRC reported that the annual costs for HCF was about \$11.5 million, while other facilities that were comparable in size cost about \$3 million annually. The cost discrepancy is credited to the medical costs of the geriatric inmate population. HCF provided training for correctional staff, including issues related to aging and dementia (Osborne, 2014). While HCF had some extensive programming for aging inmates, including chronic disease self-management groups, a “buddy” program, pre-release programs, and other various forms of self-care and skills training, some of their programs had to be eliminated due to budgetary concerns (Human Rights Watch, 2012; Moll, 2013; Rikard & Rosenberg, 2007). In terms of the diagnoses most common amongst the older inmates at HCF, dementia was reported to occur in about 5% of the population (Pineda, 2011).

### **Dementia and Dementia Recognition and Assessment in the Ohio Prison System**

There is a lack of research available regarding dementia and dementia recognition and assessment in the Ohio prison system. There is no available data on any programs, statistics, trainings, or demographics regarding inmates with dementia. Currently, the Allen-Oakwood Correctional Institution in Lima, Ohio has a low-security unit for inmates with dementia and developmental disabilities (Burek, Liederbach, & Bridges, 2016).

The Columbus Dispatch indicated an effort by the ODRC to allow inmates with severe dementia to be released before their sentences were up (Johnson, 2015). The primary reason cited for this proposal was the high costs associated with the medical care for inmates with severe dementia. The importance of this research is evident, as this study

provides best practices recommendations for identifying dementia symptoms in the prison population. Early identification can provide the system more time to plan for the costs and interventions before the symptoms of dementia progress. The data from the resulting thematic analysis study can inform collaborative resource planning, screening tools, and training requirements for prison officials working with inmates with dementia. The focus for the information collected was to generate solutions and collaboration in the prison, research, and political communities.

## **Chapter III**

### **Method**

The targeted data collection method for this study was individual interviews with staff members in the Ohio correctional system who are involved with the recognition and assessment of dementia. The purpose of this study was to use the data from the interviews to offer best practices recommendations for prison systems in recognizing and assessing for inmates with dementia, in addition to addressing the current dearth of research and literature regarding dementia assessment in prison. The research also addresses possible gender differences in the recognition and assessment of dementia in prison. The next chapter outlines the methodology and procedures used in recruiting participants and conducting the data analysis.

#### **Participants**

Seven individuals from three different Ohio correctional institutions participated in the study. Demographic information on gender, age, race, length of time within ODRC, occupation, and level of education was collected. The demographic data percentages are reported in Table D1 in Appendix D, along with the total number in each category.

Participants were selected with purposeful sampling and snowball sampling. There were five criteria for inclusion: (a) Participants must be Ohio Department of Rehabilitation and Corrections (ODRC) employees or volunteers ages 18-75 from all

demographic backgrounds; (b) Participants must also be involved in the Ohio correctional system for at least one year prior to being interviewed; (c) Participants must be involved in some capacity with inmates with dementia, which may include direct or daily contact, clinical care, or policy initiators/enforcers; (d) Participants may have been involved in some manner to the recognition or assessment of inmates with dementia, such as medical staff or mental health professionals; (e) Participants were located at the Allen-Oakwood Correctional Institution, Chillicothe Correctional Institution, and the Correctional Reception Center. The Ohio Reformatory for Women was also invited to participate in this study, but they did not return requests for participation in time for the completion of this study.

Allen-Oakwood Correctional Institution (AOCI) is located in Lima, Ohio and opened in 1988. It currently has an inmate population of 1,554 inmates and a staff of 470. This institution was included in this study because it currently has a unit for inmates with dementia. Chillicothe Correctional Institution (CCI) is located in Chillicothe, Ohio and opened in 1966. It currently has an inmate population of 2,703 inmates and a staff of 540. This institution was included in this study because of its large inmate population and since its focus is not on aging inmates or inmates with dementia, it may be representative of other general population institutions. The Correctional Reception Center (CRC) is located in Orient, Ohio and opened in 1987. It currently has an inmate population of 1,934 and a staff of 516. This institution was included in the study because it is generally the first placement of any individual entering prison in Ohio before they are assigned to their “home” institution, meaning that this institution is involved in screening inmates,

and this could include dementia screening. The Ohio Reformatory for Women (ORW) is located in Marysville, Ohio and opened in 1916. This institution has an inmate population of 2,488 and a staff of 504. The institution was initially included in the study because of its female inmate population, as this researcher was inquiring about possible differences in presentation and/or assessment of dementia based on gender (ODRC, n.d.).

### **Instruments and Procedures**

This study was reviewed by the Wright State University Institutional Review Board (WSU IRB) and the initial proposal was approved. The study and the WSU IRB approval was submitted to the ODRC IRB. Upon review, the ODRC IRB requested some minor changes to the protocol, and these changes were submitted for review by the WSU IRB board. The amendment to the initial proposal was approved and the updated protocol was re-submitted to ODRC IRB. ODRC IRB approved the submission and the researcher was able to proceed.

This study utilized a descriptive qualitative research design. Specifically, in-person individual interviews were conducted. Interviews were selected as the method of research because of the potential obstacles in coordinating correctional staff members at one time in one place, due to constraints such as shift coverage. In addition, interviews were useful for establishing the state of current practices and exploring future directions of research. Interview subjects were recruited through networking through existing contacts within the state of Ohio prison system and through contacts provided by the ODRC IRB office.

The interviews included a set of predetermined, open-ended questions, with the flexibility of allowing other questions and responses during the interview. It is important to note that ODRC staff could not reveal patient-specific information without patient consent, and therefore could only speak in generalities. After reviewing the relevant literature on dementia assessment in prison and consulting with field experts, the researcher developed the interview questions from an informed perspective. The aim of the questions was to gather information that would answer the previously stated research questions. A set of ten questions was asked to each interviewee. Please refer to Appendix B for the list of interview questions.

Interviews were conducted on-site at the selected prison of the participant at a time most convenient for the participant, per instructions from the ODRC. Participants signed a consent form that explained the purpose of the study and allowed their participation in the study. Please refer to Appendix C for the consent form. Participants answered the semi-structured interview questions for a length of time between 30 minutes and an hour. Interview subjects were not compensated for their participation per ODRC policy. However, they were provided with a certificate of study participation and a thank-you note. The interviews were conducted by the researcher and audiotaped using two audio recorders for clarity and in case of a malfunction of one of the audio recorders. The audio recordings were then transcribed in their entirety manually by the researcher. The transcripts were checked for mistakes and omissions by the researcher. After all the interviews were conducted and transcribed, the researcher analyzed the transcript data for themes among the responses. The researcher enlisted two assistant researchers to review

each of the transcripts and the researcher's coded themes. This inclusion of outside researchers addressed the possibility of bias and allowed for possible oversights in the coding of themes to be addressed. When a discrepancy occurred, the two assistant researchers and the primary researcher reviewed the discrepancy to reach a consensus on whether to include the information or if it better applied to another theme.

### **Analysis**

The results were analyzed using a thematic-analysis method (Braun & Clarke, 2006). According to Braun and Clarke (2006), there are six steps that are used to guide the thematic-analysis method. The first step is to become familiar with the collected data. This includes repeated reading of the data and "active reading," meaning that the researcher reads the data in search of meanings or patterns. This familiarization with the data can also be done with transcribing the data. In this study, the researcher transcribed the audio data from the interviews, and these transcripts were read over once in their entirety, and then it was actively re-read to allow the researcher to begin looking for possible themes or patterns in the data. The second step is to generate initial codes. These codes indicate a segment of data that could be the basis of a theme or is interesting to the researcher. It is also suggested that at this step, the researcher codes as many potential themes or patterns as possible, so potential data for themes are not excluded. The researcher coded the data by highlighting potential patterns in the transcripts and by numbering the information into categories (i.e. all the number one information was grouped together, all the number two information was grouped together, etc.). The third step is to take the initial codes and refocus the data into overarching themes. This step

involves sorting the codes into potential themes and assembling the coded information within identified themes. Tables, diagrams, or concept maps to organize the themes may be utilized at this stage. There may be varying levels of themes, including main themes and sub-themes. It is also possible that there will be codes that do not fit into a theme, resulting in a miscellaneous theme. In this study, the researcher initially found 31 themes, including one miscellaneous theme.

The fourth step of the six step process of thematic analysis is reviewing the themes. This stage includes the exclusion of some primary themes that may not be themes due to lack of data support, or that some themes may be similar and should be integrated into one theme. The themes should be distinct and clear at the end of this step. This step may involve re-coding for previously missed data or to reorganize data. At this stage, the assistant researchers were utilized to examine the themes and the context of the data to ensure that the data was accurately represented. The assistant researchers were provided with copies of the transcription from each participant and the list and description of themes developed by the researcher. They were provided with specific instructions to work separately, make sure the identified themes match up with the identified content of each script, make sure the content identified as being a particular theme does not fit better under a different theme or should not be a theme at all, make sure information was not neglected that could be considered part of a theme, and to note any “unusual” responses, which would be defined as a response that is in stark contrast to a common theme response. Each of the assistant researchers identified information that this researcher had initially not included in the formation of a theme, but did actually fit

within an existing theme. No new themes were identified from the work of the assistant researchers, nor were any themes suggested for elimination or reorganization. The fifth step states that each theme will be defined, finalized, and individually detailed and discussed. This step also includes developing a narrative about the theme. In this study, the researcher took 31 themes and narrowed them down to 13 themes, including a miscellaneous theme. Many of the 31 original themes were collapsed into the final 12 themes that are detailed in the Results section of this study. The final step is producing the report, which includes writing up the analysis in a manner that is logical and may utilize examples to illustrate the described themes.

## **Chapter IV**

### **Results**

This study was conducted to determine the current state of dementia recognition and assessment within the Ohio correctional system based on themes generated from individual interviews with ODRC mental health staff members. This chapter outlines the findings of the study, including the themes generated and the results from the research questions.

Based on the information from the interviews, the thematic analysis resulted in 12 themes regarding dementia recognition and assessment in Ohio prisons. Unusual responses that were deemed significant, but not part of a theme, are listed as well. There were no significant response themes based on the demographic variables of the participants. The themes are outlined as follows:

#### **Theme One: Employee Experiences in Corrections and Cognitive Decline**

Of the ODRC mental health employees interviewed, the majority of them had no intention of working in a correctional setting as a part of their career path (85% of participants), and many of them had worked in previous settings, such as community mental health and hospitals. They did not have exposure to corrections as an employment opportunity in their education or training, and had not thought about corrections as an

option until shortly before their employment. One participant specifically noted that there was a “stigma” associated with corrections and choosing a correctional setting as a work place. Many of the participants remarked that they had “stumbled” upon a job in the ODRC system, including hearing about it from a colleague or seeing an advertisement in a professional publication. In addition to having few exposures to corrections, the majority of the participants had few exposures to dementia assessment or treatment before they were employed with ODRC (71% of participants). This theme is significant, as the less familiar a person is with a correctional setting and/or dementia assessment, they more likely they may miss the specific signs of dementia in incarcerated individuals (Baldwin, & Leete, 2012).

### **Theme Two: Difficulty Differentiating Symptoms of Dementia**

One of the difficulties noted by participants when attempting to recognize and assess for dementia in incarcerated individuals is that there is a high likelihood of an inmate having a comorbid condition or disorder, making it difficult to discern symptoms as dementia-related or as an indicator of another condition or disorder (85% participants). Some of the examples included in the participant responses included long-term schizophrenia, long-term substance use such as Korsakoff’s syndrome, traumatic brain injuries, depression, adjustment disorders, delirium, infections, intellectual disabilities and developmental disabilities. Due to the high likelihood that an inmate may present with more than one condition or disorder, participants stressed a need to “rule-out” other disorders before providing a dementia diagnosis. The example of delirium was used as a crucial condition to rule out, as delirium can mimic dementia symptoms (confusion,

agitation, memory loss, disorientation). A key difference is that delirium has a sudden onset and is usually the result of another medical concern or event, such as a stroke, an acute infection, substance use withdrawal, or an adverse medication effect. If treated as dementia, the underlying condition causing the delirium can go unnoticed and untreated, which can be potentially fatal (Burton, n.d.). In addition to being aware of other disorders, conditions, or illnesses in combination with dementia, knowledge and awareness of common prison behaviors is important to distinguish dementia. One example provided by a participant was that an inmate going to commissary multiple times may be going because he forgot that he was already there. However, an inmate may also be going to commissary multiple times a day because they are being extorted by another inmate. To make it even more complicated, an inmate may be going to commissary multiple times a day because they are being extorted, and the reason for the extortion is because the inmate is exhibiting memory loss, and another inmate is taking advantage of the forgetful inmate. Another example provided is an inmate may be exhibiting “compensating” behaviors, such as withdrawing from public conversation or interactions, in an effort to hide dementia symptoms from other inmates and staff. Three participants noted that other inmates and staff may compensate for the inmate in an effort to hide symptoms. Other inmates may become a “one-on-one caregiver” for the inmate exhibiting dementia symptoms. The reasons vary from wanting to help the inmate because they are friends or they respect the older inmate, to wanting to take advantage of the inmate. One participant mentioned that staff members may be more likely to “let things slide” if an inmate has been incarcerated for a long period of time and has become

familiar to the staff. The staff may provide “small courtesies” to the inmate with possible dementia symptoms. When the small courtesies run their course, the staff tends to acknowledge a concern and seek medical and mental health services. This practice means that diagnosis may be missed in the early stages. Knowledge of dementia signs and presentations, in addition to an understanding of complex presentations based on comorbid diagnosis, is crucial to being able to detect dementia in an incarcerated population.

### **Theme Three: Commonly Identified Symptoms**

The symptoms that were identified by the participants as being indicators of dementia within the correctional institutions were similar to symptoms identified in the community. Symptoms identified by the participants included memory loss (100% of participants), disorientation (85% of participants), irritability (43% of participants), lack of self-care or attending to hygiene (43% of participants), “odd behaviors” (43% of participants), difficulty tracking thoughts or finding words (28% of participants), ataxic movement (14% of participants), prolonged unfocused staring (14% of participants) and attention issues (14% of participants). Due to the specific environment of a correctional setting, these signs were exhibited in varying ways. Some examples provided by participants included getting lost on the way to the chow hall, wandering around the yard unsure of where they were or where they were going, forgetting to take medication, forgetting which cell is their cell, accusing an inmate of stealing when they actually forgot where they put an item, snapping at staff when they are usually described as “even-keeled,” forgetting phone numbers, going up to staff members with the same

request multiple times a day and not remembering that they already spoke to that staff member, struggling to get to and take showers or do their laundry, and an increase in tickets for behaviors such as “out of place” or “disrespect.” Further, three participants noted that the structured setting of a correctional institution can be either beneficial, as it can provide a stark contrast as to when someone is not adhering to the institution’s rules, which could possibly indicate dementia symptoms sooner, or it can be detrimental, as if an inmate is compensating or exhibiting mild, early symptoms where they can continue to follow a daily routine, the signs may be less likely to be noticed.

#### **Theme Four: Staff Most Likely to Identify Dementia Symptoms**

The participants noted that anyone can spot signs of dementia in the incarcerated population, but the correctional employees who are most likely to spot signs of dementia are “front line” staff, which consists of correctional officers and unit managers (71% of participants). These individuals are more likely to see the same inmates at the same time multiple days in a row, so they are more likely to notice inconsistent behavior, which can indicate dementia. In addition, two participants noted that fellow inmates are also more likely to notice dementia symptoms than other individuals in the correctional setting, as they interact with the same inmates on a daily basis. Inmates are also more likely to point out another inmate’s behavior when it impacts them, such as a cell mate’s lack of hygiene in their shared living space, or if an inmate who is taking their things because they believe the items actually belong to them. This information is significant, because the front line staff are most likely to recognize dementia just based on their exposure to

inmates. Therefore, if the front line staff possess specific knowledge and awareness of dementia signs, it may increase the likelihood that dementia may be identified sooner.

### **Theme Five: Placement for Inmates with Dementia**

Once an inmate has been identified as having symptoms of dementia or has been diagnosed with dementia, there are limited areas where they could be placed. Placement adjustments usually depends on available space and the needs of the inmate. It also depends on the severity of the symptoms. One participant noted that if mild symptoms of dementia are identified, but the inmate is able to function in their day-to-day activities, they may not move the inmate until the functional impairment deteriorates to a level that is unmanageable by the general population environment. Some of the places identified include Berryhill, assisted living units, developmental or intellectual disability units, residential treatment units (RTU), geriatric units, Franklin Medical Center, or, if the inmate exhibits mild symptoms, they may remain in the general population (See Appendix F for a description of these possible placements). Space is limited at Berryhill, as there are only 51 beds dedicated to inmates with dementia, so only the most severe cases are included. A general theme of participants was that the existence of Berryhill may not be well-known throughout ODRC. There was conflicting information provided by participants about requirements to enter Berryhill, as one participant stated that there was an age requirement for inmates to be allowed into Berryhill, while three participants said they were unaware of an age requirement in place for Berryhill. Another common response among the participants was the 51 beds allotted are not nearly enough for the

amount of people within the population of the ODRC system who have been identified as having dementia symptoms.

### **Theme Six: Commonly Used Assessment Tools**

Most of the assessment tools used in diagnosing dementia in a correctional setting have to be brief instruments, such as screening tools. Participants indicated that due to the time constraints that are placed on ODRC employees, it is unlikely that they will have time to administer a full neuropsychological battery, even if the employee happens to be trained in those assessments. Conversely, it is more likely for full neuropsychological batteries to occur when diagnosing dementia in the community. Three of the participants (43%) indicated that they wish they had more time to dedicate to a more comprehensive assessment process, but other obligations limit their ability to utilize tests that might take longer than a few minutes. In addition to the lack of time to give longer instruments, the accessibility of assessment tools is limited. One participant indicated that ordering tests is difficult, because the burden of proof as to why an instrument would be useful is placed on the individual requesting the measure. Further, this individual had experienced requests either being ignored altogether, or materials being sent to incorrect institutions.

In addition to the difficulty in getting certain tools, instruments that are computer-based are usually not plausible, as there is usually a certain amount of effort and cost associated with utilizing computer-based assessments. Lab work is also generally utilized in diagnosing dementia within the correctional setting. Medical assessment data, like computed tomography scan (CAT scan) or magnetic resonance imaging (MRI) that someone could easily get in the community, are more difficult to obtain in prison and

require ODRC central office agreeing to the request. Inmates usually need to be sent out to a medical center to have imaging test completed. This service comes with a time and financial cost for the institution, so it is less likely to be provided to an inmate with dementia than an individual in the community.

The inconsistent amount of corroborating record information that an inmate may or may not have also makes it difficult to diagnosis dementia. Corroborating records include information that could assist in making a dementia diagnosis, such as family history or pre-incarceration functioning information. The two brief screening tool tools that most of the participants endorsed using include the Montreal Cognitive Assessment (MoCA), and the Mini-Mental Status Exam (MMSE) (71% of participants endorsed either or both tools). Other measures mentioned by participants included the Dementia Rating Scale, The SAGE, the Trails, and the Wechsler Memory Scale.

### **Theme Seven: Lack of Policy Regarding Dementia Assessment**

Based on participant data, there are not any ODRC-wide policies regarding a standard process for assessment and diagnosis of dementia (100% of participants). Some of the participants indicated that there are policies regarding what to do with an inmate after a positive dementia diagnosis was made (42% of participants). These policies include documenting where an inmate that was diagnosed with dementia would go, such as Berryhill or another institution or unit. However, that was the extent of the policy. None of the participants could name the steps in the policy, and two of the participants indicated that the policies in ODRC frequently change, making it difficult to keep up with the latest policy updates. One of the participants stated that they would prefer if there

were not any policies about dementia diagnosis or assessment, as that it would make the process more difficult and take away the power of clinical judgment. Two participants indicated clinical judgment was more useful for them in diagnosing dementia. However, without a standard process in place for diagnosing dementia, it is up to each institution to adhere to their own process. This variance could mean that some institutions might screen and identify dementia, whereas other institutions may only identify dementia when it has become unmanageable. The differences in assessment practices may mean significant differences in treatment. The average process included receiving a referral from a staff member, gathering information from records, staff, and/or family members if possible, administering tests (may include screening tools and/or lab work), doing a clinical interview, and then making a referral for placement, treatment, or further testing.

#### **Theme Eight: Lack of Dementia Recognition and Assessment Training**

Employees do not get specialized training in dementia assessment or recognition provided to them by ODRC, according to 100% of the participants. A few of the employees referenced the two-day specialized mental health training that all employees receive when they begin their employment at ODRC (42% of participants). This training details many aspects of mental health, but does not include anything that is specified as information regarding dementia assessment or recognition. As one participant said, the bottom line is that if a front line staff member sees anything unusual, they are to contact the mental health staff. Many of the mental health staff, as noted in a previous theme, do not have specific training in dementia recognition and assessment. Thus, they are relying on the training they have previously obtained before they came into the system, training

that their supervisors provide them on-site, or external training that they seek on their own time and pay for themselves. One participant noted that an ODRC employee offers trainings regarding neuropsychology, but that it was still completed on their own volition and was optional for ODRC employees. This information means that the employees working with inmates who may be exhibiting signs of dementia are not consistently trained on what to look out for and what to do if they suspect any inmate has dementia.

### **Theme Nine: Gender Differences**

The majority of the participants either did not know of any differences between men and women inmates in terms of dementia presentation or they did not feel as though they had enough experience working within female institutions or with female inmates with dementia symptoms to say whether a difference was present or not (85% participants). Therefore, no conclusions can be made about possible gender differences present in inmate populations with dementia.

### **Theme Ten: Lack of Knowledge and Awareness**

Lack of knowledge or awareness about dementia signs and causes was cited as a major concern by all of the participants in the study. They cited misconceptions about dementia being an issue in the elderly population as a concern, as younger inmates do develop dementia symptoms, but they are less likely to be identified because of their age, and therefore less likely to receive treatment. Another issue that stems from lack of awareness and/or knowledge is that dementia is often misattributed to other disorders or behaviors; either cognitive deficit symptoms are attributed to dementia when they are better explained by other diagnoses such as depression, or behaviors that are actual

indicators of dementia are viewed as “behavioral issues” or insubordination. All of the participants noted that even inside the mental health system, dementia symptoms and how to assess for dementia is not well-known. Employees outside of the mental health system were noted as being more likely to be able to identify dementia symptoms until the severity of the symptoms increased to a point that was not manageable, as discussed in a previous theme. If more ODRC employees are provided knowledge, and therefore, increased awareness, dementia may be identified earlier, which would lead to quicker assessment and treatment, and lead to fewer problems that can occur with unmanaged dementia in a correctional setting.

### **Theme Eleven: Conflict between ODRC Departments**

All of the participants identified various conflicts within the ODRC system that they believed contributed to some of the issues with dementia recognition and assessment. Several participants noted that there could be conflict between the medical department and the mental health department in terms of who was better equipped to assess and diagnosis dementia in the inmate population. One participant stated that, in their experience, the medical department thought dementia was a medical diagnosis and therefore should be diagnosed by the medical department, while the mental health department thought that dementia was a mental health diagnosis and thought mental health should be the one to diagnosis dementia. One participant noted that, in their system, they referred suspected dementia cases to medical and it was up to medical as to whether the case moved forward with further testing. This practice caused some conflict during cases when the medical department disagreed with the mental health assessment

of dementia and refused to investigate the dementia further. One participant identified a conflict between the central office of ODRC and the institutions, as the central office has the power to determine whether an inmate can go out for treatment. This power could include an institution recommending an inmate go out of the institution for a CAT scan because of suspected dementia symptoms, and central office has the capability to turn this request down. Some participants noted that there was a disconnection between policies that were utilized. Two of the participants (28%) thought that the policies functioned more as a protection against liability than actually assisting them in their day-to-day tasks. Further, another participant identified conflict between what they described as frontline staff and “professional” staff. An example included frontline staff telling mental health staff that they did not think a person with dementia was mentally ill and that it was instead a “behavioral” issue. Finally, the hierarchal and cultural structure of the correctional system was identified as being a barrier, as several of the participants noted that the system can make it difficult for change to occur, as if change does not follow the appropriate hierarchy and does not concur with the culture of corrections, it can be viewed negatively among other employees.

### **Theme Twelve: Lack of Priority**

All but two participants (71%) stated that they did not think dementia recognition and assessment was a high priority for the ODRC system. One participant went as far as to state that ODRC needed to experience legal action in order for change to occur in this area. Dementia recognition, assessment, and treatment was described as needing to be given a high priority within the ODRC system, as the increase in older inmates in the

correctional system is creating an increased need for assessment and treatment services in the area of dementia.

### **Miscellaneous Responses**

There were some miscellaneous responses that either did not fit in with a theme or was considered to be oppositional to the identified themes. While most participants reported using the MoCA or the MMSE to assess for dementia, participants also responded with other measures, such as the Dementia Rating Scale or the Trails Test. However, one participant mentioned an assessment measure that they use regularly that no other participant mentioned, which was the RBANS. The participant identified it as a useful tool. It can be given multiple times due to the inclusion of multiple forms; thus, it can assess declines in functioning over time. This assessment may be a useful tool for other institutions, but it was unclear if the others institutions were familiar with this assessment instrument.

Another miscellaneous was a discussion of compassionate release in the state of Ohio. Only one participant identified this concept as an area that should be considered important in the recognition and assessment of dementia. This participant concluded that if the compassionate release law was used more frequently, the inmates with severe dementia would be good candidates, and removing them for the system would free up room and space for other inmates with dementia. The participant noted that the compassionate release was rarely approved in Ohio, despite a number of inmates applying for compassionate release. In addition, this participants specifically addressed the issue of whether it is ethical to incarcerate someone who does not possess the

capacity to understand why they are incarcerated or what it means to be incarcerated, as may occur with inmates with dementia. This participant wondered if the function of the correctional setting as a place for rehabilitation is no longer applicable to inmates with dementia.

One participant did explore some possible differences between gender presentations of dementia in a correctional setting. The participant noted, for example, he thought female inmates were at a higher risk for UTIs than in male inmate populations. This factor may put them at an increased risk of infection and delirium, which can be mistaken for dementia symptoms. In addition, this participant also identified an increase in depression rates in female populations as another possible difference that could impact dementia recognition and assessment, as depression symptoms are also commonly mistaken for dementia symptoms.

### **Research Questions**

In determining the current state of dementia recognition and assessment in Ohio prisons, several research questions were considered. The following results are noted for the research questions of the study.

The first research question addressed by this study is “Is there a formal assessment process for inmates suspected of having dementia?” The results of the study suggest there is not currently a formal assessment process for inmates suspected of having dementia within the ODRC system. Based on the themes from the interviews, there is no policy that addresses how an inmate should be assessed or screened for dementia, only for what to do once dementia has been identified. Most of the participants

identified their own process and they described a general practice of their institution, but there was not a standardized process that all institutions could follow to ensure that all inmates are being consistently and appropriately assessed for dementia.

The second research question addressed by this study is “Do staff members receive any training in regards to recognizing inmates with dementia?” The results of the current study indicate staff members do not receive any training specific to dementia recognition and assessment. Based on the information provided by the participants, all staff are required to attend a two-day mental health training, but none of the participants recalled a component addressing dementia. In addition, some of the participants noted that they had previous training or they sought out training on their own that specifically addressed dementia, but this training was dependent on the individual and was not a mandatory requirement from ODRC.

The third question addressed by this study is “What are some issues that occur when assessing inmates with dementia?” The results of the current study suggest some of the issues that occur in assessing inmates with dementia are a general lack of resources, accessibility of instruments, lack of training or awareness of dementia signs and symptoms in a correctional setting, conflict within departments about the assessment and diagnostic process, other inmates taking advantage of inmates with dementia and “hiding” their symptoms, the structured environment of corrections shielding inmates with dementia from being noticed, misdiagnosis of symptoms as dementia, lack of policy formation regarding the assessment process for diagnosing dementia, and lack of time, staff, and finances for attending to dementia assessment.

The fourth research question addressed by this study is “What are possible solutions to issues assessing inmates with dementia?” The results of the current study indicate some possible solutions may include the following:

- Hire additional staff, which would allow current staff to devote more time to dementia assessment.
- Provide workshops and outreach to ODRC employees on dementia signs in a correctional setting during new employee training, which could be administered by an outside community agency.
- Include some dementia screening questions in the mental health screening intakes.
- Educate mental health staff on appropriate screening instruments and differentiating dementia symptoms from other conditions.
- Create a policy that addresses dementia assessment procedures so that the quality of referrals for dementia placement or treatment are better.
- Increase the amount of beds or units available for inmates with dementia so that when an inmate is identified as having dementia, they have an appropriate place to go.

The fifth research question addressed by this study is “What are possible barriers to these solutions?” The results of the current study suggest the budget, staff recruitment and retention, lack of interest or urgency in addressing dementia in a correctional setting, and resistance from staff are potential barriers to the previously discussed solutions.

The sixth research question addressed by this study is “Will there be differences in assessing dementia in prison based on gender?” The results of the study suggest that

this question is inconclusive, as the participant sample included only participants from male-populated institutions. The study did not include participants from a female inmate population as was anticipated during the development of this study. The participants of this study either did not feel as though they knew enough to comment on gender differences in prison populations or they did not think there were any differences.

## **Chapter V**

### **Discussion**

The purpose of this study was to identify the current standards for recognizing and assessing dementia within a sample of employees in Ohio correctional facilities. Seven participants from three institutions were interviewed about their experiences recognizing and assessing for dementia. Their responses were collected into general themes that informed the development of suggestions for best practices. The following section includes a summary of key findings, best practice recommendations based on the results, limitations, strengths, and suggestions for future research.

#### **Summary of Key Findings**

Several themes collected from this study are representative of the limited literature on dementia assessment. The researcher found that the signs and symptoms that are present in inmates with dementia are generally consistent with some of the signs and symptoms that a person in the community would exhibit, but the manner in which they are presented is specific to the correctional environment.

As previously stated, the prison environment presents challenges for inmates with dementia. Functional impairments specific to correctional setting, known as PADLs (prison activities of daily living) are activities that an inmate is expected to perform on a daily basis, and they include getting up in the top bunk, getting to chow/medication calls, and standing for count (Williams, Goodwin et al., 2012; Williams, Lindquist, Sudore,

Strupp, Willmott, & Walter, 2006). The participants identified issues in inmates with dementia in a correctional setting performing PADLs, including getting to the chow hall.

The view that inmates are seen as “trouble-making,” when in fact that are exhibiting irritability associated with dementia, is also supported by the participant responses (Piccolino, n.d.). Inmates struggling with being taken advantage of by other inmates is another point discussed by participants of this study (Baldwin, & Leete, 2012). The participant responses pointed out that these misattributions of behavior may cause problems for early identification of dementia in an inmate, which in turn have an impact on the level of care an inmate with dementia may receive.

A lack of regular screening was identified in the literature as being commonplace for most correctional institutions (Human Rights Watch, 2012; Moll, 2013; Wilson and Barboza, 2012). This information was somewhat supported by the participants responses, as even though all of the participants noted that they do indeed use screening tools when assessing for dementia, none of the participants noted that screening tools are utilized in the general population of inmates to screen for potential dementia symptoms. Essentially, inmates that have been identified as possibly having dementia are screened, but inmates who could have symptoms of dementia, but are able to function and go unnoticed, are not identified because there is a lack of regular screening. This information also supports the theme of a lack of identification of dementia in inmates until their symptoms are disruptive or can no longer be ignored or controlled.

There are currently no nationally recognized trainings, practice standards, or policies regarding dementia recognition and assessment (Coleman, Crews, Hall, Ita, &

Williams, 2013). The participant responses supported this information, as the participants did not identify any policy regarding dementia recognition or assessment in Ohio correctional institutions. The participants also overwhelmingly stated that no formal trainings are provided to their staff, outside of general mental health trainings or education/training that they already possess before they enter their role within the ODRC.

The last major finding that is supported by existing data is the fact that correctional staff members are generally the first to identify dementia symptoms in inmates (Williams, Goodwin, et al., 2012). Several of the participants noted that correctional officers are generally the referral source for their dementia cases. The correctional officers are trained to be aware of inmate behaviors and routines, so they may be more likely to notice irregularities in inmate behavior, which in turn may indicate a diagnosis of dementia.

Some of the themes the researcher identified were not addressed in the literature. For example, there is no current literature that addresses gender differences in dementia presentation in inmates. While most of the participants either declined to answer or responded that they did not think there were any differences in gender and dementia presentation, one participant suggested that there could be some differences, including higher risk of UTIs and depression in the female inmate population. This information might be useful as a direction for future research.

Another interesting theme that was not reflected in the research was the conflict between the various correctional departments in regards to assessing and treating dementia. All of the participants acknowledged some conflicts within the ODRC system,

whether it was between the medical and mental health department, or between the institution and the central office, or if it was within departments. This data could inform potential policies within the ODRC, as one of the policy development areas might be clarification of various department roles, which might create a smoother process implementation.

Previous researchers indicated that the correctional institution routine may hide signs of dementia (Moll, 2013). However, several participants noted that because of the emphasis on observation in a correctional setting, an obvious departure of behavior within the strict prison institution that may occur if an inmate developed dementia (such as an inmate with dementia being out of place), and the sheer amount of various people who interact with an inmate at any given time in the day, dementia may be more easily identified in prison than previously thought.

The participants of this study echoed the overall lack of awareness for addressing dementia in a correctional setting, while also supporting the fact that dementia assessment and treatment is an increasing area of urgency for correctional institutions and state departments to address. Based on the response from the participants and suggestions from the participants themselves, a list of best practices recommendations has been generated.

### **Best Practice Recommendations**

Based on the responses from the participants of this study, including their suggestions for change in the system regarding the recognition and assessment of

dementia, several best practice recommendations were developed. These recommendations are directed towards correctional facility employees and management.

**Recommendation one.** The first recommendation is to create a standardized process for assessing dementia in the correctional setting. It is important that the process be clear, but does not necessarily impede on the clinical judgment of the professionals. Appendix E outlines a possible standardized process that can inform policy development. The first stage is pre-identification, which consists of screening inmates when they come into the system and providing dementia awareness and information trainings for all staff. The second stage is the identification phase, which primarily consists of what the individual who suspects an inmate may be displaying dementia symptoms should do. It is suggested that employees document their concerns and refer the individual to a specific point person within the mental health department who assesses for dementia at that particular institution. The next step is the assessment stage, which includes a clinical interview, record review, lab work, observation, and the administration of a screening instrument. It is important to include a search for any organic causes to their behavior, and include a hearing and vision test before an inmate is given any assessment or screening measures. The next stage is diagnosis. If the screening tool is positive, and other information points to dementia, then a probable dementia diagnosis is given and the inmate is referred to Berryhill. If Berryhill is full, then a list of other appropriate units/institutions are provided. If the inmate does not appear to have dementia at that time, then the inmate will be reevaluated every six months for decline in cognitive functioning. This information is a suggested process that can be utilized as a policy by

ODRC, and can be altered to fit the system. In the standard process, it is important to include clear roles of mental health, medical, and frontline staff, so that there is no question as to who has responsibility at any step in the process.

**Recommendation two.** A second recommendation is that ODRC should provide training for frontline employees that specifically addresses recognizing signs and symptoms of dementia within a correctional setting, and what to do if a frontline employee suspects dementia. The training can be brief, and may be able to fit into the mental health training section of the new employee trainings. Targeted areas would include facts about how dementia develops, the symptoms of dementia, the signs that an inmate could have dementia, differentiating dementia from behavioral issues, communication strategies for inmates with dementia, and diffusion tactics for dealing with inmates who may have dementia. This training could also be conducted by outside community agencies or organizations, which may provide such trainings for free or at a reduced cost. Creating the community linkage may be helpful in reducing the cost of additional trainings.

In addition, training should be provided for mental health professionals regarding the assessments that are most commonly and appropriately used regarding assessing for dementia so there is consistency across all institutions as to the materials that are being used and knowledge of dementia assessment. This training will help with diagnostic clarity and prevent inappropriate referrals for the dementia unit. It would also be important that all institutions have access to the same assessment instruments, again to provide consistency. As one participant noted, some of the screening instruments are

easily accessible online, so it may be as simple as sending an email to all the mental health departments about possible assessment tools and how to access them. While some of the assessment instruments are more costly, they are usually a one-time purchase, with additional testing protocols being ordered as needed.

**Recommendation three.** The third recommendation is to begin administering the MMSE or another brief screening tool to all incoming inmates as a part of the detailed mental health screening process. This early screening would allow all inmates to have a recorded baseline. If there are issues later during their incarceration, there is a record noting their MMSE score. This information could be compared to current functioning to assess whether a decline is occurring. In addition, it would allow any identified concerns to be addressed earlier in the process, rather than later when the inmate becomes disruptive or problematic. It is also recommended that inmates over 55 receive a yearly MMSE. This recommendation may be difficult depending on the size of the institution and the size of the staff, but doing so would allow any declines in functioning to be recognized sooner and therefore allow quicker intervention.

**Recommendation four.** A fourth recommendation is to dedicate finances and space in the budget for additional beds, units, or programs for inmates with dementia. Understandably, the budget is not always up to ODRC and is often up to the larger state government. However, it may be beneficial to advocate for additional funds in this area since inmates aging and potentially developing dementia are becoming an increasing subset of the inmate population. Planning ahead for resources would be beneficial. As of this study's completion, participants noted that a new facility for inmates with dementia

was planned for future use, which indicates that ODRC is currently in the undertaking of this recommendation.

**Recommendation five.** A fifth recommendation includes working to recruit and retain mental health professionals who have interest or experience in aging-related issues, dementia, or neuropsychology. Reaching out to regional collegiate programs and local Ohio organizations, such as Ohio Psychological Association, could help with featuring the correctional system as a worthwhile career opportunity and reduce some the stigmatizing thoughts that the general community may have about working in a correctional setting. It may also be beneficial to begin working with health care programs to provide training opportunities within correctional institutions in Ohio to further increase exposure to the corrections system. In addition, recruiting mental health professionals with interest in neuropsychology, aging issues, and dementia may be helpful as the population in corrections continues to age. Professionals with experience in this domain may also be able to provide trainings and workshops for other employees, which would save on the cost of bringing in trainers from the community. Further, institutions could partner with local medical training institutions to secure neurological services at reduced rates based on trainee status. This partnership could not only save the institution on costs, but also free up time for the ODRC staff.

**Recommendation six.** The sixth recommendation is to enlist the understanding and support of younger inmates. As previously mentioned, there are some programs that are utilizing younger inmates as one-on-one caregivers for older inmates and inmates with dementia in exchange for reduced time. As fellow inmates are more likely to notice

signs of dementia than other correctional employees, it might be beneficial to have younger inmates who can look out for other inmates and communicate to prison staff if an inmate's functioning is declining. It would also provide younger inmates with the opportunity to learn skills in being a responsible caregiver that they can use when they leave the correctional system.

### **Limitations**

This study had several limitations that should be noted. This was a qualitative study using in-person interviews, which required an extensive amount of time. Conducting in-person interviews within the ODRC correctional system required time to travel to the institution, time for the participants to take away from their work, time to go through two IRBs, and time for transcribing the interviews. The researcher transcribed the interviews herself, and it took around two to three hours per interview for an accurate transcript. This affects the capabilities of other researchers to replicate the study, as other researchers may not have the time availability, or other correctional institutions may not want their employees to take time for their work schedule to participate in a research study. One way this limitation can be addressed in future research is to utilize phone or online interviews, to cut down on travel and time costs.

In-person interviews could have resulted in some response bias from participants, as participants may have reacted to the interviewer's facial expressions or tone of the questions, and they may have felt swayed to answer in a certain manner. Some of the ODRC employees were concerned that their information and responses would be available to ODRC, which potentially affected their willingness to be forthcoming on

some of the answers. They had to be assured that no one's individual responses would be identifiable. While all of the participant agreed to be recorded for their interviews, the fact that their interview was recorded may have also influenced their willingness to discuss some topics. Further, there was some concerns about audio recording in the correctional institutions, as that is not ordinarily allowed in Ohio correctional institutions, but the final decisions is up to the individual correctional institution's warden. While ODRC approved of the researcher's use of audio recording, the individual institution had the final decision as to whether or not this researcher could bring in audio equipment.

Another limitation is that all of the participants in the study were mental health professionals. While this resulted in valuable information, as mental health professionals are vital when it comes to identifying and assessing dementia, the front line staff, such as correctional officers, are usually the first to alert the mental health staff that an inmate is exhibiting symptoms. It may have been helpful to include a front line staff member in the interviews in order to add their experiences in dementia recognition and assessment within the responses and themes from the mental health professionals.

The most significant limitation is the exclusion of the Ohio Reformatory for Women (ORW). Initially, ORW was invited to participate in the study, and one of the research questions specifically addressed possible gender differences in inmates with dementia symptoms. However, after repeated attempts to engage potential participants, ORW did not respond to this researcher with enough time to include their information in this study. Without the viewpoint of the mental health staff at the women's institution, there is no data to compare possible gender differences. All except one participant either

did not feel comfortable addressing that research question or did not know if there were any gender differences with dementia presentation in corrections.

### **Strengths of the Study**

The use of in-person interviews is advantageous in this study, as there is a lack of information known about dementia recognition and assessment in corrections, and there is limited research about the practices that prisons are implementing when it comes to assessing or recognizing dementia. Conducting in-person interviews allowed the researcher to develop a realistic view for current practices in the field of dementia recognition and assessment, which then can create a basis for future research ideas. In-person interviews afforded some flexibility in the topics of discussion, which then allowed additional information to be collected that the researcher may not have thought about when creating the semi-structured interview. A relationship was able to be formed between the interviewer and the participants, which may have facilitated a more comfortable atmosphere and a willingness to be open. This format potentially facilitated more in-depth responses.

In-person interviews also allowed for additional participants to be identified, as when the researcher interviewed one participant, that participant would make a suggestion as to another person within ODRC that would be interested in being interviewed based on their position and experience. The suggestions of other possible participants allowed for more options for appropriate participants. At least one participant was identified for the study via snowball sampling at the conclusion of a participant interview.

Another strength of the study is that the participants were asked for input in solving some of the problems that they identified, which allowed for the best practice recommendations listed to be considered from a practical point of view. As the participants are the ones working in the system, any suggestion would affect them if it were to be implemented. The purpose of this study was to create possible solutions to the issues regarding dementia recognition and assessment discussed by the participants. This study included participants input in order to increase the likelihood that the recommendations created would be seriously considered and applied to the system.

The researcher's previous experience within the ODRC system is also a strength in regards to this study. The researcher not only knew about the culture of the ODRC correctional system, which includes an emphasis on security, the hierarchy of command and some of the factors that affect mental health services in corrections, such as finances and lack of filled staff positions, but also the specific terms used within the ODRC system. Participants did not have to explain acronyms that they used or explain why the security of the institution is generally considered more important over an inmate's mental health needs. The participants were potentially more comfortable speaking with an individual who had experience in the system. The researcher's prior experience within ODRC allowed for easier access to the facilities as well.

In addition, the participants, who were in many ways similar in terms of their demographics, held varying positions within mental health, which allowed the researcher to see the issue of dementia in corrections from an interdisciplinary viewpoint. Four of the participants were psychologists, but the study also included a nurse practitioner, a

psychiatrist, and a psychology assistant. Gathering different viewpoints from a variety of mental health professionals allowed for a rich discussion of some of the intricacies of assessing dementia in a correctional setting, including some of the conflict between medical and mental health departments.

Another strength is that the researcher transcribed the interviews manually. While this was time-consuming and may be viewed as a limitation for some, it allowed the researcher to become familiar with the data set. Knowing the data set is a cornerstone to using thematic analysis, and if the researcher had used a transcription service, the researcher would not have had as much experience with the data and identifying appropriate themes. Also, the use of research assistants for inter-rater reliability provided support for the consensus of themes that had been developed and assisted in reducing bias by the researcher. Further, the importance of the study is highlighted by the fact that many of the study findings were supported by the available literature on the topic of dementia recognition and assessment.

### **Future Directions**

There are a number of possible directions for future researchers. One of the major areas that has yet to be researched in regards to dementia assessment and healthcare in correction is statistical data on the prevalence rate, including demographic information, of inmates in the United States correctional system that have symptoms or a diagnosis of dementia. This research could be useful in terms of tracking trends in the population of inmates with dementia symptoms, and could be used to advocate for others the importance of dementia assessment and healthcare in correctional settings. Further,

research regarding differences in presentation within various populations, such as gender or race, would inform better, more culturally competent practices for dementia assessment and treatment.

Another area of future research may include using the inmate population as a norming population for neurocognitive screening tools. This suggestion may result in researchers finding differences in scores on screening tools such as the MoCA or the MMSE for inmates compared to similarly aged adults in the community. This information could be useful in identifying specific, early warning signs or symptoms of dementia in a correctional setting.

Developing programs for inmates with dementia may be a beneficial research area in the future. Some institutions have begun creating programs for inmates with dementia, including utilizing younger inmates as one-to-one caregivers to older inmates with symptoms of dementia. Understanding the effectiveness of those programs may be helpful for other institutions to get the financial and administrative support to create their own. This research could be implemented using program evaluations on existing inmate caregiver programs.

Based on one of the limitations of this study, it would be beneficial for future research to include front line staff as participants. Front line staff were identified by the participants in this study as being one of the first people to recognize dementia, so studies addressing their insights, trainings, viewpoints, and responses to inmates with dementia may be helpful to develop trainings addressing signs and symptoms of dementia in the

United States prison system. This research could be implemented by using the design described in this study.

## Appendix A

### Characteristics of Measures for Assessing Dementia

<b>Measure</b>	<b>Cost*</b>	<b>Time to Administer</b>	<b>Administrator</b>	<b>Advantages</b>	<b>Disadvantages</b>
<b>Mini-Cog</b>	Free, download on website mini-cog.com	3 minutes	Any health care team member can administer, a physician or nurse can interpret results	Free, quick to use, not a significant chance for cultural or language bias	Not a diagnostic tool, may not be good for those with lack of drawing/writing ability
<b>MMSE</b>	\$251 for all materials, but the test and interpretation can be found online for free	10-15 minutes	Any health care team member can administer, a physician or nurse can interpret results	Can be used repeatedly to assess for changes, good for differentiating cognitive impairments from other conditions	Not a diagnostic tool, may not be good for those with hearing and visual impairments, communication disorders and English literacy concerns
<b>MoCA</b>	Free online with registration on the website mocatest.org	10 minutes	Any health care team member can administer with training, a doctorate-level clinician can interpret results	Easily accessible, many languages	Not a diagnostic tool, threshold of 26 may include people with normal functioning

### Characteristics of Measures for Assessing Dementia Continued

<b>ADAS-Cog</b>	\$7 for all materials, but can be found online for free	30 minutes	Any health care team member can administer with training, a doctorate-level clinician can interpret results	Can assess for changes in functioning over time	Not good at distinguishing mild cognitive impairment
<b>CAMC</b>	\$95	25-40 minutes	Psychiatrist with training	Can generate MMSE score, has good sensitivity and specificity	Length of time to administer, limited on who can administer it
<b>WMS-IV</b>	\$850 for basic kit	60 minutes	A doctorate-level clinician with training	Has an older adult battery, includes a brief screener, widely used and recognized	Length of time, cost
<b>RBANS Update</b>	\$699 for combo kit (all forms)	30 minutes	A doctorate-level clinician with training	Different forms allow for re-testing, can show change over time	Cost
<b>DRS-2</b>	\$353 for basic kit	15-30 minutes	A health care clinician with training	Different forms allow for re-testing, can show change over time	Only normed for those 56 years old and up, cost

### Characteristics of Measures for Assessing Dementia Continued

<b>SAGE</b>	Free to download at <a href="http://wexnermedical.osu.edu">wexnermedical.osu.edu</a>	10-15 minutes	Self-administered, but a doctorate-level clinician needs to interpret the results	Different forms, good for mild cognitive impairment and early dementia symptoms	Self-administered, not a diagnostic tool
<b>NPIQ</b>	Free with subscription to PROQOLID, but can be found online for free	5-10 minutes	Self-administered by informants, but a health care clinician with training needs to interpret the results	Includes severity and distress scales, can be administered by a correctional employee	Does not include input from individual in question

*\*Note: Prices may vary*

## **Appendix B**

### **Interview Questions**

1. What are the signs for recognizing dementia in prison?
2. What is the standard process for being diagnosed with dementia in the selected prison?
3. What tools are used to assess for dementia in prison?
4. What policies have the selected prison enacted around dementia assessment, and how effective are they?
5. What training do the selected prison's staff receive in regards to recognizing inmates with dementia?
6. What are the differences, if there are any, to the presentation of dementia in men and women?
7. What are some problems that occur when recognizing and assessing for inmates with dementia?
8. What are possible solutions to the issues surrounding the recognition and assessment for inmates with dementia?
9. What is needed to enact these solutions?
10. What are possible barriers to these solutions?

## **Appendix C**

### **Consent Form**

#### **Subject Informed Consent Document**

##### **A Study of Dementia Assessment Practices in Ohio Prisons**

**Investigator(s) name & address:** Elizabeth K. Turner, Wright State School of Professional Psychology, 117 Health Sciences, 3460 Colonel Glenn Highway, Dayton, OH 45435

**Site(s) where study is to be conducted:** ODRC Institution of the selected participants.

**Phone number for subjects to call for questions:** 937-572-1052

#### **Introduction and Background Information**

You are invited to participate in a research study. The study is being conducted by Elizabeth Turner, Psy. M., Psychology Trainee, under the supervision of LaTrelle Jackson, Ph.D., Faculty advisor and Wright State University School of Professional Psychology. Approximately 6-8 subjects will be invited to participate.

#### **Purpose**

The purpose of this study is to assess the current state of dementia assessment within prison settings in order to inform future research and recommendations. Interviews will be conducted to obtain a general idea of current dementia assessment practices through interviews with professionals involved in the process of diagnosing inmates with dementia.

#### **Procedures**

In this study, you will be asked to participate in a semi-structured interview, explaining your experience with assessing and diagnosing dementia and any related barriers, procedures, and needs. Interview should take about 60 minutes to complete. You may decline to answer any questions that may make you feel uncomfortable.

#### **Potential Risks**

There are no foreseeable risks other than possible discomfort in answering personal questions.

## **Benefits**

The possible benefits of this study include increasing the amount of literature on dementia assessment in prison settings and making applicable recommendations to improve the process of diagnosing inmates with dementia. The information collected may not benefit you directly. The information learned in this study may be helpful to others.

## **Compensation**

Per the ODRC policy, participants will not be able to be compensated for their participation in this study. However, participants may receive a certificate for study participation at the conclusion of the study.

## **Confidentiality**

We will keep your information in the strictest of confidence and protect your privacy to the extent permitted by law. Results of the study will be presented as a collection or identifiable by a code.

## **Security**

Data collected will be kept in a password protected computer or locked in a file cabinet to ensure security.

## **Voluntary Participation**

Taking part in this study is voluntary. You may choose not to take part at all. If you decide to be in this study you may stop taking part at any time. If you decide not to be in this study or if you stop taking part at any time, you will not lose any benefits for which you may qualify.

## **Research Subject's Rights, Questions, Concerns, and Complaints**

You may contact the principal investigator at [turner.227@wright.edu](mailto:turner.227@wright.edu) or the Faculty advisor, Dr. LaTrelle Jackson, at [latrelle.jackson@wright.edu](mailto:latrelle.jackson@wright.edu).

If you have any questions about your rights as a study subject, questions, concerns or complaints, you may call the Wright State IRB Office (937) 775-4462. You may discuss any questions about your rights as a subject with a member of the IRB or staff. The IRB is an independent committee composed of members of the University community, staff of the institutions, as well as lay members of the community not connected with these institutions. The IRB has reviewed this study.

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This paper tells you what will happen during the study if you choose to take part. Your signature means that this study has been discussed with you, that your questions have been answered, and that you will take part in the study. This informed consent document is not a contract. You are not giving up any legal rights by signing this informed consent document. You will be given a signed copy of this consent to keep for your records.

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Signature of Subject/Legal Representative

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Date Signed

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Signature of Person Obtaining Consent  
(if other than the Investigator)

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Date Signed

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Signature of Investigator

---

Date Signed

---

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Printed Subject Name

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Signature of Subject

---

Date Signed

---

Signature of Person Obtaining Consent  
(if other than the Investigator)

---

Date Signed

## Appendix D

### Demographic Table

Table D1

*Participant Demographic Information*

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<b>Demographic Category</b>	<b>Participants (n=7)</b>	<b>Percentages (%)</b>
<hr/>		
<b>Race</b>		
Black	1	14
Caucasian	6	86
<b>Gender Identification</b>		
Female	2	29
Male	5	71
<b>Age Range</b>		
26-45	3	43
46-65	3	43
65+	1	14
<b>Education Level</b>		
Bachelor's	1	14
Master's	1	14
Doctorate	5	71
<b>Occupation</b>		
Psychology Assistant	1	14
Psychiatrist	1	14
Psychologist	4	57
Nurse Practitioner	1	14
<b>Length of time with ODRC</b>		
1-4 years	3	43
5-9 years	1	14
10-15 years	1	14
15+ years	2	29

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## Appendix E

### Suggested Dementia Diagnostic Process

#### 1. Pre-identification

- Healthcare staff, correctional officers, unit managers, and other frontline staff are trained in the etiology of dementia, the symptoms of dementia, and correctional-specific signs of dementia during new employee training. Yearly trainings on s subject are provided for existing employees.
- Mental Health and Medical staff are further trained on assessment materials and identifying comorbid or differentiating diagnosis.
- Inmates who are 55 years old are given an MMSE as a part of their mental health screening upon admission into ODRC.
- Inmates 55+ are screened yearly with either a cognitive screening tool or a MMSE.

#### 2. Identification

- Any employee who observes an inmate exhibiting signs and symptoms of dementia are to document the behaviors in question and make a referral to a specifically appointed mental health person for further assessment.

#### 3. Assessment

- Collect all available records, including information from family.
- Conduct a clinical interview with the inmate.
- Administer a hearing and vision test before completing any assessment measures.
- Administer a brief screening tool.
- Put the inmate in an observation area for a period of 1-2 weeks, if possible.
- Refer to Medical for labs.

#### 4. Diagnosis

- If the inmate has a positive screening tool, other disorders are ruled out, and the symptoms reported/observed match with a cognitive impairment diagnosis, mental health and medical department make a referral for ODRC dementia unit. If the dementia unit is full, then a list of other units/ institutions are provided.
- If an inmate does not meet full criteria for suspected dementia, then they are reassessed every 6 months for any changes.

## Appendix F

### Potential locations for an inmate in the ODRC system with dementia

Location	Description
Berryhill, AOCI	Dementia Unit
Assisted living units	Provides additional support staff for inmates to complete day-today-activities
Sugarcreek, AOCI	Unit for inmates with severe intellectual and developmental disabilities.
Residential Treatment Unit (RTU)	Unit for inmates with severe mental illness, such as schizophrenia.
Geriatric units	Units for inmates considered “aging.”
Franklin Medical Center	Institution for inmates who need more medical attention than a correctional institution usually can provide.
General Population	The dorms and units where inmates without any special requirements or needs are housed.

## References

- Alzheimer's Association. (2006). Alzheimer's disease and other dementias. Retrieved from <http://www.alz.org/greaterdallas/documents/AlzOtherDementias.pdf>
- Alzheimer's Association. (2013). Alzheimer's disease facts and figures. *Alzheimer's & Dementia*, 9(2), 208–245.
- Associated Press. (2018, January 3). Ohio closing Hocking Correctional Unit, which houses 430 inmates, to save money. *The Columbus Dispatch*. Retrieved from <http://nbc4i.com/2018/01/03/ohio-closing-hocking-correctional-unit-which-houses-430-inmates-to-save-money/>
- Baldwin, J., & Leete, J., (2012). Behind bars: the challenge of an ageing prison population. *Australian Journal of Dementia Care*, 1(2), 16-19. Retrieved from <http://journalofdementiacare.com/wp-content/uploads/2014/04/AJDC-Prisons-Aug-Sept2012.pdf>
- Barnes, D. E., Covinsky, K. E., Whitmer, R. A., Kuller, L. H., Lopez, O. L., & Yaffe, K. (2009). Predicting risk of dementia in older adults: The late-life dementia risk index. *Neurology*, 73(3), 173–179. doi:10.1212/WNL.0b013e3181a81636
- Belluck, P. (2012). Dealing with dementia among aging criminals. *The New York Times*. Retrieved 17 August 2016, from [http://www.nytimes.com/2012/02/26/health/dealing-with-dementia-among-aging-criminals.html?\\_r=0](http://www.nytimes.com/2012/02/26/health/dealing-with-dementia-among-aging-criminals.html?_r=0)

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. doi:10.1191/1478088706qp063oa
- Bretschneider, W., Elger, B., & Wangmo, T. (2013). Ageing prisoners' health care: Analysing the legal settings in Europe and the United States. *Gerontology*. 267-275. <http://doi.org/10.1159/000345333>
- Burek, M.W., Liederbach, J. & Bridges, J.K. (2016). A study of Ohio's Correctional Institution Inspection Committee's (CIIC) inmate surveys. *Ohio Consortium of Crime Sciences*. Retrieved from <https://services.dps.ohio.gov/OCCS/Pages/Public/Reports/FinalReportCIIC.pdf>
- Burton, J. (n.d.). Dementia and delirium. John Hopkins Medicine. Retrieved from <https://www.hopkinsmedicine.org/gec/series/dementia.html>
- Carson, E. A. (2014). Prisoners in 2013. *Bureau of Justice Statistics*. Retrieved from <http://www.bjs.gov/content/pub/pdf/p13.pdf>
- Chen, S. (2009, November 13). Prison health-care costs rise as inmates grow older and sicker. *CNN*. Retrieved from <http://www.cnn.com/2009/CRIME/11/13/aging.inmates/>
- Chettiar, I., Bunting, W., & Schotter, G. (2012). At America's expense: The mass incarceration of the elderly. 1-98. Retrieved from American Civil Liberties Union Website: [https://www.aclu.org/files/assets/elderlyprisonreport\\_20120613\\_1.pdf](https://www.aclu.org/files/assets/elderlyprisonreport_20120613_1.pdf)
- Chiu, T. (2010). It's about time: Aging inmates, increasing costs, and geriatric release. 1-12. Retrieved from Vera Institute of Justice Website:

<http://www.vera.org/sites/default/files/resources/downloads/Its-about-time-aging-inmates-increasing-costs-and-geriatric-release.pdf>

Christodoulou, M. (2012). Locked up and at risk of dementia. *The Lancet Neurology*, *11*(9), 750-751. [http://doi.org/10.1016/S1474-4422\(12\)70195-3](http://doi.org/10.1016/S1474-4422(12)70195-3)

Coleman, D., Crews, C., Hall, C., Ita, K., & Williams, R. (2013). Officers in training: Proper care of inmates with dementia. Kentucky Public Health Leadership Institute. Retrieved from [http://www.uky.edu/kaphtc/sites/www.uky.edu.kaphtc/files/Officers%20in%20Training20Proper%20Care%20of%20Inmates%20with%20Dementia\\_1.pdf](http://www.uky.edu/kaphtc/sites/www.uky.edu.kaphtc/files/Officers%20in%20Training20Proper%20Care%20of%20Inmates%20with%20Dementia_1.pdf)

Cummings, J. L. (1994). The Neuropsychiatric Inventory Questionnaire: Background and administration. Retrieved from <https://www.alz.org/careplanning/downloads/npiq-questionnaire.pdf>

Doerflinger, D. M. C. (2012). Mental status assessment in older adults: Montreal Cognitive Assessment: MoCA Version 7.1 (Original Version). *Best Practices in Nursing Care to Older Adults*, *3*(2). Retrieved from <https://consultgeri.org/try-this/general-assessment/issue-3.2.pdf>

Feczko, A. (2014). Dementia in the incarcerated elderly adult: Innovative solutions to promote quality care. *Journal of the American Association of Nurse Practitioners*, *26*(12), 640-648. <http://doi.org/10.1002/2327-6924.12189>

Gaydon, L. B. & Miller, M. K. (2007). Elders in the justice system: How the system treats elders in trials, during imprisonment, and on death row. *Behavioral Sciences and the Law*, *25*(5), 677-699. <http://doi.org/10.1002/bsl>

- Glaze, L. E., & Kaeble, D. (2014). Correctional populations in the United States, 2013. Bureau of Justice Statistics Bulletin (December), 1–14.
- Henrichson, C. & Delaney, R., (2012). The price of prisons: What incarceration costs taxpayers. *Vera Institute of Justice*. [https://storage.googleapis.com/vera-web-assets/downloads/Publications/the-price-of-prisons-what-incarceration-costs-taxpayers/legacy\\_downloads/price-of-prisons-updated-version-021914.pdf](https://storage.googleapis.com/vera-web-assets/downloads/Publications/the-price-of-prisons-what-incarceration-costs-taxpayers/legacy_downloads/price-of-prisons-updated-version-021914.pdf)
- Hoelzle, J. B., Nelson, N. W., & Smith, C. A. (2011). Comparison of Wechsler Memory Scale–Fourth Edition (WMS–IV) and Third Edition (WMS–III) dimensional structures: Improved ability to evaluate auditory and visual constructs. *Journal of Clinical and Experimental Neuropsychology*, 33(3), 283-291.  
doi:10.1080/13803395.2010.511603
- Hollenbeak, C. S., Schaefer, E. W., Penrod, J., Loeb, S. J., & Smith, C. A. (2015). Efficiency of health care in state correctional institutions. *Health Services Insights*, 8, 9–15. <http://doi.org/10.4137/HSI.S25174>
- Hudson, D. (2015, July 15). President Obama: "Our criminal justice system isn't as smart as it should be" [Weblog]. Retrieved from <https://www.whitehouse.gov/blog/2015/07/15/president-obama-our-criminal-justice-system-isnt-smart-it-should-be>
- Human Rights Watch (2012). Old behind bars: The aging prison population in the United States. 1-110. Retrieved from [https://www.hrw.org/sites/default/files/reports/usprisons0112webwcover\\_0.pdf](https://www.hrw.org/sites/default/files/reports/usprisons0112webwcover_0.pdf)

- Johnson, A. (2015, March 6). Prisons want to release brain-dead inmates, those with severe dementia. *The Columbus Dispatch*. Retrieved from <http://www.dispatch.com/content/stories/local/2015/03/05/prison-officials-inmate-medical-care.html>
- Kim, K. & Peterson, B. (2014). Aging behind bars: Trends and implications of graying inmates in the federal prison system. 1-24. Retrieved from Urban Institute Website: [http://www.urban.org/sites/default/files/alfresco/publication-pdfs/413222-Aging-Behind -Bars-Trends-and-Implications-of-Graying-Inmates-in-the-Federal-Prison-System.PDF](http://www.urban.org/sites/default/files/alfresco/publication-pdfs/413222-Aging-Behind-Bars-Trends-and-Implications-of-Graying-Inmates-in-the-Federal-Prison-System.PDF)
- Kingston, P., Le Mesurier, N., Yorston, G., Wardle, S., & Heath, L. (2011). Psychiatric morbidity in older prisoners: Unrecognized and undertreated. *International Psychogeriatrics/IPA*, 23(8), 1354–1360. <http://doi.org/10.1017/S1041610211000378>
- Maschi, T., Kwak, J., Ko, E., & Morrissey, M. B. (2012). Forget me not: Dementia in prison. *Gerontologist*, 52(4), 441–451. <http://doi.org/10.1093/geront/gnr131>
- Maschi, T., Suftin, S. L., & O'Connell, B. (2012). Aging, mental health, and the criminal justice system: A content analysis of the literature. *Journal of Forensic Social Work*, 2, 162–185. <http://doi.org/10.1080/1936928X.2012.750254>
- Mattis, S., Jurica, P. J., & Leitten, C. L. (2001). Dementia Rating Scale–2 [Measurement instrument]. Psychological Assessment Resources.

- McCarthy, K. E., & Rose, C., (2013). State initiatives to address aging prisoners.  
Retrieved 17 August 2016, from <https://www.cga.ct.gov/2013/rpt/pdf/2013-R0166.pdf>
- McKhann, G. M., Knopman, D. S., Chertkow, H., Hyman, B. T., Jack, C. R., Kawas, C. H., . . . Phelps, C. H. (2011). The diagnosis of dementia due to Alzheimer's disease: Recommendations from the National Institute on Aging-Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. *Alzheimers Dementia*, 7(3), 263–269. doi:10.1016/j.jalz.2011.03.005
- Mistry, P., & Muhammad, L., (2015). Dementia in the incarcerated: Ready or not? *Corrections Forum*, 8-12. Retrieved from [http://www.corizonhealth.com/downloads/industrynews/16\)%20CorrForum\\_SeptOct2015\\_Dementia\\_Mistry.pdf](http://www.corizonhealth.com/downloads/industrynews/16)%20CorrForum_SeptOct2015_Dementia_Mistry.pdf)
- Mitchell, S. L., Teno, J. M., Kiely, D. K., Shaffer, M. L., Jones, R. N., Prigerson, H. G., & ... Hamel, M. B. (2009). The clinical course of advanced dementia. *The New England Journal Of Medicine*, 361(16), 1529-1538.  
doi:10.1056/NEJMoa0902234
- Mohs, R. C., Knopman, D., Petersen, R. C., Ferris, S. H., Ernesto, C., Grundman, M., & ... Thal, L. J. (1997). Development of cognitive instruments for use in clinical trials of antidementia drugs: Additions to the Alzheimer's Disease Assessment Scale that broaden its scope. *Alzheimer Disease and Associated Disorders*, 11(Suppl2), S13-S21. doi:10.1097/00002093-199700112-00003

- Moll, A. (2013). Losing track of time: Dementia and the ageing prison population: Treatment challenges and examples of good practice. Mental Health Foundation. Retrieved from <https://www.mentalhealth.org.uk/sites/default/files/losing-track-of-time-2013.pdf>
- NIC State Statistics: Ohio. (2016). *Nicic.gov*. Retrieved 11 September 2016, from <http://nicic.gov/statestats/?st=ga>
- Office of the Inspector General. (2015). The impact of an aging inmate population on the Federal Bureau of Prisons. 1-59. Retrieved from <https://oig.justice.gov/reports/2015/e1505.pdf>
- Office of Criminal Justice Services (2011). Ohio criminal justice statistics. 54-71. Retrieved from [http://www.publicsafety.ohio.gov/links/ocjs\\_statistics.pdf](http://www.publicsafety.ohio.gov/links/ocjs_statistics.pdf)
- Ohio Department of Rehabilitation and Correction. (n.d.). ODRC Institutions. Retrieved from <http://www.drc.ohio.gov/institutions>
- Ortman, B. J. M., Velkoff, V. A., & Hogan, H. (2014). An aging nation: The older population in the United States. *U.S. Bureau of the Census, 1964*, 1–28. Retrieved from <https://www.census.gov/prod/2014pubs/p25-1140.pdf>
- Osborne Association. (2014). The high costs of low risk: The crisis of America's aging prison population. 1-15. Retrieved from [http://www.osborneny.org/images/uploads/printMedia/Osborne\\_Aging\\_White\\_Paper.pdf](http://www.osborneny.org/images/uploads/printMedia/Osborne_Aging_White_Paper.pdf)
- Peters, R. (2009). The prevention of dementia. *International Journal of Geriatric Psychiatry*, 24(5), 452-458. doi:10.1002/gps.2153

- Piccolino, A. L. (n.d.). Dementia in corrections: Treatment challenges and the delivery of compassionate care [PowerPoint slides]. Retrieved from [http://www.alz.org/documents/mndak/208\\_Dementia-Corrections-Presentation.pdf](http://www.alz.org/documents/mndak/208_Dementia-Corrections-Presentation.pdf)
- Pineda, F. (2011). The older offender in the Ohio correctional system. *Ohio Association of Area Agencies on Aging*. Retrieved from <http://ohioaging.org/PDFs/WKSHP%2011%20Needs%20of%20Older%20Offenders.pdf>
- Randolph, C. (2012). Repeatable Battery for the Assessment of Neuropsychological Status Update [Measurement instrument]. Bloomington, Minn: NCS Pearson: PsychCorps
- Randolph, C., Tierney, M. C., Mohr, E., & Chase, T. N. (1998). The Repeatable Battery for the Assessment of Neuropsychological Status (RBANS): Preliminary clinical validity. *Journal of Clinical and Experimental Neuropsychology*, 20(3), 310-319. doi:10.1076/jcen.20.3.310.823
- Rich, J. D., Allen, S. A., & Williams, B. A. (2015). The need for higher standards in correctional healthcare to improve public health. *Journal of General Internal Medicine*, 30(4), 503-507. <http://doi.org/10.1007/s11606-014-3142-0>
- Rikard, R. V., & Rosenberg, E. (2007). Aging inmates: A convergence of trends in the American criminal justice system. *Journal of Correctional Health Care*, 13(3) 150-162. (July 2007) Published by SAGE (ISSN: 1078-3458). doi: 10.1177/1078345807303001

- Risk and Protective Factors: SAMHSA. (2015). Samhsa.gov. Retrieved 2 October 2016, from <http://www.samhsa.gov/capt/practicing-effective-prevention/prevention-behavioral-health/risk-protective-factors>
- Sakala, L. (2014). Breaking down mass incarceration in the 2010 Census: State-by-State incarceration rates by race/ethnicity. *Prison Policy Initiative*. Retrieved from <http://www.prisonpolicy.org/reports/rates.html>
- Scharre, D. (n.d.). SAGE: A test to detect signs of Alzheimer's and dementia. Retrieved from <https://wexnermedical.osu.edu/brain-spine-neuro/memory-disorders/sage>
- Sheehan, B. (2012). Assessment scales in dementia. *Therapeutic Advances in Neurological Disorders*, 5(6) 349–358. doi:10.1177/1756285612455733
- Strauss, E., Sherman, E. M., & Spreen, O. (2006). *A compendium of neuropsychological tests: Administration, norms, and commentary*, 3rd ed. New York, NY, US: Oxford University Press.
- True Grit Program-Rehabilitation and Cost of Elderly in Prisons: Programs for Elderly. (2016). Programsforelderly.com. Retrieved 17 August 2016, from <http://www.programsforelderly.com/cool-truegrit-prisons.php>
- United Nations, Department of Economic and Social Affairs, Population Division (2013). World population ageing. 19. Retrieved from <http://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2013.pdf>
- Wechsler, D. (2009). Wechsler Memory Scale-Fourth Edition [Measurement instrument]. Bloomington, Minn: NCS Pearson: PsychCorps

- Williams, B. A., Goodwin, J. S., Baillargeon, J., Ahalt, C., & Walter, L. C. (2012). Addressing the aging crisis in U.S. criminal justice health care. *Journal of the American Geriatrics Society*, 60(6), 1150–1156. <http://doi.org/10.1111/j.1532-5415.2012.03962.x>
- Williams, B. A., Lindquist, K., Hill, T., Baillargeon, J., Mellow, J., Greifinger, R., & Walter, L. C. (2009). Caregiving behind bars: Correctional officer reports of disability in geriatric prisoners: Ethnogeriatrics and special populations. *Journal of the American Geriatrics Society*, 57(7), 1286–1292. <http://doi.org/10.1111/j.1532-5415.2009.02286.x>
- Williams, B. A., Lindquist, K., Sudore, R., Strupp, H. M., Willmott, D. J., & Walter, L. C. (2006). Being old and doing time : Functional impairment and adverse experiences of geriatric female prisoners: Ethnogeriatrics and special populations. *Journal of the American Geriatrics Society* 702–707. <http://doi.org/10.1111/j.15325415.2006.00662.x>
- Williams, B. A., Stern, M. F., Mellow, J., Safer, M., & Greifinger, R. B. (2012). Aging in correctional custody: Setting a policy agenda for older inmate health care. *American Journal of Public Health*, 102(8), 1475-1481. [doi:10.2105/AJPH.2012.300704](https://doi.org/10.2105/AJPH.2012.300704)
- Wilson, J., & Barboza, S. (2010). The looming challenge of dementia in prisons. *Correct Care*, 24(2), 10–13. Retrieved from <http://www.ncchc.org/pubs/CC/archive/24-2.pdf>