

Modifying the Community Screening Instrument for Dementia (CSI'D') for an Institutional Setting

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Executive Summary

Canada is facing a rapidly aging incarcerated population similar to other nations. A validated, reasonably accurate, dementia screen would assist prison staff in identifying older offenders in need of a clinical dementia assessment. To address this need, in 2019, the University of Saskatchewan's the Centre for Forensic Behavioural Science and Justice Studies (CFBSJS) initiated a three phase study to identify and validate one or more culturally appropriate dementia screening tools for the Correctional Service of Canada (CSC).

The current report presents the findings from Phase 1 of the Dementia Project. In this phase, a culturally appropriate dementia screening tool, the Community Screening Instrument for Dementia (CSI'D'), was modified and administered to older offenders in the Regional Psychiatric Centre (RPC), a CSC Regional Treatment Centre located in Saskatoon, Saskatchewan. In addition, a staff survey was conducted to determine the perceived health needs of older inmates and the extent to which RPC accommodated these health needs in the facility and in discharge planning. The results from this component of the study are presented in a companion article (Stoliker et al., in progress). For the purpose of the Dementia Project, an "older offender" was defined as a non-Indigenous inmate aged 50 years and above, and an Indigenous inmate aged 45 years and above.

In Phase Two, a clinical dementia diagnosis of the older offenders administered the CSI'D' screen in Phase One will be conducted via a Comprehensive Geriatric Assessment (CGA). In addition, a second promising dementia screen, the Canadian Indigenous Cognitive Assessment (CICA), will be administered. In Phase Three, the CSI'D' and CICA screens and a clinical dementia diagnostic assessment will be completed with older offenders in a nationally representative sample of CSC prisons to validate one or both screens for a prison setting. In all phases, while the screens are being validated, health and accommodation recommendations will be provided to older offender participants.

Methods

A multi-method strategy—including data from CSC's Offender Management System (OMS), interviews with older offender participants and self-administered surveys to the older offenders' Primary Nurses—were used to determine the rates of older offenders at RPC who should be referred for a clinical dementia assessment.

Participants

Fifty-five older offenders were identified as initially meeting the eligibility criteria for the study. Of these individuals, 53% consented ($n = 29$) to participate, 27% ($n = 15$) declined participation, and 11 were deemed ineligible due to being in the regional hospital ($n = 1$, 2%), being deemed dangerous ($n = 1$, 2%), 4%), not having the capacity to consent ($n = 1$, 2%), or being discharged/transferred to another CSC facility ($n = 7$, 13%).

CSI'D'

The Community Screening Instrument for Dementia (CSI'D') is a screening instrument intended to flag someone at high-risk for dementia and who requires a dementia assessment. The CSI'D' was developed in Canada in consultation with Cree Elders in Manitoba, which was then validated with a sample of Cree Peoples in Manitoba and Caucasians in Winnipeg (Hall et al., 1993; Hendrie et al., 1995). The CSI'D' has since been validated with racialized communities in Indianapolis, USA, Asia, Latin America, the Caribbean, the Middle East and Africa (Hall et al., 1996; Unverzagt et al., 1999). While the CSI'D' provides a valid flag for high-risk Indigenous and non-Indigenous persons in the community in need of a more thorough clinical dementia assessment, it contains items that are not valid for offenders living in custodial settings. With the aid of the CSC Working Team, the research team modified these items to be more appropriate for an institutional setting. As with any amended risk tool, these revisions require validation.

The modified **CSI'D' Participant Interview** contained items on memory (4), abstract thinking (4), higher cortical function (10), praxis (5), orientation to time (5), and orientation to place (5). The items were weighted and scored to produce the **CSI'D' Cognitive Score** (Cog. Score). Clinical psychology research assistants completed the modified CSI'D' Participant Interviews with the 29 participants in April through May 2019. Interviews took 10 to 34 minutes.

The modified **CSI'D' Informant Questionnaire** contained items on memory and cognition (11), activities of daily living (7), and miscellaneous problems (5), which was used to produce the **CSI'D' Informant Score**. These questionnaires were disseminated to the Primary Nurse (PN) assigned to the study participants in May through August 2019 (i.e., PNs were asked to complete an informant questionnaire for each participant on their caseload). Questionnaires were completed by 12 Primary Nurses for 21 of the 29 screened older inmates. A **Discriminant Score** (D.S.) was then computed from the combination of the Cognitive Score from the patient interview and Informant Score from the nurses' survey.

Findings

Overall, the modified CSI'D' flagged 45% of participants for a dementia assessment. Specifically, 38% of the 13 Indigenous and 69% of the 16 non-Indigenous participants were flagged for a dementia assessment.

Age-related Findings

- Indigenous participants flagged for a dementia assessment ($M = 60.80$ years, $SD = 15.06$) were slightly older than those with a good or intermediate performance on the CSI'D' ($M = 56.09$ years, $SD = 7.09$).
- Conversely, younger non-Indigenous participants ($M = 59.88$ years, $SD = 7.20$) were more likely to be high-risk, compared to non-Indigenous participants not flagged for a dementia assessment ($M = 63.80$, $SD = 5.12$).

- There were no significant differences in ages for Indigenous or non-Indigenous participants flagged for a dementia assessment.

Education-related Findings

- Indigenous participants flagged for a dementia assessment ($M = 5.60$ grade, $SD = 2.30$) had an average of 3 grades of education fewer than those who were not flagged for a dementia assessment ($M = 8.55$ grade, $SD = 3.05$), $F(3, 25) = 3.502$, $p > .05$
- There was no difference in education level among non-Indigenous participants flagged for a dementia assessment ($M = 9.88$ grade, $SD = 1.25$) compared to those not flagged for a dementia assessment ($M = 9.60$ grade, $SD = 2.51$).

Cognitive Score Findings

- Participants not flagged for a clinical dementia assessment had better Cog. Scores, compared to participants classified as high-risk by the CSI'D' Participant Interview.
- Indigenous ($M = 31.53$, $SD = 1.42$) and non-Indigenous ($M = 32.31$, $SD = 0.53$) participants not flagged for a dementia assessment demonstrated higher Cog. Scores than high-risk Indigenous ($M = 25.79$, $SD = 4.34$) and non-Indigenous ($M = 28.46$, $SD = 3.56$) participants. Cog. Score ≤ 28.5 indicates poor performance or the need for a dementia assessment.
- Non-Indigenous participants not flagged for a clinical assessment was the best performing sub-group on Cog. Score ($M = 32.31$, $SD = .53$), while the Cog. Score for Indigenous participants not flagged for a clinical assessment was less than 1-point lower on average ($M = 31.53$, $SD = 1.42$). This could be due slightly to higher cognitive needs among Indigenous participants not flagged for a clinical assessment, or because the modified CSI'D' has not yet been validated.
- High-risk participants had significantly greater difficulty with the location of the Regional Hospital, naming animals in 1 minute, location of the kitchen, and naming their parole officer, compared to those not flagged for a dementia assessment, irrespective of ethnicity.

Informant Score Findings

- Overall, the CSI'D' Informant Score was able to identify high-risk participants.
- PNs believed Indigenous inmates ($M = 2.88$, $SD = 2.84$) had lower dementia risks on average, compared to non-Indigenous inmate participants ($M = 4.39$, $SD = 3.45$), but their perception of dementia risk by ethnicity was not statistically significant.
- According to their PN, Indigenous participants flagged for a dementia assessment ($M = 5.80$, $SD = 1.79$) performed significantly worse on memory and cognition, activities of daily living, and miscellaneous problems, compared to Indigenous participants who were not flagged for a dementia assessment ($M = 0.79$, $SD = 0.64$).

- Non-Indigenous participants flagged for a dementia assessment ($M = 6.08$, $SD = 2.91$) were perceived by their PNs as having significantly more cognitive issues than those who were not deemed to be high-risk for dementia ($M = 1.00$, $SD = 0.87$).
- PNs perceived high-risk non-Indigenous as having slightly more cognitive issues than high-risk Indigenous (mean 0.79 vs. 1.00), but this was not statistically significant.

Discriminant Score Findings

- When both the Cog. Score and Informant Score were combined into the D.S. Score, group means were very similar for high-risk Indigenous ($M = 0.41$, $SD = 0.12$) and non-Indigenous participants ($M = 0.40$, $SD = 0.17$).
- Similarly, D.S. means were relatively consistent for Indigenous ($M = 0.11$, $SD = 0.04$) and non-Indigenous participants ($M = 0.13$, $SD = 0.05$) not flagged for a dementia assessment by the CSI'D'.

Conclusion

Almost half of the inmate sample (45%) was flagged for a clinical dementia assessment. This is slightly higher than the upper limit of the range obtained from a prior meta-analysis of dementia studies conducted on American prison samples (1% - 44%; Maschi et al., 2012). However, it should be noted the dementia estimate among older inmates in the RPC is likely to be overestimated due to the following reasons: a) health screens tend to be over-inclusive to ensure persons in need receive health services (Trevethan, 2017); b) Informant Scores were unavailable for 28% of the sample, and the D.S. is a more accurate dementia flag compared to the Cog. Score only (Hall et al., 2000); and c) almost half of older inmates were deemed ineligible (20%) or declined to participate due to having “no issues or problems with memory/dementia” (27%). Assuming a lower limit whereby no excluded older offenders required a dementia assessment and an upper limit whereby all excluded older offenders required a dementia assessment, the possible rate of older offenders at RPC who may require a dementia assessment may range from 24% to 71%.

In reviewing these studies findings, several limitations should be kept in mind. Notably, accuracy results were not produced for the modified CSI'D' because the outcome variable, dementia diagnosis, will not be available until Phase 2. In addition, the low response rate for both older offenders and PNs adversely affected the reliability of the results. Finally, RPC is one of five Regional Treatment Centres (RTCs), which house CSC inmates with high mental health needs. Results from RPC are not generalizable to other CSC facilities due to the higher rates of older inmates and inmates with high mental health needs at RPC. The higher rate of Indigenous inmates in RPC compared to other RTCs also makes generalizations to other RTCs problematic. Even with these limitations, this study is an important first step in producing a validated dementia screen for institutional populations and is necessary to formulating a cost-effective strategy to identify and provide health care to CSC older offenders with dementia.

Abbreviations

CICA	Canadian Indigenous Cognitive Assessment <ul style="list-style-type: none"> • Modified from the KICI-cog
CO	Correctional Officer
CSC	Correctional Service Canada
CSI'D'	Community Screening Instrument for Dementia <ul style="list-style-type: none"> • Cog. Score: Cognitive Score: Participant/Patient Interview • I.S. :Informant Score: Care-giver/nurse Interview • D.S.: Discriminant Score: Combines Cognitive and Informant Scores
CFBSJS	Centre for Forensic Behavioral Sciences and Justice Studies
KICA	Kimberly Indigenous Cognitive Assessment <ul style="list-style-type: none"> • KICA-cog: Administered to older persons • KICA-Carer: Administered to caregivers of persons with dementia
OCI	Office of the Correctional Investigator
OMS	Offender Management System
PO	Parole Officer
PN	Primary Nurse
RA	Research Assistant
RPC	Regional Psychiatric Centre
RTC	Regional Treatment Centre
SW	Social Worker

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Chapter 1: Introduction

The Centre for Forensic Behavioural Science and Justice Studies (CFBSJS) conducted the first phase of the Dementia Project in 2019 to: (1) screen older offenders in the Regional Psychiatric Centre (RPC) for dementia; and (2) determine the extent to which Correctional Service Canada (CSC) was accommodating dementia and other age-related problems in older offenders in the facility and in discharge planning. RPC is a Correctional Service Canada (CSC) Regional Treatment Centre (RTC) located in Saskatoon, Saskatchewan. CSC defines inmates aged 50 years and above as older offenders (Greiner & Allenby, 2010; Office of the Correctional Investigator [OCI], 2019b), while CSC Indigenous Initiatives Directorate recommends 45 years and above be used as the older offender criteria for Indigenous inmates due to concerns about ethnic differences in aging and dementia in prison.¹ The Dementia Project defined “older offenders” as a non-Indigenous inmate aged 50 years and above (Baidawi et al., 2011; Brooke & Rybacka, 2020; Combalbert et al., 2018; Maschi et al., 2012), or an Indigenous inmate aged 45 years and above (Baidawi et al., 2011; Brooke & Rybacka, 2020; du Toit et al., 2019; Jacklin et al., 2013; MacDonald et al., 2018).

The Dementia Project will span three phases. Phase 1 included administering: (1) a culturally appropriate dementia screening tool, the Community Screening Instrument for Dementia (CSI‘D’), to screen older inmates in RPC for dementia; and (2) a staff survey to determine the perceived health needs of older inmates and the extent to which RPC accommodated these health needs in the facility and in discharge planning. In Phase 2, a clinical dementia diagnosis of the older offenders who were administered the CSI‘D’ screen in Phase 1 will be completed. In addition, a second promising dementia screen, the Canadian Indigenous Cognitive Assessment (CICA), will also be administered. In Phase 3, the CSI‘D’ and CICA screens and a clinical dementia diagnosis will be conducted with older offenders in a nationally representative sample of CSC prisons to validate one or both screens for a prison setting. This report presents the findings of the CSI‘D’ dementia screen; the findings for the second goal of Phase 1 will be published in a companion peer-reviewed article (Stoliker et al., in progress).

Aging in Prison

Similar to other nations (Baidawi et al., 2011; Brooke et al., 2020; Brooke & Rybacka, 2020; Cipriani et al., 2017; Gaston, 2018; Maschi et al., 2012; Williams et al., 2012), Canada is facing a rapidly aging incarcerated population due to mandatory minimum sentences, repeat offenders and convictions for historical sex crimes (Baidawi et al., 2011; Brooke et al., 2020; Peacock et al., 2018, 2019). Indeed, 25% of CSC’s 14,004 incarcerated population was 50 years

¹ The Director of CSC Indigenous Initiatives Directorate recommended the study use 45 years and above to identify older Indigenous offenders in a project design meeting with the previous director of the CFBSJS, the first author and the second author in August 2018. The Director of CSC Indigenous Initiatives Directorate is a member of the practitioner Working Team, which also includes an Elder, Occupational Therapist, Social Workers (2), a Parole Officer and Nurse based at the RPC, one of CSC’s five Regional Treatment Centres.

or older in 2018 (OCI, 2019a). Although 50 years of age is not considered ‘old’ among community members, prisons are thought to accelerate the aging process by 10 years (Baidawi et al., 2011; Combalbert et al., 2018; du Toit et al., 2019; Gaston, 2018; Lawson, 2014; Williams et al., 2012), while other researchers have argued that inmates health may be as much as 15 years advanced compared to community members (Brooke & Rybacka, 2020; Kouyoumdjian et al., 2017). Older inmates face complex health needs (Brooke et al., 2020; Brooke & Rybacka, 2020; Cipriani et al., 2017; Combalbert et al., 2018; du Toit et al., 2019; Peacock et al., 2018, 2019), including Parkinson’s disease, heart disease, hypertension, cancer (Lawson, 2014), mental health problems (Maschi et al., 2012; Skarupski et al., 2018) and dementia (Brooke et al., 2020; Combalbert et al., 2018; du Toit et al., 2019; Gaston, 2018; Kingston et al., 2011; Maschi et al., 2012; Peacock et al., 2019; Skarupski et al., 2018; Williams et al., 2012).

Dementia Rates

Not only do older inmates face higher dementia risks due to pre-existing conditions, lifestyle choices, disadvantage and access to healthcare prior to entering prison (e.g., lower educational attainment, substance abuse and poor nutrition; see: Baidawi et al., 2011; du Toit et al., 2019; Gaston, 2018), and the realities of incarceration (e.g., social isolation, overcrowding, traumatic brain injury, absence of cognitive stimulation, structured daily routine, restricted mobility and continued poor nutrition; for discussion, see: Combalbert et al., 2018; Gaston, 2018; Skarupski et al., 2018), inmates face this risk at an earlier age (Brooke & Rybacka, 2020; Skarupski et al., 2018; Williams et al., 2012). Although no studies on actual dementia prevalence rates of older offenders exists, international studies (Combalbert et al., 2018; Kingston et al., 2011; Maschi et al., 2012; Skarupski et al., 2018) have found between 1% to 44% of inmates aged 50 and older screen positive for dementia or cognitive impairment. Close to 20% of older inmates recruited from seven French prisons screened as being high-risk for dementia and cognitive impairment (Combalbert et al., 2018), while meta-analyses drawn from US state and federal older inmate samples estimated dementia rates between 1% to 30% (Skarupski et al., 2018) or 1% to 44% (Maschi et al., 2012), and 13% of older inmates demonstrated signs of cognitive impairment in a UK study (Kingston et al., 2011). These studies used the Mini-Mental State Examination² (Combalbert et al., 2018; Kingston et al., 2011) or another dementia screen³ to estimate the likely dementia rate among older offenders. Importantly, health screens do not provide a conclusive diagnosis. Instead, they attempt to be over-inclusive and flag/identify people who are high-risk for the disorder. Therefore, high-risk rates identified by dementia screens are likely to over-estimate dementia prevalence. For contrast, community dementia prevalence rates for the 65-74 age group in Canada in 2014 was 2.8% for females and 1.9% for males (Alzheimer Society of Canada, 2016).

² The Mini-Mental State Examination (MMSE) has sensitivity and specificity between 80%-90% in community settings (Alzheimer Society of Canada, 2016).

³ Maschi et al. (2012) and Skarupski et al. (2018) meta-analyses did not specify which standardized dementia screen was used in the included studies. Skarupski et al. (2018) noted the use of unstandardized dementia screens as a limitation of the reviewed studies.

Identifying Dementia: Screening and Testing

Dementia is a syndrome that includes a variety of symptoms associated with declining cognitive functioning, such as memory loss, changes in reasoning and communication ability, and changes in mood and behaviour. Alzheimer's disease is the most common type of dementia. Warning signs of dementia include: (1) memory loss, (2) difficulty with familiar or routine tasks, (3) forgetting words or using the wrong word, (4) difficulty with time and location, (5) impaired judgement, (6) frequent problems with complicated tasks, (7) misplacing things, (8) sudden changes in mood and behaviour, (9) sudden changes in personality, and (10) loss of interest in hobbies or things the person used to enjoy doing (Alzheimer Society of Canada, 2018). The daily schedule in correctional facilities often makes these warning signs of dementia difficult for prison staff to detect (Williams et al., 2012). Furthermore, dementia-related behaviours (e.g., agitation, purposive wandering, and/or poor impulse control) may put these inmates at risk for disciplinary actions (Maschi et al., 2012; Williams et al., 2012).

A health screen is a short tool that flags or identifies high-risk individuals who require a more detailed medical assessment (Trevethan, 2017). Screens are used when it is not feasible or fiscally possible to administer complete medical assessments to everyone in a population of interest (Trevethan, 2017). A validated, that is, reasonably accurate, dementia screen would assist prison staff in identifying older offenders in need of a clinical dementia assessment. Neuropsychologists or geriatricians trained to provide a clinical diagnosis of dementia are also able to provide treatment recommendations, such as de-escalation techniques to reduce disciplinary incidents and health care requirements to stabilize patients. All screens have some degree of classification error, that is, they falsely classify low-risk persons as high-risk (which may be a costly mistake) or classify high-risk persons as low-risk, thereby denying care to people in dire need. Dementia screens in particular have higher rates of classification error for Indigenous persons because the screens do not adequately consider Indigenous culture, ways of knowing, and education levels (Hall et al., 1993, 1996).

While a dementia screen flags someone at high-risk for dementia, that is, identifies persons who require a dementia assessment, an interdisciplinary team is required to diagnose dementia. A clinical dementia diagnosis requires a medical doctor/nurse to complete the medical rule out portion (approximately 30 minutes), as well as a neuropsychologist trained to conduct clinical dementia assessments and/or a geriatrician to complete the second portion of the assessment (on average, 1 ½ to 2 ½ hours). There is no publically available diagnosis cost estimate for Canada (it costs between 477 to 1,115 Euros to diagnose one person in Sweden; Jedenius et al., 2010). CSC health care cost in 2012-2013 was \$267 million (OSI, 2019a); conducting clinical dementia assessments for approximately 3,500 older inmates (25% of CSC's 14,004 incarcerated population that was 50 years or older in 2018; OCI, 2019a) is likely to be beyond CSC's resources. Given the expense and time required to conduct clinical dementia assessments compared to administering a dementia screen (typically 15-30 minutes), one or more validated dementia screening tools would help CSC triage older inmates for costly clinical dementia assessments, thereby reducing CSC's dementia diagnosis costs and costs of untreated

dementia in prison (Williams et al., 2012). Two possible tools that may be considered are the Community Screening Instrument for Dementia and the Canadian Indigenous Cognitive Assessment.

Community Screening Instrument for Dementia. The Community Screening Instrument for Dementia (CSI'D') was developed in Canada in consultation with Cree Elders in Manitoba, which was then validated with a sample of Cree Peoples in Manitoba and Caucasians in Winnipeg (Hall et al., 1993; Hendrie et al., 1995). The CSI'D' has since been validated with racialized communities in Indianapolis, USA, Asia, Latin America, the Caribbean, the Middle East and Africa (Davoudkhani et al., 2019; Hall et al., 1996; Khan et al., 2020; Phung et al., 2014; Prince et al., 2003; 2008; 2011; Unverzagt et al., 1999). Validated versions of the CSI'D' exist in Cree (in the original study; see: Hall et al., 1993), Urdu (Khan et al., 2020), Arabic (Phung et al., 2014), Chinese (Chan et al., 2003), Taiwanese (Liu et al., 2005), Swahili (Longdon et al., 2013) and Persian (Davoudkhani et al., 2019).

The CSI'D' contains a Cognitive Score obtained from a participant interview and an Informant Score obtained from a caregiver (Hall et al., 1993, 1996, 2000). The Cognitive Score from the patient interview and Informant Score from the caregiver/nurse score is then combined to create the Discriminant Score (Hall et al., 2000). The Cognitive Score may be used on its own in the absence of the Informant Score, but accuracy is maximized when both scores are combined and weighted. There is a separate scoring protocol for Indigenous and racialized persons ($0.461839 - [0.012164 * \text{Cognitive Score}] + [0.045880 * \text{Informant Score}]$) and Caucasians ($0.564786 - [0.015019 * \text{Cognitive Score}] + [0.044918 * \text{Informant Score}]$), which has remained relatively consistent across the aforementioned diverse cultural jurisdictions since the original study in 1995 (Ochayi & Thacher, 2006; Unverzagt et al., 1999). Prior studies have found the scoring protocol mitigates education and cultural biases (e.g., see: Hall et al., 2000: AUC=.90 Indianapolis, USA; AUC=.82 Ibadan, Nigeria; AUC=.96 Jamaica; AUC=.97 Cree Reserves; AUC=.97 Winnipeg).

Canadian Indigenous Cognitive Assessment. The Kimberly Indigenous Cognitive Assessment (KICA) is another promising screening tool for dementia, which has been validated with Indigenous Australians aged 45 years and above (KICA, 2004). The KICA consists of two components: the KICA-cog and the KICA-Carer. The KICA-cog is administered to older persons, while the KICA-Carer is administered to caregivers of persons with dementia, similar to the CSI'D'. The KICA-cog flags someone with a score of 33 or below (out of 39) in the KICA-cog for a clinical dementia assessment (KICA, 2004). Other items in the tool are asked for informational purposes to aid in interpretation of the results and determining treatment recommendations. The sensitivity of the KICA is 76% or higher, and specificity is 71% or higher; when both components of the KICA, the KICA-cog and KICA-Carer, are combined, sensitivity=91% and specificity=94% (Dyer et al., 2017). The Canadian Indigenous Cognitive Assessment (CICA) was recently modified from the KICA-cog and was validated for Canadian Indigenous communities. No publications on the accuracy of the CICA currently exists. However, the CICA is brief and no items need to be modified for prison settings, and therefore is

an ideal tool for a prison validation study. Neither the CSI'D' nor the CICA screens have been validated for a prison setting.

Modifying and Validating Dementia Screens for Prisons

While the CSI'D' provides a valid flag for high-risk Indigenous and non-Indigenous persons in the community in need of a more thorough clinical dementia assessment, it contains items that are not valid for offenders – for example, who is the mayor? What is your address? Where is the city market? With the aid of the Occupational Therapist on the CSC Working Team, the research team modified these items to “What is the name of your Parole Officer?” “What is your cell/room number?” and “Where is the main kitchen where patients’ food is prepared?” respectively (see Appendix B). As with any amended risk tool, these revisions require validation. Although the CICA does not contain any items that require modification, testing for relevancy before implementation is advisable (Peacock et al., 2019; Williams et al., 2012). Indeed, a community neuropsychologist who conducts Fetal Alcohol Spectrum Disorder (FASD) assessments experienced difficulties in applying community norms (i.e., means and standard deviations) with RPC inmates, as competency in the prison did not translate to competency in a community setting—high-functioning RPC inmates scored as impaired based on the community standards (Kerodal et al., 2020).

Screens must also be validated (tested) for accuracy against the gold standard for diagnosis (in this case, a clinical dementia diagnosis). Earlier CSI'D' studies used the DSM-III-R criteria for dementia diagnosis (Hall et al., 1993, 1996; Hendrie et al., 1993), while more recent studies used the DSM-IV criteria as the gold or reference standard to determine accuracy, sensitivity and specificity (Chan et al., 2003; Khan et al., 2020; Liu et al., 2005; Longdon et al., 2013; Phung et al., 2014; Prince et al., 2003, 2008). No study to date has used the current DSM-5 diagnostic criteria for major neurocognitive disorder as the reference standard to validate the CSI'D'. Furthermore, as noted previously, the CSI'D' contained items not valid for a institutional setting and was modified to be more valid/appropriate for prisons. These modifications require validation to determine the accuracy rate of the tool before widespread implementation would be a cost-effective means of identifying which of CSC’s older offenders should be offered a dementia assessment.

Overview of the Dementia Project

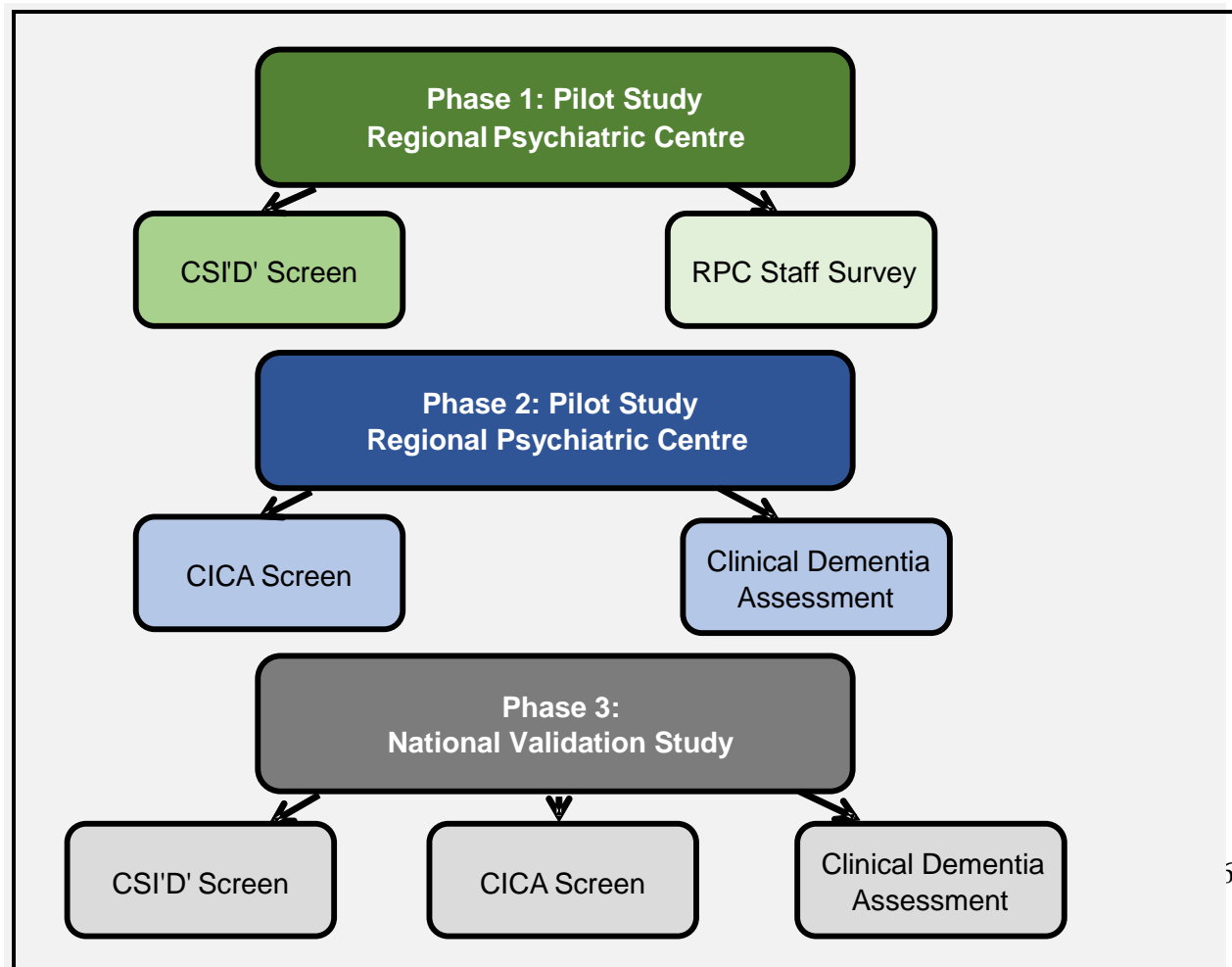
The Dementia Project is a three Phase study to validate two culturally appropriate dementia screens, the CSI'D' and CICA, for the Correctional Service Canada. While the screens are being validated, health and accommodation recommendations will be provided to older offender participants.

Phase One

Phase 1 included the following two components:

1. The modified CSI'D' was used to screen for dementia among older offenders in the RPC, where 'older offender' was defined as Indigenous RPC inmates aged 45 and above and non-Indigenous inmates aged 50 and above to determine rates of older offenders who require a clinical dementia assessment. This report presents the findings of:
 - a. the modified CSI'D' Participant Interview dementia screen administered to 53% (29/55) eligible older offenders in RPC; and
 - b. the modified CSI'D' Informant Questionnaire completed by 12 Primary Nurses for 21 of the 29 screened older inmates.
2. A self-administered survey on the health and discharge needs of older inmates was distributed to RPC Social Workers, Primary Nurses and Parole Officers with older offender caseloads to determine the extent to which dementia and other age-related problems in older offenders are being accommodated in the discharge planning process. All Social Workers (8/8), 67% of Primary Nurses (12/18) and 29% of Parole Officers (2/7) responded to the survey. The results of the RPC Staff Surveys will be published in a companion peer-reviewed article (Stoliker et al., in progress); preliminary results were presented at the 2019 Custody and Caring Conference in Saskatoon, Saskatchewan (Brown et al., 2019).

Figure 1. Overview of Dementia Project



Phase Two

In Phase 2, a second culturally appropriate dementia screen, the CICA, will be administered to the Phase One sample. A clinical dementia assessment will also be administered to the Phase One sample to determine accuracy of the CSI'D' and CICA screens (i.e., overall accuracy/area under the curve [AUC], positive predictive value [PPV], negative predictive value [NPV], sensitivity and specificity). The clinical dementia assessment will provide a diagnosis of 'dementia', 'mild cognitive impairment', or 'no cognitive impairment', based on the DSM-5 diagnostic criteria for major neurocognitive disorder (formerly termed dementia). Phase 2 will be a pilot study of the multisite study (Phase Three), and will provide treatment recommendations for all inmate participants in RPC. All inmate participants will be debriefed on the outcome of their clinical dementia assessment. If inmate consent is provided, their diagnosis and treatment recommendations will be uploaded to their Open Source Clinical Application Resource (OSCAR) Electronic Medical Records (EMR) file.

The goals of Phase 2 are to:

1. Provide treatment recommendations for assessed inmates;
2. Provide recommendations supporting older inmates and the RPC health care staff;
3. Provide recommendations supporting RPC staff who work with older offenders;
4. Determine the accuracy rates of the CSI'D' and CICA dementia screener tools; and,
5. Pilot test a cost-effective method for CSC to identify inmates with dementia.

Phase 2 is tentatively planned for 2021 (subject to funding, CSC approval, the conclusion of the COVID-19 pandemic, and University of Saskatchewan ethics approval).

Phase Three

In Phase Three, both the CSI'D' and CICA screens will be administered to selected CSC facilities to: (1) diagnose and recommend treatment for inmates at other federal prisons; and (2) validate the CSI'D' and CICA tools for Canadian prisons. CSC facilities will be selected to provide a national representative sample of incarcerated older offenders. All eligible inmates from selected CSC facilities will be approached to participate in the study. This will be a multi-site study involving a multi-disciplinary team with nurses, psychologists and geriatricians, to be led and coordinated by the CFBSJS. The CFBSJS will collaborate with researchers and CSC staff familiar with the selected CSC facilities; oversee the study to ensure consistency in the data collection protocols; and ensure data collected can be merged. Screen and diagnosis data will be pooled and de-identified. A split-sample design will be used to validate the CSI'D' and CICA screens. Half of the sample will use the current scoring protocols; if the accuracy of the tools (i.e., AUC, PPV, sensitivity and specificity) are lower than the baseline results obtained from the Phase 2 findings, the sample will be re-weighted and validated against the second half of the sample (Picard et al., 2018; Picard & Kerodal, 2018). In addition to the validation of the CSI'D' and CICA screens, Phase 3 will provide treatment recommendations for all inmate participants, who will be debriefed on the outcome of their clinical dementia assessment. If inmate consent is provided, their diagnosis and treatment recommendations will be uploaded to the national CSC

OSCAR file. Phase 3 is tentatively planned for 2022-2025 (subject to funding, CSC approval, the conclusion of the COVID-19 pandemic, and University of Saskatchewan ethics approval).

At the end of the Dementia Project, CSC will know the prevalence of dementia and cognitive impairment among older offenders and be in a stronger position to decide how to address the issue. CSC will also have a validated dementia screen to identify which older offenders require a clinical dementia assessment and formulate evidence-based health services to meet older offenders' cognitive and aging needs. Compassionate release may be a viable option for older terminally or chronically ill inmates (OCI, 2018; 2019a), although the absence of family supports, caregivers and housing may limit the usefulness of compassionate release or early release for inmates with dementia (Campbell Pope & Elmer, 2020). Since prisons were not designed for older offenders, designing specialized geriatric units,⁴ with features such as accessible ramps and showers, may be worth exploring (Lawson, 2014; Maschi et al., 2012; Williams et al., 2012). Williams et al. (2012) cautioned that geriatric units may be costly, negatively impact younger inmates who benefit from the stabilization effect of interacting with older inmates and socially isolating for older inmates whose preference should be considered when making such housing changes. Compassionate release and prison infrastructure changes may be controversial in both the practitioner and policy research worlds, but there is less ambiguity in the usefulness of a validated prison dementia screen, which can be administered to annually to older inmates based on the jurisdiction's 'older offender' criteria (Williams et al., 2012).

The Current Study

This report presents the findings of the Phase 1 CSI'D' component of the Dementia Project. The purpose of this study was to determine the rate of older offenders in RPC who require a clinical dementia assessment. The next chapter describes the methods of the study. The results of the modified CSI'D' Participant Interview dementia screen administered to eligible older offenders in RPC ($N = 29$) and the modified CSI'D' Informant Questionnaire completed by Primary Nurses ($n = 21$) are presented in Chapter 3. Chapter 4 discusses the relevance of the findings in light of the overall project design.

⁴ Mackenzie Unit is RPC's geriatric unit where several members of the Working Team are based; they have mentioned the need for more evidence-based accommodations to meet the health needs of older offenders in their Unit.

Chapter 2: Methods

This chapter describes the sample selection, procedure, data sources, measures and analytic approach used in the current study. A multi-method strategy—including CSC’s Offender Management System (OMS), interviews with older inmate participants and self-administered surveys to older offenders’ Primary Nurse—was used to determine the rates of older offenders at RPC who should be referred for a clinical dementia assessment. Finally, the limitations of the study are described at the end of the chapter.

Procedure

In fall 2018, during the study design phase, the Community Screening Instrument for Dementia (CSI‘D’) was modified with the aid of the Occupational Therapist on the RPC Working Team (see Appendix B and C for the modified CSI‘D’). The names of eligible older offenders—Indigenous inmates aged 45 and above and non-Indigenous inmates aged 50 and above—were extracted from CSC’s OMS database in February, 2019 by an RPC Epidemiologist. Extracted variables included older offender demographics (age, ethnicity, and gender) and variables needed to determine correct answers for the CSI‘D’ (e.g., Unit location, and Parole Officer name).

In March 2019, four University of Saskatchewan clinical psychology doctoral students received an afternoon of training on the modified CSI‘D’ Participant Interview, including the consent process, protocol for emergency situations, protocol for referring participants who requested/appeared to require follow-up by an RPC psychiatrist, mock administration of the CSI‘D’ Participant Interview and rules for scoring the instrument. The scoring protocol and CSI‘D’ were provided by one of the original tool developers, Hugh C. Hendrie (see Appendix B and C).

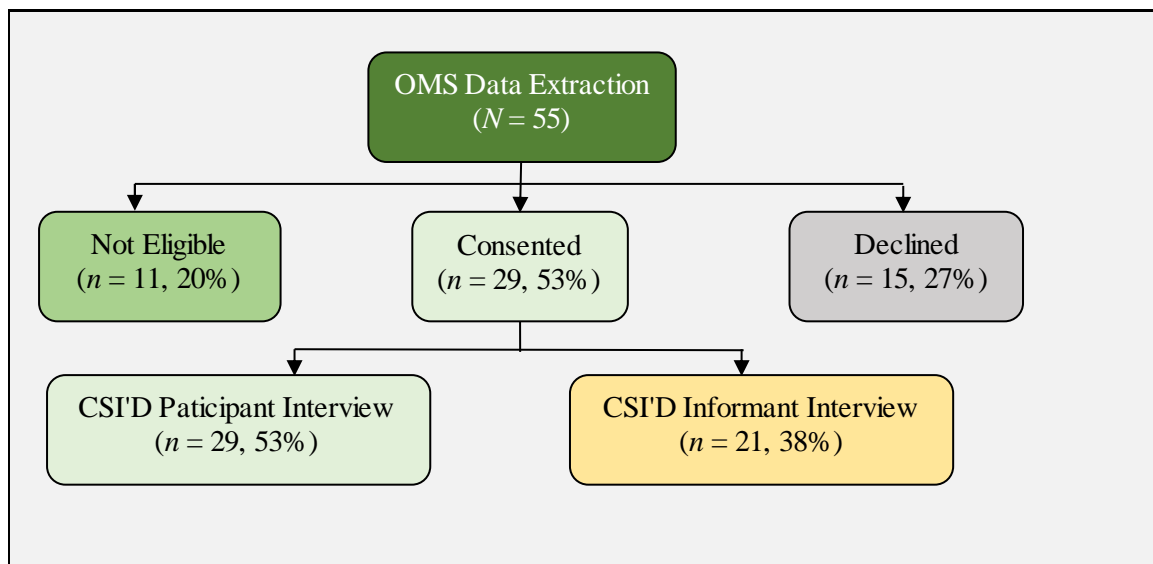
The list of the 55 eligible inmates obtained from the OMS data extraction was emailed using CSC’s confidential outlook account to the Team Leads in Bow Unit, Mackenzie Unit, Assiniboine Unit, Clearwater (upper and lower) Unit and the Regional Hospital (RH) in March 2019. Team Leads indicated which eligible inmate participants had the capacity to consent to the study or posed a risk to the researchers. Team Leads also verified inmates’ cell room number, Primary Nurse (PN), Social Worker (SW) and Parole Officer (PO). The results of the CSI‘D’ Informant Questionnaire (described below), are included in this report; the portions of the PNs’ survey related to inmates’ discharge needs, the SW survey and PO survey will be presented in a companion publication (Stoliker et al., in progress).

Inmate Recruitment

Fifty-five older offenders were eligible for this study. Originally, ten inmates were excluded. Reasons for exclusion included they had surgery at an external hospital and were in recovery in the RH ($n = 1, 2\%$); were deemed by the Team Lead as dangerous ($n = 1, 2\%$) or without the capacity to consent ($n = 1, 2\%$); or were discharged/transferred to another CSC

facility prior to the start of data collection in April 2019 ($n = 7$, 13%). Forty-five eligible inmates were approached to participate in the study in April 2019: 15 declined (citing no problems with dementia or memory) and 30 consented (see Appendix D for inmate participant consent form). One older offender who consented was subsequently excluded because he was deemed potentially dangerous to the University of Saskatchewan's clinical psychology doctoral students conducting the CSI'D', which resulted in an inmate sample of 29 participants (and a total of 11 inmates being excluded from the study). One of the 29 participants had difficulty answering questions due to a language barrier (Inuit vs. English). However, the participant answered sufficient questions to be scored and, since the scoring results were consistent for the Participant and Informant Questionnaire, the participant was included in the results.⁵ The participant recruitment is displayed in Figure 2.

Figure 2. Recruitment



Note. "Not eligible" included 1 (2%) inmate at an outside hospital, 2 (4%) inmates deemed as possibly dangerous to the research staff, 1 (2%) without the capacity to consent, 1 (2%) inmate transferred to another prison and 6 (11%) discharged inmates.

Modified CSI'D' Participant Interview

The Correctional Officer (CO) in charge of the Unit and Team Leads were informed the day prior to each data collection attempt and provided with a list of eligible inmate participants. On each data collection day, eligible participants were paged by the Correctional Officer in charge of the Unit in sequence. Inmates who were out of the Unit for programming or who were working at RPC were seen on a subsequent visit. The CO informed potential participants that a researcher from the University of Saskatchewan wanted to speak with them, and asked if they

⁵ It is possible that the low Informant Score was also due to the language barrier; hopefully, this will be resolved in Phase 2, when the participant will be offered a clinical dementia assessment.

were willing to speak with the researcher. Inmates who responded in the affirmative were directed to a secure room in the Unit to speak with the researcher conducting the consent process.

Clinical Research Assistants (RAs) conducted the CSI'D' immediately after obtaining consent (Appendix D) for 14 participants (48%). The lead author obtained consent from 52% of the participants; refresher consent (Appendix E) was obtained by the clinical RA prior to conducting the CSI'D' Participant Interviews for these participants (see Appendix B). Interviews ranged in duration from 10-34 minutes. Overall, sixteen Indigenous participants aged 45 years and above and thirteen non-Indigenous participants aged 50 years and above completed the modified CSI'D' Participant Interview in April through May 2019 ($N = 29$).

Two RAs conducted CSI'D' Participant Interviews in April 2019. Each RA scored the screens they personally administered and subsequently verified each other's scoring. A third RA conducted CSI'D' Participant Interviews in May 2019. After personally scoring the screen, the RA conferred with the two RAs who conducted the screens in April to verify the scoring. Arlene Kent-Wilkinson, a University of Saskatchewan nursing associate professor and co-author on this report, conducted a final review of the CSI'D' Participant Interview scoring and confirmed the RAs' scoring.

Modified CSI'D' Informant Questionnaire

Team Leads were approached in May 2019 to distribute self-administered survey packages (see Appendix I for the letter to Team Leads) for PNs and SWs with older offenders who consented to participate in the study, who were on the respective RPC staff member's caseload. Team Leads were also asked to distribute self-administered surveys to POs based in their Unit with older offenders on their caseloads in the past two years. RPC staff selected for the study were instructed to return the package to their Team Lead even if they did not complete the self-administered surveys to avoid Team Leads knowing which staff participated in the study. Team Leads returned packages during May-August 2019 to the first author at her RPC assigned workspace.

Primary Nurses (PNs) with older offenders on their caseloads received one CSI'D' Informant Questionnaire⁶ (Appendix C) and survey for each older offender who consented to participate in the study, along with a consent form (Appendix F), a letter inviting them to participate in the study (Appendix G) and a return envelope in a package from their Team Lead. The survey included questions about the discharge needs of the specific older offender and

⁶ The CSI'D' Information Interview instruments were de-identified and combined with the CSI'D' Participant Interview Instruments, and stored securely at the RPC. They will be uploaded to inmates' OSCAR files at the end of Phase 2, which will administer a clinical dementia assessment. In consultation with RPC health staff, the research team decided that the CSI'D', without context of a diagnosis, may be confusing to RPC staff and potentially result in negative consequences for the inmate participants.

nurses training on dementia,⁷ which will be presented in a companion publication, along with the results of the SW and PO surveys (Stoliker et al., in progress).

Reminder emails (see Appendix H) were sent to eligible RPC staff in June and July 2019. Staff who completed the surveys were sent a thank you email in June and July 2019. Data collection ended in August 2019. PNs have multiple offenders on their caseload. Eighteen PNs received packages and 67% ($n = 12$) returned CSI'D' Informant Questionnaires sufficiently completed to be included in the analysis. Overall, CSI'D' Informant Questionnaires were completed for 21 inmates (72% of the inmate sample; 38% eligible inmates). SPSS syntax was used to score the modified CSI'D' Informant Questionnaire, based on the scoring protocol provided by one of the tool developers, Hugh C. Hendrie (see Appendix C).

Measures

The following data sources were merged to create an inmate participant level analysis file. A second file was created at the RPC staff level. The results of the second file, as well as the staff survey responses (excluding the CSI'D' Informant Questionnaire), will be published in the companion article (Stoliker et al., in progress).

CSC's Offender Management System (OMS)

Demographics (age in years, gender, ethnicity, and grade completed), Unit, cell room and PO name were obtained from the OMS data extraction in February 2019. As RPC inmates may change Unit location and staff may be transferred or promoted, Team Leads verified participants' POs, Unit and cell room number.

CSI'D' Participant Interview

The modified CSI'D' Participant Interview contained items on memory (4), abstract thinking (4), higher cortical function (10), praxis (5), orientation to time (5), and orientation to place (5). The items were weighted and scored to produce the CSI'D' Cognitive Score (Cog. Score; see Appendix B for items and scoring protocol). The following variables were produced from the CSI'D' Participant Interview: individual items in the Participant Interview, Cog. Subscores—abstract thinking (ranged from 0-4), higher cortical function (HCF; 0-10+), praxis (0-5), orientation to time (0-5), and orientation to place (0-5)—and the Cog. Score (ranged from 0-33; perfect score=33). The Cog. Score cannot be computed if 22 or more items are missing; all participants completed sufficient items to be scored.

CSI'D' Informant Questionnaire

The modified CSI'D' Informant Questionnaire contained items on inmate participants' memory and cognition (11), activities of daily living (7), and miscellaneous problems (5), which was used to produce the CSI'D' Informant Score (see Appendix C for items and scoring

⁷ Staff survey packages were de-identified, and taken to the Centre for Forensic Behavioural Science and Justice Studies (CFBSJS) University of Saskatchewan office for data entry and secure storage. Inmate and staff consent forms are also stored securely at the CFBSJS office.

protocol). Variables were produced for individual items on the CSI'D' Informant Questionnaire, Informant Subscores—memory and cognition, Activities of Daily Living [ADL], and miscellaneous problems—and the overall Informant Scores (ranged from 0-30; perfect score=0). The Informant Score (also termed “Relscore”) cannot be computed if 12 or more items are missing, adequate information was provided to score 21 Informant Questionnaires.

CSI'D' Clinical Assessment Flag

A Discriminant Score (D.S.) was computed from the combination of the Cognitive Score from the patient interview and Informant Score from the nurses' survey. Computation of D.S. was as follows (Hall et al., 2000, p. 526), for Indigenous participants = $0.461839 - (0.012164 * \text{Cognitive Score}) + (0.045880 * \text{Informant Score})$; for non-Indigenous participants, $D.S. = 0.564786 - (0.015019 * \text{Cognitive Score}) + (0.044918 * \text{Informant Score})$. D.S. ranged from .0629 to + .6280.⁸ The scoring protocol has been found to mitigate education and cultural biases across sites in Canada, the USA, Jamaica and Nigeria (Hall et al., 2000; Shen et al., 2006), and was recommended by one of the tool developers, Hugh C. Hendrie, as appropriate for this study.

Inmate participants were placed into the following risk categories based on the Discriminant Score (D.S.), or the Cognitive Score (Cog. Score) when the Informant Score was unavailable: (1) good performance = $D.S. < 0.120$ or $\text{Cog. Score only} > 29.5$; (2) intermediate performance = $D.S. 0.120-0.183$ or $\text{Cog. Score only} > 28.5 \leq 29.5$; and (3) poor performance = $D.S. \geq 0.184$ or $\text{Cog. Score only} \leq 28.5$. Patients with poor performance, $D.S. \geq 0.184$ or $\text{Cog. Score only} \leq 28.5$, were flagged for a clinical dementia assessment (Hall et al., 1996, p. 136). The clinical dementia assessment is scheduled for Phase 2 of the study, which is currently in the CSC and University of Saskatchewan Ethics approval stage.

Analytic Approach

Statistical analyses were conducted using the IBM Statistical Package for the Social Sciences (SPSS) version 24. The following tests were conducted:

Categorical Variables

Categorical variables in the study included: gender, Indigenous ethnicity, modified CSI'D' Participant Interview items, modified CSI'D' Informant Questionnaire items and CSI'D' risk category (high-risk / poor performance, intermediate-risk and low-risk / good performance). Chi-squares were reported for categorical variables comparing two or more groups. Comparisons were conducted by ethnicity (Indigenous vs. non-Indigenous) and CSI'D' dementia assessment flag (high-risk vs. intermediate- and low-risk).

⁸ Hugh Hendrie, one of the original tool developers, recommended the use of the D.S. scoring protocol cited in Hall et al. (2000, p. 526), whereby the Cree scoring protocol be used for Indigenous participants and the Winnipeg scoring protocol be used for the non-Indigenous participants.

Continuous Variables

Age, grade completed, Cognitive Score (Cog. Score), Informant Score, D.S, Cog. Subscores (memory, abstract thinking, HCF, praxis, orientation to place, and orientation to time) and Informant Subscores (memory and cognition, ADL, and miscellaneous problems) were measured as continuous variables.

Two Groups

Independent samples t-tests were reported for continuous variables when two group means were compared (e.g., Indigenous vs. non-Indigenous participants). The “equal variances not assumed” line of the t-test was reported when the equal variances assumption was violated, Levene's $p < .05$.

More than Two Groups

ANOVA F -tests were reported for continuous variables when more than two group means were compared and the Bonferroni post-hoc test was used to determine which group means significantly differed (i.e., analysis by both ethnicity and dementia assessment flag). When the equal variances assumption of the ANOVA was violated, that is, the Levene's $p < .05$, the Welch F was used to determine if at least one group mean differed from the others, and Games-Howell post-hoc test was used to determine which group means were significantly different.

Limitations

The following limitations should be kept in mind when reviewing the study's findings:

No Diagnosis Information

As noted previously, a clinical dementia assessment was not included in Phase One of the study. Therefore, the outcome variable required to determine the accuracy of the modified CSI'D' was unavailable at the time of writing this report.

Inmate Participants' Consent

Slightly over half of eligible older offenders consented to participate in the study (53%); 20% were deemed ineligible and 27% declined to participate. Most of the inmates who declined to participate in the study cited “no issues or problems with memory/dementia” as their reason. Therefore, it is feasible that the more high-risk inmates, or those who considered themselves to be high-risk, consented to participate in the study. Almost half of participants (45%, $n = 13$) were flagged for a clinical dementia assessment: it is likely that the rate of RPC older offenders who require assessment may be as low as 24% (13 flagged for an assessment / 55 eligible participants). Assuming all eligible older offenders need to be tested for dementia, the higher end of the confidence interval was 71% ([13 flagged for an assessment + 26 non-participants] / 55 eligible participants).

Nurses' Response Rate

Unfortunately, only twelve of the eighteen eligible PNs (67%) responded to the survey and D.S. was unavailable for 28% ($n = 8$) of inmate participants. The CSI'D' has a decision rule, Cog. Score only ≤ 28.5 , for situations when the Informant Questionnaire is missing. However, this rule produces lower accuracy rates than the combined Cog. Score and Informant Score.

Unique RPC Population

CSC inmates who require psychiatric assessments and persons pending trials who need to be assessed for competency to stand trials are housed in one of the five Regional Treatment Centres (RTCs). Therefore, the RTCs inmate populations are vastly different from the other federal prisons and RTCs. RPC has high mental health needs patients, similar to the other RTCs. However, data requested from the RPC in April 2018 indicated that this facility had a higher proportion of older (30% of inmate population was 50 or older vs. 25% at other CSC facilities; OCI, 2019a) and Indigenous inmate populations (56% of inmate population was Indigenous at the RPC vs. 28% at other CSC facilities; OSI, 2018), compared to the overall CSC population. RPC also has a higher proportion of older Indigenous (43% of inmates ages 50 or older are Indigenous at the RPC vs. 18% at other CSC facilities) inmate population, compared to the overall CSC demographic.

Unable to Specify Dementia Type

Finally, although the CSI'D' can screen for dementia (i.e., identify which persons require a clinical dementia assessment), it is unable to differentiate between Alzheimer's from other forms of dementia.

Ethics

Ethics approval was granted by the University of Saskatchewan's Behavioural Research Ethics Board (Beh# 256) to conduct this study (see Appendix A).

Chapter 3: Findings

This chapter describes the results of the modified CSI'D' Participant Interview administered to older offenders in RPC and the modified CSI'D' Informant Questionnaire obtained from the RPC Primary Nurse's (PN) survey. The modified CSI'D' Participant Interview contained items on memory (4), abstract thinking (4), higher cortical function (10), praxis (5), orientation to place (5), and orientation to time (5). Sixteen Indigenous participants aged 45 and above and thirteen non-Indigenous participants aged 50 and above completed the modified CSI'D' Participant Interview in April through May 2019. The modified CSI'D' Informant Questionnaire contained items on inmate participants' memory and cognition (11), activities of daily living (7), and miscellaneous problems (5). Copies of the modified CSI'D' Participant and Informant Questionnaire are presented in Appendices B and C, respectively. The CSI'D' Participant Interview produced a Cognitive Score (Cog. Score) for the participant, and the CSI'D' Informant Questionnaire produced an Informant Score, both scores were then combined to produce the Discriminant Score (D.S.). The D.S was computed as follows (Hall et al., 2000):

1. Indigenous participants: $0.461839 - (0.012164 * \text{Cognitive Score}) + (0.045880 * \text{Informant Score})$ and
2. Non-Indigenous participants: $0.564786 - (0.015019 * \text{Cognitive Score}) + (0.044918 * \text{Informant Score})$.

The differences in the intercepts and weights of the Cog. Score and Informant Score were designed to counteract education and cultural effects when screening for dementia in non-western populations (Hall et al., 1993, 1996; Hendrie et al., 1995). Participants were placed into the following risk categories based on the D.S., or the Cog. Score when the Informant Score was unavailable:

1. Good performance = $\text{D.S.} < 0.120$ or $\text{Cog. Score only} > 29.5$
2. Intermediate performance = $\text{D.S. } 0.120\text{-}0.183$ or $\text{Cog. Score only } > 28.5 \leq 29.5$
3. Poor performance = $\text{D.S.} \geq 0.184$ or $\text{Cog. Score only} \leq 28.5$ (Hall et al., 1996).

Patients with poor performance were flagged for a clinical dementia assessment (Hendrie et al., 1995).

Sample

The sample descriptives for the 29 inmate participants are displayed in Table 1. T-tests were reported for continuous variables (i.e., age and grade completed) and chi-squares were reported for categorical variables (i.e., gender and dementia assessment flag). Slightly over half (55%) was Indigenous and 45% was non-Indigenous. All Indigenous inmate participants were male, while 92% of non-Indigenous inmate participants were male. Gender differences by ethnicity were not significant, $\chi^2(1) = 1.275, p > .05$. As expected based on the study's inclusion criteria, non-Indigenous inmate participants ($M = 61.38$ years, $SD = 6.55$) were almost four years older than Indigenous inmate participants ($M = 57.56$ years, $SD = 9.95$). However, this difference was not statistically significant, $t(27) = 1.189, p < .05$.

Non-Indigenous participants had significantly more years of education ($M = 9.77$ grade, $SD = 1.74$) compared to Indigenous participants ($M = 7.63$ grade, $SD = 3.10$), $t(24.33) = 2.351, p < .05$. The lower Indigenous participants' education level did not appear to adversely affect their chances of being flagged as high-risk for dementia by the CSI'D': 31% of Indigenous participants vs. 62% on non-Indigenous were flagged for a medical dementia assessment (i.e., D.S. ≥ 0.184 or Cog. Score only ≤ 28.5). Participant Score ($r(11) = .016, p = .959$) and Informant Score ($r(7) = .493, p = .178$) and D.S. ($r(7) = .358, p = .344$) were not correlated with the average number of grades completed for non-Indigenous participants. There was also no correlation between the number of grades completed for Indigenous participants and the Participant Score ($r(11) = .366, p = .164$), Informant Score ($r(7) = -.264, p = .407$) or D.S. ($r(7) = -.327, p = .299$). However, no conclusive statements can be made about any education effect on the validity of the CSI'D' until the dementia diagnosis is completed, scheduled for Phase 2 of the study.

Table 1. Sample Descriptives

Category	Indigenous (<i>n</i> = 16)	Non-Indigenous (<i>n</i> = 13)	Sample (<i>N</i> = 29)	Test Statistic	df	<i>p</i> -value
Male	100%	92%	97%	1.275	1	0.259
Mean age	57.56 (9.95)	61.38 (6.55)	59.28 (8.67)	1.189	27	0.245
Mean grade completed ^a	7.63 (3.10)	9.77 (1.74)	8.59 (2.76)	2.351*	24.330	0.027
Flagged for Dementia Assessment	31%	62%	45%	2.660	1	0.103

***Significant at the 0.001 level, **Significant at the 0.01 level, *Significant at the 0.05 level.

Note. Percent and chi-square statistic were reported for categorical variables; mean (standard deviation) and t-tests were reported for continuous variables. The CSI'D' contained a cognitive score (obtained from an interview with the patient) and an informant score (obtained from patient's caregiver / nurse). Patients who performed poorly on both or only the cognitive interview (in the absence of a caregiver interview) were recommended for a complete dementia assessment.

^a The equal variances assumption of the t-test was violated, Levene's $p < .05$. The equal variances not assumed line of the t-test is reported.

Overall, the modified CSI'D' flagged 45% of participants for a dementia assessment. In contrast, a meta-analysis under review cited in Maschi et al. (2012) found a 1-44% dementia rate

in American prisons (no data exists on rates of dementia in Canadian prisons). Due to modifications made to the CSI'D', it is possible that the high rate of inmates flagged for a dementia assessment in the current study may be due to classification errors, that is, low-risk participants were flagged as high-risk and/or high-risk participants were flagged as low-risk by the CSI'D'. The accuracy of the tool will be determined in Phase 2 of this study, when a clinical dementia assessment will be administered to the Phase 1 participants.

Demographic Differences in the CSI'D' 'Poor Performance' Flag

The sample descriptives, disaggregated by CSI'D' outcome (poor performance vs. good or intermediate performance), are displayed in Table 2. ANOVA *F*-tests were reported for continuous variables (age and grade completed) and chi-square is reported for the categorical variable, gender. The Welch *F* is reported when the equal variance assumption of the ANOVA was violated, that is, Levene's $p < .05$. Indigenous participants flagged for a dementia assessment ($M = 60.80$ years, $SD = 15.06$) were slightly older than those with a good or intermediate performance on the CSI'D' ($M = 56.09$ years, $SD = 7.09$). The reverse was true for non-Indigenous participants, whereby younger non-Indigenous participants ($M = 59.88$ years, $SD = 7.20$) were more likely to be high-risk, compared to non-Indigenous participants not flagged for a dementia assessment ($M = 63.80$, $SD = 5.12$). However, there were no significant differences in ages for Indigenous or non-Indigenous participants flagged for a dementia assessment, Welch $F(3, 10.823) = 1.806$, $p < .05$.

There was no difference in education level among non-Indigenous participants flagged for a dementia assessment ($M = 9.88$ grade, $SD = 1.25$) compared to those not flagged for a dementia assessment ($M = 9.60$ grade, $SD = 2.51$). However, Indigenous participants flagged for a dementia assessment ($M = 5.60$ grade, $SD = 2.30$) had an average of 3 grades of education fewer than those who were not flagged for a dementia assessment ($M = 8.55$ grade, $SD = 3.05$), $F(3, 25) = 3.502$, $p > .05$ (see Table 2, footnote ^b). Given that items were modified in the current study, it is unknown whether the lower education level of Indigenous participants flagged for a dementia assessment was due to an education bias in the modified tool. Results from Phase 2 would determine whether the modified CSI'D' contains an education bias for Indigenous persons. Phase 3 results will be used to correct this bias via re-weighting or dropping the problematic items.

Table 2. Sample Descriptives by Ethnicity

	<u>Indigenous Inmates</u>		<u>Non-Indigenous Inmates</u>		Sample (<i>N</i> = 29)	Test Statistic	df	<i>p</i> -value
	Flagged for Clinical Assessment (<i>n</i> = 5)	Not flagged for Clinical Assessment (<i>n</i> = 11)	Flagged for Clinical Assessment (<i>n</i> = 8)	Not flagged for Clinical Assessment (<i>n</i> = 5)				
Male	100%	100%	100%	80%	97%	4.971	3	0.174
Mean age ^a	60.80 (15.06)	56.09 (7.09)	59.88 (7.20)	63.80 (5.12)	59.28 (8.67)	1.806	3, 10.823	0.205
Mean grade completed ^b	5.60 (2.30)	8.55 (3.05)	9.88 (1.25)	9.60 (2.51)	8.59 (2.76)	3.502*	3, 25	0.030

***Significant at the 0.001 level, **Significant at the 0.01 level, *Significant at the 0.05 level.

Note. Percent and chi-square statistic were reported for categorical variables; mean (standard deviation) and ANOVA tests were reported for continuous variables. The CSID contained a cognitive score (obtained from an interview with the patient) and an informant score (obtained from patient's caregiver / nurse). Patients who performed poorly on both or only the cognitive interview (in the absence of a caregiver interview) were recommended for a complete dementia assessment.

^a The equal variances assumption of the ANOVA test was violated, Levene's $p < .05$. The more robust test, the Welch F , is reported.

^b According to the Bonferroni post-hoc test, Indigenous inmates flagged for a clinical dementia assessment had a significantly lower education grade level compared to non-Indigenous inmates flagged for a clinical assessment. The Bonferroni is an appropriate post-hoc test when the ANOVA test equal variance assumption is not violated, that is, the Levene's test p -value is $> .05$.

Table 3. Distribution of CSI'D' Scores by Ethnicity

	Indigenous Inmates (<i>n</i> = 16)	Non- Indigenous Inmates (<i>n</i> = 13)	Full Sample (<i>N</i> = 29)	Test Statistic	df	<i>p</i> -value
Mean Cognitive Score (Perfect score = 33)	29.74 (3.73)	29.94 (3.36)	29.83 (3.51)	0.150	27	0.882
Risk Categories ^a						
Good performance	44%	31%	38%			
Intermediate performance	25%	8%	17%			
Poor performance	31%	62%	45%	3.033	2	0.220
	(<i>n</i> = 12)	(<i>n</i> = 9)	(<i>N</i> = 21)			
Mean Informant Score (Perfect score = 0)	2.88 (2.84)	4.39 (3.45)	3.52 (3.13)	1.103	19	0.284
Mean Discriminant Score (range = .0629 to + .6280) ^b	0.24 (.17)	0.31 (.19)	0.27 (.18)	0.866	19	0.397

***Significant at the 0.001 level, **Significant at the 0.01 level, *Significant at the 0.05 level.

Note. Percent and chi-square statistic were reported for categorical variables; mean (standard deviation) and t-tests were reported for continuous variables.

^a Inmate participants were placed into the following risk categories based on the Discriminant Score (D.S.), or the Cognitive Score (Cog. Score) when the Informant Score was unavailable: (1) good performance = D.S. < 0.120 or Cog. Score only > 29.5; (2) intermediate performance = D.S. 0.120-0.183 or Cog. Score only > 28.5 ≤ 29.5; and (3) poor performance = D.S. ≥ 0.184 or Cog. Score only ≤ 28.5. Patients with poor performance are flagged for a clinical dementia assessment.

^b The Discriminant Score (D.S.) was the combination of the Cognitive Score (Cog. Score) from the patient interview and Informant Score from the caregiver/nurse score, and ranged from .0629 to + .6280. For Indigenous inmates, D.S. = 0.461839 - (0.012164 * Cog. Score) + (0.045880 * Informant Score); for non-Indigenous inmates, D.S. = 0.564786 - (0.015019 * Cog. Score) + (0.044918 * Informant Score).

Sample Summary: CSI'D' Distribution by Ethnicity

Summary statistics for the modified CSI'D' administered to older offenders in Phase 1 of the Dementia Study, conducted in RPC during April through May 2019, is presented in this section.

Sample Summary: CSI'D' Score Distribution by Ethnicity

CSI'D' Cog. Scores were obtained for 29 participants. One participant spoke Inuit and had difficulty hearing. However, because the participant completed sufficient items in the CSI'D' Participant Interview to compute the Cog. Score (if 22 or more scored items are missing, the Cog. Score can not be calculated) and both the Cog. Score and Informant Score recommendations were consistent, the case was included in the analysis. Informant Scores from participants' PNs were available for 21 participants. In the absence of an Informant Score, the Cog Score was used to decide whether to flag the case for a dementia assessment. The distribution of the Cog. Score ($n = 29$), and Informant Score ($n = 21$) by inmate participant ethnicity are presented in Table 3. T-tests were reported for continuous variables (Cog. Score, Informant Score and D.S.) and the chi-square was reported for the categorical variable, Risk Categories.

Mean Cog. Score was approximately 29 (out of 33, with Cog. Score ≤ 28.5 indicating poor performance or the need for a dementia assessment) for both Indigenous ($M = 29.74$, $SD = 3.73$) and non-Indigenous ($M = 29.94$, $SD = 3.36$) participants, $t(27) = .150$, $p > .05$. Slightly over 40% of Indigenous participants had 'good,' a quarter had 'intermediate' and close to a third had 'poor' Cog. Scores. In contrast, almost one-third of non-Indigenous participants had 'good,' less than 10% had 'intermediate' and two-thirds had 'poor' Cog. Scores. However, these differences in Cog. Scores by ethnicity were not significant, $\chi^2(2) = 3.033$, $p > .05$. Informant scores, and D.S. were available for 21 participants. PNs believed Indigenous inmates ($M = 2.88$, $SD = 2.84$) had lower dementia risks on average, compared to non-Indigenous inmate participants ($M = 4.39$, $SD = 3.45$). However, nurses perception of dementia risk by ethnicity was not statistically significant, $t(19) = 1.103$, $p > .05$. These results are displayed in Table 3.

Sample Summary: CSI'D' Score Distribution by Dementia Assessment Flag

The distribution of the Cog. Score ($n = 29$), and Informant Score ($n = 21$) by inmate participant ethnicity and dementia assessment flag are presented in Table 4. ANOVA F -tests were reported for continuous variables (Cog. Score, Informant Score and D.S.) and the chi-square was reported for the categorical variable, Risk Categories. The Welch F was reported when the equal variance assumption of the ANOVA test was violated. Indigenous ($M = 31.53$, $SD = 1.42$) and non-Indigenous ($M = 32.31$, $SD = 0.53$) participants not flagged for a dementia assessment demonstrated higher Cog. Scores than high-risk Indigenous ($M = 25.79$, $SD = 4.34$) and non-Indigenous ($M = 28.46$, $SD = 3.56$) participants, Welch $F(3, 10.935) = 6.237$, $p < .05$. However, since '0' was contained in the group mean differences' confidence intervals in the Games-Howell post-hoc tests, it was impossible to identify which groups had significantly different Cog. Score. Since the dementia assessment flag was based on the combination of the

Cog. Score and Informant Score, the absence of significance in the Games-Howell post-hoc test indicated inconsistencies between the Cog. Score obtained from the participant interview (Appendix B) and Informant Score obtained from the PNs Questionnaire (Appendix C).

The ANOVA comparing the Informant Score (perfect score=0) by ethnicity and dementia assessment flag was more consistent than the Cog. Scores. According to their PN, Indigenous participants flagged for a dementia assessment ($M = 5.80$, $SD = 1.79$) performed significantly worse on memory and cognition, activities of daily living, and miscellaneous problems, compared to Indigenous participants who were not flagged for a dementia assessment ($M = 0.79$, $SD = 0.64$). Similarly, non-Indigenous participants flagged for a dementia assessment ($M = 6.08$, $SD = 2.91$) were perceived by their PNs as having significantly more cognitive issues than those who were not deemed to be high-risk for dementia ($M = 1.00$, $SD = 0.87$), Welch $F(3, 6.557) = 14.635$, $p < .01$.

When both the Cog. Score and Informant Score were combined into the D.S., group means were very similar for high-risk Indigenous ($M = 0.41$, $SD = 0.12$) and non-Indigenous participants ($M = 0.40$, $SD = 0.17$). Similarly, D.S. means were relatively consistent for Indigenous ($M = 0.11$, $SD = 0.04$) and non-Indigenous participants ($M = 0.13$, $SD = 0.05$) not flagged for a dementia assessment by the CSI'D'. The D.S. was significantly different by dementia risk level and ethnicity, Welch $F(3, 6.649) = 12.386$, $p < .01$. However, as noted previously in this chapter, the accuracy rate of the CSI'D' by ethnicity will be determined after the clinical assessment is administered to this sample in Phase 2.

Table 4. Distribution of Scores by Ethnicity and CSI'D' Screen Result

	<u>Indigenous Inmates</u>		<u>Non-Indigenous Inmates</u>		Sample (N = 29)	Test Statistic	df	p -value
	Flagged for Clinical Assessment (n = 5)	Not flagged for Clinical Assessment (n = 11)	Flagged for Clinical Assessment (n = 8)	Not flagged for Clinical Assessment (n = 5)				
Mean Cognitive Score ^a	25.79 (4.34)	31.53 (1.42)	28.46 (3.56)	32.31 (0.53)	29.83 (3.51)	6.237*	3, 10.935	0.010
Risk Categories ^b								
Good performance	0%	64%	0%	80%	38%			
Intermediate performance	0%	36%	0%	20%	17%			
Poor performance	100%	0%	100%	0%	45%	29.777***	6	0.000
	(n = 5)	(n = 7)	(n = 6)	(n = 3)	(N = 21)			
Mean Informant Score ^c	5.80 (1.79)	0.79 (0.64)	6.08 (2.91)	1.00 (0.87)	3.52 (3.13)	14.635**	3, 6.557	0.003
Mean Discriminant Score ^d	0.41 (0.12)	0.11 (0.04)	0.40 (0.17)	0.13 (0.05)	0.27 (0.18)	12.386**	3, 6.649	0.004

***Significant at the 0.001 level, **Significant at the 0.01 level, *Significant at the 0.05 level.

Note. Percent and chi-square statistic were reported for categorical variables; mean (standard deviation) and ANOVA tests were reported for continuous variables.

^a A perfect Cognitive Score = 33+. The equal variances assumption of the ANOVA test was violated, Levene's $p < .05$. The more robust test, the Welch F , is reported. Although the Welch F was significant at the .05 level, the Games-Howell post-hoc test did not identify any significant differences in sub-groups' means. The Welch F result is not reliable as 0 is contained in all sub-groups' confidence intervals.

^b Inmate participants were placed into the following risk categories based on the Discriminant Score (D.S.), or the Cognitive Score (Cog. Score) when the Informant Score was unavailable: (1) good performance = D.S. < 0.120 or Cog. Score only > 29.5; (2) intermediate performance = D.S. 0.120-0.183 or Cog. Score only > 28.5 ≤ 29.5; and (3) poor performance = D.S. ≥ 0.184 or Cog. Score only ≤ 28.5. Patients with poor performance were flagged for a clinical dementia assessment. Patients with poor performance are flagged for a clinical dementia assessment.

^c A perfect Informant Score = 0. The equal variances assumption of the ANOVA test was violated, Levene's $p < .05$. The more robust test, the Welch F , is reported. According to the Games-Howell test, Indigenous inmates flagged for a clinical dementia assessment had a significantly higher Informant Score compared to inmates (Indigenous and non-Indigenous) not flagged for a clinical assessment. Non-Indigenous inmates flagged for a clinical assessment also had a significantly higher Informant Score, compared to inmates (Indigenous and non-Indigenous) not flagged for a clinical assessment.

^d The Discriminant Score (D.S.) was the combination of the Cognitive Score (Cog. Score) from the patient interview and Informant Score from the caregiver/nurse score, and ranged from .0629 to +.6280. For Indigenous inmates, D.S. = $0.461839 - (0.012164 * \text{Cog. Score}) + (0.045880 * \text{Informant Score})$; for non-Indigenous inmates, D.S. = $0.564786 - (0.015019 * \text{Cog. Score}) + (0.044918 * \text{Informant Score})$. The equal variances assumption of the ANOVA test was violated, Levene's $p < .05$. The more robust test, the Welch F , is reported. According to the Games-Howell test, Indigenous inmates flagged for a clinical dementia assessment had a significantly higher D.S. compared to inmates (Indigenous and non-Indigenous) not flagged for a clinical assessment. Non-Indigenous inmates flagged for a clinical assessment also had a significantly higher D.S., compared to inmates (Indigenous and non-Indigenous) not flagged for a clinical assessment.

Community Screening Instrument for Dementia (CSI'D')

A detailed breakdown of the items contained in the CSI'D' Cognitive Score and Informant Score is provided in this section. The Cog. Score, obtained from the CSI'D' Participant Interview, ranged from 0-33+ (the score can be higher than 33 because the naming animals item allows participants to be scored for as many items as they can name in one minute, with no point allocation limit), with lower scores indicating higher dementia risk. The CSI'D' Participant Interview should not be scored if 22 or more items are missing. Cog. Score > 29.5 indicated "good performance;" Cog. Score $> 28.5 \leq 29.5$ indicated "intermediate performance" and Cog. Score ≤ 28.5 indicated "poor performance."

The modified CSI'D' Informant Score had a possible range from 0 to 30, was not to be scored if 12 or more items are missing. When both the Cog. Score and Informant Score was available to compute the Discriminant Score (D.S.), D.S. < 0.120 indicated "good performance;" D.S. $0.120-0.183$ indicated "intermediate performance" and D.S. ≥ 0.184 indicated "poor performance." Participants who scored 28.5 or lower on the Cog. Score, or 0.184 or higher on the D.S. (i.e., "poor performance" or high-risk for dementia), were flagged for a clinical assessment, while participants with good and intermediate performance were not flagged for a clinical dementia assessment. Participants were further disaggregated by ethnicity (Indigenous vs. non-Indigenous).

CSI'D' Cognitive Score

In consultation with the Occupational Therapist on the RPC Working Group and based on previous modifications made to the CSI-D informed by a Cree-speaking Grandmothers Group in Saskatchewan (Lanting, 2011), the following modifications were made to increase validity of the Cognitive Score for an institutional setting: "tell us about Martin Luther King Jr.'s Assassination or the Nigerian Civil War" was modified to "tell us a story about your childhood"; "remember the East Boston Story" was modified to "remember a story"; "what is a bridge?" was modified to "what is a table?"; "where do we go to buy medicine?" was modified to "where is the Regional Hospital located?"; "repeat: no ifs, ands or buts" was modified to "repeat: the sun is rising in the East"; "take paper in right hand, fold in half and put paper in your lap" was modified to "take paper in right hand, fold in half, return it to interviewer"; "name of city" was modified to "name of prison"; "name a major street" was modified to "name this Unit"; "where is the local market?" was modified to "where is the kitchen?"; "what is your address?" was modified to "what is your cell (room) number?"; "who is the mayor?" was modified to "what is your Parole Officer's name?"; and "did it rain yesterday?" was modified to "did it snow yesterday?" "Snow yesterday" was used in the original version of the CSI'D' (Hall et al., 1993).

The modified CSI'D' Participant Interview items are displayed in Table 5. ANOVA *F*-tests, means and standard deviations were reported for continuous variables; and chi-squares and percent "yes" were reported for categorical variables. When the equal variance assumption was violated for the ANOVA *F*-test, the more robust Welch *F* was reported. Sub-scores were consistently higher participants not flagged for a clinical dementia assessment.

Memory

The memory subscore, which had a possible range between 0 and 4, was strongest for non-Indigenous ($M = 3.69$, $SD = .22$) and Indigenous participants ($M = 3.61$, $SD = .20$) not flagged for a dementia assessment. Non-Indigenous high-risk participants performed well on the memory items ($M = 3.20$, $SD = .67$), and Indigenous high-risk participants demonstrated the lowest memory ($M = 2.89$, $SD = .77$) among the four subgroups. The memory subscore by ethnicity and dementia assessment flag was not significant, Welch $F(3, 9.620) = 2.340$, $p > .05$.

Abstract Thinking

The abstract thinking subscore also had a possible range between 0 and 4, with higher numbers indicting greater competency. It should be noted that an error was made when modifying the Regional Hospital question: this was modified to a location question, rather than a more appropriate abstract thinking question (e.g., “where do you go to get medical treatment in the prison”). This item will need to be amended in Phase 3, the validation study. According to the Games-Howell post-hoc tests, high-risk Indigenous participants ($M = 2.80$, $SD = .45$) scored significantly lower on abstract thinking, compared to Indigenous ($M = 3.91$, $SD = .30$) and non-Indigenous ($M = 4.00$, $SD = 0.00$) participants not flagged for a dementia assessment, $F(3, 25) = 11.500$, $p > .05$ (the Welch, which would have been the appropriate test to report since the equal variance assumption was violated, was not produced because there was no variance in non-Indigenous participants not flagged for a clinical dementia assessment). There were no differences in average abstract thinking subscore for high-risk non-Indigenous persons ($M = 3.50$, $SD = .53$) and those who were not flagged for a clinical dementia assessment ($M = 4.00$, $SD = 0.00$). Most participants’ scored well on the abstract thinking items, with the exception of the incorrect Regional Hospital question (the error was ours): none of the Indigenous participants and 50% of the non-indigenous high-risk participants were able to answer this question.

Higher Cortical Function (HCF)

The HCF subscore had a possible range between 0 and 10. Participants had close to perfect scores on the seven naming items in the HCF subscore, with one high-risk Indigenous participant being unable to point to their elbow (this was the participant who spoke Inuit, and their naming difficulty may have been due to the language barrier). According to the Games-Howell post-hoc test, high-risk non-Indigenous participants ($M = 9.19$, $SD = .47$) had significantly lower HCF scores compared to non-Indigenous participants not flagged for a follow-up clinical assessment ($M = 9.83$, $SD = .27$), Welch $F(3, 11.126) = 4.236$, $p < .05$. This was due to lower scores in naming animals (high-risk mean = 0.48 vs. not flagged for dementia assessment mean = 0.90) and recalling ‘boat, house, fish’ (high-risk mean = 0.71 vs. not flagged for dementia assessment mean = 0.93). Although high-risk Indigenous participants ($M = 8.69$, $SD = .96$) had significantly lower HCF scores, compared to those not flagged for a clinical dementia assessment ($M = 9.63$, $SD = .46$), the Games-Howell post-hoc tests did not find this difference to be statistically significant.

Table 5. CSI'D' Cognitive Items Distribution by Indigenous Ethnicity

	Indigenous Inmates		Non-Indigenous Inmates		Sample (N = 29)	Test Statistic	df	p -value
	Flagged for Clinical Assessment (n = 5)	Not flagged for Clinical Assessment (n = 11)	Flagged for Clinical Assessment (n = 8)	Not flagged for Clinical Assessment (n = 5)				
Memory								
Remember my name (either 1st or 2nd chance)	60%	100%	63%	100%	83%	7.449	3	0.059
Remember 3 words (Boat, House, Fish) ^{a, b}	0.93 (.15)	1.00 (.00)	1.00 (.00)	1.00 (.00)	0.99 (.06)	1.724	3, 25	0.188
Tell story about childhood	100%	100%	100%	100%	100%			
Remember a story	0.35 (.26)	0.60 (.19)	0.56 (.24)	0.68 (.22)	0.56 (.24)	2.040	3, 25	0.134
Subscore comparison ^a	2.89 (.77)	3.61 (.20)	3.20 (.67)	3.69 (.22)	3.39 (.55)	2.340	3, 9.620	0.137
Abstract Thinking								
What is a table?	100%	100%	100%	100%	100%			
What do you do with a hammer?	80%	100%	100%	100%	97%	4.971	3	0.174
What do people do in church?	100%	100%	100%	100%	100%			
Where is the Regional Hospital located?	0%	91%	50%	100%	66%	16.123**	3	0.001
Subscore comparison ^{a, b, c}	2.80 (.45)	3.91 (.30)	3.50 (.53)	4.00 (.00)	3.62 (.56)	11.500***	3, 25	0.000
Higher Cortical Function (HCF)								
Name these items as I point to them:								
Pencil	100%	100%	100%	100%	100%			
Watch	100%	100%	100%	100%	100%			
Chair	100%	100%	100%	100%	100%			
Shoes/boots	100%	100%	100%	100%	100%			
Knuckles	100%	100%	100%	100%	100%			
Elbow	80%	100%	100%	100%	97%	4.971	3	0.174
Shoulder	100%	100%	100%	100%	100%			
Repeat: The sun is rising in the East	80%	100%	100%	100%	97%	4.971	3	0.174
Name animals (1 minute) ^d	0.43 (.28)	0.82 (.20)	0.48 (.18)	0.90 (.30)	0.67 (.29)	6.829**	3, 25	0.002
Repeat: "Boat, House, Fish" (2nd recall)	0.66 (.41)	0.82 (.31)	0.71 (.45)	0.93 (.15)	0.78 (.35)	0.639	3, 25	0.597
Subscore comparison ^{a, e}	8.69 (.96)	9.63 (.46)	9.19 (.47)	9.83 (.27)	9.38 (.66)	4.236*	3, 11.126	0.032

Table 5. CSI'D' Cognitive Items Distribution by Indigenous Ethnicity (Continued)

	Indigenous Inmates		Non-Indigenous Inmates		Sample (N = 29)	Test Statistic	df	p - value
	Flagged for Clinical Assessment	Not flagged for Clinical Assessment	Flagged for Clinical Assessment	Not flagged for Clinical Assessment				
	(n = 5)	(n = 11)	(n = 8)	(n = 5)				
Praxis								
Language Comprehension - Motor Response								
Nod head	60%	100%	100%	100%	93%	10.311*	3	0.016
Point to window then door	80%	100%	100%	100%	97%	4.971	3	0.174
Take paper in right hand, fold in half, return to interviewer ^{a, b}	1.00 (.00)	0.94 (.14)	0.83 (.18)	1.00 (.00)	0.93 (.14)	2.609	3, 25	0.074
Constructional Ability								
Overlapping circles	100%	100%	100%	100%	100%			
Interlocking pentagons	80%	82%	50%	80%	72%	2.787	3	0.426
Subscore comparison ^{a, f}	4.20 (.84)	4.76 (.40)	4.33 (.64)	4.80 (.45)	4.55 (.59)	1.399	3, 10.041	0.300
Orientation: Place								
Name of prison facility	80%	100%	100%	100%	97%	4.971	3	0.174
Name of unit	100%	91%	75%	100%	90%	3.025	3	0.388
Where is the kitchen?	20%	91%	88%	100%	79%	13.252**	3	0.004
Cell (room) number	80%	100%	63%	100%	86%	6.503	3	0.090
Parole officer name	40%	100%	75%	100%	83%	10.078*	3	0.018
Subscore comparison ^{a, b, g}	3.20 (1.48)	4.82 (.60)	4.00 (1.31)	5.00 (.00)	4.34 (1.14)	4.132*	3, 25	0.016
Orientation: Time								
Month	100%	100%	75%	100%	93%	5.639	3	0.131
Day	60%	91%	88%	100%	86%	3.904	3	0.272
Season	80%	91%	75%	100%	86%	2.012	3	0.570
Year	100%	100%	100%	100%	100%			
Did it snow yesterday?	60%	100%	88%	100%	90%	6.627	3	0.085
Subscore comparison ^{a, b}	4.00 (.71)	4.82 (.40)	4.25 (1.49)	5.00 (.00)	4.55 (.91)	1.758	3, 25	0.181
Cognitive score (Perfect score=33) ^{a, h}	25.79 (4.34)	31.53 (1.42)	28.46 (3.56)	32.31 (.53)	29.83 (3.51)	6.237*	3, 10.935	0.010

***Significant at the 0.001 level, **Significant at the 0.01 level, *Significant at the 0.05 level.

Notes continue on the next page

Table 5. CSI'D' Cognitive Items Distribution by Indigenous Ethnicity (Continued)

Note. Percent and chi-square statistic were reported for categorical variables; mean (standard deviation) and ANOVA tests were reported for continuous variables. No test statistic was reported when there was no variance between the sub-groups, and the area was greyed-out. The CSI'D' contained a cognitive score (range 0-33; obtained from an interview with the patient) and an informant score (obtained from patient's caregiver / nurse). Patients who performed poorly on both or only the cognitive interview (in the absence of a caregiver interview) were recommended for a complete dementia assessment. There was an error in the question "where do we go to buy medicine", which was modified to "where is the Regional Hospital located" -- "where do you go to get Clinical treatment in the prison" would have been a more appropriate modification for this item.

^a The equal variances assumption of the ANOVA test was violated.

^b Unable to produce the robust test, the Welch *F* statistic, because at least one group had 0 variance. The Welch *F* is typically reported instead of the *F*-statistic when the equal variances assumption for ANOVA is violated, that is, the Levene's test *p*-value is $< .05$. For this analysis, the less robust *F*-statistic is reported.

^c According to the Games-Howell post-hoc test, Indigenous participants flagged for a clinical dementia assessment had significantly lower Abstract Thinking ability, compared to all participants (Indigenous and non-Indigenous) not-flagged for follow-up assessments. Abstract Thinking score did not differ between non-Indigenous persons flagged for a clinical dementia follow-up and those not flagged for follow-up. The Games-Howell is an appropriate post-hoc test to determine mean differences between specific sub-groups when the ANOVA test equal variance assumption is violated, that is, the Levene's test *p*-value is $< .05$.

^d The Bonferroni is an appropriate post-hoc test when the ANOVA test equal variance assumption is not violated, that is, the Levene's test *p*-value is $> .05$. According to the Bonferroni post-hoc test, Indigenous participants flagged for a clinical dementia assessment named significantly fewer animals in 1- minute, compared to all participants (Indigenous and non-Indigenous) not-flagged for follow-up assessments. Non-Indigenous participants flagged for a clinical dementia assessment also named significantly fewer animals in 1 minute, compared to all participants (Indigenous and non-Indigenous) not-flagged for follow-up assessments.

^e The robust test was significant at the .05 level, Welch $F(3, 11.126) = 4.236, p = 0.032$. According to the Games-Howell post-hoc test, non-Indigenous participants flagged for a clinical dementia assessment had significantly reduced Higher Cortical Function compared to non-Indigenous participants not flagged for a follow-up clinical assessment. Although counter-intuitive based on the mean differences, the Games-Howell did not find any significant differences between Indigenous participants flagged for a clinical dementia assessment and Indigenous participants not flagged for a follow-up assessment, which was likely due to the difference in group sizes.

^f The robust test was not significant, Welch $F(3, 10.041) = 1.399, p = .300$.

^g The Games-Howell post-hoc test did not identify any significant differences in sub-groups' means. The ANOVA result was not reliable as '0' was contained in all sub-groups' post-hoc confidence intervals.

^h Although the Welch *F* was significant (Welch $F(3, 10.935) = 6.237, p = 0.010$), the Games-Howell post-hoc test did not identify any significant differences in sub-groups' means. The Welch *F* result was not reliable because '0' was contained in all sub-groups' post-hoc confidence intervals.

Praxis

Praxis included 3 items for Language Comprehension / Motor Response and 2 items for Constructional Ability. The subscore had a possible range between 0 and 5. Mean Praxis subscore was close to perfect for non-Indigenous ($M = 4.80$, $SD = .45$) and Indigenous ($M = 4.76$, $SD = .40$) participants not flagged for a dementia assessment, while high-risk non-Indigenous ($M = 4.33$, $SD = .64$) and Indigenous ($M = 4.20$, $SD = .84$) participants also scored well on this domain, as indicated by the non-significant group mean finding, Welch $F(3, 10.041) = 1.399$, $p > .05$.

Orientation to Place

The orientation to place subscore had a possible range between 0 and 5. High-risk Indigenous ($M = 3.20$, $SD = 1.48$) and non-Indigenous ($M = 4.00$, $SD = 1.31$) performed worse on the orientation to place subscore, compared to Indigenous ($M = 4.82$, $SD = .60$) and non-Indigenous ($M = 5.00$, $SD = .00$) participants not flagged for a dementia assessment, $F(3, 25) = 4.132$, $p < .05$. Indeed, non-Indigenous participants not flagged for a dementia assessment had a perfect orientation to place subscore, and Indigenous participants not flagged for a dementia assessment had an almost perfect subscore, whereby 1 participant did not know the name of their Unit or the location of the kitchen. However, the ANOVA violated the equal variances assumption, and due to the absence of variance in the non-Indigenous participants not flagged for a dementia assessment group ($M = 5.00$, $SD = .00$), the Welch F could not be produced. The Games-Howell post-hoc test did not identify any significant differences in sub-groups' means and '0' was contained in all sub-groups' confidence intervals in the Games-Howell post-hoc test, which indicated that any group differences did not reach the level of statistical significance.

Although the orientation to place subscore did not differ significantly between subgroups, 2 items on the subscore differentiated between high-risk and other participants: "Where is the main kitchen where patients' food is prepared?" and "What is the name of your Parole Officer?" Indigenous (20% correct) and non-Indigenous (88%) high-risk participants were less likely to accurately provide directions to the kitchen, compared to Indigenous (91%) and non-Indigenous (100%) participants not flagged for a dementia assessment, $\chi^2(3) = 13.252$, $p < .01$. High-risk Indigenous (40%) and non-Indigenous (75%) participants were less likely to remember the name of their parole officer, compared to Indigenous and non-Indigenous (both were 100% accurate) participants not flagged for a dementia assessment, $\chi^2(3) = 10.078$, $p < .05$. It should be noted that there were a few recent changes in assigned parole officers just prior to administration of the CSI'D' Participant Interview; however, none of the participants who performed well on the Cog. Score failed to recall their parole officer's name.

Orientation to Time

The orientation to time subscore had a possible range between 0 and 5. Non-Indigenous participants not flagged for a dementia assessment had a 100% accuracy rate for the orientation to time items, while Indigenous participants not flagged for a dementia assessment had a 100% accuracy rate for all but 2 items (day of the week and season; 91% accuracy for both items). High-risk Indigenous participants had lower rates of accuracy for naming the day (60% vs. 91%

Indigenous participants not flagged for a dementia assessment), season (80% vs. 91% Indigenous participants not flagged for a dementia assessment) and remembering if it snowed yesterday (60% vs. 100% Indigenous participants not flagged for a dementia assessment). High-risk non-Indigenous participants had lower rates of accuracy for naming the month (75%), the day (88%), season (75%) and remembering if it snowed yesterday (88%), compared to non-Indigenous participants not flagged for a dementia assessment, who were all able to provide correct responses to these items. None of these differences were statistically significant. Accordingly, although non-Indigenous ($M = 5.00$, $SD = 0.00$) and Indigenous ($M = 4.82$, $SD = .40$) participants not flagged for a dementia assessment had higher orientation to time subscores, when compared to high-risk non-Indigenous ($M = 4.25$, $SD = 1.49$) and Indigenous ($M = 4.00$, $SD = .71$) participants, subscore differences were not statistically different by ethnicity or dementia risk, $F(3, 25) = 1.758$, $p > .05$.

Cog. Score

Participants not flagged for a clinical dementia assessment had better Cog. Scores, compared to participants classified as high-risk by the CSI'D' Participant Interview. Non-Indigenous participants not flagged for a clinical assessment was the best performing sub-group on Cog. Score ($M = 32.31$, $SD = .53$), while the Cog. Score for Indigenous participants not flagged for a clinical assessment was less than 1-point lower on average ($M = 31.53$, $SD = 1.42$). This could be due slightly to higher cognitive needs among Indigenous participants not flagged for a clinical assessment, or because the modified CSI'D' has not yet been validated. These differences in Cog. Scores by ethnicity and dementia assessment flag were significant, Welch $F(3, 10.935) = 6.237$, $p < .05$, but not stable according to the Games-Howell post-hoc test (i.e., '0' was contained in the group differences' confidence intervals).

In terms of individual CSI'D' Participant Interview items, high-risk participants had significantly greater difficulty with the location of the Regional Hospital ($\chi^2(3) = 16.123$, $p < .01$), naming animals in 1 minute ($F(3, 25) = 11.500$, $p < .05$), location of the kitchen ($\chi^2(3) = 13.252$, $p < .01$), and naming of parole officer ($\chi^2(3) = 10.078$, $p < .05$), compared to those not flagged for a dementia assessment, irrespective of ethnicity. With regards to CSI'D' Participant Interview subscores, abstract thinking, HCF and orientation to place appeared to be promising. However, orientation to place was unstable due to the presence of "0" in the post-hoc test's confidence intervals, and HCF also contained "0" in the post-hoc test's confidence intervals comparing Indigenous participants by CSI'D' flag.

CSI'D' Informant Questionnaire Items Distribution

In consultation with the Occupational Therapist on the RPC Working Group, the following modifications were made to increase validity of the Informant Score for an institutional setting: "forgets names of friends" was modified to "forgets names of friends or other inmates"; "forgets names of members of the family" was modified to "forgets names of RPC staff"; "gets lost in community" was modified to "gets lost in the facility"; "gets lost in own home" was modified to "gets lost in the Unit"; and "difficulty with household tasks" was

modified to “difficulty making their bed”. PNs in RPC returned Informant Questionnaires for 21 older offenders on their caseloads during May through August 2019 in the RPC.

Memory and Cognition

The memory and cognition subscore in the modified CSI‘D’ Informant Questionnaire had a possible range between 0 and 11, with a higher score denoting a possible cognitive issue on the part of the corresponding inmate participant. PNs believed high-risk Indigenous ($M = 2.70$, $SD = 1.04$) and non-Indigenous ($M = 2.58$, $SD = 2.35$) had greater memory and cognition issues, compared to Indigenous ($M = 0.07$, $SD = .19$) and non-Indigenous ($M = 0.50$, $SD = .50$) not flagged for a clinical dementia assessment, Welch $F(3, 5.657) = 10.597$, $p < 0.05$. According to the Games-Howell test, PNs perceived high-risk Indigenous participants as having significantly more memory and cognition problems compared to Indigenous participants not flagged for a clinical assessment. However, there was no significant difference in the memory and cognition subscore for high-risk non-Indigenous participants and non-Indigenous participants not flagged for a clinical assessment because “0” was contained in the Games-Howell post-hoc test’s confidence interval.

Activities of Daily Living (ADL)

The ADL subscore had a possible range between 0 and 13, with a higher score denoting a possible cognitive issue on the part of the corresponding inmate participant. One item, “change in the inmate’s ability to handle money” was deemed irrelevant by the Occupational Therapist on the Working Team and omitted from the CSI‘D’ Informant Questionnaire (this item would have made the possible score range between 0 and 14). ADL items were only scored if the issue was *not* due to the physical disability (that is, ADL problems caused by a physical disability did not influence inmate participants’ cognitive limitation score assigned by PNs).

PNs did not perceive any ADL limitations by ethnicity or CSI‘D’ flag, Welch $F(3, 8.914) = 1.984$, $p > .05$. Indeed, “difficulty adjusting to change”, “urinary or anal incontinence” and “change in the inmate participant’s ability to think and reason” were the only ADL items where PNs perceived any difficulties among older inmates in their care. However, there were no statistically significant differences in these items by ethnicity or CSI‘D’ flag. PNs believed about two-thirds of high-risk Indigenous (60%) and non-Indigenous inmate participants (67%) sometimes or regularly had difficulty adjusting to change, while they believed only 14% of Indigenous and 33% of non-Indigenous inmate participants not flagged for a dementia assessment sometimes or regularly had difficulty adjusting to change, $\chi^2(6) = 5.767$, $p > .05$. PNs perceived a change in quite a few high-risk Indigenous (40%) and non-Indigenous (50%) inmate participants’ ability to think and reason in the past year, but perceived a similar change in few (14% of Indigenous and 0% of non-Indigenous) inmate participants not flagged for a dementia assessment. Finally, one Indigenous inmate participant (14%) not flagged for a dementia assessment reportedly had urinary incontinence, which was not reported as an issue by PNs for inmate participants in the other subgroups.

Table 6. CSI'D' Informant Questionnaire Distribution by Indigenous Ethnicity

	Indigenous Inmates		Non-Indigenous Inmates		Sample (N = 21)	Test Statistic	df	p-value
	Flagged for Clinical Assessment	Not flagged for Clinical Assessment	Flagged for Clinical Assessment	Not flagged for Clinical Assessment				
	(n = 5)	(n = 7)	(n = 6)	(n = 3)				
Memory & Cognition								
Remembering is a problem: ever	60%	0%	67%	0%	33%			
Sometimes	0%	0%	0%	0%	0%			
Regularly	60%	0%	67%	0%	33%	9.600*	3	0.022
Forgets where he puts things: ever	40%	0%	50%	0%	24%			
Sometimes	40%	0%	17%	0%	14%			
Regularly	0%	0%	33%	0%	10%	10.223	6	0.116
Forgets where things are usually kept: ever	20%	0%	33%	0%	14%			
Sometimes	20%	0%	33%	0%	14%			
Regularly	0%	0%	0%	0%	0%	3.578	3	0.311
Forgets names of friends/inmates: ever	80%	0%	17%	33%	29%			
Sometimes	80%	0%	17%	33%	29%			
Regularly	0%	0%	0%	0%	0%	9.730*	3	0.021
Forgets names of RPC staff: ever	100%	0%	33%	67%	43%			
Sometimes	100%	0%	33%	67%	43%			
Regularly	0%	0%	0%	0%	0%	12.833**	3	0.005
Forgets what wanted to say mid-conversation: ever	60%	0%	50%	0%	29%			
Sometimes	60%	0%	50%	0%	29%			
Regularly	0%	0%	0%	0%	0%	7.770	3	0.051
Forgets when last saw nurse: ever	40%	0%	50%	0%	24%			
Sometimes	40%	0%	33%	0%	19%			
Regularly	0%	0%	17%	0%	5%	7.656	6	0.264
Forgets what happened the day before: ever	60%	14%	50%	0%	33%			
Sometimes	60%	14%	17%	0%	24%			
Regularly	0%	0%	33%	0%	10%	10.524	6	0.104

Table 6. CSI'D' Informant Questionnaire Distribution by Indigenous Ethnicity (Continued)

	<u>Indigenous Inmates</u>		<u>Non-Indigenous Inmates</u>		Sample (N = 21)	Test Statistic	df	p -value
	Flagged for Clinical Assessment (n = 5)	Not flagged for Clinical Assessment (n = 7)	Flagged for Clinical Assessment (n = 6)	Not flagged for Clinical Assessment (n = 3)				
Forgets where he/she is: ever	20%	0%	0%	0%	5%	3.360	3	0.339
Sometimes	20%	0%	0%	0%	5%			
Regularly	0%	0%	0%	0%	0%			
Gets lost in the prison facility: ever	0%	0%	0%	0%	0%			
Sometimes	0%	0%	0%	0%	0%			
Regularly	0%	0%	0%	0%	0%			
Gets lost in the Unit: ever	0%	0%	17%	0%	5%	2.625	3	0.453
Sometimes	0%	0%	17%	0%	5%			
Regularly	0%	0%	0%	0%	0%			
<i>Subscore comparison^a</i>	2.70 (1.04)	0.07 (.19)	2.58 (2.35)	0.50 (.50)	1.48 (1.79)	10.597*	3, 5.657	0.010
Activities of Daily Living (ADL)								
Difficulty making bed: ever	0%	0%	0%	0%	0%			
Slight	0%	0%	0%	0%	0%			
Great	0%	0%	0%	0%	0%			
Difficulty adjusting to change: ever	60%	14%	67%	33%	43%	5.767	6	0.450
Sometimes	40%	14%	33%	33%	29%			
Regularly	20%	0%	33%	0%	14%			
Difficulty feeding self: any (max=3)	0%	0%	0%	0%	0%			
Eats messily with a spoon only	0%	0%	0%	0%	0%			
Can manage simple solids	0%	0%	0%	0%	0%			
Has to be fed	0%	0%	0%	0%	0%			
Difficulty dressing: ever (max=3)	0%	0%	0%	0%	0%			
Occasionally misplaces buttons	0%	0%	0%	0%	0%			
Wrong sequences, commonly forgets items	0%	0%	0%	0%	0%			
Unable to dress	0%	0%	0%	0%	0%			
Urinary or anal incontinence: any (max:3)	0%	14%	0%	0%	5%			
Urinary incontinence	0%	14%	0%	0%	5%	2.100	3	0.552
Anal incontinence	0%	0%	0%	0%	0%			

Table 6. CSI'D' Informant Questionnaire Distribution by Indigenous Ethnicity (Continued)

	Indigenous Inmates		Non-Indigenous Inmates		Sample (N = 21)	Test Statistic	df	p-value
	Flagged for Clinical Assessment (n = 5)	Not flagged for Clinical Assessment (n = 7)	Flagged for Clinical Assessment (n = 6)	Not flagged for Clinical Assessment (n = 3)				
Change in ability to handle money								
Loss of skill or hobby	0%	0%	0%	0%	0%			
Change in ability to think and reason	40%	14%	50%	0%	29%	3.570	3	0.312
<i>Subscore comparison^b</i>	0.80 (.57)	0.36 (.63)	1.00 (.95)	0.17 (.29)	0.62 (.72)	1.984	2, 8.914	0.188
Miscellaneous Problems								
Change in daily activities	60%	14%	83%	33%	48%	6.739	3	0.081
Decline in mental functioning	60%	0%	83%	0%	38%	12.378**	3	0.006
Difficulty finding the right word: ever								
Sometimes	20%	0%	67%	0%	24%			
Regularly	20%	0%	0%	0%	5%	12.693*	6	0.048
Uses wrong words: ever								
Sometimes	40%	0%	0%	0%	10%			
Regularly	0%	0%	17%	0%	5%	9.528	6	0.146
Does he/she talk about long ago: ever								
Sometimes	40%	14%	0%	0%	14%			
Regularly	40%	14%	33%	0%	24%	7.606	6	0.268
<i>Subscore comparison^c</i>	2.30 (.57)	0.36 (.48)	2.50 (.55)	0.33 (.58)	1.43 (1.16)	26.219***	3, 17	0.000
<i>Informant score (Perfect score=0)^d</i>	5.80 (1.79)	0.79 (.64)	6.08 (2.91)	1.00 (.87)	3.52 (3.13)	14.635**	3, 6.557	0.003

***Significant at the 0.001 level, **Significant at the 0.01 level, *Significant at the 0.05 level.

Notes continue on the next page

Table 6. CSI'D' Informant Questionnaire Distribution by Indigenous Ethnicity (Continued)

Note. Percent and chi-square statistic were reported for categorical variables; mean (standard deviation) and ANOVA tests were reported for continuous variables. Summary percentages were reported for context; test results were presented for the categorical break-down only. No test statistic was reported when there was no variance between the sub-groups. The CSI'D' contained a cognitive score (range 0-33; obtained from an interview with the patient) and an informant score (range 0-29; obtained from patient's caregiver / nurse). Patients who performed poorly on both or only the cognitive interview (in the absence of a caregiver interview) were recommended for a complete dementia assessment. Each item CSI'D' Informant Questionnaire was scored between 0 and 1, unless otherwise noted in Table 5. Informant Questionnaires were available for 21 participants. A high Informant Score denoted a problem with the inmate participant's cognition. Activities of daily living (ADL) items were scored only if the issue was not due to the physical disability.

^a The equal variances assumption of the ANOVA test was violated. The robust test was significant at the .05 level, Welch $F(3, 5.657) = 10.597, p = 0.010$. According to the Games-Howell test, Indigenous participants flagged for a clinical dementia assessment had significantly more Memory and Cognition problems compared to Indigenous participants not flagged for a clinical assessment. The Games-Howell is an appropriate post-hoc test to determine mean differences between specific sub-groups when the ANOVA test equal variance assumption is violated, that is, the Levene's test p -value is $< .05$.

^b Equal variances assumption of the ANOVA test was violated. The robust test was not significant, Welch $F(3, 8.914) = 1.984, p = 0.188$.

^c Equal variances assumption of the ANOVA test was not violated. According to the Bonferroni post-hoc test, Indigenous participants flagged for a clinical dementia assessment had significantly more Miscellaneous Problems compared to participants (Indigenous and non-Indigenous) not flagged for a clinical assessment. Non-Indigenous participants flagged for a clinical assessment had significantly more miscellaneous problems, compared to participants (Indigenous and non-Indigenous) not flagged for a clinical assessment. The Bonferroni is an appropriate post-hoc test when the ANOVA test equal variance assumption is not violated, that is, the Levene's test p -value is $> .05$.

^d Equal variances assumption of the ANOVA test was violated. The robust test was significant at the .01 level, Welch $F(3, 6.557) = 14.635, p = 0.003$. According to the Games-Howell test, Indigenous participants flagged for a clinical dementia assessment had a significantly higher Informant Score compared to participants (Indigenous and non-Indigenous) not flagged for a clinical assessment. Non-Indigenous participants flagged for a clinical assessment also had a significantly higher Informant Score, compared to participants (Indigenous and non-Indigenous) not flagged for a clinical assessment.

Miscellaneous Problems

The miscellaneous problems in the modified CSI'D' Informant Questionnaire had a possible range between 0 and 5, with a higher score denoting a possible cognitive issue on the part of the corresponding inmate participant. Unlike the ADL subscore, the miscellaneous problems subscore was able to identify high-risk participants, irrespective of ethnicity, $F(3, 17) = 26.219, p < .01$. According to the Bonferroni post-hoc test, PNs deemed high-risk Indigenous participants as having significantly more miscellaneous problems ($M = 2.30, SD = .57$), compared to Indigenous participants not flagged for a dementia assessment ($M = 0.36, SD = .48$). Similarly, the Bonferroni post-hoc test determined that PNs deemed high-risk non-Indigenous participants as having significantly more miscellaneous problems ($M = 2.50, SD = .55$), compared to non-Indigenous participants not flagged for a dementia assessment ($M = 0.33, SD = .58$). This significant difference in the miscellaneous problems subscore was due to PNs perception of (1) a sudden decline in mental functioning among high-risk Indigenous and non-Indigenous inmate participants (60% and 83%, respectively; $\chi^2(3) = 12.378, p < .01$), and (2) difficulties in finding the right word among high-risk Indigenous and non-Indigenous inmate participants (40% and 67%, respectively; $\chi^2(6) = 12.693, p < .05$) compared to 0% among Indigenous and non-Indigenous inmate participants not flagged for a dementia assessment on both subscale items.

Furthermore, according to PNs, non-Indigenous inmate participants not flagged for a dementia assessment experienced almost no miscellaneous problems: a change in daily activities being the only exception (33% of non-Indigenous inmate participants not flagged for a dementia assessment demonstrated a change in daily activities in the past year). A similar pattern occurred with Indigenous participants not flagged for a dementia assessment (14% of non-Indigenous inmate participants not flagged for a dementia assessment demonstrated a change in daily activities in the past year), along with 29% of this subgroup who sometimes or regularly talk about long ago. It is possible that this may have been due to the cultural importance placed in story telling and respect for history, rather than an indicator of possible dementia.

Informant Score

The CSI'D' Informant Score had a possible range of 0-29. Normally the scale ranges from 0-30, but one item, "change in ability to handle money in the past year" in the ADL subscore, was deemed irrelevant and omitted from the screen. Given that lower scores on the CSI'D' Informant Score denotes a possible cognitive issue that warrants further testing, omitting one item in the preliminary testing of the tool was not a fatal flaw. This omission would, of course, need to be tested for accuracy in Phase 2 and validated in Phase 3 before implementation in CSC would be advisable.

Overall, the CSI'D' Informant Score was able to identify high-risk participants, Welch $F(3, 6.557) = 14.635, p < .01$. According to the Games-Howell post-hoc test—which is the appropriate test to determine subgroup differences when the equal variance assumption of the ANOVA F-test is violated—PNs deemed high-risk Indigenous participants as having significantly more cognitive issues ($M = 5.80, SD = 1.79$), compared to Indigenous participants

not flagged for a dementia assessment ($M = 0.79$, $SD = .64$). The Games-Howell post-hoc test also found that PNs deemed high-risk non-Indigenous participants as having more cognitive issues ($M = 6.08$, $SD = 2.91$), compared to non-Indigenous participants not flagged for a dementia assessment ($M = 1.00$, $SD = .87$). PNs also perceived high-risk non-Indigenous as having slightly more cognitive issues than high-risk Indigenous (mean 0.79 vs. 1.00), but this was not statistically significant.

Chapter 4: Conclusion

This report presented the results of Phase One of the RPC Dementia Study. The modified CSI'D' Participant Interview was administered to 29 older offenders in the RPC in April through May 2019 and the modified CSI'D' Informant Questionnaire was provided to PNs at the RPC in May through August 2019. Modified CSI'D' Informant Questionnaires were returned for 21 older offenders. The Cognitive Score (Cog. Score) obtained from the CSI'D' Participant Interview and the Informant Score obtained from the modified CSI'D' Informant Questionnaire were combined to produce the Discriminant Score (D.S.). The D.S. adjusts for cultural and education bias common in dementia risk tools. In the absence of an Informant Score, the Cog. Score was used to determine which inmate participants should be flagged for a clinical dementia assessment. Almost half of the inmate sample (45%) was flagged for a clinical dementia assessment. This is slightly higher than the upper limit of the range obtained from a prior meta-analysis of dementia studies conducted on American prison samples (1% - 44%; Maschi et al., 2012). However, it should be noted the dementia estimate among older inmates in the RPC is likely to be overestimated due to the following reasons:

1. Health screens, such as the CSI'D' tend to be over-inclusive to ensure persons in need receive health services (Trevethan, 2017);
2. The CSI'D' was modified for an institutional setting and will not be validated until the end of Phase 3 of this study;
3. Informant Scores were unavailable for 28% of the sample, and the D.S. is a more accurate dementia flag compared to the Cog. Score only (Hall et al., 2000); and
4. Almost half of older inmates were deemed ineligible (20%) or declined to participate (27%). Older inmates who declined to participate in the study often cited "no issues or problems with memory/dementia" as their reason. Assuming a lower limit whereby no excluded older offenders required a dementia assessment and an upper limit whereby all excluded older offenders required a dementia assessment, the possible rate of older offenders at RPC who may require a dementia assessment may range from 24% to 71%.

The Indigenous and non-Indigenous samples had similar gender distributions. However, the non-Indigenous sample was slightly older and had significantly more years of education compared to the Indigenous sample. While there was no difference in education level among non-Indigenous participants flagged for a dementia assessment, high-risk Indigenous participants had about three years fewer education than their low-risk counterparts were. Nevertheless, the modified CSI'D' results were not correlated with education for either the Indigenous or non-Indigenous inmate samples. It is impossible to determine conclusively whether the modified CSI'D' was biased by education level or ethnicity until the outcome variable, a dementia diagnosis, is obtained in Phase 2.⁹

⁹ Any education or cultural bias in the modified CSI'D' will be corrected in Phase 3, the validation study.

By itself, the Cog. Score was unable to predict the CSI'D' flag due to the presence of "0" in the subgroup differences' confidence intervals. Several individual Cog. Score items—location of the Regional Hospital, naming animals in 1 minute, location of the kitchen, and naming of parole officer—proved more problematic for both Indigenous and non-Indigenous participants flagged for a dementia assessment and were able to predict the CSI'D' flag. With regards to Cog. subscores, abstract thinking appeared to be promising, while the association between orientation to place and HCF with the CSI'D' flag were both unstable due to the presence of "0" in the post-hoc test's confidence intervals. The presence of "0" in the post-hoc test's confidence intervals for individual Cog. Score items is not troubling since dementia manifests differently in individuals, that is, someone with dementia may score within normal ranges on some cognitive items, while demonstrating limitations on other cognitive items. However, given that the CSI'D' flag was determined by both the Cog. Score and Informant Score for 21 participants, the presence of "0" in the subgroup differences' confidence intervals for the CSI'D' flag indicated inconsistencies between the PNs' perception of older offenders in their care and the Cog. Scores obtained directly from testing these older offenders. Unfortunately, it is impossible to determine whether the inconsistency was due to errors in the weights on the modified CSI'D' or whether PNs were unable to identify dementia risk for older offenders in their care until Phase 2 is completed.¹⁰

The results of the Informant Score were more consistent with the CSI'D' high-risk flag. The Informant Score was able to predict the CSI'D' flag for both Indigenous and non-Indigenous participants. PNs perceived greater difficulties among high-risk Indigenous and non-Indigenous participants with remembering, forgetting names of friends or inmates, forgetting the names of staff, declining mental functioning and difficulty finding the right word. Finally, the miscellaneous problem subscore was able to predict the CSI'D' flag for both Indigenous and non-Indigenous participants. It is possible that PN perception was more consistent with the CSI'D' flag compared to the Cog. Score because of the higher weight assigned to the Informant Score. It was also possible that the Informant Score was more consistent with the CSI'D' high-risk flag because fewer items were modified on the CSI'D' Informant Questionnaire (5 vs. 12 items modified on the CSI'D' Participant Interview).

Limitations of the Study

It should be noted that accuracy results were not produced for the modified CSI'D' because the outcome variable, dementia diagnosis, will not be available until the end of Phase 2. In addition, the low response rate for both older offenders and PNs adversely affected the reliability of the results. Most of the inmates who declined to participate in the study cited "no issues or problems with memory/dementia" as their reason, which may have inflated the rate of participants flagged for a dementia assessment. Finally, RPC is one of the five Regional Treatment Centres (RTCs), which houses CSC inmates with high mental health needs. Results from RPC are not generalizable to other CSC facilities due to the higher rates of older inmates

¹⁰ One of the key findings in the companion article to this report analyzing the RPC Staff Survey data was a moderate agreement between PNs and SWs on the likelihood that individual older offenders in their mutual care had dementia (Kappa=.765, $p < .001$, total agreement=90%; Stoliker et al., in progress).

and inmates with high mental health needs compared to other CSC facilities. The higher rate of Indigenous inmates in RPC compared to other RTCs also makes generalizations to other RTCs problematic. However, this study is an important first step in producing a validated dementia screen for institutional populations and is necessary to formulating a cost-effective strategy to identify and provide health care to CSC older offenders with dementia.

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Appendix A: Ethics Approval



UNIVERSITY OF
SASKATCHEWAN

Behavioural Research Ethics

Certificate of Approval

PRINCIPAL INVESTIGATOR
Stephen Wormith

DEPARTMENT
Psychology

ID#
256

INSTITUTION(S) WHERE RESEARCH WILL BE CONDUCTED: Regional Psychiatric Centre Correctional Services Canada (CSC)

STUDENT RESEARCHER(S): Alexandra Zidenberg and Ashmini Kerodal

TITLE: Older Offenders in Correctional Service Canada

FUNDER(S): N/A

ORIGINAL REVIEW DATE
12-Sep-2018

APPROVAL ON
15-Nov-2018

APPROVAL OF:
Behavioural Research Ethics Application
MMSE
SW, PCN, PO Surveys
Team Leads Information Letters (SW, PCN, PO)
Inmate Consent Form
SW Consent Form
PCN Consent Form
PO Consent Form
Reminders
Email from RPC Psychiatry Department

EXPIRY DATE
14-Nov-2019

Full Board Meeting ☒

Dates of Full Board Meetings: 12-Sep-2018 and 10-Oct-2018

Delegated Review ☐

CERTIFICATION: The University of Saskatchewan Behavioural Research Ethics Board (Beh-REB) is constituted and operates in accordance with the current version of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2 2014). The University of Saskatchewan Behavioural Research Ethics Board has reviewed the above-named research project. The proposal was found to be acceptable on ethical grounds. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this research project, and for ensuring that the authorized research is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.

Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.

ONGOING REVIEW REQUIREMENTS: In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month prior to the current expiry date each year the study remains open, and upon study completion. Please refer to the following website for further instructions: <http://research.usask.ca/for-researchers/ethics/index.php>

*Digitally Approved by Diane Martz
Interim Chair, Behavioural Research Ethics Board
University of Saskatchewan*

Please send all correspondence to:

Research Services and Ethics Office
University of Saskatchewan
Room 223 Thorvaldson Building
110 Science Place
Saskatoon, SK Canada S7N 5C9

Certificate of Re-Approval

Application ID: 256

Principal Investigator: Lisa Jewell

Department: Centre for Forensic Behavioural Science
and Justice Studies

Locations Where Research

Activities are Conducted: Regional Psychiatric Centre and other Prairie Region Correctional Services Canada (CSC)
institutions, CanadaStudent(s): Alexandra Zidenberg
Ashmini Kerodal
Carissa Toop
Jeremy Cheng
Kelsey Brown
Kelsi Toews
Robi Wirove

Funder(s): Saskatchewan Health Research Foundation

Sponsor: Correctional Service of Canada

Title: Identifying Dementia and Other Age-Related Needs of Older Offenders at the Regional
Psychiatric Centre

Approved On: 14/11/2019

Expiry Date: 13/11/2020

Acknowledgment Of: none

Review Type: Delegated Review

* This study, inclusive of all previously approved documents, has been re-approved until the expiry date noted above

CERTIFICATION

The University of Saskatchewan Behavioural Research Ethics Board (Beh-REB) is constituted and operates in accordance with the current version of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2 2018). The University of Saskatchewan Behavioural Research Ethics Board has reviewed the above-named project. The proposal was found to be acceptable on ethical grounds. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this project, and for ensuring that the authorized project is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.

ONGOING REVIEW REQUIREMENTS

In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month prior to the current expiry date each year the project remains open, and upon project completion. Please refer to the following website for further instructions: <https://vpresearch.usask.ca/researchers/forms.php>.

***Digitally Approved by Diane Martz, PhD
Chair - Behavioural Research Ethics Board
University of Saskatchewan***

Appendix B: CSI'D' Participant Interview

THE CENTRE FOR
FORENSIC BEHAVIOURAL SCIENCES AND JUSTICE STUDIES



COMMUNITY SCREENING FOR DEMENTIA (CSI'D')

INTERVIEWER

Interviewer name:

Date of Interview:

Patient's Unit:

PATIENT

Inmate Pseudo ID:

(Please do not write the inmates name on this document. Please only record the Pseudo ID corresponding to the inmate).

I know when you were young there may not have been a school near your home but I would just like to begin by asking about school and also about your occupation.

1. Did you attend school?

- ☐ [0] No
- ☐ [1] Yes

2. What was the highest grade you completed in the community?

- | | | |
|----------------------------|-----------------------------|------------------------------------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 7 | <input type="checkbox"/> Some college |
| <input type="checkbox"/> 2 | <input type="checkbox"/> 8 | <input type="checkbox"/> College degree |
| <input type="checkbox"/> 3 | <input type="checkbox"/> 9 | <input type="checkbox"/> Technical school |
| <input type="checkbox"/> 4 | <input type="checkbox"/> 10 | <input type="checkbox"/> Some University |
| <input type="checkbox"/> 5 | <input type="checkbox"/> 11 | <input type="checkbox"/> University Degree |
| <input type="checkbox"/> 6 | <input type="checkbox"/> 12 | <input type="checkbox"/> Other: <input type="text"/> |

3. What was the highest grade you completed in RPC?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6

- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10
- ☐ 11
- ☐ 12

- ☐ Some college
- ☐ College degree
- ☐ Technical school
- ☐ Some University
- ☐ University Degree
- ☐ Other:

4. What was your main occupation in life?

Write answer:

**5. I'd like for you to remember my name. My first name is
Can you repeat that please?**

[Interviewer may repeat 3 times if necessary.]

- ☐ [0] Can't repeat name
- ☐ [1] Successfully repeats name

Language Expression - Naming

We will begin with naming things. I will point to something and I would like for you to tell the name of the object. For example....

Show your pencil

6. What is this called?

- ☐ [0] Incorrect
- ☐ [1] Correct

Score:

Point to your watch

7. What is this?

- ☐ [0] Incorrect
- ☐ [1] Correct

Score:

Pat your chair

8. What about this?

- ☐ [0] Incorrect
- ☐ [1] Correct

Score:

Page Subtotal:

Point to shoes/boots

9. And these?

- ☐ [0] Incorrect
☐ [1] Correct

Score:

Show your knuckles.

10. What do we call these?

- ☐ [0] Incorrect
☐ [1] Correct

Score:

Point to the elbow.

11. What do we call this?

- ☐ [0] Incorrect
☐ [1] Correct

Score:

Point to the shoulder.

12. And this, what do we call this part of our body?

- ☐ [0] Incorrect
☐ [1] Correct

Score:

Language Expression – Definition

I was just showing you things and you told me what we call them. Now I will tell you the name of something and I want you to describe what it is. For example...

13. What is a table?

Write answer:

e.g., a piece of furniture

Prompt: **Tell me more**

- ☐ [0] Incorrect
☐ [1] Correct

Score:

14. What do you do with a hammer?

Write answer:

e.g. to drive a nail into something

Prompt: **Tell me more**

- ☐ [0] Incorrect
☐ [1] Correct

Score:

Page Subtotal:

15. What do people do in a church?

Write answer:

e.g., pray; get married; worship

Prompt: **Tell me more**

☐ [0] Incorrect

☐ [1] Correct

Score:

Language Expression – Repetition

[Note to interviewer: only one presentation is allowed, so it is essential that you read the phrase clearly and slowly, enunciating clearly.]

16. Now I would like for you to repeat what I say: ‘The sun is rising in the East’

☐ [0] Incorrect

☐ [1] Correct

Score:

Memory– Recall

17. Do you remember my name? What is it?

Write answer:

☐ [0] Incorrect

☐ [1] Correct

Score:

If Incorrect: **Well, I'll ask you again very soon. Remember my first name is**

[Repeat 3 times if necessary, rough approximation of name is acceptable]

Page Subtotal:

Language Expression – Naming, Fluency

18. Now we are going to do something a little different, I am going to give you a category and I want you to name, as fast as you can, all of the things that belong in that category. For example, if I say 'articles of clothing,' you could say shirt, tie or hat. Can you think of other articles of clothing?'

Wait for the subject to give two words. If the subject succeeds, indicate that the responses are correct and proceed to the test itself. If the subject gives an inappropriate word or reply, correct the response and repeat the instructions. If the subject fails to respond, repeat the instructions. If it becomes clear that the subject still does not understand the instruction, terminate this task and explore why this is so. After you are satisfied that the subject understands the task and has given two words naming articles of clothing, say:

That's fine. I want you to name things that belong to another category, 'animals'. I want you to think about all the many different kinds of animals you know. Think of any kind of animal in the air, on land, in the water, in the forest, all the different animals. Now I would like for you to tell the names for as many different animals as you can. You will have a minute to do this. [Interviewer - look at your watch.] Are you ready? Let's begin...

[Note to Interviewer: Allow one minute precisely. If the subject stops before the end of the time period, encourage him or her to try to find more words. If he or she is silent for 15 seconds, repeat the basic instruction ("I want you to tell me all the animals you can think of"). No extension on the time limit is made in the event that the instruction is repeated in the course of the association.]

- | | | |
|-----------------------------------|------------------------------------|--------------------------------|
| <input type="checkbox"/> bear | <input type="checkbox"/> goose | Other, list below: |
| <input type="checkbox"/> beaver | <input type="checkbox"/> hare | <input type="checkbox"/> _____ |
| <input type="checkbox"/> bison | <input type="checkbox"/> heron | <input type="checkbox"/> _____ |
| <input type="checkbox"/> bobcat | <input type="checkbox"/> horse | <input type="checkbox"/> _____ |
| <input type="checkbox"/> buffalo | <input type="checkbox"/> lynx | <input type="checkbox"/> _____ |
| <input type="checkbox"/> caribou | <input type="checkbox"/> mink | <input type="checkbox"/> _____ |
| <input type="checkbox"/> cat | <input type="checkbox"/> moose | <input type="checkbox"/> _____ |
| <input type="checkbox"/> chicken | <input type="checkbox"/> muskox | <input type="checkbox"/> _____ |
| <input type="checkbox"/> cougar | <input type="checkbox"/> otter | <input type="checkbox"/> _____ |
| <input type="checkbox"/> coyote | <input type="checkbox"/> pig | <input type="checkbox"/> _____ |
| <input type="checkbox"/> deer | <input type="checkbox"/> rabbit | <input type="checkbox"/> _____ |
| <input type="checkbox"/> dog | <input type="checkbox"/> seal | <input type="checkbox"/> _____ |
| <input type="checkbox"/> duck | <input type="checkbox"/> sheep | <input type="checkbox"/> _____ |
| <input type="checkbox"/> eagle | <input type="checkbox"/> skunk | <input type="checkbox"/> _____ |
| <input type="checkbox"/> elephant | <input type="checkbox"/> squirrel | <input type="checkbox"/> _____ |
| <input type="checkbox"/> fish | <input type="checkbox"/> turtle | <input type="checkbox"/> _____ |
| <input type="checkbox"/> fox | <input type="checkbox"/> wolf | <input type="checkbox"/> _____ |
| <input type="checkbox"/> giraffe | <input type="checkbox"/> wolverine | <input type="checkbox"/> _____ |

Score:

[The score is the sum of acceptable animals divided by 23. Any member of the animal kingdom, real or imaginary, is scored correct, except repetitions and proper nouns. Specifically, each of the following gets credit: a species name and any accompanying breeds within the species; male, female and infant names of a species.]

Page Subtotal:

Registration

Now I am going to tell you three words and I would like for you to repeat them after me.

19. Repeat after me these words: Boat, house, fish

- ☐ [0] Incorrect
- ☐ [.33] Boat
- ☐ [.33] House
- ☐ [.33] Fish

Score:

[Note to Interviewer: Points only awarded if answer correctly on the first try. Repeat the three words in sequence, up to a total of three (3) times.]

Number of trials ('1' if repeated correctly first time):

Very good, now try to remember these words because I will be asking you later: Boat, house, fish.

Attention and Calculation

Now we're going to do some things with numbers. This is sometimes hard for people, just try to do the best you can.

20. If I have 20 dollars and give you 2 dollars, how many do I have left?

Correct answer: \$18

- ☐ [0] Incorrect
- ☐ [1] Correct

Recall

21. Can you tell me the three words I told you a few minutes ago?

- ☐ [0] Incorrect
- ☐ [.33] Boat
- ☐ [.33] House
- ☐ [.33] Fish

Score:

[Note to Interviewer: Points only awarded if answer correctly on the first try. No prompts; self-corrections are accepted].

Page Subtotal:

Attention and Calculation

22. Please count from 1 to 10.

☐ [0] Incorrect

☐ [1] Correct



22a. Now count backward from 10 to 1.

☐ [0] Incorrect

☐ [1] Correct

23. If one pound of coffee costs 2 dollars, how much would 2 pounds of coffee cost?

Correct answer: \$4

☐ [0] Incorrect

☐ [1] Correct



23a. How much would 3 pounds of coffee cost?

Correct answer: \$6

☐ [0] Incorrect

☐ [1] Correct

23b. What about 4 pounds of coffee?

Correct answer: \$8

☐ [0] Incorrect

☐ [1] Correct

Show the subject 2 coins, one dime and one quarter.

24. How much money is this?

Correct answer: 35 cents

☐ [0] Incorrect

☐ [1] Correct

25. If someone gave you this amount, 35 cents, as change from a dollar, \$1.00, (One loony), how much did you spend?

Correct answer: 65 cents

☐ [0] Incorrect

☐ [1] Correct

Orientation to Place

Now I would like to ask some questions about your home, this area.

26. What is the name of this facility?

Correct answer: The Regional Psychiatric Centre, RPC

Write answer:

☐ [0] Incorrect

☐ [1] Correct

Score:

27. What city are we in?

Correct answer: Saskatoon

Write answer:

☐ [0] Incorrect

☐ [1] Correct

Score:

[score 26 OR 27]

28. What is the name of your Parole Officer?

Correct answer: _____

Write answer:

☐ [0] Incorrect

☐ [1] Correct

Score:

29. What is the name of your unit?

Correct answer: _____

Write answer:

☐ [0] Incorrect

☐ [1] Correct

Score:

30. Where is the main kitchen where patients' food is prepared?

Correct answer: along main hallway, directly outside the 'barriers'
OR: on the way to/near 'stores' or 'housekeeping/laundry/maintenance.'

Write answer:

☐ [0] Incorrect

☐ [0] Don't know

☐ [1] Correct

Score:

Page Subtotal:

31. Where is the Regional Hospital located? Should be “where do you go when you get sick in RPC?” This should not be a location question.

Correct answer: along main hallway, between Mackenzie and Churchill units,

OR: beside the correctional manager’s office/keeper’s office and D65 board room.

Prompt: Tell me more OR, tell me where in RPC the Regional Hospital is located?

Write answer:

- ☐ [0] Incorrect
- ☐ [0] Don’t know
- ☐ [1] Correct

Score:

32. What is your cell/room number?

Correct answer: _____

Write answer:

- ☐ [0] Incorrect
- ☐ [1] Correct

Score:

Orientation to Time

Now I would like to ask some questions about time.

33. What month is it?

- ☐ [0] Incorrect
- ☐ [1] Correct

Score:

34. What day of the week? e.g, Monday, Tuesday...

- ☐ [0] Incorrect
- ☐ [1] Correct

Score:

35. What part of the day is it? Is it morning or afternoon?

- ☐ [0] Incorrect
- ☐ [1] Correct

36. What year is it?

- ☐ [0] Incorrect
- ☐ [1] Correct

Score:

Page Subtotal:

37. What season is it? Is it winter, summer, fall or spring?

- ☐ [0] Incorrect
☐ [1] Correct

Score:

38. Did it snow yesterday?

- ☐ [0] Incorrect
☐ [1] Correct

Score:

Language Comprehension – Motor Response

I am going to ask you to carry out some actions so please listen carefully because I will only tell you one time. [Interviewer, give complete instructions at one time, do not give them step by step.]

39. Please nod your head.

- ☐ [0] Incorrect
☐ [1] Correct

Score:

40. Please point first to the window and then to the door. (If there's no window, substitute "table").

- ☐ [0] Incorrect
☐ [.50] window/table
☐ [.50] door

Score:

[Points only awarded if answer correctly on the first try.]

41. I'm going to give you a piece of paper. When I do, take the paper in your right hand, fold the paper in half with both hands, and hand the paper back to me. [Hold up the paper and wait until the patient takes the paper.]

- ☐ [0] Incorrect
☐ [.33] Right hand
☐ [.33] Folds
☐ [.33] Returns paper

Score:

Memory – Recall

If previously did not recall interviewer's name (omit if patient correctly answered previously):

42. Do you remember my name? [Rough approximation acceptable as correct.]

Write answer:

- ☐ [0] Incorrect
☐ [1] Correct


Score:

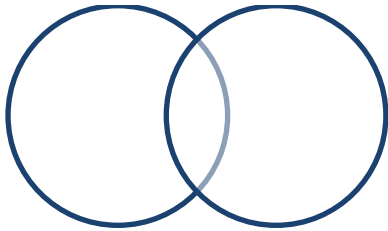
Page Subtotal:

Praxis – Copying

Now I would like for you to take my pencil and copy these figures in the space to the right of the figure.

43.

Draw below: 




[Note to interviewer: Score 1 if two vaguely circular objects intersect to form a meniscus]

☐ [0] Incorrect

☐ [1] Correct

Score:

44.

Draw below: 



[Note to interviewer: Score 1 if two 5-sided objects intersect to form a diamond shape]

☐ [0] Incorrect

☐ [1] Correct

Score:

Page Subtotal:

Memory

45. Now I will read a short story then I will ask you to repeat as much of the story as you can remember. I want you to listen very carefully because I want you to try to tell me the whole story with as many details as you can remember.

Three children were alone at home and the house caught on fire. A brave man managed to climb in a back window and carry them to safety. Aside from minor cuts and bruises all were well.

Now I would like for you to tell me the story in as much detail as possible.

- ☐ [0] Incorrect
- ☐ [.16] children
- ☐ [.16] house on fire
- ☐ [.16] brave men
- ☐ [.16] children rescued
- ☐ [.16] minor injuries
- ☐ [.16] Everyone well

Score:

Language Expression – Spontaneous Speech

I would appreciate hearing in your own words something about your childhood.

46. As you well know things have changed a great deal since you were a child. Life for children today is quite different from when you were a little boy/girl. I'd like for you to think back to what life was like when you were a child. Tell me any favorite memories you have of things that happened in your childhood?

Alternate prompts if the patient can't think of a happy childhood memory:

1. What did you do for fun when you were a child?
2. Tell me about your brothers and sisters.

If the subject is able to tell a story you are allowed to give some encouraging appreciative comments at appropriate intervals.

For example: Oh my, oh really,
that's interesting,
that must have been something,
wow.

- ☐ [0] Inmate refused to tell story
- ☐ [0] Inmate not able to tell story
- ☐ [1] Inmate told the story

Score:

Page Subtotal:

End of Interview

Thank you for taking part in this study.

INTERVIEWER

Length of time to complete this assessment: minutes

Cognitive Section

Page 2 subtotal:

Page 3 subtotal:

Page 4 subtotal:

Page 5 subtotal:

Page 6 subtotal:

Page 8 subtotal:

Page 9 subtotal:

Page 10 subtotal:

Page 11 subtotal:

Page 12 subtotal:

TOTAL SCORE

Scoring System for the Cognitive Scale (COGSCORE) includes 33 scored items, each worth 1 point, with the exception of the list of animals, which may be greater than 1.

If 22 or more **scored** items are missing, score is not calculated/incomplete, please select appropriate box below:

- ☐ [0] Incomplete survey
- ☐ [1] Complete survey

Appendix C: CSI'D' Informant Questionnaire

THE CENTRE FOR
FORENSIC BEHAVIOURAL SCIENCES AND JUSTICE STUDIES



OLDER OFFENDER DEMENTIA STUDY: PRIMARY NURSE SURVEY

Part 1: Questions about Older Offenders on your Caseload

Please fill out a separate questionnaire for each older offender on your caseload. For the purposes of this study, older offenders are defined as any non-Indigenous incarcerated individual who is 50 years of age or older or any incarcerated Indigenous offender who is 45 years of age or older.

Inmate Pseudo ID:

(Please do not write the inmates name on this document. Please only record the Pseudo ID corresponding to the inmate).

COGNITIVE AND FUNCTIONAL IMPAIRMENT

We're interested in knowing about any cognitive or functional impairment this inmate may have. The questions in this section were obtained from the Community Screening Instrument for Dementia (CSI'D') Informant Questionnaire.

Please answer a few brief questions about the inmate's activities.

1. Have you seen a change in the inmate's daily activities in the past year?

PNPart1_Q1

- ☐ [0] No
- ☐ [1] Yes
- ☐ [0] I don't know

1(a). If yes, please describe.

2. Has there been a general decline in the inmate's mental functioning?

PNPart1_Q2

- ☐ [0] No
- ☐ [1] Yes
- ☐ [0] I don't know

2(a). If yes, please describe.

2(b). When did you first notice this? Please estimate the date:

/

MM YYYY

3. We all have slight difficulties in remembering things as we get older, but has this been a particular problem for this inmate?

PNPart1_Q3

- ☐ [0] No
- ☐ [1] Yes
- ☐ [0] I don't know

Please answer a few brief questions about the inmate's cognitive functioning and behaviour.

4. Does the inmate forget where he/she has put things?

PNPart1_Q4

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

5. Does the inmate forget where things are usually kept?

PNPart1_Q5

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

6. Does the inmate forget the names of friends or other inmates? **[added 'inmates']** PNPart1_Q6

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

7. Does the inmate forget the names of RPC staff? [changed from 'family'] PNPpart1_Q7

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

8. Does the inmate forget what he/she wanted to say in the middle of the conversation? PNPpart1_Q8

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

9. When speaking, does the inmate have difficulty saying the right words? PNPpart1_Q9

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

10. When speaking, does the inmate use the wrong words? PNPpart1_Q10

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

11. Does the inmate tend to talk about what happened long ago rather than the present? PNPpart1_Q11

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

12. Does the inmate forget when last he/she saw you? PNPpart1_Q12

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

13. Does the inmate forget what happened the day before? PNPpart1_Q13

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

14. Does the inmate forget where he/she is? PNPpart1_Q14

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

15. Does the inmate get lost in the facility? [changed from 'community']

PNPart1_Q15

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

16. Does the inmate get lost in the Unit (e.g., finding the shower)? [changed from 'home']

PNPart1_Q16

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

Please answer a few brief questions about the inmate's daily living activities.

17. Does the inmate have difficulty making their bed? [changed from 'household tasks']

PNPart1_Q17

- ☐ [0] No or if problem is due to physical difficulty
- ☐ [.5] Yes, sometimes if problem is NOT due to physical disability [should be: slight difficulty]
- ☐ [1] Yes, regularly if problem is NOT due to physical disability [should be: great difficulty]
- ☐ [0] I don't know

17(a). If yes, do you think the problem is primarily due to physical disability? PNPart1_Q17a

- ☐ [1] No
- ☐ [0] Yes
- ☐ [0] I don't know

18. Is there a loss of a special skill or hobby the inmate could manage before?

PNPart1_Q18

- ☐ [0] No or if problem is due to physical difficulty
- ☐ [1] Yes if problem is NOT due to physical disability
- ☐ [0] I don't know

18(a). If yes, do you think the problem is primarily due to physical disability? PNPart1_Q18a

- ☐ [1] No
- ☐ [0] Yes
- ☐ [0] I don't know

19. Does the inmate have difficulty adjusting to change in his/her daily routine?

PNPart1_Q19

- ☐ [0] No
- ☐ [.5] Yes, sometimes
- ☐ [1] Yes, regularly
- ☐ [0] I don't know

20. Have you noticed a change in the inmate's ability to think and reason?

PNPart1_Q20

- ☐ [0] No
- ☐ [1] Yes
- ☐ [0] I don't know

21. Does the inmate have difficulty feeding himself/herself? (You may select multiple 'yes' options). PNPpart1_Q21

- ☐ [0] No, eats cleanly with proper utensils or if problem is due to physical difficulty
- ☐ [1] Yes, eats messily with a spoon only if problem is NOT due to physical disability
- ☐ [2] Yes, can manage simple solids such as biscuits if problem is NOT due to physical disability
- ☐ [3] Yes, has to be fed if problem is NOT due to physical disability
- ☐ [0] I don't know

21(a). If yes, do you think the difficulty is primarily due to physical disability? PNPpart1_Q21a

- ☐ [1] No
- ☐ [0] Yes
- ☐ [0] I don't know

22. Does the inmate have difficulty dressing? (You may select multiple 'yes' options). PNPpart1_Q22

- ☐ [0] No, dresses self or if problem is due to physical difficulty
- ☐ [1] Yes, occasionally misplaces buttons, etc. if problem is NOT due to physical disability
- ☐ [2] Yes, wrong sequences, commonly forgets items if problem is NOT due to physical disability
- ☐ [3] Yes, unable to dress if problem is NOT due to physical disability
- ☐ [0] I don't know

22(a). If yes, do you think the difficulty is primarily due to physical disability? PNPpart1_Q22a

- ☐ [1] No
- ☐ [0] Yes
- ☐ [0] I don't know

23. In the past year, has the inmate had urinary incontinence (i.e., does he/she wet herself/himself)? PNPpart1_Q23

- ☐ [0] No problems or if problem is due to physical difficulty
- ☐ [1] Yes, occasionally wets bed
- ☐ [2] Yes, frequently wets bed if problem is NOT due to physical disability, and no anal incontinence
- ☐ I don't know

23(a). If yes, do you think the problem is primarily due to physical disability? PNPpart1_Q23a

- ☐ No
- ☐ Yes
- ☐ I don't know

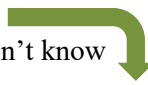
24. In the past year, has the inmate had anal incontinence (i.e., does he/she soil herself/himself)? PNPpart1_Q24

- ☐ No problems or if problem is due to physical difficulty
- ☐ [3] Yes, occasionally has anal incontinence if problem is NOT due to physical disability, and also have urinary incontinence
- ☐ [3] Yes, frequently has anal incontinence if problem is NOT due to physical disability, and also have urinary incontinence
- ☐ I don't know

24(a). If yes, do you think the problem is primarily due to physical disability? PNPpart1_Q24a

- ☐ No
- ☐ Yes
- ☐ I don't know

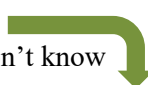
25. Has there been a change in the inmate's sleeping pattern over the past year?

- ☐ No
 - ☐ Yes
 - ☐ I don't know
- 

25(a). If yes, please describe.

Please answer a few brief questions about any changes to the inmate's personality in the past year.

26. Have you noticed any changes in the inmate's personality in the past year?

- ☐ No
 - ☐ Yes
 - ☐ I don't know
- 

26(a). If yes, please describe.

27. Has the inmate become more irritable in the past year?

- ☐ No
- ☐ Yes
- ☐ I don't know

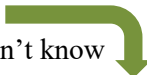
28. Has the inmate become more stubborn in the past year?

- ☐ No
- ☐ Yes
- ☐ I don't know

29. Has the inmate lost interest in things he/she used to enjoy in the past year?

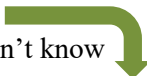
- ☐ No
- ☐ Yes
- ☐ I don't know

30. Is the inmate more depressed in the past year?

- ☐ No
- ☐ Yes 
- ☐ I don't know

30(a). If yes, please describe.

31. Is the inmate more nervous in the past year?

- ☐ No
- ☐ Yes 
- ☐ I don't know

31(a). If yes, please describe.

OMITTED QUESTION

32. Has the inmate shown a change in the ability to handle money in the past year?

Appendix D: Inmate Participant Consent Form

Consent Form for Inmates

Title of Study: Identifying Dementia and other Age-Related Needs of Older Offenders at the Regional Psychiatric Centre

Researchers:

Ashmini Kerodal, PhD
Lisa Jewell, PhD
Kelsey Brown, MA
Alexandra Zidenberg, MA
Megan O'Connell, PhD

Contact Information for the Researchers:

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What is this study about?

We are researchers from The Centre for Forensic Behavioural Science and Justice Studies at the University of Saskatchewan and we want to tell you about a research study that we are doing at RPC. A research study is a way to learn more about something by gathering and analysing information. We would like to find out more about the experiences of older offenders in Correctional Services Canada (CSC) institutions like RPC.

We are especially interested in finding out how many older offenders might have a memory or thinking problem that could be causing them difficulties in their daily lives. We are also asking the staff at RPC to tell us about their experiences arranging services and any problems they might have when doing discharge plans for older offenders.

Why am I being asked to join this study?

You are being asked to join this study because you are an older offender (someone who is Aboriginal and over the age of 45 or someone who is not Aboriginal and over the age of 50) currently at RPC.

What am I being asked to do?

If you agree to join this study, you will be asked to:

- **Do a cognitive assessment with a researcher (me) from the University of Saskatchewan.** This assessment will take 30 minutes to complete. This assessment is not enough to give you a diagnosis but it can tell you if you might need other tests to help improve your quality of life. You can ask for a copy of the assessment to be placed in your file while you are at RPC and you can choose to talk to a primary nurse or a doctor after you are released.
- **Let the researchers use information from your RPC records.** This information would include your Offender Management System (OMS) data, health file, intake assessment, correctional plans, and discharge plans. This will include things like your age, the reason you are serving time at the RPC (your offense), your mental health diagnoses (if you have any), and any programs you may have participated in at RPC. This information will let us learn more about older offenders and to see how well CSC deals with age-related problems in the facility and when doing discharge planning.
- **Let your Social Worker (if you have one) and Primary Nurse answer questions for the researchers.** We will be asking your Social Worker (if you have one) and Primary Nurse questions about your institutional plan, what supports you will need in the community once you've been released, and any steps that they have taken to make a discharge plan for you. This information will let us learn more about older offenders and to see how well CSC deals with age-related problems in the facility and when doing discharge planning.

Are there any risks with being in the study?

When answering the questions in the assessment, you might feel stressed or worried about your answers. If you do feel uncomfortable, you don't have to answer the question. You can choose to only answer the questions that you are comfortable with. You can also talk to the researcher or with the staff at RPC to ask questions or to tell them that you are uncomfortable.

Will my information be kept private?

All of the information that we collect from your assessment, your RPC files, and your Social Worker and Primary Nurse will be kept private. Your name will not be put on any of the forms. Instead of your name, we will be making a code for you. We are using a code instead of your name to make sure that your data is private and that no one will know your personal information. The only people who will see this information are the researchers for this study. You can ask for a copy of your assessment to be put in your health file and then the staff at RPC will see your scores for that assessment. If you do decide to have a copy of the assessment put into your health file, the RPC staff may choose to use the assessment to help in your programming and treatment if it is placed in your file.

How will my information be kept private?

To be sure that your data is kept private the researchers will make sure that:

- Your name is not on any of the forms that collect information and only the code will be used on any assessment reports, RPC files, and information from your Social Workers and Primary Nurse. We will keep this information for 5 years after we finish writing reports using the information and then we will destroy it.
- When reports are written using your information, we will never use your name or only talk about 1 person. We will always talk about the group of older offenders that we collected information for. Talking about information in groups makes it harder for anyone to identify your answers or information and helps keep what you tell us private.
- Any forms that have your name on them (like this form) will be kept in a locked filing cabinet at The Centre for Forensic Behavioural Science and Justice Studies in the University of Saskatchewan. All of the other forms with your information will be locked in a different filing cabinet. This will help to make sure that no one knows which inmates decided to participate in the study when looking at the information that we collected, which will help keep your answers private.
- All of your information will be stored in a safe place. If the information is on paper, it will be stored in a locked cabinet in a locked room. Only the researchers will have the keys. If the information is digital, it will be kept on a password protected network drive. Only the researchers will have the password to the file and to the computer.
- We will protect your information and make sure that only the researchers see the information and that your personal information is not shared with anyone. No one at RPC will see your personal information and they will only see the report that talks about the group of older offenders.

Limitations of confidentiality

Please keep other patients' information and disclosures confidential. Any information provided during the assessment may be disclosed without your consent if:

- You pose a serious or immediate threat to your own safety, or the safety of others in the institution or the community;

- Disclosure is mandated or permitted by relevant legislation (e.g., *Corrections and Conditional release Act*, the *Privacy Act*, provincial or territorial legislation regarding reporting of offences against a child, etc.)

How will the study findings be reported?

We are collecting this information because we want to learn more about older offenders and what they need so that we can make their time while in prison better. To make sure this happens, we will be looking at the information we collected and telling other researchers and people who work in prisons what we have found. We will be writing a report which will be given to RPC, Correctional Services Canada, and posted on the Forensic Centre's website. The researchers may also present the findings at conferences and may publish them in academic journals.

We will always protect your privacy and your name will not be included in any reports, presentations, or journal articles. If you want to see the results of this research study, you can ask your Parole Officer for a summary of the report to look at. The report will take time to write and probably won't be finished until March 2020.

Do I have to join this study?

You do not have to join this study. It is up to you. You can say that you want to join now and change your mind later. All you have to do is tell us you want to stop. You will not get in trouble if you don't want to be in the study or if you join the study and change your mind later and stop. Whether you decide to join this study or not will have no effect on your time at RPC. If you do change your mind about joining the study after you have said yes, ask your Parole Officer to contact Dr. Ashmini Kerodal at 306-966-6275 or ashmini.kerodal@usask.ca to let us know. We need to know if you change your mind before August 30, 2019.

Who do I contact if I have questions about the study?

Before you say **yes or no** to being in this study, we will answer any questions you have. If you join the study, you can ask questions at any time. Just tell your Parole officer to let the researchers know that you have a question and they will contact Dr. Ashmini Kerodal (ashmini.kerodal@usask.ca; 306-966-6275) or Dr. Lisa Jewell (lisa.jewell@usask.ca; 306-966-2707).

This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca (306) 966-2975. Out of town participants may call toll free (888) 966-2975.

Consent to Join this Study

- ☐ I have read this form and understand what this study is about.
 - ☐ I was allowed to ask questions about this study and I don't have any more questions about what I am being asked to do.
 - ☐ I know that I can join the study now and still decide not to participate any time before August 30, 2019.
 - ☐ I understand that only information I consent to share will be included in the study.
- ☐ **Yes**, I want to be in this research study. ☐ **No**, I don't want to be in this research study.

Please put a check mark next to the statements you want to say YES to:

- ☐ I have a copy of this consent form for my records.
- ☐ I will allow the researchers to do a cognitive assessment with me.

- ☐ I will allow the researchers to use my OMS data for this study.
- ☐ I will allow the researchers to use my Health File data for this study.
- ☐ I will allow the researchers to use my Intake Assessment File data for this study.
- ☐ I will allow the researchers to use my Correctional Plan data for this study.
- ☐ I will allow the researchers to use my Discharge Plan information, if one is in place, for this study.
- ☐ I will allow my Social Worker, if I have one, to share information about me with the researchers.
- ☐ I will allow my Primary Nurse to share information about me with the research team.
- ☐ I would like to have a copy of my assessment results placed in my Health File for the Health Care Workers at RPC to see.
- ☐ I would like a summary of the report given to my Parole Officer for me to read.

Signatures

_____	_____	_____
Participant name (Print)	Participant name (Signature)	YY/MM/DD

_____	_____	_____
Researcher (Print)	Researcher (Signature)	YY/MM/DD

Proxy Consent:

_____	_____	_____
Proxy / Guardian / Relative (Print)	Proxy / Guardian / Relative (Signature)	YY/MM/DD

Appendix E: Refresher (Inmate) Consent

THE CENTRE FOR
FORENSIC BEHAVIOURAL SCIENCES AND JUSTICE STUDIES



OLDER OFFENDER DEMENTIA STUDY

Verify Consent

Thank you very much for seeing me. I am a researcher from the Centre for Forensic Behavioural Science and Justice Studies at the University of Saskatchewan. We are doing a study to find out about the experiences of older patients in Correctional Services Canada (CSC) institutions like RPC.

We are interested in finding out how many older patients might have a memory or thinking problem that could be causing them difficulties in their daily lives. I would like to ask you a few questions about yourself in the past and how you are now. Your answers will be kept confidential and you are free to stop the interview at any time. You spoke with Ashmini, a researcher from the University, earlier this month and agreed to participate in the study. Before we start, I must ask you if you still agree to take part in the study.

☐ **Yes**

☐ **No**

Researcher (Print)

Researcher (Signature)

YY/MM/DD

Appendix F: Primary Nurse Consent Form

Consent Form

You are invited to participate in the University of Saskatchewan study, “Identifying Dementia and other Age-Related Needs of Older Offenders at the Regional Psychiatric Centre”. Please keep this consent form for future reference.

Researchers:

Ashmini Kerodal, PhD
Ashmini.Kerodal@csc-scc.gc.ca
Ashmini.Kerodal@usask.ca
306-966-6275

Kelsey Brown, MA
Kelsey.Brown@usask.ca

Supervisors:

Lisa Jewell, PhD
Lisa.Jewell@usask.ca
306-966-2707

Arlene Kent-Wilkinson, MN, PhD
Arlene.Kent@usask.ca
306-966-6897

What is the purpose of this project?

The Centre for Forensic Behavioural Science and Justice Studies, University of Saskatchewan is gathering information about older offenders at the Regional Psychiatric Centre (RPC).

- We are using a cognitive assessment to determine the number of older inmates at RPC that have signs of dementia and other age-related cognitive disorders.
- We are also surveying RPC staff to find out if inmates’ signs of dementia are considered in their discharge plans, the steps RPC normally takes to arrange community services/supports for older inmates, and any problems RPC faces when arranging older inmates’ discharge plans.

What am I being asked to do?

You are invited to complete a survey for each older offender on your caseload and answer some basic questions about yourself and your experience. The total time to complete the survey will be dependent on the number of older offenders on your caseload, but it is expected that each survey for Part 1 will take approximately 10 minutes, while Part 2 may be completed in 5 minutes.

At your earliest convenience, please complete ____ Part 1 surveys and complete Part 2 only once. Part 1 is labelled with a numeric code for each older offender on your caseload and list of their names is included to help you complete the surveys. Please return the surveys to the RPC contact person listed in the sealable envelope provided, even if you have chosen not to answer any of the questions. This procedure will ensure that only you know if you have decided to participate in the study or not.

Who is funding this study?

The Centre for Forensic Behavioural Science and Justice Studies, University of Saskatchewan and the Saskatchewan Health Research Foundation.

What are the potential risks and benefits of my participation?

During participation in this study, you may feel stressed or worried about your answers to the surveys; however, if this happens, you have the option to refrain from answering any particular questions that make you uncomfortable. You may also contact the research team with your questions and concerns at

any time during this study. Additionally, you may be worried about the confidentiality of your participation. In order to assure the privacy of your answers, we have provided you with a sealable envelope and have instructed all staff to keep these envelopes closed and confidential.

Furthermore, you may also take advantage of the service below, anonymously; if you feel you have other questions or concerns:

The Canadian Institute for Public Safety Research and Treatment: <https://www.cipsrt-icrtsp.ca/>

How will my data be kept confidential?

- Your name will not be included in your surveys or data files. This information will be stored for five years to adhere to University research policies. Following these years, electronic data will be deleted permanently and physical copies of surveys will be shredded.
- All raw data will only be accessible to the research team. Survey responses will be kept confidential and not shared with anyone at RPC.
- Your name will not be used in any reports and your survey responses will be reported in aggregate form.
- Any documents with your name on them will be stored in a different location from your survey responses and secured with a lock and key.

How will my data be stored?

The data will be stored electronically in a de-identified file at RPC in a secure folder. The hardcopy surveys will be stored securely at the University of Saskatchewan in a locked file cabinet and a copy of the data file will be stored on a password protected network drive at the University, where only members of the research team will have access to the data. All staff identifiers will be deleted from the surveys and data file before transportation to the university. Data will be stored for a maximum of five years following the publication of the final report, after which all data will be destroyed.

How will my data be used?

The researchers will prepare a report, which will be given to RPC and Correctional Service of Canada and posted on the Forensic Centre's website. The researchers may also present the findings at conferences and publish the findings in peer-reviewed journals. No names will be included in the report.

Right to withdraw

Your participation is completely voluntary and you don't have to participate in this study or answer any questions that you do not want to. You may withdraw from the research project for any reason, at any time, without explanation or penalty of any sort. Your decision to participate (or not participate) will have no effect on your employment at the Regional Psychiatric Centre.

If you want to withdraw after you have submitted your surveys, please contact Dr. Ashmini Kerodal at 306-966-6275, Kelsey Brown at kelsey.brown@usask.ca, or Dr. Lisa Jewell at 306-966-2707. If you withdraw from the research project anytime before August 31, 2019, any data that you have contributed will be removed from the study. After that time, it will no longer be possible to remove individual responses.

How can I get a copy of the results?

If you are interested in the results of this study, please see the Centre for Forensic Behavioural Sciences and Justice Studies website (www.usask.ca/cfbsjs/) where a copy of the report will be posted or contact the Forensic Centre directly at forensic.centre@usask.ca.

If you have any questions, please contact:

- Dr. Ashmini Kerodal, ashmini.kerodal@csc-scc.gc.ca; ashmini.kerodal@usask.ca; (306) 966-6275.

- Kelsey Brown, kelsey.brown@usask.ca.
- Dr. Lisa Jewell, lisa.jewell@usask.ca; (306) 966-2707.
- This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office at ethics.office@usask.ca or (306) 966-2975. Out of town participants may call toll free at (888) 966-2975

Consent:

By completing and submitting the surveys, *your free and informed consent is implied* and indicates that you understand the conditions of participation in this study.

Appendix G: Primary Nurse Invitation Letter



UNIVERSITY OF SASKATCHEWAN

Centre for Forensic
Behavioural Science
and Justice Studies

CFBSJS.USASK.CA

Room 110A, 9 Campus Drive
Saskatoon SK S7N 5A5 Canada
Telephone: 306-966-2687
Email: forensiccentre@usask.ca

Wednesday, May 22, 2019

Dear RPC Nurse,

Re. Identifying Dementia and other Age-Related Needs of Older Offenders at the Regional Psychiatric Centre Study

The Centre for Forensic Behavioural Science and Justice Studies, University of Saskatchewan is gathering information about older offenders at the Regional Psychiatric Centre (RPC). The study's goals are to determine the prevalence of dementia signs and symptoms and other age-related cognitive disorders. In addition, the study will determine the extent to which Correctional Service Canada (CSC) is accommodating these health issues for older offenders both in the facility and in discharge planning.

We would like to hear from Nurses who work directly with these older offenders. As a result, we are inviting you to complete our survey. Your participation in this study is completely voluntary and you do not have to answer any questions you do not feel comfortable answering.

The survey consists of two parts: Part 1 asks about the cognitive functioning and discharge needs of each older offender on your caseload, and Part 2 asks about your training needs and experience. Please return the surveys to the RPC contact person listed in the included sealable envelope, even if you have chosen not to answer any of the questions. This procedure will ensure that only you know if you have decided to participate in the study or not. Please read the consent form provided with this package for additional details about your role in the study, your right to withdraw, the secure protection of data and confidentiality.

We hope that you will support this important research. This project has been approved by Correctional Service of Canada and the University of Saskatchewan's Research Ethics Board. It is funded by the Centre for Forensic Behavioural Science and Justice Studies and the Saskatchewan Health Research Foundation. If you have any questions, please do not hesitate to contact Dr. Ashmini Kerodal at ashmini.kerodal@csc-scc.gc.ca, ashmini.kerodal@usask.ca or 306-966-6275.

Sincerely,

Ashmini Kerodal, PhD
Kelsey Brown, MA
Lisa Jewell, PhD
Arlene Kent-Wilkinson, MN, PhD



SHRF
SASKATCHEWAN
HEALTH RESEARCH
FOUNDATION

Appendix H: Primary Nurse Reminder



UNIVERSITY OF SASKATCHEWAN

Centre for Forensic
Behavioural Science
and Justice Studies

CFBSJS.USASK.CA

Room 110A, 9 Campus Drive
Saskatoon SK S7N 5A5 Canada
Telephone: 306-966-2687
Email: forensic.centre@usask.ca

Subject: Nurse Survey, Older Offenders Dementia Project

Dear RPC Nurse (get names from list at RPC),

The University of Saskatchewan is gathering information about older offenders at RPC. As a Nurse who works directly with older offenders, you were invited to participate in this study. If you have already completed the survey package, please accept our thanks. If you have not completed the surveys, please complete the survey package at your earliest convenience.

Your contribution will allow CSC, criminal justice professionals and researchers to have a better understanding of age-related cognitive and health needs of older offenders. If you have misplaced your survey package, please email me and I will provide a replacement package.

If you have any questions, please do not hesitate to contact me at ashmini.kerodal@csc-scc.gc.ca, ashmini.kerodal@usask.ca or 306-966-6275.

Sincerely,

Ashmini

Ashmini Kerodal, PhD
Centre for Forensic Behavioural Science and Justice Studies
University of Saskatchewan
110A Arts Building, 9 Campus Drive, Saskatoon SK S7N 5A5
Phone: (306) 966-6275
ashmini.kerodal@usask.ca

Appendix I: Letter to Team Leads



UNIVERSITY OF SASKATCHEWAN

Centre for Forensic
Behavioural Science
and Justice Studies

CFBSJS.USASK.CA

Wednesday, May 22, 2019

Room 110A, 9 Campus Drive
Saskatoon SK S7N 5A5 Canada
Telephone: 306-966-2687
Email: forensic.centre@usask.ca

Dear _____ (insert Team Lead's name),

Re. Identifying Dementia and other Age-Related Needs of Older Offenders at the Regional Psychiatric Centre Study

The Centre for Forensic Behavioural Science and Justice Studies, University of Saskatchewan is gathering information about older offenders at the Regional Psychiatric Centre (RPC). The study's goals are to determine the prevalence of dementia signs and symptoms and other age-related cognitive disorders. In addition, the study will determine the extent to which Correctional Service Canada (CSC) is accommodating these health issues for older offenders both in the facility and in discharge planning.

We would like to hear from Primary Nurses, Social Workers and Parole Officers who work directly with these older offenders. We are inviting Primary Nurses and Social Workers to complete a survey about each older offender on their caseload and to share personal experiences as a staff member at RPC. We are inviting Parole Officers to share their experiences in working with older offenders. Staff participation in this study is voluntary.

Please distribute the survey packages to all staff in the attached list, and request they return the package to you in the provided sealable privacy envelope. Please email me to collect these packages from you at your earliest convenience.

We hope that you will support this important research. To protect the privacy of participants, please refrain from asking about their decision to participate in the study and leave the privacy envelopes sealed. This project has been approved by Correctional Service of Canada and the University of Saskatchewan's Research Ethics Board.

Thank you for taking the time to distribute our study. If you have any questions, please do not hesitate to contact me at ashmini.kerodal@csc-scc.gc.ca, ashmini.kerodal@usask.ca or 306-966-6275.

Sincerely,

Ashmini Kerodal, PhD
Kelsey Brown, MA
Lisa Jewell, PhD
Arlene Kent-Wilkinson, MN, PhD

