An Integrated Exploration of Psychological Distress among Older Prisoners

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General Declaration

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I, Susan Hana Baidawi, hereby declare that this thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

This thesis includes five original papers published or accepted for publication in peer reviewed journals. The core theme of the thesis is investigating the level of psychological distress among older prisoners in two Australian states (Victoria and New South Wales), and the factors associated with psychological distress in this population. The ideas, development and writing of all the papers in the thesis were the principal responsibility of myself, the candidate, working within the Department of Social Work, Monash University under the supervision of Professor Christopher Trotter, Dr Catherine Flynn and Professor Daniel O'Connor. The inclusion of co-authors in the case of most of the published works reflects the fact that the work came from active collaboration between researchers and acknowledges input into team-based research.

In the case of Chapters 3 and 5, my contribution to the work involved the following:

Thesis chapter	Publication title	Publication status	Nature and extent (%) of student's contribution
Chapter Three	Psychological distress among older prisoners: A literature review	Published	Reviewed literature, prepared and revised manuscript (90%)
Chapter Five	Older prisoners: psychological distress and associations with mental health history, cognitive functioning, socio-demographic and criminal justice factors	Published	Reviewed literature, prepared and revised data collection instruments, collected most data, coded data, conducted analyses, prepared and revised manuscript (100%)
Chapter Five	Psychological distress among older prisoners: Associations with health, healthcare utilisation and the prison environment	Published	Reviewed literature, prepared and revised data collection instruments, collected most data, coded data, conducted analyses, prepared and revised manuscript (75%)
Chapter Five	Prison experiences and psychological distress among older inmates	Published	Reviewed literature, prepared and revised data collection instruments, collected most data, coded data, conducted analyses, prepared and revised manuscript (75%)
Chapter Five	An integrated exploration of factors associated with psychological distress among older prisoners	Published	Reviewed literature, prepared and revised data collection instruments, collected most data, coded data, conducted analyses, prepared and revised manuscript (75%)

I have renumbered sections of submitted or published papers in order to generate a consistent presentation within the thesis, though table numbers remain as presented in the accepted versions of each manuscript. Additionally, English spelling (American / British) and referencing styles vary across the publications due to specific journal requirements.

Other related research outputs which were completed during the candidature period are listed in Appendix 14.

The undersigned hereby certify that the above declaration correctly reflects the nature and extent of the student and co-authors' contributions to this work.

Student signature: [redacted] Date: 13/02/2017

Main Supervisor signature: [redacted] Date: 13/02/2017

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Abstract

Background: Older people constitute the fastest growing age group in many Western prisoner populations, including in Australia. The growth among older prisoner populations necessitates an understanding of this group in order to generate effective management strategies. One particular concern is the mental wellbeing of older prisoners. This study aimed to determine the level of psychological distress among sentenced prisoners aged 50 years and older, to compare this level to that seen among younger prisoners and older people in the community, and to investigate the factors associated with psychological distress in this group.

Methods: A cross-sectional survey of 173 older (M = 63 years) and 60 younger prisoners (M = 34 years) in two Australian jurisdictions (Victoria and New South Wales) was conducted. The Kessler Psychological Distress (K10) scale was administered with prisoners, and additional data were collected from prisoner interviews, and participant health and corrections files. K10 scores were compared to community norms using data from the Australian Health Survey. Bivariate analyses were performed to identify independent variables associated with psychological distress levels among the prisoner sample; socio-demographic, criminal justice history, physical health, functional health and social factors were examined. Independent variables significantly associated with psychological distress scores were further examined in multivariate analyses (linear regressions) to identify the independent variables most consistently and strongly explanatory of variations in psychological distress among the older prisoner sample.

Results: Average K10 scores of the older prisoners were significantly lower than the younger prisoners' ($p = .04$), though the effect size was small ($r = 0.1$). Significantly higher distress levels were observed in comparison to the general population ($p < .001$), with older prisoners being

three times more likely to display very high levels of distress compared to community dwelling older citizens (12.3% vs 3.7%).

Higher psychological distress scores among older prisoners were significantly associated with a number of independent variables in bivariate analyses, including current employment status, level of past month exercise, gender, self-reported current health concerns, past month healthcare utilisation, healthcare access problems, a number of mental health variables (including listed mental health diagnoses and self-reported history of suicide, self-harm, and alcohol and drug help-seeking), experiencing physical difficulties in the prison environment, functional decline, number of physical health issues, history of prison victimisation, and self-reported level of safety and social support in prison.

Conclusions: Independent variables most prominently associated with variations in psychological distress among older inmates were self-reported levels of social support, self-reported safety, and ease of healthcare access. Difficulties in the built environment and mental health history were significantly explanatory of variations in older prisoner distress in two of the three regression models. The findings suggest that modifiable situational factors evident in current prison contexts are reasonably explanatory of variations in prisoner distress among older inmates.

While the levels of distress seen among older prisoners were significantly lower than that of younger prisoners, their higher levels of distress in comparison to community norms suggest a need for correctional services to be attuned to the mental health of the expanding older prisoner population.

Contents

List of tables

Please note that tables contained within published works are not included in this list.

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List of acronyms and abbreviations

ABI	Acquired brain injury
ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ANOVA	Analysis of variance
AOD	Alcohol and other drugs
BPI	Bipolar Psychological Inventory
CANFOR-S	Camberwell Assessment of Need Forensic Short Version
CES-D	Centre for Epidemiological Studies Depression Scale
CFD	Corrections file data
CSEC	Corrective Services Ethics Committee (New South Wales)
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders (Forth edition)
GHQ	General Health Questionnaire
GMS-AGECAT	Geriatric Mental State Examination - Automated Geriatric Examination for Computer Assisted Taxonomy
HFD	Health file data
HREC	Human Research Ethics Committee
HSCL	Hopkins Symptom Checklist
JHREC	Justice Human Research Ethics Committee (Victoria)
K10	Kessler Psychological Distress Scale (10-item version)
MMSE	Mini-Mental State Examination
MUHREC	Monash University Human Research Ethics Committee
NSW	New South Wales
OSS	Omnibus Stress Scale
SCRGSP	Steering Committee for the Review of Government Service Provision
SPSS	Statistical Package for the Social Sciences
SS	Structured Survey
STPI	State-Trait Personality Inventory
VACRO	Victorian Association for the Care and Resettlement of Offenders

Chapter 1. Introduction

"Pain is as diverse as man. One suffers as one can." – Victor Hugo

Prisons are the terminus of society's criminal justice administration process. They were once collectively dubbed the 'penal' system, derived from Latin root *poena*, also the name of the mythological Greek goddess of divine retribution. These same etymological origins underpin the words 'punishment', 'penalty' and 'pain'. Nowadays, Australian prisons have sought to divorce themselves from these penal foundations, having commonly become labelled as the 'correctional' system. This perhaps reflects the desire for a contemporary characterisation of these institutions as dispensers of a more dignified form of justice, devoid of the uncivilized physical brutality of times gone by.

And yet pain persists.

Contemporary research continues to evidence higher rates of distress experienced by prisoners vis-à-vis community norms (Butler et al., 2006; Edwards & Potter 2004; Vanhooren, Leijssen & Dezutter 2015). Mental health issues, self-harm and suicide – both attempted and successful – appear relatively more prevalent among inmate populations (Butler et al., 2006; Fazel et al. 2011; Hurley & Dunne 1991). The drivers of prisoner distress continue to be surrounded by considerable debate, particularly the respective roles played by individual differences and environmental factors (Bonta & Gendreau 1990; Liebling et al. 2005; Wright 1991).

In the "society within a society" that is the prison system (Sykes 1958a, p. 109), older prisoners have emerged as a key subgroup of inmates who have incrementally captured the interest of researchers and policy-makers alike. This field-specific interest mirrored the rise of broader

demographic research concerning population aging which occurred over the past half century (Schoeni & Ofstedal 2010). Initial studies of older prisoners emerged from the US in the 1960s and 70s, in response to the recognition of this population's growth (Aday & Webster 1979). Since this time, the number and proportion of older prisoners has substantially risen across many Western jurisdictions, including in the US, Canada, the UK and Australia (Aday & Krabill 2012; Baidawi et al. 2011; Uzoaba 1998). Correspondingly, a modest body of international peer-reviewed and grey literature concerning older prisoners has also arisen from the US (Aday 2003; Maschi, Suftin & O'Connell 2012; Williams, B.A. et al. 2006), the UK (Crawley & Sparks 2005b; Her Majesty's Inspectorate of Prisons 2004; Wahidin 2004), Canada (Greiner & Allenby 2010; Shantz & Frigon 2009; Uzoaba 1998) and Australia (Baidawi et al. 2011; Grant 1999; Leach & Neto 2011; Trotter & Baidawi 2015) among other countries. The majority of research concerning older prisoners has emerged from the US, where the numbers of incarcerated older inmates rose substantially during the 1980s and 1990s (Aday 2003). Studies of older prisoners to date have been diverse in their foci. Research has examined the drivers of the growth among older prisoner populations, the health and mental health issues of older inmates, and requirements for healthcare delivery to this population. The subjective experiences of older prisoners including prison adjustment, operational issues presented by the rising older prisoner population, and the costs and ethics of imprisoning older people have also been investigated.

Common among many of these studies is a description of the prison machinery's overall "institutional thoughtlessness" towards issues relating to age and ageing (Crawley 2005, p. 350). Prisons were not inherently designed to meet the needs of older offenders, particularly those presenting with health issues, functional declines and increasing frailty (Crawley 2005;

Potter et al. 2007). Some have suggested this mismatch between older people and the correctional environment constitutes a double-punishment of sorts (Prison Reform Trust 2014). In addition to their relative invisibility at the institutional level, older inmates typically occupy a lowly rank within the prisoner social hierarchy (Dawes 2009; Kratcoski & Babb 1990; Mann 2012a; Wahidin 2004), though exceptions exist for more notorious older inmates (Kerbs & Jolley 2007).

So how do these older prisoners fare?

This question arrives at the heart of this study, which seeks to understand the level and correlates of psychological distress experienced by older prisoners. This constitutes relatively unchartered territory in the research to date concerning older inmates, yet this research topic is not merely vain abstraction. As Liebling and colleagues (2005, p. 224) articulate, *"… we should be cautious, as well as more curious, about what the prison does"*, if we as communities are to be conscious distributors of justice. While an emergent body of qualitative research from the US and UK richly depicts the subjective experiences of older inmates, including distress, and the stressors and strains inherent in their incarceration experience (Crawley & Sparks 2005b; Mann 2012b; Wahidin 2004), few studies have sought to quantify the experiences of older prisoners. Significant statistical understanding in this area thus remains a research gap.

The study rationale is underpinned by human rights, pragmatic and economic considerations. A fundamental motivation for examining this subject is a concern for the rights of older inmates, who the United Nations have formally recognised as a vulnerable group of prisoners with identified special needs (United Nations Office on Drugs and Crime 2009). At a pragmatic level, understanding the degree and correlates of psychological distress can support the

identification of potential interventions for ameliorating the pains of imprisonment experienced by older inmates. Such information is useful from the perspective of correctional staff and management, who are faced with the task of responding to rising older inmate numbers. Furthermore, research in the general population reveals that psychological distress among older people is associated with worsening health, physical functioning, and wellbeing, as well as higher levels of healthcare utilization (Atkins et al. 2013). Ultimately there are therefore economic incentives to examine this issue, which is set upon the backdrop of limited correctional budgets and the high cost of prisoner healthcare (Maschi, Viola & Sun 2013).

1.1 The broader Australian Research Council Linkage project

This study was carried out as part of a broader project conducted between 2010 and 2013, which examined the needs and experiences of older prisoners in two Australian states (Victoria and New South Wales). The wider project was predominantly funded by the Australian Research Council, with additional monetary support provided by the Victorian project partners - the Victorian Department of Justice and the Victorian Association for the Care and Resettlement of Offenders (VACRO), a non-government prisoner support agency. Described in further detail in the Methodology Chapter, this broader project was a cross-sectional study involving interviews with older prisoners in these two states, as well as a comparison group of younger prisoners.

My research officer role in this broader project involved an array of activities, including the development of ethics applications and data collection instruments, as well as face-to-face data collection and data analysis. Through interviews with 90 older inmates across the two states involved in the research, I was exposed to the sheer diversity of older prisoner participants. Previous authors have described the startling lack of emotion evident in prison

research, particularly in relation to quantitative studies (Jewkes 2011; Liebling 1999). Accordingly, it seems imperative to impart some sense of these experiences, to avoid the potential for their disembodiment via the quantitative analysis presented over the forthcoming chapters.

On one occasion during data collection, a female prisoner aged in her fifties approached the Activities Centre of a particular prison, intending to participate in one of our research interviews. However less than 30 metres from my vantage point at the Centre's doorway she collapsed on a mound of grass, sobbing. The sight of other prisoners and staff continuing to move about, apparently blind to the scene of this woman's grief, was to me a poignant embodiment of the institutional thoughtlessness articulated in the previous literature. On another occasion an octogenarian male arrived on a wheeled walking frame to participate in an interview in a maximum security prison. During the interview, he described the misery of his daily existence, isolated by age, frailty, language barriers, fears of victimisation, and abandonment by his family. He spent his days devising solitary games to play in his cell, avoiding other prisoners which at times meant avoiding showering or medication pick-ups, and later crying himself to sleep. These sombre moments contrasted with others in which I was perplexed by the seeming cheerfulness and optimism of older prisoners. Some were keenly interested in and supportive of the study, their approach towards me apparently infused with a sense of generativity and nurturance.

These experiences somewhat conflicted with the sense of older prisoners I had gathered from much of the research to date, and thus generated curiosity as to what differences underpinned these disparities. Auspiciously, the data collected as part of the broader project enabled the investigation of these issues in greater depth.

1.2 Thesis overview

1.2.1 Thesis including published works

This thesis is structured as one which incorporates published works, a relatively novel approach to the doctoral dissertation in the Social Work Department in which I am located. There are various methods of approaching this thesis structure, including the development of a published work for each of the thesis chapters. The approach this thesis adopts is to primarily generate published works (journal articles) relating to the research findings, as well as an initial literature review paper. This approach was taken as these sections of the thesis constituted the most substantive contributions to the existing literature base. As indicated in the General Declaration, five published works have been included throughout the thesis.

1.2.2 Thesis outline

Six chapters in total are presented in the thesis. This Introduction Chapter is followed by a brief Background Chapter which describes the Australian prison system, and subsequently outlines the rise in the number of older prisoners nationally, as well as significant subgroups of this population in the local context.

A published article is then presented in Chapter Three, reviewing the literature specifically relating to psychological distress among older prisoners. This paper examines how psychological distress generally varies across the lifespan, before describing the evidence in relation to the mental wellbeing of prisoners more broadly. A number of original research articles and theses investigating the level and correlates of psychological distress among older inmates are reviewed, and findings and research gaps are both identified.

Chapter Four then presents the research question and specific sub-questions to be addressed in the study, followed by the detailed study methodology. Description and justification of the study design, sampling, data collection and analysis methods are presented, as well as a discussion of research ethics, the research context, and study validity and reliability.

The Results Chapter (Chapter Five) contains two components: an introductory section followed the presentation of four academic papers delivering the research findings. The introductory section describes the study sample, including a detailed exploration of the sample representativeness. The findings papers subsequently presented in Chapter Five have been published in social work, correctional health, and psychology and psychiatry journals, reflecting the diversity of disciplinary interest in this topic.

The thesis then concludes with an integrated discussion and conclusion presented in Chapter Six, which initially reviews and evaluates the chosen research approach, and then summarises the key findings, appraising the knowledge developed in relation to the previous research. The limitations of the study are described, before outlining the implications of the study findings for research, policy and practice.

The next chapter provides a brief overview of prison systems in Australia, and subsequently outlines the growth in the older prisoner population nationally.

Chapter 2. Background

This chapter provides a brief overview of Australian prison systems and the national older prisoner population, in order to provide contextual information to situate the ensuing literature review and study methodology.

2.1 The Australian prison system

In Australia, corrective services are the responsibility of the six State and two Territory governments, which may either deliver prison services directly or purchase them through private contractual arrangements (SCRGSP, 2016). Alternatively, a combination of both arrangements may be in place, as is the case in the two jurisdictions in which this study is conducted.

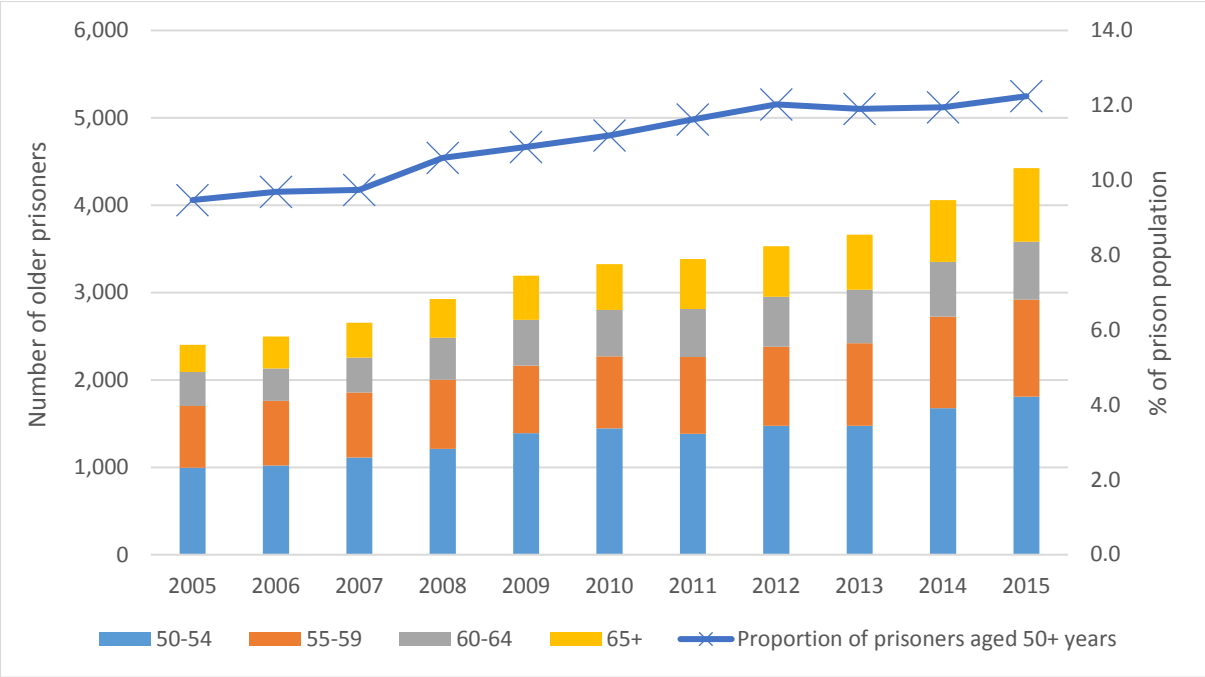
According to the most recently available data, as at 30th June 2015 there were 36,134 sentenced and un-sentenced prisoners in Australia, 92% of whom are male (Australian Bureau of Statistics 2015). A key feature of the national prisoner population is the over-representation of Indigenous (or Aboriginal and Torres Strait Islander) inmates. They form 27% of the prisoner population, though only two percent of the national population aged 18 years and over (ABS 2015). The latest national data quote the Australian imprisonment rate at 196 adult prisoners per 100,000 adult population in 2015 (ABS 2015). By way of international comparison, the World Prison Population List indicates that the 2015 Australian imprisonment rate (cited as 151 prisoners per 100,000 population) is comparable to that of England and Wales (148 prisoners per 100,000 population), and far lower than that seen in the United States (698 prisoners per 100,000 population) (Walmsley 2016). It should be noted that the ABS rate

compares the prisoner population to the national *adult* population rather than the national *total* population, accounting for the difference between the rates cited in the two reports.

2.2 The Australian older prisoner population and emerging sub-groups of older people in custody

While there remains a lack of consensus as to what constitutes an 'older prisoner', many studies have adopted a functional definition of 50 years and older (Baidawi et al. 2011)[1]. Australian prisoner census data show that prisoners aged 50 years and older represented 12.2% of the total (sentenced and un-sentenced) prisoner population in 2015 (or 4424 prisoners), compared to 9.5% in 2005 and around 6% in 1994 (ABS 1997; Australian Bureau of Statistics 2005, 2015). Figure 1 depicts the number and proportion of prisoners aged 50 years and older in Australia over the period 2005-2015.

Figure 1. Number and proportion of older prisoners in Australia 2005-2015



[1] While the issue of defining older prisoners is further discussed in the methodology chapter, for the sake of presenting the research context the threshold of 50 years and older is adopted in this section.

In terms of raw prisoner numbers, the older prisoner population has grown by 2023 additional older inmates – an increase of 84.3% – across Australian prisons over the period 2005-2015 (ABS 2005, 2015). This is more than double the percentage increase in the national prison population, which was 42.5% over the same time frame (ABS 2005, 2015). Despite this apparent growth, it should be noted that the proportion of prisoners aged 50 years and older across Australia has remained relatively stable since 2012, at approximately 12%.

Diversity among the older inmate population can be represented by either categorising older prisoners based on their criminal histories or by their socio-demographic characteristics. Previous research has often identified four mutually exclusive key groups of older prisoners based on variations in offending history (Goetting 1984, pp. 18-9), including:

- **"Old offenders"** who are first-time prisoners incarcerated when already at an older age;
- **"Career criminals"**, ageing recidivist offenders who enter and exit prison throughout their lifetime then return to prison at an older age;
- **"Oldtimers"** who are prisoners incarcerated for long sentences before they are older, who grow old while incarcerated; and finally
- **"Young short term first offenders"** who are incarcerated later in life (though just prior to becoming 'older') and who are serving shorter sentences than the oldtimers group.

These groups of older prisoners combine to create a stacking effect. Inmates serving long sentences remain in prison, ageing in place, while additional older prisoners continue to enter the correctional system. This combination is understood to generate the growth seen in the older prisoner population (Sterns et al. 2008).

Three socio-demographic subgroups of older prisoners that are relevant in the Australian context include prisoners aged 65 years and older, older female prisoners, and older Indigenous prisoners. These three subgroups have shown proportionally faster growth over the past decade compared with the overall older prisoner population (Baidawi et al. 2011). They are also likely to present with health care needs and risk factors that differ from the broader older prisoner population, hence their consideration as key emerging subgroups.

Elderly prisoners: Prisoners aged 65 years and older have been the fastest growing age-based subgroup of all older prisoners in Australia, experiencing a 170% increase between 2005 and 2015 (ABS 2005; Australian Bureau of Statistics 2015). In 2015, there were 842 prisoners aged 65 years and older across Australia (ABS 2015). Victorian data from 2009–10 indicated that prisoners aged 65 years and older were more likely to be serving their first term of imprisonment (70%) compared with older prisoners aged 50 to 64 years (54%)[2].

Older female prisoners: From 2005 to 2015, the percentage increase observed in the older female prisoner population (89%) was slightly greater than of the older male prisoner population over the same period (84%) (ABS 2005, 2015). However, older female prisoners comprise a relatively small proportion of older prisoners overall (6.4%) (ABS 2015). In 2015, there were a total of 282 female prisoners aged 50 years and older across Australia, forming 9.8% of the national female prisoner population (ABS 2015).

Older Indigenous prisoners: In 2015, Indigenous prisoners comprised 11.7% of Australian prisoners aged 50 years and older (ABS 2015). As discussed later in the Methodology Chapter (Chapter 4), there is an argument for adopting a modified lower-age threshold of 45 years and

[2] Unpublished data provided by the Victorian Department of Justice.

older in relation to Indigenous prisoners, given the lower life expectancy among Indigenous Australians. Data from the Australian Bureau of Statistics indicate that the median age of death was 55.4 years for Indigenous males and 58.5 years for Indigenous females, compared to 78.4 years for all males and 84.6 years for all females in Australia in 2011 (ABS 2011b). In 2015, there were 1143 Indigenous prisoners aged 45 years and older across Australia, and this subgroup has evidenced a 191.6% increase in size over the past decade (ABS 2005, 2015).

The Australian data to date verify the rising older prisoner population, together with key emerging subgroups. In spite of these facts, there was little in the way of policy relating to older prisoners in Australia at the time of commencement of this PhD candidature in 2014, though some earlier local studies drew attention to the issue in the preceding two decades (Grant 1999; Heckenberg 2006). Suffice to say the area of older prisoners remains a relatively new field of research in the Australian context. The next chapter broadens the horizon to consider the available research evidence concerning the level and correlates of psychological distress among older prisoners in the international literature.

Chapter 3. Literature Review

3.1 Preamble to Paper One

The first publication in this thesis reviews the literature relating to psychological distress among older people in prison. It begins by describing how psychological distress varies across the lifespan, and subsequently broadly outlines the landscape concerning mental illness among prisoner populations in general. A review of 24 research articles and theses specifically examining psychological distress among older inmates is then presented, with a view to identifying what is already known concerning the level and correlates of psychological distress in this population. The article also highlights the substantial proportion of the literature base in this area emanating from the United States, a country whose prisoner population – and older prisoner population - experiences significantly different conditions and circumstances of incarceration compared to Australia. The vastly greater number and proportion of older prisoners serving life sentences in the US provides one example of these disparities (Human Rights Watch 2012). This provides further impetus for local research concerning older prisoners, and for proceeding with caution when comparing findings internationally in this area.

This article was published in the *Journal of Forensic Social Work* in 2015, a peer-reviewed journal of the National Association of Forensic Social Work in the United States (ISSN 1936-9298 (Online)). While the journal is a relatively new publication, having been established in 2011, it was chosen for its specialisation and potential practitioner readership, both of which are well-suited to the study topic.

3.2 Paper One: Psychological distress among older prisoners: a literature review

This is an Accepted Manuscript of an article published in the Journal of Forensic Social Work online [January 4, 2016], available online:

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Abstract

Older people constitute the fastest growing age group among many prisoner populations worldwide, yet little is known about the mental wellbeing of this population. This article reviews research examining the level of psychological distress experienced by older prisoners, as well as the factors associated with this phenomenon. Findings suggest that older prisoners likely experience levels of psychological distress which are similar to that of younger prisoners and greater than that of older people in the general community. Personal, demographic, prison and social factors associated with psychological distress are also identified from the literature, and implications for future research are discussed.

Background

This article reviews the literature relating to the level of psychological distress and the factors associated with distress among older prisoners. Older prisoners are the fastest growing age group in various prison systems around the world, including in the US, UK, Australia, New Zealand, Japan and Canada (Aday & Krabill 2012; Baidawi et al. 2011; Howse 2003; Johnson 2000; New Zealand Department of Corrections 2014; Uzoaba 1998). While some older prisoners first enter prison at an older age, others grow old while incarcerated, and ageing recidivist offenders enter and exit prison over their lifetime (Aday 2003). There is however a lack of consensus on what age constitutes an older prisoner and definitions vary substantially, from 45 years and older to 65 years and older (Aday & Krabill 2012). Given the population growth of older prisoners, correctional services require an understanding of older people in prison to enable effective planning and management strategies.

One identified issue is the mental wellbeing of older inmates, at least one half of whom are estimated to suffer from mental illnesses, commonly depression or anxiety (Aday & Krabill 2011; Fazel, Hope, O'Donnell, et al. 2001; Hayes et al. 2012; Kakoullis, LeMesurier & Kingston 2010; Koenig et al. 1995). Two UK studies have characterised the mental health problems among older male prisoners as both underdiagnosed and undertreated (Fazel et al. 2004; Kingston et al. 2011), and evidence suggests that the mental health of older prisoners is worse than that of older people in the general community (Kingston et al. 2011; Koenig et al. 1995).

Given the aforementioned growth in this group, as well as the relatively high prevalence of mental illness among older prisoners, knowledge concerning psychological distress among this group will enable the monitoring of wellbeing, as well as the implementation of specific interventions which may improve the welfare of older inmates. There are also economic

incentives to examine this issue, given that psychological distress among older people is associated with worsening health, functioning, and wellbeing, as well as higher levels of healthcare utilisation (Atkins et al. 2013). In the context of limited correctional budgets and high prisoner healthcare costs, understanding psychological distress may prove useful to identifying interventions which can reduce expenses associated with incarceration and social costs following release.

Defining and measuring psychological distress. Measures and correlates of psychological distress are reported in prison mental health research, however the concept of 'psychological distress' is seldom defined with precision. This may be either due to a presumed common understanding of the term, or may reflect its reference to a range of experiences. Added to this uncertainty is the fact that studies adopt different terminology for psychological distress, including 'emotional distress' and 'mental distress'. This review is guided by the definition of psychological distress put forward by Mirowsky and Ross (2003b, p. 23), as "a number of uncomfortable subjective states", encompassing the mood and malaise (or bodily states) associated with depressive (e.g. sadness and worthlessness) and/or anxious states (e.g. worry and restlessness).

Psychological distress is generally considered in dimensional terms, where individuals may be ranked along a continuum of severity. Dohrenwend and others (1980, pp. 1229-30) draw an eloquent comparison between psychological distress and the measurement of temperature in medicine, stating that "elevated scores on these scales, like elevated temperature, tell you that something is wrong", rather than being indicative of a particular condition. As a dimensional construct, psychological distress is useful in understanding the whole experience of a population, rather than solely focusing on clinical cases of mental illness; this enables

exploration of psychosocial risk factors among subpopulations, can overcome problems of reporting on population mental health where substantial mental health comorbidity may be present, and may be useful for examining prevention of mental ill health (Newmann 1989). In contrast, categorical constructs of mental illness, which are conceptualised in dichotomous terms (yes/no decisions regarding the presence or absence of mental illness), are generally more suited to the purposes of ascertaining service delivery or treatment needs (Kessler 2002; Newmann 1989).

Quantitative prison research generally utilises standardised screening tools such as the General Health Questionnaire (e.g. Liebling et al., (2005)), the Brief Symptom Inventory (e.g. Edwards and Potter (2004)) or versions of Kessler Psychological Distress Scale (e.g. Butler et al., (2006)) to investigate psychological distress. As Kessler and colleagues (2002) explain, these screening scales inquire about a range of non-specific emotional, behavioural and cognitive symptoms (e.g. hopelessness, restlessness and concentration) which are characteristic of a broad range of mental health conditions.

While there is some debate as to whether qualitative or quantitative methods ought to be adopted in regards to researching psychological distress, there are arguments for tolerance of both approaches. According to Massé (2000), qualitative processes provide meaning and description of the lived experiences of psychological distress, while quantitative approaches can enable detection of shared characteristics and norms, and may be useful for public health purposes. For this reason, this article reviews both qualitative and quantitative studies.

Psychological distress across the lifespan. Understanding how psychological distress varies across the lifespan contextualises this issue in relation to older prisoners. In research with large scale community samples, the proportion of individuals meeting the diagnostic criteria for

mental illnesses such as depression and anxiety generally reduces across the lifespan (Kessler et al. 2005; O'Connor & Parslow 2010). However, the average levels of psychological distress remain relatively stable when measured by scaled instruments - slightly decreasing throughout adulthood, and moderately rising again in later old age (i.e. at 75 to 80 years) (Byles et al. 2012; Mirowsky & Ross 1992; O'Connor & Parslow 2010). The reasons for the discrepancy between levels of distress and clinical diagnoses are uncertain, however authors of historical studies in this area posited that psychiatric diagnoses may fail to capture distress which may be "attributable to disease, grief, poverty, restricted activity, and physical disability", effectively excluding "much of the sadness and malaise experienced by the elderly" (Mirowsky & Ross 1992, p. 192; Newmann 1989). Research has also determined that scaled instruments do not result in artificially inflated distress scores due to age-related changes in cognition, energy or social inclusion (i.e. there is no evidence of physiogenic bias). Therefore it has been suggested that the complex nature of questioning in certain diagnostic tools potentially minimises the rate of mental disorders identified in older individuals (Mirowsky & Ross 1992; O'Connor & Parslow 2010). This provides further impetus for research examining psychological distress among older prisoners, as opposed to that which solely focuses on mental illness.

Atkins and others (2013, p. 249) argue that later life depressive symptoms should be considered a public health issue among ageing populations given their association with physical morbidity and mortality (Katon & Ciechanowski 2002), decreased physical functioning (Stuck et al. 1999), high health service utilisation (Katon & Ciechanowski 2002; Luber et al. 2001), and increased risk of dementia (Jorm 2001). Higher levels of psychological distress are associated with various fixed factors, including female gender, lower educational status, and increasing age after the age of 75 years (Byles et al. 2012; Mirowsky & Ross 1992). However modifiable

factors associated with psychological distress are also identified, including levels of social support and engagement (Atkins et al. 2013; Golden, Conroy & Lawlor 2009; Paul, Ayis & Ebrahim 2006), physical activity levels (Strawbridge et al. 2002), sleep cycles (Atkins et al. 2013), functional status, and physical health burden (Paul, Ayis & Ebrahim 2006).

Psychological distress in prison populations. Compared to studies examining prisoner mental illness, research focusing on psychological distress is relatively sparse. Edwards and Potter (2004, p. 135) draw attention to this important distinction, and note that while mental illnesses may be "at least partially physiological in their basis", psychological distress may be more attributable to situational factors, and therefore potentially amenable to prevention and intervention. The greater research interest in mental illness among prisoners perhaps reflects both a biomedical orientation and clinical focus of much prisoner mental health research, which may seek to assess treatment and service delivery needs (Kessler 2002; Newmann 1989).

In comparison to community norms, relatively high levels of psychological distress are evidenced in quantitative cross-sectional studies of prisoners in Australia, the US, and the UK (Butler, T et al. 2006; Edwards & Potter 2004; Hurley & Dunne 1991; Liebling et al. 2005). However it is unclear whether such findings are reflective of the experiences of older prisoners, given that the research has been conducted in the general prison population.

The reasons underpinning the higher levels of psychological distress among imprisoned populations have been the subject of much debate, particularly among criminologists and sociologists (Bonta & Gendreau 1990). Initial theories regarding the impact of imprisonment were based on a deprivation model, which described the various "structural deprivations" inherent in the imprisonment experience, including the loss of liberty, deprivation of goods and services, frustration of sexual desire, and deprivation of autonomy and security (Sykes,

1958). Exposure to these chronic deprivations was thought to account for the high levels of prisoner distress observed.

Later research disputed the long-held belief that prisons were inherently destructive environments, citing the fact that not all individuals experienced psychological deterioration during imprisonment (Bonta & Gendreau 1990; Bukstel & Kilmann 1980). An alternative 'importation' model of prisoner adjustment suggested that the risk and resilience of individual prisoners accounted for their differential response to incarceration, including the risk of negative outcomes such as distress, self-harm and suicide attempts. Imported vulnerability includes such factors as a history of mental illness, suicide attempts, receiving psychological help and substance abuse, and also individual coping styles and abilities (Liebling et al. 2005; Porporino & Zamble 1984).

Finally, a combined model, in which prisons are understood to expose vulnerable populations to additional risk, has gained increasing support (Hochstetler, Murphy & Simons 2004; Liebling et al. 2005; Toch 1977; Wright 1991). Female gender, lower educational attainment, being early in the custodial sentence, and being a first time prisoner have also been implicated as factors associated with greater psychological distress among incarcerated populations (Butler, T et al. 2007; Edwards & Potter 2004; Liebling et al. 2005). Wright (1991) extends this concept, arguing that in addition to individual and environmental factors, the congruence between the person and environment should also be taken into account in understanding individuals' experience of incarceration. This is particularly pertinent in relation to older prisoners, for whom prison (including the built environment, regimes and programming) has been suggested as being largely unsuitable (Aday 2003; Crawley 2005; Wahidin 2004).

Methods

The review involved a search of English language articles located through online criminology, psychology and social work databases: Criminal Justice Abstracts, CINCH (Australian criminology database), International Bibliography of the Social Sciences, ProQuest Criminal Justice, PsychInfo, Ovid MEDLINE and Social Services Abstracts. Keyword search items included combinations of the terms prison/inmate, older/aging/ageing/elderly and distress/stress. The following criteria were used to guide article selection for the review: i) Empirical research (both qualitative and quantitative studies were included); ii) PhD theses, books or articles (in an English language peer-reviewed journal) published between 1974 and 2014; iii) Articles reporting on research which includes a sample of older prisoners aged 45 years or older; and iv) Description of levels of distress among older prisoners and/or factors associated with distress among this group.

Given that the review focuses on psychological distress, studies only reporting on specific mental illness diagnoses among older prisoners were excluded.

The studies. A total of 24 original research articles and theses were located which met the search criteria. The literature was published between 1981 and 2013, with the majority (17/24) published since 2000. Over one half of the studies originated from the US (14/24), and the majority (19/24) concerned older male prisoners only (three studies focused on older female prisoners, one study included both male and female participants, and one study did not specify the gender of older prisoners). The definition of older prisoners ranged from 45 years and older to 65 years and older, however the most common age thresholds adopted were 50 (13/24) or 55 years and older (5/24). Qualitative (10/24) research designs, primarily comprising in-depth semi-structured interviews with older prisoners, were relatively common among the located

studies. The quantitative (9/24) and mixed method studies (5/24) consisted of structured or semi-structured interviews, most of which utilised standardised instruments relating to psychological distress, such as the Brief Symptom Inventory (5 studies), Geriatric Depression Scale (2 studies) or other scales. Table 1 below summarises the research studies.

Table 1. Characteristics of studies of distress among older prisoners

Author(s) and year	Country	Age	Sample size	Participant gender(s)	Methods	Measure(s) of distress	Key results
Aday (1994a)	US		25	Male	Qualitative		Distress related to separation from family, stigma of crime, shock of imprisonment, shame, death of family/friends, fear of health declines and death, healthcare access and lack of stimulation.
Aday & Farney (2014), Aday & Krabill (2011)	US	50+	327	Female	Mixed	Modified version of Hopkins Symptom Checklist (HSCL)	HSCL - High/severe levels of depression in 46% of participants; high/severe levels of anxiety in 43% of participants.
Allen, Phillips, Roff et al. (2008)	US	50+	73	Male	Quantitative	Brief Symptom Inventory (BSI)	BSI – Subscale mean values: Depression (M = 4.01/20), Anxiety (M = 3.66/24). Better self-reported health associated with less anxiety and depression. Positive religious coping and feeling abandoned by God associated with greater depression.
Allen, Harris, Crowther et al. (2013)	US	45+	94	Male	Quantitative	Centre for Epidemiological Studies Depression Scale (CES-D)	CES-D - Older inmates and those reporting greater levels of positive religious coping endorsed fewer symptoms of depression. Those who reported greater levels of negative religious coping endorsed more depressive symptoms.
Alvey (2013)	Ireland	50+	14	Male	Qualitative		Study identified distress relating to health declines and fear of death, family issues (e.g. separation or breakdown).
Burling (1999)	US	55+	88	Male	Mixed	Geriatric Depression Scale (GDS), BSI	GDS – M = 8.2. Over half (65.5%) scored within normal range (0-10), 28.7% had mild (11-20), and 6.7% moderate-severe depressive symptoms (21-30). BSI – subscale mean values for older prisoners

							higher than non-patient norms: Depression (M = 61.1), (Norm=54); Anxiety (M = 57.1), (Norm = 53). Older prisoners had a higher Global Severity Index than non-patient population mean values (62.1 vs 53). Positive correlations between distress (somatic subscale) and various measures of healthcare utilisation.
Crawley & Sparks (2005; 2006)	England and Wales	65+	80	Male	Qualitative		Distress relating to prison entry shock, coping with prison regimes, health declines and fear of dying in prison, family issues (e.g. loss of contact), 'spoiled' identity and release/resettlement fears (e.g. victimisation). Heterogeneity in coping identified.
Dawes (2009)	Australia	50+	14	Male	Qualitative		Distress relating to coping with prison regimes (including lack of stimulation) and built environment issues, access to healthcare and social supports, and concerns regarding release.
Gallagher (1988)	Canada	45+	48	Male	Mixed	Adapted version of Omnibus Stress Scale (OSS)	OSS - Older prisoners had lower mean distress scores (M = 2.1) than younger prisoners (M = 2.5), but differences were not statistically significant. Total number of health problems, loneliness, and stress associated with mental distress in older prisoners.
Hayes, Burns, Turnbull et al. (2012)	US	50+	262	Male	Quantitative	Camberwell Assessment of Need Forensic Short Version (CANFOR-S)	CANFOR-S - Statistically significant difference observed in level of support needed for psychological distress between prisoners aged 50-54 years (higher) compared to those aged 65-69 years (lower).
Koenig (1995)	US	50+	95	Male	Quantitative	CES-D	CES-D – 24% of inmates scored in clinically depressed range (>15). Religious affiliation of prisoner and caretaker who had raised them, and frequent attendance at religious services (>weekly) were associated with lower depression scores.
Kopera-Frye, Harrison,	US	50+	111	Male	Mixed	BSI-18	BSI-18 – Mean subscale values for veteran and non-veteran older prisoners within normal range, suggesting mild symptomology:

Iribarne et al. (2013)							Depression (M = 9.86-9.88), Anxiety (M = 7.72-8.21), Somatic (M=9.38-10.58). No significant differences between veterans and non-veterans.
Kratcoski & Babb (1990)	US	50+	442	Both	Mixed		Distress relating to built environment issues (e.g. temperature, ventilation), social issues (e.g. interactions with younger prisoners), fear of victimisation for some (e.g. females), health and mental health issues.
Loeb & Steffensmeier (2011)	England and Wales	50+	42	Male	Qualitative		Distress relating to healthcare access, built environment issues (e.g. temperature, ventilation), diet management, interactions with younger prisoners and staff.
Mann (2012b)	England and Wales	55+	40	Male	Qualitative		Distress relating to physical and functional health declines, built environment issues, coping with prison regimes (including lack of stimulation), issues with healthcare access and quality, difficulties maintaining contact with family, and fears about release and resettlement.
Maschi & Baer (2013)	US	50+	667	Male	Quantitative	BSI	BSI – Mean subscale values of three groups of older prisoners defined by latent class analysis of responses to World Assumptions Scale. BSI subscale mean values: Depression (M = 0.554-2.231), Anxiety (M = 0.380-1.840), Hostility (M = 0.316-1.369), Paranoia (M = 0.850-2.271).
Maschi, Morgen, Zgoba et al. (2011)	US	55+	334	Male	Quantitative	Life Stressor Checklist-Revised (LSC-R)	LSC–R - Subjective distress associated with prison stress (M = 3.7/5), rated among the most distressing traumatic and stressful life events. Age had a significant inverse relationship to subjective traumatic and stressful life events.
Murdoch, Morris & Holmes (2008)	England and Wales	55+	121	Male	Quantitative	GDS	GDS – Mean score = 10.9. Around one half (49%) of prisoners scored below the threshold for depression (≤ 10), 48% scored in the mild depression range (11–20) and 3% scored in the severe depression

							range (≥20). Depressive symptoms were associated with advancing age, ill health, reduced cognitive function and history of psychiatric illness.
Phillips (1996)	England and Wales	55+	6	Unspecified	Qualitative		Distress relating to fear of victimisation, health issues, social isolation, built environment issues, fears about release and resettlement (e.g. finances and victimisation),
Phillips, Allen, Salekin et al. (2009)	US	50+	73	Male	Quantitative	BSI	BSI – Mean subscale values by lifer/non-lifer status: Depression (M = 3.39-4.40), Anxiety (M = 3.18-3.96). Slightly higher values for lifers (life sentence or sentence ending after age 75), but overall no significant differences observed between lifers and non-lifers.
Shantz & Frigon (2009)	Canada	50+	14	Female	Qualitative		Distress relating to physical and mental health issues and declines, healthcare access, resettlement issues (e.g. health and financial).
Teller & Howell (1981)	US	50+	92	Male	Quantitative	Bipolar Psychological Inventory (BPI)	BPI – Prisoners aged 50 years and older scored lower than younger prisoners on 9 of 15 BPI subscales, were significantly less likely to experience psychic pain ($p < .001$), and were less depressed than younger prisoners.
Vega & Silverman (1988)	US	63+	40	Male	Mixed	State-Trait Personality Inventory (STPI)	STPI – No significant differences between older and younger prisoners on measures of anxiety and anger. Older prisoners had significantly higher scores than standardization samples on state scales relating to anxiety and anger, and trait scales relating to anxiety.
Wahidin (2004)	England and Wales	50+	35	Female	Qualitative		Distress relating to prison entry shock, physical and mental health issues, healthcare access, limited programming, prison regimes and environment, social concerns (e.g. interactions with younger prisoners and staff, fear of victimisation separation from family).

Literature review findings

Level of psychological distress. A total of 14 studies were located which utilised measures relating to levels of psychological distress with non-probability samples of older prisoners (e.g. Brief Symptom Inventory, Geriatric Depression Scale and various measures of stress, anxiety and depression). However, only eight of these papers reported findings relating to distress and provided some context to these results (e.g. comparison to younger prisoners or community norms). Only one study (Aday & Farney, 2014) included older female prisoners, all but one were carried out in North America (US and Canada), and two comprised PhD theses. A range of assessment instruments were used in the papers, and findings were sometimes reported differently even between studies adopting the same instruments. It is therefore inappropriate to compare results between studies; however the relative level of psychological distress within each study's sample can be examined.

Comparison to younger prisoners. There was some variability between the three studies analysing the relative level of psychological distress of older and younger male prisoners. One study concluded that older prisoners were slightly less distressed and/or better adjusted than the younger prisoners surveyed, (Teller & Howell 1981), while two others reported no significant differences between older and younger prisoners on measures of anxiety and anger (Vega & Silverman 1988), or mental distress (Gallagher 1988). Based on 40 individual interviews, Vega and Silverman (1988, p. 153) proposed that older male prisoners "create a façade of adjustment", making them appear to be faring well, while experiencing similar emotional reactions to younger inmates, as measured with quantitative instruments.

Similarly, Gallagher (1988) found that while older prisoners identified fewer sources of stress than younger prisoners this did not translate to a statistically significant difference in distress

levels (as measured by an adapted version of the Omnibus Distress Scale). While the author described "total stress scores" of older prisoners (45 years and older) as significantly lower than those of younger prisoners (30 years and under), the measure adopted was a checklist of potential sources of stress identified from the literature, including items such as stress associated with loss of freedom or harassment from staff. When this same group of participants was asked to indicate "what sorts of things bother them in prison" the difference between younger and older prisoners in the rate of reporting stressors was negligible, perhaps indicating that the items included in the checklist did not adequately describe the stressors faced by older prisoners. In contrast to these two studies, Teller and Howell (1981) suggested that older inmates were better adjusted to prison than younger inmates (experiencing less psychic pain and less depression), following assessment using the Bipolar Psychological Inventory (BPI) of a sample of 92 older and 539 younger male prisoners.

Comparison to community norms. A total of five studies provided some comment as to the relative level of psychological distress or related symptoms among older prisoners compared to community norms. Two studies used the Geriatric Depression Scale (GDS) to examine distress among older male prisoners. These studies found mean GDS scores of 8.2 and 10.9, and reported that between 35 per cent (Burling 1999) and 51 per cent (Murdoch, Morris & Holmes 2008) of participants experienced mild to severe depressive symptoms.

Both studies indicated that the rates of depressive symptoms observed among older prisoners (aged 55 years and older) were higher than community norms, and cited papers reporting between 32 and 35 per cent of older people in the community screened positive for depressive symptoms using the GDS (D'Ath et al. 1994; Parmalee, Lawton & Katz 1989). However, articles citing community norms used samples including high proportions of females, and people aged

75 years and older (compared to prisoner samples), and one included older people in residential aged care – all groups anticipated to display higher levels of psychological distress. Given the lack of standardisation for age, gender and other factors, the rates of depressive symptoms in the older prisoner samples are likely to be much higher than expected in community-dwelling older people. The findings of these studies are similar to a study of older female prisoners by Aday and Farney (2014), which found that over one third of older female prisoners displayed high to severe levels of depression (46%) and anxiety (43%) (using a modified version of the Hopkins Symptom Checklist).

In contrast, using the Brief Symptom Inventory (BSI-18) Kopera-Frye and others (2013) compared older war veteran and non-veteran prisoners who were residing in a structured living program for older prisoners in the US. No significant differences emerged between veteran and non-veteran older prisoners. The authors concluded that the sample had BSI-18 scores which fell within a "normal" range (e.g. Depression M = 9.86-9.88, Anxiety = 7.72-8.21), suggesting only a mild degree of anxiety, depression and somatic symptoms. However, it is unclear whether the normative ranges referenced were standardised for age and gender, making it difficult to assess the accuracy of these findings. These results conflicted with Burling's (1999) findings (using the BSI), and another study by Vega and Silverman (1988) (using the State-Trait Personality Inventory) which both concluded that the psychological wellbeing of older prisoners was moderately worse than community norms. While this may indicate some impact of the structured living program in which the prisoners in the first study resided, a comparison group of older prisoners residing in general prison units was not included in order to investigate this possibility.

Overall, the available research suggests the level of psychological distress experienced by older prisoners is similar or slightly lower than that of younger prisoners, and is likely to be moderately worse than indicated by community norms of older people. At the same time, the available studies are limited in that they have exclusively originated from North America, and most are dated. Additionally, the studies utilise non-probability samples, they largely neglect to take into account other confounding factors such as time spent in prison, time remaining to serve and previous imprisonments, and few have included older female prisoners. Finally, it is unclear whether some of the instruments utilised have been validated with older populations, and comparison to community norms generally lacks standardisation for factors such as age and gender.

Factors associated with psychological distress. Examination of the located studies revealed four broad groups of factors which appear to be related to psychological distress among older prisoners: personal and demographic factors, sentence characteristics, prison factors and social factors.

Personal and demographic factors. While older prisoners are generally presented as a single group in the reporting of research findings, age among older prisoners may itself be a factor associated with psychological distress. Hayes and others (2012) noted that male prisoners aged 50 to 54 years in the US needed more support for psychological distress compared to those aged 65 years and older, as assessed using the Camberwell Assessment of Need Forensic Short Version (CANFOR-S). This finding conflicted with UK research by Murdoch and others (2008) which found a small but significant positive correlation between age and depressive symptoms (as measured by the Geriatric Depression Scale) in 121 life-sentenced male prisoners aged 55 years and older. This second study also found that higher cognitive function and greater levels

of education were associated with lower depression scores, however the effect of education was mediated by health factors – that is, older prisoners with lower educational levels were also found to have poorer health (Murdoch et al., 2008). The conflicting findings of these studies perhaps indicate that while older prisoners potentially experience more distress with age, they may be less in need of support in managing these symptoms. Alternatively, the findings could point to differences in patterns of distress between life-sentenced and non-life-sentenced older prisoners.

Research from the US and the UK found that between 85 and 93 per cent of older prisoners have health issues (particularly chronic cardiovascular, musculoskeletal and respiratory conditions); a higher prevalence than both younger prisoners and their counterparts in the general population (Aday & Farney 2014; Fazel, Hope, O'Donnell, et al. 2001; Hayes et al. 2012). Both chronic health issues and a history of mental health problems were significantly associated with more depressive symptoms among the older prisoners in a UK study (Murdoch et al., 2008). Positive associations between poorer health status (measured by number of health problems or higher healthcare utilisation) and higher scores on distress scales among older prisoners have also been found in two other US studies of older male prisoners (Burling, 1999; Gallagher, 1988). This association between health status and distress accords with the qualitative literature which describe difficulties accessing healthcare, worries of physical and mental deterioration rendering dependency, and fears of dying in prison as distressing situations faced by older prisoners (Aday 1994a; Aday & Krabill 2011; Alvey 2013; Crawley & Sparks 2006; Phillips, 1996; Wahidin 2004).

Research has also investigated the impact of being a first-time prisoner at an older age. Qualitative studies report that for older prisoners who encounter prison for the first time in

later life, imprisonment often constitutes “nothing short of a disaster, a catastrophe” (Crawley & Sparks 2005b, p. 347). Associated with this is the concept of a ‘spoiled identity’, entailing the loss of status and respectability, with little opportunity remaining for reclaiming social standing (Aday 1994a; Crawley & Sparks 2005b). Conversely, a quantitative study by Teller and Howell (1981) found that while better adjustment characterised first-time older prisoners, those who had experienced multiple imprisonments adjusted more poorly, and bore more resemblance to the younger prisoners surveyed when measured by the Bipolar Psychological Inventory. Disagreements between these studies perhaps reflect fluctuations in distress and coping levels throughout the sentence of first-time older prisoners, or potentially real differences in the experiences of older prisoners over the lengthy period between these studies.

Finally, the research suggests that individual differences in attitude and coping account for some variations in distress among older prisoners. Various coping strategies utilised by older prisoners have been described in the qualitative literature, including withdrawal and ‘making oneself invisible’, ‘attempts at mastery’ including denial, re-framing the imprisonment experience, drawing on previous life experiences of surviving adversity, pragmatism and acceptance (Aday 1994a; Crawley & Sparks 2005b; Mann 2012b; Wahidin 2004). Similarly, Maschi and Baer (2013) found that older prisoners’ basic assumptions and world views were related to symptoms of depression, anxiety, hostility and paranoia. Similarly, quantitative studies suggest that aspects of religiousness or spirituality may be associated with better emotional health among older male prisoners, including the number and frequency of spiritual practices and not feeling abandoned by God (Allen et al., 2008; Koenig 1995).

Sentence factors. As with prisoners in general (Liebling et al. 2005; Porporino & Zamble 1984), the qualitative literature describes the initial period of imprisonment as a particularly

distressing time for older inmates, often constituting a total shock, accompanied by a sense of the surreal or being caught in a nightmare, particularly for first time prisoners (Aday, 1994; Crawley & Sparks, 2005; Wahidin, 2004). In addition to heightened anxieties during prison entry, various concerns of older prisoners preparing for release have been described, including financial insecurities, fear of family rejection, and worries about not coping or of being victimised post-release (Aday 1994a; Crawley & Sparks 2006; Mann 2012b; Phillips, 1996). While the qualitative literature describes both the entry and release phases of imprisonment as times of heightened distress, there is limited quantitative evidence to evaluate whether these are ubiquitous experiences of older prisoners. Additionally, one quantitative study suggested that the amount of time spent in prison is unrelated to wellbeing among older people, though this finding is limited to a single US study (Murdoch, Morris & Holmes 2008).

Prison factors. The availability of age-appropriate environments, regimes, activities and services has often been raised in qualitative studies as crucial for older prisoners' coping with imprisonment (Aday 1994a; Aday & Krabill 2011; Dawes 2009; Gallagher 1988; Wahidin 2004). However, many correctional environments have been designed with the needs of younger prisoners in mind (Aday 2003; Crawley 2005). Qualitative studies from the US, UK and Australia have drawn attention to a lack of appropriate programs and services for older prisoners in a range of areas including accommodation, healthcare, education, work and exercise (Aday 2003; Dawes 2009; Loeb & Steffensmeier 2011; Mann 2012b; Shantz & Frigon 2009; Wahidin 2004). There also appears to be a lack of structure and programs to maintain engagement in daily prison life for prisoners who are past retirement age, and no longer wanting to or physically unable to work (Dawes 2009; Kratcoski & Babb 1990; Wahidin 2004). The absence

of age-appropriate activities and programs is understood to intensify the multiple losses experienced by virtue of imprisonment (Wahidin, 2004).

Tentative quantitative evidence of this association was found in one study of three US prisons, which found that older inmates who were engaged in more individual hobbies and activities at one prison location had fewer symptoms of psychological distress compared to older prisoners at other locations (Gallagher, 1988). There are a number of other prison-related factors which have been described as distressing for older prisoners, including noise levels, a lack of privacy, and the lack of regime differentiation for older prisoners (Crawley 2005; Dawes 2009; Gallagher 1988; Mann 2012b; Phillips, 1996).

There is also some evidence relating the security rating of institutions to older prisoner distress levels. Kratcoski and Babb (1990) found that older prisoners placed in minimum security prisons tended to adjust as well or even better than older prisoners held in facilities specially programmed for older people. Finally, accessibility of prison health and mental health services is raised as a consistent concern in qualitative studies of older prisoners internationally (Aday 1994a; Dawes 2009; Mann 2012b; Shantz & Frigon 2009; Wahidin 2004). In support of these qualitative findings, Murdoch and others (2008) found a positive association between unsatisfactory ratings of prison healthcare and depressive symptoms in older prisoners. However it was unclear if this association was secondary to other factors, such as poorer health status among those who rated prison healthcare as being unsatisfactory.

Social factors. Social interactions within the prison environment have alternately been depicted as distressing and supportive for older prisoners. The literature describes interactions with prison staff (including both officers and health staff) as frequently distressing for older prisoners (Crawley & Sparks 2005b; Gallagher 1988; Loeb & Steffensmeier 2011; Mann 2012b).

This includes infantalising, unresponsive, disrespectful and degrading interactions which conflict with older prisoners' sense of "place within the generational order" (Wahidin, 2004, p.169). At the same time, some research describes positive relationships between older prisoners and prison staff (e.g. older prisoners feeling treated with respect by staff and feeling that there was a staff member who they could turn to with a problem) (Gallagher 1988).

Interactions with younger prisoners are commonly described as a source of distress for older inmates, and are often characterised by a fear of victimisation, particularly for older prisoners experiencing declines in physical functioning (Aday, 2003; Dawes, 2009; Gallagher, 1988; Kratscoski & Babb, 1990; Mann, 2012; Vega & Silverman, 1988; Wahidin, 2004). Psychological victimisation by younger prisoners (such as insults, threats, fake punches and cutting in while in queues) and property victimisation (Dawes 2009; Kerbs & Jolley 2007), appear relatively common. Physical and sexual abuse have also been reported towards older prisoners, albeit less frequently (Aday 1994a, 2003; Kerbs & Jolley 2007). There is qualitative evidence that fear of such victimisation limits the level of social engagement of older prisoners, generating experiences of isolation (Dawes 2009; Wahidin 2004).

The limited literature pertaining to older females suggests that they are more likely to be socially isolated in prison, however there are inconsistent findings relating to the relative levels of fear of victimisation among older male and female prisoners (Aday 2003; Kratcoski & Babb 1990). Researchers have concluded that "Older and more frail inmates may devote a substantial portion of their day-to-day existence trying to minimise the dangers of imprisonment" (Aday & Krabill 2012, p. 213). Naturally, some studies have found that older prisoners prefer age-segregated placement in prison provided this does not prevent access to other facilities and services (Wahidin 2004). Qualitative studies indicate that social support

within prison also serves as a protective factor for older inmates, particularly in the context of disruption to their relationships outside of prison, and the lowly position in the prison social hierarchy occupied by many older inmates (Aday, 1994; Mann, 2012; Wahidin, 2004). In the absence of a supportive social milieu, isolation poses significant difficulties for some older prisoners (Aday, 1994; Crawley, 2005), and the accompanying loneliness has been found to be significantly associated with psychological distress among older prisoners (Gallagher, 1988).

While coping with changes in social relationships with family and friends outside of prison may pose a challenge to all prisoners, there are unique difficulties in this area for older inmates (Aday, 1994, 2003; Aday & Krabill, 2011; Alvey, 2013). Separation from family, particularly where older prisoners have occupied care-giving roles or have been in long-term partnerships, is often pointed to as a distressing experience, as is the difficulty of coping with death among family and friends outside prison (Aday 1994; Aday & Krabill, 2011; Crawley & Sparks, 2006; Wahidin 2004). Finally, changes in family and community social network circumstances, including as a result of offending within the family context, is described as a considerable source of grief in the qualitative literature concerning older prisoners (Aday 1994; Alvey, 2013; Crawley & Sparks, 2006; Shantz & Frigon, 2009).

Discussion

A growing body of literature, primarily originating in the USA, England and Wales has shone a light on the experiences of older inmates (Aday, 2003; Wahidin 2004; Wahidin & Aday 2005). Qualitative studies paint a picture of a largely vulnerable, marginalised and systematically overlooked older prisoner population. It is commonly understood that prisons are primarily designed for the young and able-bodied, who comprise the majority of inmates (Aday, 2003; Crawley 2005). As a result, research findings suggest that prison environments generally cater

poorly for the variety and complexity of needs of older prisoners, including their physical and mental health issues as well as programming, safety and reintegration needs (Aday, 2003; Crawley 2005; Wahidin 2004). This mismatch between the older prisoner and the correctional environment has been suggested to arise out of an "institutional thoughtlessness", rather than any deliberate attempt to punish or ignore the older prisoner (Crawley 2005). As Wahidin (2004, p. 166) describes, older inmates often find themselves "in the direct path of the operational needs of the prison machine, which fails to respond to difference, need and ability". Nonetheless, this situation has been suggested by some as constituting a double-punishment of the older inmate who must ultimately cope in an environment which may be inherently unsuited to their needs and life stage.

This review located a limited body of qualitative and quantitative evidence which specifically examined psychological distress among older prisoners, and the factors associated with this. Findings suggest that older prisoners likely experience levels of psychological distress which are similar to that of younger prisoners and greater than that of older people in the general community. At the same time, the quantitative evidence is mainly derived from studies of older male prisoners, and largely originates from North America, limiting its generalisability due to substantial differences between correctional systems internationally.

The review found a small body of literature concerning the factors associated with psychological distress among older prisoners. Further investigation could attempt to understand the relative contribution of these factors upon psychological distress among older prisoners, including physical and mental health issues, access to appropriate healthcare, experiences of victimisation, issues of the prison environment, social relationships and prison programs. Future research with contemporary samples of older prisoners, including females,

and examining a variety of prison environments (e.g. security ratings), would be useful in this respect. While there are an absence of quantitative studies examining gender differences in psychological distress among older prisoners, findings relating to the poor health and physical functioning of older females in prison, alongside detailed qualitative studies describing the impact of imprisonment upon this group suggest that further analysis of gender differences in distress among older prisoners is needed (Krabill & Aday 2005; Wahidin 2004; Williams, B.A. et al. 2006). Older war veterans form another subgroup who warrant further investigation, particularly any association between distress and coping experiences and previous military service or training.

The health and psychosocial nature of many of the factors which appear to be associated with distress among older inmates suggests a role for forensic social work in examining and addressing these issues. Overall, the review supports the usefulness of adopting an interactive model in examining psychological distress among older prisoners (Wright 1991). Older prisoners may enter correctional systems with certain vulnerabilities, such as physical and mental health issues, or may develop these throughout the course of their imprisonment. However the extent to which prisons provide a physical and social environment suited to the needs of older prisoners may impact upon the level of distress experienced. Contemporary research is needed to address the research gaps identified, and to provide current evidence as to the levels, drivers and potential solutions of distress among older prisoners.

Conclusion

An historical body of research demonstrates the heavy burden of psychological distress among prisoners. While individual, situational and environmental factors impacting upon prisoner distress have been broadly explored, there is little empirical data examining this phenomenon

among older prisoner populations. This issue warrants further investigation given that older inmates are the fastest growing segment of the prison population, and it remains unclear how relevant current models of distress are to the older prisoner group, who appear to represent a marginalised minority of the inmate population.

The small body of literature points to significant physical, mental and social concerns of older prisoner populations internationally, as well as barriers to safe and purposeful participation in the prison institution. Given the potential for distress to have such significant impacts upon older people in prison, (including in their social, mental and physical functioning), and the associated impact on the functioning and cost of correctional services, there is a clear argument for further empirical analysis of the factors associated with distress among older prisoners. Research pertaining to older people in the community has demonstrated that distress among older people is not an inevitable consequence of ageing, and there is significant potential for interventions to ameliorate such experiences. Such findings will have implications for various areas of corrections, including accommodation, programming and healthcare services.

References

Aday, R. H. (1994). Aging in Prison: A case study of New Elderly Offenders. *International Journal of Offender Therapy and Comparative Criminology, 38*(1), 79-91.

Aday, R. H. (2003). *Aging prisoners: Crisis in American corrections*. Santa Barbara, CA: Praeger Publishers.

Aday, R. H., & Farney, L. (2014). Malign neglect: Assessing older women's health care experiences in prison. *Bioethical Inquiry, 11*, 359-372.

Aday, R. H., & Krabill, J. J. (2011). Women aging in prison: A neglected population in the criminal justice system. Boulder, CO: Lynne Rienner.

Aday, R. H., & Krabill, J. J. (2012). Older and Geriatric Offenders: Critical Issues for the 21st Century. In L. Gideon (Ed.), *Special Needs Offenders in Correctional Institutions* (pp. 203-232). Thousand Oaks, CA: Sage.

Allen, R., Phillips, L., Roff, L., Cavanaugh, R., & Day, L. (2008). Religiousness/Spirituality and Mental Health Among Older Male Inmates. *The Gerontologist, 48*, 692-697.

Allen, R. S., Harris, G. M., Crowther, M. R., Oliver, J. S., Cavanaugh, R., & Phillips, L. L. (2013). Does religiousness and spirituality moderate the relations between physical and mental health among aging prisoners? *International Journal of Geriatric Psychiatry, 28*, 710-717.

Alvey, J. (2013). Ageing Prisoners in Ireland: Issues for Probation and Social Work. *Irish Probation Journal, 10*, 203-215.

Atkins, J., Naismith, S. L., Luscombe, G. M., & Hickie, I. B. (2013). Psychological distress and quality of life in older persons: relative contributions of fixed and modifiable risk factors. *Biomed Central Psychiatry, 13*, 249-259.

Baidawi, S., Turner, S., Trotter, C., Browning, C., Collier, P., O'Connor, D., & Sheehan, R. (2011). Older prisoners - A challenge for Australian corrections. *Trends and Issues in Crime and Criminal Justice* (426), 1-8.

Bonta, J., & Gendreau, P. (1990). Reexamining the cruel and unusual punishment of prison life. *Law and Human Behaviour, 14*(4), 347-372.

Bukstel, L. H., & Kilmann, P. R. (1980). Psychological effects of imprisonment on confined individuals. *Psychological Bulletin, 88*(2), 469-493.

Burling, K. L. (1999). A correlational investigation of the relationship between psychological distress, life satisfaction, and health care utilization among elderly male inmates. PhD Thesis, Iowa City: The University of Iowa.

Butler, T., Allnutt, S., Kariminia, A., & Cain, D. (2007). Mental health status of Aboriginal and non-Aboriginal Australian prisoners. *Australian and New Zealand Journal of Psychiatry, 41*, 429-435.

Butler, T., Andrews, G., Allnutt, S., Sakashita, C., Smith, N. E., & Basson, J. (2006). Mental disorders in Australian prisoners: a comparison with a community sample. *Australian and New Zealand Journal of Psychiatry, 40*, 272-276.

Byles, J., Gallienne, L., Blyth, F. M., & Banks, E. (2012). Relationship of age and gender to the prevalence and correlates of psychological distress in later life. *International Psychogeriatrics, 24*(6), 1009-1018.

Crawley, E. (2005). Institutional thoughtlessness in prisons and its impacts on the day-to-day prison lives of elderly men. *Journal of Contemporary Criminal Justice, 21*(4), 350-363.

Crawley, E., & Sparks, R. (2005). Older men in prison: Survival, coping and identity. In A. Liebling & S. Maruna (Eds.), *The Effects of Imprisonment* (pp. 343-366). Cullompton, Devon: Willan Publishing.

Crawley, E., & Sparks, R. (2006). Is there life after imprisonment? *Criminology and Criminal Justice, 6*(1), 63-82.

D'Ath, P., Katona, P., Mullan, E., Evans, S., & Katona, C. (1994). Screening, detection and management of depression in elderly primary care attenders. The acceptability and performance of the 15 item GDS and the development of the short versions. *Family Practice, 11*(260-266).

Dawes, J. (2009). Ageing Prisoners: Issues for social work. *Australian Social Work, 62*(2), 258-271.

Dohrenwend, B. P., Shrout, P. E., Egri, G., & Mendelsohn, F. S. (1980). Nonspecific psychological distress and other dimensions of psychopathology. *Archives of General Psychiatry, 37*, 1229-1236.

Edwards, W. T., & Potter, R. H. (2004). Psychological distress, prisoner characteristics, and system experience in a prison population. *Journal of Correctional Health Care, 10*(2), 129-149.

Fazel, S., Hope, T., O'Donnell, I., & Jacoby, R. (2004). Unmet treatment needs of older prisoners: A primary care survey. *Age and Ageing, 33*(4), 396-398.

Fazel, S., Hope, T., O'Donnell, I., Piper, M., & Jacoby, R. (2001). Health of elderly male prisoners: worse than the general population, worse than younger prisoners. *Age and Ageing, 30*(5), 403-407.

Fazel, S., Hope, T., O'Donnell, I., & Jacoby, R. (2001). Hidden psychiatric morbidity in elderly prisoners. *British Journal of Psychiatry, 179*, 535 – 539.

Gallagher, E. (1988). Older men in prison: Emotional, social, and physical health characteristics. (PhD Thesis). Burnaby, B.C.: Simon Fraser University.

Golden, J., Conroy, R. M., & Lawlor, B. A. (2009). Social support network structure in older people: underlying dimensions and association with psychological and physical health *Psychology, Health & Medicine, 14*, 280-290.

Hayes, A. J., Burns, A., Turnbull, P., & Shaw, J. J. (2012). The health and social needs of older male prisoners. *International Journal of Geriatric Psychiatry, 27*(11), 1155-1162.

Hochstetler, A., Murphy, D. S., & Simons, R. L. (2004). Damaged goods: Exploring predictors of distress in prison inmates. *Crime and Delinquency, 50*, 436-457.

Howse, K. (2003). Growing old in prison: A scoping study on older prisoners. London: Prison Reform Trust.

Hurley, W., & Dunne, M. P. (1991). Psychological distress and psychiatric morbidity in women prisoners. *Australian and New Zealand Journal of Psychiatry, 1991*(25), 461-470.

Johnson, E. H. (2000). Elders and Japanese corrections. In M. B. Rothman, B. D. Dunlop & P. Entzen (Eds.), *Elders, crime, and the criminal justice system* (pp. 222-235). Springer: New York.

Jorm, A. F. (2001). History of depression as a risk factor for dementia: An updated review. *Australian and New Zealand Journal of Psychiatry, 35*, 776-781.

Kakoullis, A., LeMesurier, N., & Kingston, P. (2010). The mental health of older prisoners. *International Psychogeriatrics, 22*(5), 693-701.

Katon, W., & Ciechanowski, P. (2002). Impact of depression on chronic medical illness. *Journal of Psychosomatic Research, 53*(4), 859-863.

Kerbs, J., & Jolley, J. (2007). Inmate-on-inmate victimization among older male prisoners. *Crime and Delinquency, 53*(2), 187-218.

Kessler, R. C. (2002). Categorical versus dimensional assessment controversy in the sociology of mental illness. *Journal of Health and Social Behavior, 43*, 171-188.

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S.-L. T., Walters, E. E., & Zazlavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine, 32*, 959-976.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey replication. *Archives of General Psychiatry, 62*(6), 593-602.

Kingston, P., Le Mesurier, N., Yorston, G., Wardle, S., & Heath, L. (2011). Psychiatric morbidity in older prisoners: unrecognized and undertreated. *International Psychogeriatrics, 23*(8), 1354-1360.

Koenig, H. G. (1995). Religion and older men in prison. *International Journal of Geriatric Psychiatry, 10*, 219-230.

Koenig, H. G., Johnson, S., Bellard, J., Denker, M., & Fenlon, R. (1995). Depression and anxiety disorder among older male inmates at a federal correctional facility. *Psychiatric Services, 46*(4), 399-401.

Kopera-Frye, K., Harrison, M. T., Iribarne, J., Dampsey, E., Adams, M., Grabreck, T., McMullen, T., Peak, K., McCrown, W.G., & Harrison, W. O. (2013). Veterans Aging in Place Behind Bars: A Structured Living Program That Works. *Psychological Services, 10*(1), 79-86.

Krabill, J. J., & Aday, R. H. (2005). Exploring the social world of aging female prisoners. *Women and Criminal Justice, 17*(1), 27-53.

Kratcoski, P., & Babb, S. (1990). Adjustment of older inmates: An analysis by institutional structure and gender. *Journal of Contemporary Criminal Justice, 6*, 264-281.

Liebling, A., Durie, L., Stiles, A., & Tait, S. (2005). Revisiting prison suicide: the role of fairness and distress. In A. Libeling & S. Maruna (Eds.), *The Effects of Imprisonment* (pp. 209-231). Cullompton, Devon: Willan Publishing.

Loeb, S., & Steffensmeier, D. (2011). Older inmates: Pursuit of good health: A focus group study. *Research on Gerontological Nursing, 4*(3), 185-194.

Luber, M. P., Meyers, B. S., Williams-Russo, P. G., Hollenberg, J. P., DiDomenico, T. N., Charlson, M. E., & Alexopoulos, G. S. (2001). Depression and service utilization in elderly primary care patients. *American Journal of Geriatric Psychiatry, 9*(2), 169-176.

Mann, N. (2012). Doing harder time?: The experiences of an ageing male prison population in England and Wales Surrey: Ashgate Publishing Limited.

Maschi, T., & Baer, J. (2013). The heterogeneity of the world assumptions of older adults in prison: Do differing worldviews have a mental health effect? *Traumatology, 19*(1), 65-72.

Maschi, T., Morgen, K., Zgoba, K., Courtney, D., & Ristow, J. (2011). Age, cumulative trauma and stressful life events, and post-traumatic stress symptoms among older adults in prison: Do subjective impressions matter? *The Gerontologist, 51*(5), 675-686. doi: 10.1093/geront/gnr074

Mirowsky, J., & Ross, C. E. (1992). Age and depression. *Journal of Health and Social Behavior, 33*(3), 187-205.

Mirowsky, J., & Ross, C. E. (2003). *Social causes of psychological distress*. New York: Walter de Gruyter.

Murdoch, N., Morris, P., & Holmes, C. (2008). Depression in elderly life sentence prisoners. *International Journal of Geriatric Psychiatry, 23*, 957-962.

New Zealand Department of Corrections. (2014). Trends in the Offender Population. Wellington: New Zealand Department of Corrections.

Newmann, J. P. (1989). Aging and depression. *Psychology and Aging, 4*(2), 150-165.

O'Connor, D., & Parslow, R. (2010). Mental health scales and psychiatric diagnoses: Responses to GHQ-12, K-10 and CIDI across the lifespan. *Journal of Affective Disorders, 121*, 263-267.

Parmalee, P. A., Lawton, M. P., & Katz, I. R. (1989). Psychometric properties of the Geriatric Depression Scale among the institutionalized aged. *Psychological Assessment, 1*(4), 331-338.

Paul, C., Ayis, S., & Ebrahim, S. (2006). Psychological distress, loneliness and disability in old age. *Psychology, Health & Medicine, 11*(2), 221-232.

Phillips, J. (1996). Crime and older offenders. *Practice: Social work in action, 8*(1), 43-54.

Phillips, L. L., Allen, R. S., Salekin, K. L., & Cavanaugh, R. K. (2009). Care alternatives in prison systems: Factors influencing end-of-life treatment selection. *Criminal Justice and Behaviour, 36*, 620-634.

Porporino, F. J., & Zamble, E. (1984). Coping with imprisonment. *Canadian Journal of Criminology, 26*(4), 403-421.

Shantz, L. R., & Frigon, S. (2009). Aging, women and health: From the pains of imprisonment to the pains of reintegration. *International Journal of Prisoner Health, 5*(1), 3-15.

Strawbridge, W., Deleger, S., Roberts, R., & Kaplan, G. (2002). Physical activity reduces the risk of subsequent depression for older adults. *American Journal of Epidemiology, 156*(4), 328-334.

Stuck, A. E., Walthert, J. M., Nikolaus, T., Büla, C. J., Hohmann, C., & Beck, J. C. (1999). Risk factors for functional status decline in community-living elderly people: a systematic literature review. *Social Science & Medicine, 48*, 455-469.

Teller, F. E., & Howell, R. J. (1981). The older prisoner: Criminal and psychological characteristics. *Criminology, 18*(4), 549-555.

Toch, H. (1977). Living in prison: The ecology of survival. New York: Free Press.

Uzoaba, J. H. E. (1998). Managing older offenders: Where do we stand? Ottawa: Correctional Service of Canada.

Vega, M., & Silverman, M. (1988). Stress and the elderly convict. *International Journal of Offender Therapy and Comparative Criminology, 32*, 153-162.

Wahidin, A. (2004). Older women in the criminal justice system: Running out of time. London: Jessica Kingsley Publishers.

Wahidin, A., & Aday, R. H. (2005). The needs of older men and women in the criminal justice system: An international perspective. *Prison Service Journal, 160*, 13-22.

Williams, B. A., Lindquist, K. L., Sudore, R. L., Strupp, H. M., Willmott, D. J., & Walter, L. C. (2006). Being old and doing time: Functional impairment and adverse experiences of geriatric female prisoners. *Journal of the American Geriatrics Society, 54*(4), 702-707.

Wright, K. N. (1991). A study of individual, environmental and interactive effects in explaining adjustment to prison. *Justice Quarterly, 8*(2), 217-242.

Chapter 4. Methodology

The previous chapter presented a review of the limited research to date concerning psychological distress among older prisoners, and the factors which may be associated with this phenomenon. This chapter includes the detailed study methodology, which is presented in summary form in the publications presented in Chapter 5. The current chapter provides an outline and justification for the research design, the study sample and settings, the data collection instruments and procedures, data analysis processes, as well as an overview of ethical issues considered in the study.

4.1 Research context

As noted in the Introduction Chapter, this study was carried out as part of a broader project examining the needs and management of older prisoners in two Australian states. The broader project was funded through a three year (2010-12) Australian Research Council Linkage Grant (LP100100599), and consisted of a research partnership between Monash University in Victoria, the Victorian Department of Justice (both Corrections Victoria and Justice Health Victoria), and the Victorian Association for the Care and Resettlement of Offenders (VACRO). These Victorian partner agencies each contributed cash and in-kind support to the larger project, and were involved in its conception and design. This broader research project was led by a team of five Monash University academic investigators across various disciplines including social work, aged health and aged psychiatry, business and economics fields. An advisory committee which included the academic investigators, representatives from the Victorian partner organisations, and representatives from the New South Wales Department of Corrective Services and the New South Wales Justice and Forensic Mental Health Network

oversaw the project. This committee provided input and feedback on the study design, implementation, and reports arising from the research, and also assisted the research team to gain access to secondary correctional data and prison data collection sites.

The aims of the broader study were to:

a) identify the issues faced by ageing prisoners in Australia in relation to their physical environment, activities and mental and physical health;
b) identify the issues faced by prison staff and management who supervise ageing prisoners;
c) identify the issues for ageing prisoners making the transition to the community following their release from prison
d) evaluate international best practice in relation to ageing prisoner detention, rehabilitation and post-release support;
e) analyse the extent to which the interventions received by ageing prisoners in Australia influence their rehabilitation and health outcomes;
f) analyse the costs of ageing prisoners relative to the general prison population and understand the drivers of those costs; and to
g) compile an evidence-based strategic framework for management of aged prisoners, based on projected future population of aged prisoners.

Mixed methods research was utilised in the broader study, and the research methods included face-to-face interviews with both older and younger prisoners (collection of both quantitative and qualitative short-answer data), data collection from prisoner health and corrections' files (all of which form part of this discrete PhD study) as well as interviews with a range of correctional stakeholders - prison management, officers, programs and health staff,

community corrections staff and representatives of community prisoner support agencies. Data collected from key stakeholder interviews is not referenced in this discrete PhD study.

The candidate's role in the broader study was as a research assistant. This included responsibility for:

a) designing the data collection instruments (with input from academic investigators as well as the advisory committee)
b) obtaining ethics approvals
c) arranging and administering Victorian data collection
d) assistance supervising New South Wales data collection, and collection of some data in New South Wales
e) aggregation and analysis of data
f) compiling research updates for the advisory committee and reporting for funding bodies, and
g) generating the final report of study with input and feedback from academic investigators and the advisory committee.

The fact that this doctoral study was carried out as a discrete component of a broader research project carries both advantages and disadvantages. The main limitation of this arrangement is that certain aspects of the methodology for the discrete study forming the basis of this thesis were dictated by the research aims and constraints of the broader study. In some cases, the methodological choices were not necessarily ideal for the PhD study; where relevant, these issues are discussed in the remainder of this chapter. On the other hand, one significant advantage offered by the broader research study is that it allowed the opportunity to conduct the PhD research. Without the established research agreements, resources and relationships

which facilitated the broader project, it would not have been possible to carry out this research in the absence of significant funding. Consequently, while there are acknowledged constraints to the circumstances under which this PhD study took place, it ultimately has been able to provide useful information which is novel in both Australian and international contexts. Further discussion concerning the research context as it relates to the study's methodology can be found throughout this chapter, with specific attention to the impact of the immediate and broader prison research environment located in Section 4.7.

4.2 Research question

This study aims to address the following research question: What is the level of psychological distress among older prisoners and what are the factors associated with this? As outlined in the literature review (Baidawi & Trotter 2015) the limited research suggests that the level of psychological distress among older prisoners is, on average, higher than community norms and fairly similar to that of younger prisoner populations. Based on the previous literature, it is also anticipated that psychological distress in this study would potentially be associated with age group, gender, number of previous prison sentences, physical and mental health status, healthcare utilisation, victimisation in prison and the level of social support. Thus, subsidiary questions for consideration include:

a) What is the level of psychological distress (as measured by the Kessler Psychological Distress Scale) among older prisoners, including gender and age breakdowns?

b) How does this compare to i) younger prisoners and ii) the general population of older people in Australia?

c) Is the level of psychological distress among older prisoners associated with:

i) Socio-demographic factors (age, sex, Indigenous status, country of birth, and education)?

ii) Criminal justice factors (prior imprisonments, time remaining to serve, offence type, and security classification)?

iii) Mental health factors (mental health diagnosis, history of suicide attempts and self-harm, history of alcohol and other drug problems)?

iv) Cognitive functioning?

v) Physical health factors (physical health conditions and current concerns regarding physical health)?

vi) Physical functioning (level of functional independence, physical difficulties within the prison environment)?

vii) Health care factors (e.g. health care access and issues accessing health care)?

viii) Prison experience (safety/victimisation, social support, protection status, prison employment and program participation)?

d) Which factors explain relatively more of the variance in K10 scores of older prisoners?

The design of the discrete study forming this thesis accords with the proposition by Grix (2002, p. 180) that research should be 'question-led'. Specifically, this implies that the design and methods chosen ought to directly relate to the research question, and be justified as an appropriate means, and perhaps the only appropriate means, to address the question(s) posed. Accordingly, this chapter not only describes the research design, but demonstrates the logical connection between the research question and the approach adopted in the study. However, it is first necessary to outline the researcher's philosophical position.

4.2.1 Ontology and epistemology

Given the plurality of ontological and epistemological understandings concerning the nature of reality evident in the human and social sciences, the philosophical assumptions of research in these fields must necessarily be explicit. According to Grix (2002), such clarity provides the basis for a rational connection between the various elements of a piece of research – including the research question, methodology and methods – and minimises confusion in theoretical debates.

Broadly speaking, this research takes a critical realist ontological position, which presumes the existence of a reality external to the mind of the perceiver (Sayer 2000). In contrast to a purely objectivist position, realism acknowledges "a distinction between the objects that are the focus of their enquiries and the terms they use to describe, account for, and understand them" (Bryman 2012, p. 29). Critical realists advance the position of empirical realists, claiming that "the real is whatever exists, be it natural or social, regardless of whether it is an empirical object for us" (Sayer 2000, p. 11). Bryman (2012, p. 616), describes this as "a middle position between positivism and postmodernism… claiming that an entity can exist independently of our knowledge of it, while also asserting that access to the social world is always mediated". Furthermore, critical realists accept that mechanisms which produce social phenomena, while real, are not always directly observable and may only be discernible by their effects (Bryman 2012).

This ontological position is compatible with our research question, which seeks to understand the level and correlates of psychological distress among older prisoners. At its core the question is more concerned with measurement than with subjective meaning or experience. This simultaneously implies and necessitates an ontological position which assumes the

existence of an external reality, which is theoretically - though not necessarily practically - quantifiable. The research question assumes, for example, that psychological distress is not simply subjective meaning, but "a real suffering … expressed through discrete cognitive, somatic, emotive, and behavioral manifestations" (Massé 2000, p. 422).

While research ontology refers to our beliefs or understanding about what constitutes reality, epistemology concerns our understanding of how we can acquire knowledge about that presumed reality (Grix 2002). Given that the study seeks to examine the level of, and factors associated with psychological distress among older prisoners, it holds the basic assumption that distress is a measurable entity. This is a positivist stance to approaching the acquisition of knowledge about reality, which "strives toward measurability, objectivity, reducing uncertainty, duplication, and the use of standardized procedures" (Grinnell & Unrau 2011, p. 33). One could argue that a strictly positivist approach could be applied to address the research question, however this directly contradicts contemporary understandings of scientific inquiry, which have repeatedly demonstrated that the act of observation or measurement may impact upon the phenomenon being observed or measured. For example, it has been shown that socio-demographic characteristics of interviewers such as race and gender can impact upon the data collected in survey research (Davis et al. 2010). It is thus prudent to acknowledge the limitations and contestability of the knowledge resulting from a positivist research approach.

This research was therefore carried out within a post-positivist tradition of inquiry, which while aiming to gather knowledge of reality, recognises this knowledge as being relative, theory-laden and probabilistic; the knowledge obtained is effectively regarded as warranted beliefs, rather than unchallengeable truths (Braranov 2004; Corbetta 2003; Crotty 1998b; Phillips, DC 1990). The post-positivist stance adopted in this study accepts that there is an interaction

between the 'researcher' and the 'researched', that undoubtedly various factors including the involvement of the researcher, impact upon the degree to which research findings can be said to be truly representative of reality (Crotty 1998a, p. 29). At the same time, the post-positivist researcher does not abandon the attempt to understand the presumed reality, but rather endeavours to minimise and acknowledge the impact of these factors upon the research process and findings.

Although the ontological and epistemological position has been described and justified based on the research question, it is prudent to acknowledge the controversy surrounding these issues in prison research. As Liebling (1999, p.148) explains, it is a research field which often sees "sociological and medico-psychological approaches competing for epistemological prominence" (Liebling 1999, p. 148). This is particularly relevant in the area of prisoner distress, where the 'pains of imprisonment' identified in qualitative (and commonly non-objectivist) social inquiry lie in contrast with the relative absence of pain in many positivistic quantitative studies (Bonta & Gendreau 1990; Liebling 1999). In effect, adopting an epistemological stance in this area seems akin to being asked to "choose sides" in a debate where accusations of bias fly rampant from both directions (Liebling 2001). The adoption of a post-positivistic position will allow philosophical space for the exploration of these issues, particularly as they pertain to the identification of prisoner distress.

4.2.2 Research level and approach

The purpose of a piece of research should have implications for the design of the study. According to Rubin and Babbie (2013), social work research generally fits into one of three major categories, based on the purposes of the research: *exploratory research* seeks to explore a topic and provide a beginning familiarity with it; *descriptive research* seeks to describe some

aspect of the study topic in greater detail and *explanatory research* seeks to explain particular aspects of the topic, looking for example to address questions of causality. In addressing the research question, this study fits within a descriptive level design; it seeks to describe psychological distress in the study population (older prisoners) and the factors which are associated with this phenomenon, without necessarily attributing causality to these factors. This level of design is appropriate given the largely exploratory literature base in the area, identified in the literature review (Baidawi & Trotter 2015). This provides a basis upon which to generate further understanding of psychological distress among the older prisoner group (Grinnell & Unrau 2011).

Descriptive studies can feasibly utilise either quantitative or qualitative research methods, depending on whether the data required to address the research questions are quantitative (numerical) or qualitative (non-numerical, e.g. words) in nature (Grinnell & Unrau 2011, p. 20). In the context of the research question generated from the literature review, as well as the ontological and epistemological perspectives which have been adopted, a quantitative approach is appropriate to generate the data required to address the research question. While it could be argued that a qualitative approach may potentially be used to uncover *factors* associated with psychological distress among older prisoners, describing the *level* of psychological distress among the population is clearly a quantitative exercise. In contrast to qualitative descriptive studies, in which description tends to "refer to a thicker examination of phenomena and their deeper meanings", quantitative descriptive studies typically attempt to describe the characteristics of a population, as in the present study (Rubin & Babbie 2013, p. 51).

4.2.3 Methodological design

The research employed a cross-sectional survey design, which involves the use of surveys to examine "a phenomenon by taking a cross section of it at one point in time" (Rubin & Babbie 2013, p. 54), in this case psychological distress. As described by Bryman (2012, p. 59), cross-sectional designs generally incorporate a number of elements, including examination of more than one case at a single point in time, with the possibility of examining patterns of association. While this research design was ultimately chosen for the purposes of the broader ARC-Linkage study, its suitability for this discrete study should be justified. Cross-sectional survey designs are common among descriptive studies seeking to establish the prevalence of a phenomenon within a population (Rubin & Babbie 2013), and particularly common in prison-based mental health research (Andersen 2004). The justification for this approach therefore arises from the feasibility of the design, and its suitability for collecting the quantitative descriptive data needed to address the research question. In particular, the capacity of a cross-sectional design to estimate the prevalence of a particular phenomenon across a population, and to represent diversity within a population are both useful in the present study (Bourque 2004). Designing the research as a longitudinal study could have been the other potential option. While such an approach would have been useful for understanding changes that occur for individuals over time (e.g. for elucidating the impact of changes in prison, in physical health status, and time spent in prison on the individual's level of distress) it would also require greater resources (due to the need for sustained data collection) and greater intrusion upon prisons which was not feasible in the current study.

A final possibility for the collection of quantitative descriptive data is a case control design. A case control design involves the comparison of a sample possessing the relevant outcome or

condition (cases) and compares this group to those without the outcome or condition (controls) across one or more specific variables of interest (Rubin & Babbie 2013, p. 201). In the current study, such a design could be used – for example, by applying arbitrary criteria (such as a particular score on a screening scale) constituting the presence or absence of psychological distress. While this design could provide information as to the factors associated with psychological distress among older prisoners, it is unsuited to examining the *level* of psychological distress across the population, and hence would not address the first research question.

Although justifiable based on its suitability and feasibility for addressing the research question, cross-sectional designs possess certain limitations, both as a general research approach and specifically in the context of prison (and prisoner mental health) research. The first main issue concerns the single time point at which data is captured. The data collected by cross-sectional research designs are sometimes referred to as "snapshot" data, given that they represent an overview of particular population or sample at a specific point in time. Akin to viewing a photograph, it is not possible through the use of cross-sectional data to establish patterns of individual change over time, or to determine causality, which requires a demonstration of chronological consecutiveness (Maxfield & Babbie 2011).

In the current study, a cross-sectional design cannot ascertain information concerning fluctuations in distress levels throughout a prisoner's sentence, or in response to certain factors (e.g. changes in prison location, health status or following particular incidents, such as news of parole being granted or a death in the family). As Andersen (2004, p. 8) indicates, cross-sectional prison research "can at the most lead to associations, not causal relationships". Furthermore, it cannot be guaranteed that different data would not be generated (for

example, regarding the level of psychological distress among older prisoners) if the exercise were to be repeated a few months subsequently, or with a sample obtained from different prison locations (Andersen 2004; Roesch, Ogloff & Eaves 1995).

The issue of fluctuations over time is relevant in research relating to prisoner distress. As discussed in the literature review (Baidawi & Trotter 2015), distress levels are generally understood to be higher at entry into prison; this might be due to various factors including the shock of imprisonment, the potential for substance withdrawal, and issues relating to remand (e.g. uncertainty regarding bail or sentencing). Acknowledging these factors enables them to be considered in planning, sampling, data collection and reporting of prisoner mental health or wellbeing research, providing context for any findings. In the case of this study, the definition of 'prisoner' outlined in the next section excludes adults held on remand. This exclusion of un-sentenced prisoners prevents the likely over-estimation of older prisoners' distress levels which may have resulted from the inclusion of this group.

The second point to understand regarding cross-sectional designs is the importance of sample representativeness, both in terms of individual and institutional characteristics. Contextualising data obtained with reference to the sample's representativeness of the overall population is common in quantitative cross-sectional research, particularly where generalisability of findings is a concern (Bryman 2012, p. 177). The issue of institutional differences is pertinent in prison-based research. While perhaps commonly understood as fairly consistent entities, in reality individual correctional institutions possess very different features and prisoner populations, including disparities in prisoner gender, security ratings and prisoner protection characteristics, among others (Roesch, Ogloff & Eaves 1995). Moreover, these characteristics are not static, but may fluctuate over time as dictated by the nature of

prisoner populations, resources and policy priorities in a particular jurisdiction. Accordingly, it is useful to also contextualise any prison research data by reference not only to the representativeness of the sample, but also of the facilities in which data collection occurs. This is not to say that a sample must be (or can be) perfectly representative; however, it ought to be clear just how the sample varies from the broader population and what impact this might have on findings, in order to provide meaning.

Finally, one practical consideration associated with cross-sectional research designs involving large samples and face-to-face data collection methods is the likely requirement of multiple interviewers (Andersen 2004). This not only has resource implications, but also introduces the potential for interviewer-related factors to impact upon research findings.

A cynical perspective might conclude that these limitations render such data devoid of any real meaning or usefulness. However so as long the data are understood and interpreted within these limitations, rather than in ignorance of them, their meaning remains valid. Just as a photograph cannot show us how the subject appeared on the following day, nor explain the reason behind a facial expression, it nonetheless remains one depiction or representation of the subject. Similarly, in assisting to "accumulate the database needed to obtain a clearer picture" (Roesch, Ogloff & Eaves 1995, p. 3), cross-sectional data remains useful in illuminating the needs and characteristics of specific prisoner subgroups, such as older inmates, as intended in the current study (Anderson, 2004; Roesch, 1995).

4.3 Study sample

In quantitative research, sampling serves multiple functions including economising resources, creating manageable datasets, generating data which meet the assumptions of statistical tests

and meeting the requirements of experiments (Champion 2006, p. 154). Planning the intended nature of the sample in the current study required attention to the study's aims, including those of the broader study, as well as the resources available, both in terms of time and budget.

4.3.1 Definition of key terms relating to the sample

The broader project intended to include samples of both older and younger prisoners with a view to understanding the differences in the characteristics, needs and experiences of these inmate groups. In this discrete study, data from younger prisoners are also included for comparison purposes. So as to identify a sample for the cross-sectional survey, the first step was to define *who* was to be considered an older prisoner; that is, it was necessary to define each of the key terms *older* and *prisoner.* The operational definitions of these terms which were adopted are outlined and discussed below:

Older: As indicated in the literature review (Baidawi & Trotter 2015), there remains a lack of consensus on what constitutes 'older' in terms of prisoner populations, and definitions vary substantially, ranging from 45 years and above to 65 years and above (Aday & Krabill 2012; Stojkovic 2007; Yorston & Taylor 2006). Despite the variability, many studies have defined 'older prisoners' as those who are 50 years of age and older, which was the threshold adopted for the current study (Hayes et al. 2012; Kerbs & Jolley 2007; Kingston et al. 2011; Loeb & AbuDagga 2006; Maschi & Baer 2013). This was also the most commonly adopted age threshold among previous studies of distress among older prisoners, having been utilised in 54% (13/24) of the studies examined in the literature review (Baidawi & Trotter 2015). Additionally, a review of health-related literature relating to older prisoners also indicated 50 years and older was the most commonly-applied age threshold in that body of research (6/21 studies) (Loeb & AbuDagga 2006).

It should be noted that a similar lack of consensus exists in the broader gerontology and social sciences literature regarding the lower threshold denoting older age. This is perhaps unsurprising given that the concept of an 'older' person is socially constructed, and therefore subject to variations across culture and time (Calasanti & Slevin 2001). The United Nations holds an agreed lower cut-off of 60 years to refer to the older population, but uses the lowered threshold of 50 years in studying older people in Africa, given the lower median age of death in this population (World Health Organization 2012). Similarly, while 65 years is often considered the lower age threshold of 'older' in Australian health and welfare data (Australian Institute of Health and Welfare 2007), the utilisation of 50 years and older as an appropriate gauge for 'old age' in prison can be justified on both intellectual and pragmatic grounds.

Firstly, prison populations are relatively young compared to the broader Australian population. In 2012, data from the Australian Bureau of Statistics indicated that the median age of the general population was 37.4 years, compared to 34 years for the prison population (ABS 2012a, 2012c). The relatively lower median age of the national prisoner population, despite the exclusion of those younger than 17 or 18 years among this group (depending on which jurisdiction is examined), illustrates the generally youthful nature of the prison population. It therefore follows that the definition of 'older' in terms of the youth-heavy prisoner population ought to be relatively younger than the age thresholds adopted for the general population.

A second argument for the adoption of lower age thresholds for the definition of 'older' among prisoners is the frequently claimed 10 to 15-year differential between the overall health of older prisoners and that of the general population (Fazel, Hope, O'Donnell, Piper et al. 2001; Loeb, Steffensmeier & Lawrence 2008). This statement regularly appears among the scholarly and grey literature regarding older prisoners (see, for example Fazel et al. (2004), Grant (1999)

and Mitka (2004)). However it is worth examining the veracity of this claim to ensure, as Flynn (2013) describes, that we do not confuse “statistical rumours” with research-based evidence.

The first appearance of evidence supporting this statement was located in a 1994 study authored by Ronald Aday, one of the most influential authors in the area of older prisoners. Aday (1994b, p. 48) reported on a nationwide survey of US correctional agencies, stating that, “Several correctional officials suggested that the typical inmate in his fifties has a physical appearance of at least 10 years older. In addition, the declining health of many inmates contributes to them being "elderly" before their time.” This is relatively anecdotal and observational evidence, particularly given that it arises from correctional officials, who may have limited knowledge of the breadth of ageing and health experiences among the general community.

The second source of evidence arises from three separate studies examining the health issues of older prisoners. Each of these studies reported that the health status of older prisoners was similar to that of relatively older people in the general community, furthering the argument that perhaps a lower threshold ought to be used to denote older age among prisoners. For example, a study by Fazel and colleagues (Fazel, Hope, O'Donnell, Piper et al. 2001) reported that the health problems of 203 male prisoners aged 60 years and older (as recorded in medical notes and self-reported at interview) were significantly worse than the self-reported health found in a community-based survey of slightly older men (n = 895, aged 65 to 74 years). Additionally, Loeb and colleagues (2008) found no statistically significant differences in the number of self-reported health conditions and self-rated health between a sample of US male prisoners (n = 51, average age 57 years) and a relatively older sample of community-dwelling males (n = 33, average age 72 years). Finally, a recent UK study investigated the health of 165

older male prisoners using a combination of participant self-report and analysis of prisoner case notes (Hayes et al. 2012). The study's findings indicated that there were few differences in the health of prisoners aged 50 to 59 years and those over 60 years of age, suggesting that health-related issues pertaining to ageing in prison may begin to be relevant by the age of 50 years.

The findings of these three studies indicate a consistent theme, however their generalisation to all older prisoners is problematic given that all of the studies only included male prisoners and the study by Loeb and colleagues (2008) included a relatively small sample, where the representativeness is unclear. Additionally, prisoner health data in these studies was either based upon participant self-report or examination of medical files, rather than direct physical examination, and is therefore subject to various forms of bias and error when used as a proxy measurement of physical health (Butler, Burkhauser, Mitchell, & Pincus, 1987; Goldman et al. 2003).

The overall level of evidence to support the claim of a 10 to 15-year health differential between older prisoners and that of older people in the general community could be described as moderate based on the available data, and not applicable to older female prisoners. Nevertheless, the evidence does suggest, for older male prisoners at least, that there is a disproportionate burden of physical health issues compared to older people in the general community. Given that these differences can be seen in the available studies by age 60, and the suggestion in Hayes et al. (2012) that there is little difference in the health needs of older prisoners aged 50 to 64 compared to those aged 65 years and older, it is reasonable to suggest the lower threshold of age 50 is appropriate to examine issues pertaining to ageing in prison. A further practical advantage of adopting the age of 50 (as opposed to a higher age) as the

threshold for older age in prison is that it allows for the inclusion of a higher proportion of older female prisoners, who are represented in smaller numbers and proportions relative to older male prisoners in Australia (ABS 2013b).

A modified definition of 'older prisoner' was adopted in the current study for Indigenous prisoners (45 years and older) to account for the lower median age of death in this population compared to non-Indigenous Australians (55.4 years for Indigenous males and 58.5 years for Indigenous females, compared to 78.4 years for all males and 84.6 years for all females in Australia in 2011) (ABS 2011b). Data from the Australian Institute of Health and Welfare indicate that the age distribution of Indigenous Australians declines more sharply beyond the age of 45 years compared to non-Indigenous Australians, providing further impetus to consider this an appropriate marker for older age among this population (AIHW 2007). While other Australian studies of older prisoners have mentioned the lower life expectancy of Indigenous Australians (see for example Dawes (2009) and Grant (1999)), neither proscribes a different age threshold for defining older in reference to Indigenous prisoners. The exception to this is a 2011 secondary analysis of correctional data of older prisoners in New South Wales (Leach & Neto 2011); the authors adopted 45 years as a lower age threshold for older Indigenous prisoners, citing the prior work of the candidate and colleagues (Baidawi et al. 2011) which had proposed this definition for older Indigenous prisoners. In the international literature, there is a similar lack of attention to the definition of older as it might pertain to Indigenous prisoner populations. For example, the Aboriginal populations of Canada are similarly over-represented among the national prisoner population (Dauvergne 2012), yet the issue of defining older as it relates to this population is not discussed in the available studies (for example see Greiner and Allenby (2010) and Uzoaba (1998)). One explanation for this lack of

attention may be that the Canadian Indigenous life expectancy gap, according to official data, is far smaller than the Australian Indigenous life expectancy gap (AIHW 2011).

Prisoner: The definition of prisoner which was applied included adult prisoners who were sentenced to a term of imprisonment in the Victorian and New South Wales adult criminal justice systems, rather than those who are on remand or detained in youth facilities. The decision to exclude prisoners on remand was based on addressing the aims of the broader study, which sought to examine issues relating to imprisonment and release for older sentenced prisoners. However, the exclusion of remand prisoners for this discrete PhD study is reasonable, given that there may be fairly substantial differences in their conditions of confinement compared to sentenced prisoners (United Nations 2016). For example, remand prisoners in Australia are generally not required to work, but can choose to do so, and access to programs and services may be limited (Jewkes & Bennett 2008). In the states involved in this study, prisoners on remand are located separately to sentenced prisoners where possible, they have increased access to visits and telephone calls, and are generally permitted to wear their own clothing (Corrections Victoria 2014; Redfern Legal Centre 2013).

In the context of examining issues related to older prisoners' distress, as previously discussed in Section 4.2.3, aspects of the remand experience become particularly important, for instance distress which may be associated with impending court outcomes. Excluding the remand group arguably reduces the factors which potentially impact the level of distress among older prisoners in the study.

4.3.2 Sampling frame (prison sites)

Prison sampling sites were selected based on those prisons identified as accommodating and releasing the highest numbers of inmates aged 50 years and older in each of the two study states (Victoria and New South Wales (NSW)). This was done for pragmatic purposes since resource constraints made it impractical to conduct the research at every prison site across the two states. Additionally, in the context of research within the correctional system, a component of study feasibility involves designing research which is not overly taxing and intrusive to the operations of the broader system. Such research recognises that the time and efforts invested on the part of corrections agencies towards research is donated, often without the guarantee of any direct benefit to the multitude of staff who facilitate research processes (Vaughn, Pettus-Davis & Shook 2012). However, it was also considered important for the chosen prisons to exhibit diversity in terms of the type of older prisoner populations held across the various locations, such that the resulting research could be reflective of the broad range of older prisoner experiences.

The sampling sites therefore included both male and female prisons, a variety of security ratings and both public and private prisons. A total of eight of the 47 adult correctional centres (17%) which were in operation across the two states at the time of the study were visited. Table 1 presents an overview of the prison sites which were sampled in the study, including the population of each prison at the time of data collection (New South Wales Department of Corrective Services 2012; Victorian Department of Justice 2011), and the number of participants recruited from each site.

Table 1. Prison sampling sites

Prison	State	Security rating	Location	Private/ Public	Prison population[a]	Sample (n) (older, younger)
Male prisons						
1	Victoria	Maximum	Metropolitan	Private	788	16, 6
2	Victoria	Medium	Regional	Public	379	32, 10
3	Victoria	Minimum	Regional	Public	121	25, 8
4	NSW	Maximum/ Minimum	Metropolitan	Public	602	55, 28
5	NSW	Medium/ Minimum	Regional	Private	639	22, 1
Female Prisons						
6	Victoria	Maximum	Metropolitan	Public	267	10, 6
7	NSW	Maximum	Metropolitan	Public	202	3,1
8	NSW	Medium	Metropolitan	Public	163	10,0

a. Average prisoner population in the year of data collection.

4.3.3 Sample size

The study aimed to recruit a total of 120 sentenced prisoners in each state (90 prisoners aged 50 years and older and 30 prisoners aged less than 50 years in each state). Note that the older prisoner sample was also permitted to include Indigenous prisoners aged between 45 and 49 years of age. Greater numbers of older prisoners were included in the sample as this population constituted the focus of the broader research project being conducted. Fewer younger prisoners were included for pragmatic reasons. Clearly a larger sample size (of both older and younger prisoners) would have been desirable for the purposes of enhancing representativeness as well as statistical power, however time and resource constraints limited the sample size (Grinnell & Unrau 2011, p. 239).

4.3.4 Selection and recruitment

The sampling strategy in this study is best described as non-proportional or disproportionate quota sampling (Singh 2007, p. 108), a type of non-probability purposive sampling in which the sample is selected on the basis of pre-specified characteristics of the study population (Rubin & Babbie 2013).

The purpose of this sampling strategy was to represent the heterogeneity of older prisoners in terms of age, gender, and the time remaining to serve in prison. While *proportionate* quota sampling aims to generate a broadly representative sample (Grinnell & Unrau 2011; Rubin & Babbie 2013), in the present study certain subgroups were deliberately over-sampled to allow for differences to be studied between various groups of older prisoners, some of whom only represent a minority of older prisoners (for example older females and those over 65 years). This sampling strategy can be described as purposive in that it is based upon our knowledge of the diversity within the study population as well as our research aims (Rubin & Babbie 2013, p. 172). The following criteria were utilised to guide sampling:

- First, the older prisoner sample was intended to be evenly distributed between prisoners aged 50 to 64 years and those who were 65 years and older. Prisoners aged 65 years and older would therefore be over-represented in the study sample, given that at the time of data collection, prisoners aged 65 years and older represented 15% of the older Victorian prisoner population (ABS 2011c) and 15.2% of the older NSW prisoner population (ABS 2012c). The purpose of this over-representation was to ensure an adequate sample of prisoners aged 65 years and older for the purpose of characterising the experiences of this subgroup of older prisoners, and comparing these experiences with those of older inmates aged less than 65 years.

- Second, both the older and younger prisoner samples were to comprise a minimum female representation of 10%. This was also a slight over-representation of older female prisoners, since at the time of data collection female prisoners represented 8.7% of older prisoners in Victoria (ABS 2011c) and 8.3% of older prisoners in New South Wales (ABS 2012c). The purpose of including this sample criteria was to ensure the representation of older females in the study sample, as reflected in the states' older prisoner population overall.
- Third, as the broader study also aimed to analyse the post-release experiences of older and younger prisoners, all the younger prisoners and half of the older prisoners were recruited within 90 days of their expected release date, allowing prisoners to reflect retrospectively on their prison experience. While the broader study included post-release interviews of older prisoners, this data does not inform this current PhD study, and is not referenced in this thesis. End-sentence participants were restricted to only half of the older prisoner sample to also ensure the sample represented the breadth of older prisoner experiences, as well as to support sufficient recruitment of the overall sample within a reasonable time frame. Nonetheless, the sampling approach was anticipated to over-represent older prisoners at the end of their sentence, as data supplied by Corrections Victoria indicated that approximately 13% of older prisoners were within 90 days of their expected release date (similar data were not available from NSW).
- Finally, certain exclusion criteria were applied in order to meet the requirements of the correctional services who facilitated the study, including prisoners identified as:

- having an intellectual disability; This was a requirement for recruitment in Victoria, due to the jurisdictions' concerns regarding prisoners' capacity to give informed consent.
- potentially behaviourally or emotionally unstable (due to researcher and participant safety issues); This included prisoners who were currently held in mental health or behaviour management units at the time of recruitment.

It is unclear what proportion of older prisoners may have been excluded due to this final criterion.

The chosen sampling strategy, including inclusion and exclusion criteria, appears in conflict with the study's descriptive design, which customarily requires a rigorous sampling strategy to generate a representative sample and generalisable findings. But as Maxfield and Babbie (2011, p. 251) describe, non-probability sampling methods, while less statistically representative, are appropriate for many research situations. Furthermore, the chosen strategy can be characterised as perhaps at the more structured end of non-probability sampling techniques, as compared, for instance to convenience or snowball sampling. There two main justifications for this chosen strategy.

First, prioritisation of diversity over sample representativeness enables the data generated to be able to address the second part of the research question concerning the factors associated with psychological distress. As Maxfield and Babbie (2011, pp. 238-9) explain, a disproportionate sampling strategy is "a way of obtaining sufficient numbers of these "rare" cases", when resources are not available to generate a larger sample able to provide sufficient numbers of subgroups for meaningful analysis. In this study, including the experiences of older female prisoners and prisoners aged 65 years and older was important. This strategy was also

suitable for meeting the aims of the broader research study, where adequate representation of subgroups and experiences of interest (e.g. pre-release experiences) was a consideration.

The second reason concerns feasibility. Drawing a stratified random sample to study a specific prisoner subgroup is difficult in the context of large prison systems, and potentially resource intensive depending on the data collection methods adopted. In the current study, it would require sampling from each prison in which older inmates were placed. While this may be possible using certain data collection methods (e.g. mailed questionnaires), in the case of the current study (and the broader project), face-to-face data collection methods were considered appropriate for reasons which are outlined in Section 4.4.1 (Structured surveys), rendering it impractical to sample every prison site. Furthermore, the reliance on prisoners volunteering to participate in the study also placed limitations on the capacity to draw a probability sample.

Given that the adopted strategy will not generate a representative sample of the older prisoner population, the implications for this study and its findings is discussed later. The groups of older prisoners which are *over-represented* in the proposed sample (i.e. those aged 65 years and older, older prisoners nearing the end of their sentence, and those not in mental health or behaviour management units) would be expected to have *lower* levels of distress compared to the groups of older prisoners who are under-represented in the sampling strategy (i.e. older prisoners aged 50 to 64 years, older inmates not nearing the end of their sentence, and those accommodated in mental health units). While this should not impact the capacity to respond to the second research question (factors associated with psychological distress), it is likely to lead to an underestimation of the levels of psychological distress among older prisoners (research sub-question a)). To some extent, the impact of the over-representation of prisoners aged 65 years and older can be circumvented by presenting distress levels of older prisoners

aged 50 to 64 years separately to those aged 65 years and older, rather than ascribing findings to the total population of older prisoners. Additionally, any differences between the distress levels of older prisoners who are nearing release compared to those who are earlier in their sentence can be explored in the results. Ascertaining the precise impact of excluding older prisoners accommodated in mental health units is more difficult. However, there are good reasons to believe that this impact would be minimal. As shown in Table 2 below, there are few prison-based mental health beds across both states. It should be noted that all mental health beds in each state, (aside from mental health screening units and forensic mental health hospitals) were located within the locations surveyed, and half of the prisons surveyed contained no allocated mental health beds.

Table 2. Mental Health Units within surveyed jurisdictions

	Prisoner population[a]	Mental health Unit (MHU) beds[b]	MHU beds as a proportion of total prisoner placements (at capacity)
Victoria			
Male prisons	4 417	30	0.7%
Female prisons	320	20	6.2%
New South Wales			
Male prisons	8 998	40	0.4%
Female prisons	668	10	1.5%
Total	14 403	100	0.7%

a. Prison population in the year of data collection. Source: Department of Justice (2011), New South Wales Department of Corrective Services (2012). Figures current at the time of data collection. b. Source: (Victorian) data collected from prison health management during project data collection. (New South Wales) Justice Health and Forensic Mental Health Network (2013).

Mental health beds comprised only 5% of the total prisoner placements at the locations surveyed and 0.7% of prisoner placements across each state. Anecdotal information collected from correctional health staff indicated that prisoners aged 50 years and older are infrequently present for long periods in these units compared to younger inmates. However, it is recognised as a limitation that data concerning older prisoner placements in these units are unavailable. Furthermore, data are not available concerning the number or proportion of older prisoners held on behaviour management units or transferred to forensic mental health hospitals at the time of data collection.

Other specialised units located at the prison data collection sites were mostly included as part of the sampling frame. This included multiple prison inpatient health sites and two specialised units for prisoners with experiencing physical or functional declines. One specific unit accommodating inmates with cognitive impairments including brain injuries was excluded, however it is not possible to predict the impact of excluding this unit on the findings in the absence of information concerning the typical profile of prisoner housed in this area. However anecdotally the researchers were informed that this typically housed younger inmates at the time of data collection. Additional discussion and analysis of sample representativeness and its impact upon the findings regarding the level of psychological distress is provided in the next chapter (Section 5.2 – Sample representativeness).

All older prisoners and every fourth younger prisoner from the prisoner list who met the above criteria were either forwarded a flyer advertising the study (See Appendix 1) or verbally informed about the study by prison program staff. Eligible prisoners opted into the research by notifying a nominated prison staff member of their interest, and the researcher then negotiated appropriate times to conduct data collection with each prison site.

4.4 Data collection

Data collection took place in Victoria throughout 2011 and in New South Wales in 2012. Data collection comprised:

- Structured surveys with prisoner participants (Appendices 6-8);
- Health file data collection (Appendix 9); and
- Corrections file data collection.

All data collection instruments involved in this research were developed by the candidate in conjunction with a team of academics who were investigators on the broader project. Academics outlined the basic components to be included in data collection instruments (e.g. survey sections covering participant demographics, health, health care utilisation, etc.), and the candidate then developed draft instruments which incorporated these elements. The data collection instruments then received feedback from both the team of academics and from project partners, who were overseeing the broader study as part of the project advisory committee. Data collection instruments were subsequently revised by the candidate. Each of the data collection instruments and procedures will now be described in turn.

4.4.1 Structured surveys

The use of structured surveys is prominent in descriptive cross-sectional studies (Bryman 2012), and particularly common among prison effects research (Jamieson & Grounds 2005), and prisoner mental health research (Andersen 2004).

As a research method, structured surveys are useful in describing and quantifying population characteristics, which is the purpose of the current study (Maxfield & Babbie 2011). Asking the

same questions of each participant in a standardised manner theoretically leads to good levels of reliability, however there are also disadvantages associated with the use of structured surveys. First, they rely on questions which may "miss what is most appropriate to many respondents", and as a result may "often appear superficial in their coverage of complex topics" (Maxfield & Babbie 2011, p. 281). Furthermore, while there may be flexibility in content, surveys cannot be changed once interviewing has commenced; therefore there is an inability to correct any issues discovered within the survey at a later date (Maxfield & Babbie 2011). Despite these limitations, the use of a survey method is clearly appropriate and feasible for responding to the research questions outlined in this study. Importantly, this method enabled the systematic collection of complex and comprehensive data from each participant in environments where recording equipment was not permitted.

4.4.1.1 Survey procedure. Structured surveys were administered using pen and paper face-to-face with individual prisoners at the prison locations, and varied between 45 and 90 minutes' duration. While in-person interviews are clearly a resource intensive method, as opposed to for example mailed surveys, there were many reasons for choosing this method of administration. As opposed to a mailed survey, face-to-face interviews ensured that the study could be explained adequately to participants. They also offered the opportunity for any participant questions to be addressed prior to commencing the survey. Secondly, potential barriers such as literacy issues, vision problems and privacy concerns (with respect to other prisoners or staff listening to telephone interviews or reading mailed survey responses) could be minimised and controlled. Thirdly, face-to-face interviews allowed for the use of non-directive probes for open-ended questions (e.g. "can you tell me more about that?"), potentially enabling the generation of more comprehensive data to these questions.

Additionally, the administration of the structured survey allowed for both the order of reading and responding to survey items to be controlled. Finally, as the broader study included subsamples of older and younger prisoners who were re-interviewed following their release from prison, face-to-face administration of the survey allowed the interviewer to meet participants prior to conducting the second interview in the community. It could be anticipated that such a process would increase rapport and familiarity, thereby potentially increasing response rates for the post-release interviews.

Three individual interviewers were involved in the administration of surveys to prisoners. Table 3 below describes the number of interviews performed by each interviewer in each of the two states. Interviewer One was the PhD candidate, Interviewer Two was a trained social worker experienced in criminal justice research and practice, and Interviewer Three was a trained nurse with experience in criminal justice research. No specific training was administered prior to the commencement of data collection, however once data collection commenced in NSW in 2012, regular discussions (via telephone, online video calls and emails) were held between the interviewers to discuss participant recruitment and survey administration. The impact of the different interviewers on the survey results, particularly in relation to self-reported distress levels, is explored later in this chapter (Interviewer effects - Section 4.8.4), and in the Results Chapter (Inter-administrator reliability analysis - Section 5.4.2).

All of the Victorian surveys were conducted by the candidate, however each of the three interviewers administered surveys in NSW; it is therefore worth mentioning processes concerning the allocation of participants to each interviewer.

Table 3. Research interviewers by state

Interviewer	Victoria	New South Wales	Total
One (Candidate)	113	7	120
Two	0	45	45
Three	0	68	68
Total	113	120	233

The candidate was only involved in administering surveys at a single NSW location (Prison 5), alongside the other interviewers. In this instance, all of the interviewers attended the prison together.

The prison service had generated a list of inmates who had previously consented to participate, and directed the interviewers to the location where the next participant could be interviewed. The interviewers were essentially randomly allocated as each prisoner and interviewer became available. The remaining NSW surveys were conducted by Interviewers Two and Three across the final three prison locations. Individual prisons informed the interviewers when a number of inmates had consented to participate in the study, and interview times were arranged when one or both interviewers were available. Again, the interviewers were assigned to conduct surveys based upon their availability (both on the day required, and throughout each day of data collection).

The structured surveys were completed with participants in areas of the prison affording privacy (generally a room with a closed door), and no prison staff were present during interviews with prisoners. Prior to commencing the survey, the respective interviewer read through the study explanatory statement with the participant (Appendices 2 and 3) and provided an opportunity to address any questions. All participants signed a form indicating

their consent to participate in the study. The consent forms (see Appendices 4 and 5) also asked (separately) if the participant consented for information to be collected from their personal corrections and health files for the purposes of the study, and obtained contact information for prisoners who consented to participating in a follow-up interview post-release as part of the broader project.

4.4.1.2 Survey Content. The survey instrument was a structured interview schedule (see Appendices 6, 7 and 8) collecting socio-demographic information and a combination of yes/no, scaled, and short answer questions concerning various topics, including physical functioning, health and mental health, healthcare utilisation, exercise, sleep, diet, program participation, experiences of the prison environment, social functioning, pre-release planning and general wellbeing. These survey topics were intended to address the research aims of the broader study (described on p. 62 of this Methodology Chapter), and arose from a previous literature review which identified issues relating to ageing in prison which had been raised in the international research (Baidawi et al. 2011). The survey was reliant on participant self-report across all items, and sought to gather both quantitative and short-answer qualitative information concerning the experiences of both the older and younger prisoners across the domains described above.

Though the bulk of survey items were identical, slightly different interview schedules were created for each of the prisoner participant groups (older prisoners within 90 days of their earliest release date, older prisoners who were not within 90 days of their earliest release date, and younger prisoners). For example, prisoners who were nearing the end of their term of imprisonment were asked questions about release preparation which were not asked of other participants. Given that the survey instrument intended to capture information for the

purposes of the broader project concerning older prisoners, not all items are relevant to the current PhD study.

Three separate instruments were incorporated into the interviewer-administered survey: one measuring psychological distress (Kessler Psychological Distress Scale (K10) (Kessler et al. 2002)), a second measuring the level of independence in physical functioning (the Barthel Index (Mahoney & Barthel 1965)) and a final instrument measuring cognitive functioning (the Mini Mental State Examination (Folstein, Folstein & McHugh 1975)). These three measures are now described in more depth. The focus of these discussions is upon the Kessler Psychological Distress Scale, which is of central relevance to this research, given that the scale is the mechanism by which the variable of psychological distress is measured.

4.4.1.3 Kessler Psychological Distress (K10) Scale. As indicated, psychological distress was assessed using the Kessler Psychological Distress Scale (K10) (see Appendix 6, pp. 346-347). The reasons for opting for the scale, as well as its structure, reliability and validity are now explored in detail.

The Kessler Psychological Distress Scale (K10) comprises a 10-item measure of non-specific psychological distress in the previous four weeks, and includes items relating to depressed mood, nervousness, restlessness, worthlessness, fatigue and hopelessness (Kessler et al. 2002). The K10 Scale asks respondents to indicate how often they had experienced each of the items relating to psychological distress over the past four weeks by nominating one of five values, from one (none of the time) to five (all of the time). The scale produces a score for each respondent ranging from 10 (indicating no distress) to 50 (indicating severe distress) (Andrews & Slade 2001).

The K10 Scale was developed in the United States (US) to form a component of the annual US National Health Interview Survey. As such, developers aimed to generate a scale which was brief, but which contained items which had maximum precision in measuring non-specific psychological distress, particularly in the highest 10% of the general population who are most likely to have a serious mental illness (Kessler et al. 2002). The developers utilised an initial pool of 612 items contained in 18 other scales measuring psychological distress and related concepts, including the Beck Depression Inventory (Beck et al. 1961), the General Health Questionnaire (Goldberg 1972), and the State-Trait Anxiety Inventory (Spielberger 1979), among others. These items were sequentially reduced and refined into the final form of the instrument through pilot surveys, feedback from an expert panel of survey researchers, and calibration surveys (which involved administering the instrument alongside clinical interviews in community samples in the US and Australia) (Kessler et al. 2002).

The K10 Scale is suitable for the purposes of the current study for various reasons. Firstly, the scale is simple to administer, requiring between two to three minutes, and able to be delivered by lay interviewers (Kessler et al. 2002). Second, the scale was partly developed in the Australian context, and comparison data are available for the Australian community. This includes both national samples, samples in the two states where the current study was conducted (Centre for Epidemiology and Research 2008; Department of Health 2012; Slade, Grove & Burgess 2011), as well as samples of Australian prisoners (Butler, T et al. 2006, 2007; Fleming, Gately & Kraemer 2012; Schneider et al. 2011). Additionally, the scale is free to use and available in the public domain. Finally, the K10 Scale has been assessed with regard to numerous measures of reliability and validity, which will now be discussed further.

Instrument Validity – convergent and concurrent. The validity of a particular instrument refers to the extent to which it measures what it is intended to measure (Grinnell & Unrau 2011, pp. 184-5). Given the methodology adopted for development of the K10 Scale, it is unsurprising that significant associations have been found between scores on the Scale and scores on other validated measures of psychological wellbeing or disability, such as the General Health Questionnaire (GHQ-12), and the Short Form Health Survey's mental health component scale (Andrews & Slade 2001). This demonstrates what is known as *convergent validity*, whereby different measurements of a similar construct yield similar results (Grinnell & Unrau 2011, p. 188).

Another method of understanding the validity of an instrument is to examine whether it is valid based on some external criterion (known as criterion-related validity), which is theoretically understood to be related to the phenomenon being measured. According to Rubin and Babbie (2013, p. 105) two subtypes of criterion-related validity are *predictive validit*y (the degree to which an instrument accurately predicts the external criterion) and *concurrent validity* (the degree to which an instrument corresponds to a concurrently known criterion). For instance, if the K10 Scale is in fact a valid measure of psychological distress, it would be expected that individuals exhibiting a high score on the scale would have a high likelihood of meeting the diagnostic criteria for a mental health condition. The K10 Scale demonstrates this concurrent validity, and has been shown to outperform other screening measures relation to its capacity to detect individuals meeting the diagnostic criteria for mental health conditions, (particularly anxiety and affective disorders, such as depression), using common diagnostic tools such as the Composite International Diagnostic Interview or the Structured Clinical Interview for DSM-

IV (Donker et al. 2010; Furukawa et al. 2003; Gill et al. 2007; Kessler et al. 2002; Slade, Grove & Burgess 2011).

The validity of the K10 Scale has also been investigated across different social, cultural and demographic groups. In Australian samples, no significant effects of gender, education or age have been found (O'Connor & Parslow 2010), although there is some evidence of an association between K10 scores and both physical and mental disability (Anderson et al. 2013; Baillie 2005; Furukawa et al. 2003). The K10 Scale has also been previously utilised in a comparative study of mental health status of Indigenous and non-Indigenous Australian prisoners (Butler et al. 2007). That study reported that Indigenous women were more likely than non-Indigenous women to be classified as having high or very high levels of psychological distress, while the reverse pattern was found among men (Butler et al. 2007). Though that study utilised experienced mental health clinicians as well as a number of Indigenous interviews, the authors did acknowledge the potential for variability in the cultural expression of distress and mental illness (Butler et al. 2007). While we therefore expect the scale to be appropriate for use with both the younger and older prisoners in our sample, it is acknowledged that no specific studies validating the K10 Scale with a prisoner sample - including Indigenous prisoners - could be located.

Instrument reliability. Reliability can be understood as the degree of consistency of an instrument's measurements, or the amount of random error that is in a measurement (Rubin & Babbie 2013, p. 102). Relevant measures of reliability differ according to the study design and purpose (Rubin & Babbie 2013), and may include assessment of stability of measurement over time (test-retest reliability or temporal stability), examination of the instrument's internal consistency, and testing the degree of consistency between different individuals administering

the instrument (inter-observer or inter-rater reliability) (Bryman 2012). This section reviews findings concerning the reliability of the K10 instrument in the existing literature.

Temporal stability (Test-retest reliability). No peer-reviewed academic papers could be located which tested the temporal stability of the K10 instrument, with multiple authors suggesting that this is an area for further exploration (Andrews & Slade 2001; McNamara et al. 2014). However, given that the K10 Scale intends to measure self-reported symptoms of distress over the previous four weeks it is an indicator of a state, rather than a stable trait, individual results would be expected to fluctuate over time (CATI Technical Reference Group 2004). Nonetheless, it is useful to understand the extent to which results vary in order to provide context to this study's findings. One Australian study administered two waves of the K10 Scale to a nationwide sample of 303 adult respondents using Computer Assisted Telephone Interviewing (CATI Technical Reference Group 2004). There was a mean of 15 days between each administration, which occurred as part of field testing for the development of national health surveys (CATI Technical Reference Group 2004). When total K10 scores were categorically divided (low, moderate, high and very high risk levels), the authors reported that the Weighted Kappa value for the two sets of K10 results was .65 (.57-.72) (CATI Technical Reference Group 2004). This statistic provides a measure of temporal stability, which incorporates quantification of both the relative seriousness of disparities between nominal or ordinal measurements and ratings, as well as chance expected proportions of agreements (Cohen, J 1968; Fleiss, Levin & Paik 2003). This Kappa value corresponds to a good level of reliability according to the authors' criteria (CATI Technical Reference Group 2004), as well as that of other authors (see for example, Cicchetti (2001), Fleiss et al. (2003), and Landis and Koch (1977)).

Inter-administrator reliability. The K10 Scale uses self-report responses and does not require any particular observations or ratings on the behalf of the administrators (Kessler et al. 2002). In general, where screening instruments rely on participant self-report, inter-administrator reliability is considered less pertinent (Blais & Baer 2010). In fact, despite several studies examining the validity and reliability of the K10 Scale, none reported on inter-administrator reliability of the scale. Given the importance of the K10 Scale in this study, an analysis of inter-administrator reliability of the Scale is presented in the Results Chapter (Section 5.4.2). Additionally, the lack of observation or rating required by the administrator of the scale does not preclude the possibility of interviewer effects impacting on the reliability of findings. This potential source of error is discussed with respect to the broader study in Section 4.8.4.

Internal consistency reliability. Internal consistency of the instrument is another important aspect of the reliability of self-report screening scales (Blais & Baer 2010). This measure describes a dimension of reliability which is relevant when multiple items are used to measure a single concept, as in the K10 Scale. As described by Rubin and Babbie (2013, p. 103) internal consistency reliability refers to "the degree to which scores among scale items, or scores among subsets of scale items, correlate with each other". This kind of correlation would be expected if the items were reliably measuring the same concept. Authors have emphasised that internal consistency does not necessarily refer to homogeneity of responses to items on a particular scale, but rather concerns their interrelatedness (Schmitt 1996; Tavakol & Dennick 2011).

A common statistical measure of internal consistency is Cronbach's alpha, which is expressed as a number between 0 and 1, with increasing values reflecting greater correlation between items on a scale (Cronbach 1951; Tavakol & Dennick 2011). Various acceptable levels of

Cronbach's alpha have been reported, generally ranging from 0.70 to 0.95 (Bland & Altman 1997; DeVellis 2003; Tavakol & Dennick 2011). Scores above 0.95 are not considered as desirable, as these indicate that the items may in fact be measuring homogenous elements, and are therefore redundant. Kessler and others (2002) determined that the K10 Scale has high levels of internal consistency reliability in both a US telephone survey (N = 1,574) (Cronbach's alpha = 0.93) as well in a face-to-face survey with a probability Australian community sample (N = 10,641) (Cronbach's alpha = 0.92). Other studies have similarly reported high levels of internal consistency in the use of the scale with different samples (Arnaud et al. 2010; Donker et al. 2010; Hides et al. 2007). An examination of the internal consistency reliability of the K10 Scale as it pertains to its use in this study is presented in the Results Chapter (Section 5.4.1).

In summary, the characteristics of the K10 Scale (including its accessibility, ease of administration, and demonstrated validity and reliability), make it a suitable measure for the current study.

4.4.1.4 Barthel Index. Physical functioning was assessed using the Barthel Index (BI), a standardised 10-item measurement of a person's level of independence in performing Activities of Daily Living (ADLs) including bathing, grooming, continence and mobility (Mahoney & Barthel 1965). The Index is administered by interviewers reading each of the items aloud, and asking respondents to self-report the level of assistance required with each of the ten activities described, as shown in Appendix 6 (pp. 345-346). The scale produces a score for each respondent ranging from 0 (dependent) to 100 (independent in continence, feeding, dressing, bathing, grooming etc.).

The results of this measure are used to determine any associations between the level of functional dependence and the level of psychological distress reported by the older prisoners. Previous studies have shown the BI to be a valid measure, reliable for administration by unskilled non-healthcare professionals (Collin et al. 1988; Wade & Collin 1988). As with the K10 Scale, the researchers completed the BI with each prisoner utilising participant self-reported responses. Previous research has compared self-report outcomes on the BI with other measurement methods, including direct performance measurements and asking a friend or relative. A high degree of correlation was found in the total scores between various measurements, providing evidence for the validity of self-report measurement with this index (Collin et al. 1988; Shinar et al. 1987).

4.4.1.5 Mini-Mental State Examination. Cognitive functioning was assessed via the Mini Mental State Examination (MMSE) (see Appendix 6, pp. 349-350) a 30-item screen containing items relating to orientation, registration, recall, calculation and attention, naming, repetition, comprehension, reading, writing and drawing (Cockrell & Folstein 2002; Folstein, Folstein & McHugh 1975). The MMSE is commonly utilised as a screen for cognitive impairment (Folstein, Folstein & McHugh 1975); a score of 24 or greater (out of a maximum score of 30) is generally indicative of normal cognition (ABS 2009).

The results of this measure are used to determine if any association between cognitive functioning and psychological distress is apparent among the older prisoner sample. Previous research indicates that MMSE scores are reliable between tests and administrators (Folstein et al., 1975), and correlate with other mental and physical tests of cognitive decline (Cockrell & Folstein 2002). However it is worth noting that MMSE results are impacted by other factors,

particularly the subject's level of education (Crum et al. 1993; O'Connor et al. 1989), which is considered in the analysis of findings (see Section 6.3.4).

The MMSE has been regularly used in studies of older prisoners (see e.g. Fazel et al., (2002), Kingston et al. (2011), and Murdoch et al., (2008)). Yet Kingston and colleagues (2011, p. 1359) rightly note that the validity of the instrument in prison and underprivileged populations is unclear, as are the appropriate cut-off scores to be used. These issues are reflected upon in the Discussion Chapter (Chapter 6).

4.4.2 Health file data collection

4.4.2.1 Health file data collection procedure. During the prisoner interviews, participants were asked for consent for researchers to access their prison health files, in order to extract information regarding their medical conditions and utilisation of health care. The number and proportion of participants consenting are presented in the Results Chapter (see Section 5.3.1 Health file data).

In Victoria, prisoner health file audits were completed by Justice Health Victoria's contracted health service provider. In New South Wales, audits were completed by the research interviewers. The different mechanisms for collecting this data were adopted based on consultation with each state's correctional health department (Justice Health in Victoria and the New South Wales Justice Health and Forensic Health Network). The validity and reliability of health file data are discussed later in this chapter (see Section 4.8.3).

4.4.2.2 Health file data collection content. Data from participants' health files were collected to examine any associations between physical and mental health diagnoses, healthcare utilisation and the level of psychological distress among the older prisoners interviewed.

At the time of the study, prisoner health records in both Victoria and New South Wales were only available as hard copies - no electronic health record system existed from which information could be extracted. Therefore, it was necessary to develop an instrument which could be used to extract common data from prisoner health files in the two jurisdictions.

A draft instrument for the health file audit received initial feedback from the project advisory committee. Overall, the amendments made to the instrument were intended to enable ease of auditing by non-healthcare professionals, and to correspond with the data available in prisoner health files. The knowledge base of the advisory committee was invaluable in this respect. This initial feedback included: listing prisoner reference numbers on each page of the instrument, specifying on the front page that all information should only be collected for the previous two years, including more space for providing comments, and removing any items which required experienced health professionals to interpret health files (e.g. details of specific treatments provided). Amendments were made and the instrument was then piloted with a sample (n = 5) of prisoner health files by Justice Health staff in Victoria. A final round of amendments was made to the instrument prior to being utilised in the study. Specifically, the previous version of the instrument required auditors to tick prisoners' relevant health conditions from a list, while the new instrument allowed the auditors to write a freehand list of medical conditions as recorded on the prisoner's health file. The revised method was seen to be less time consuming and more accurately reflect health file data, particularly where auditors may be less familiar with medical terminology.

Data collected from health files related to the previous two years. This time frame was chosen for both methodological and pragmatic reasons. Methodologically, the purpose of extracting information from health files was to understand the health conditions and health care

utilisation among older prisoners. If a longer time frame (e.g. 5 years) of data collection from health files was used, there could be many prisoners for whom a proportion of the data collected corresponded to health issues or healthcare utilisation when they were, by the study's definition, a younger prisoner. However, there was a need to balance this concern with selecting too short a timeframe (e.g. 3 or 6 months); here the potential risk is that sporadic use of health resources is not captured at all. For example, some regular preventative tests such as mammograms and cholesterol tests, would only expected to be performed annually or biannually, and hence would not be captured if auditing for only 3 or 6 months were performed. For the purposes of this discrete study, information from health files will serve as indicators of health and healthcare utilisation in order to examine any association with psychological distress among older prisoners. Information which was current at the time of data collection was therefore relevant for this purpose. Overall, a two-year time frame was considered reasonable for balancing these methodological concerns.

Only two other studies could be located which audited older prisoners' health files to examine health care utilisation. One study incorporating an archival review of older inmates' health files covered an 18-month period, similar to the current study (Burling 1999). Another US study published in the same year adopted a 6 month period for reviewing older prisoners' medical encounters (Falter 1999). While the purpose of that second study was to examine factors associated with higher health care utilisation, the authors noted this time frame as a limitation of their study (Falter 1999).

Pragmatic resource concerns also shaped this decision in the current study, given that extraction of data from health files was manually performed from hard copy health files in both states. In Victoria, state privacy constraints required that the health file audits be completed

by employees of the correctional health department, therefore the time frame was also required to be reached in agreement with this agency.

The health file data collection instrument (See Appendix 9) contained items relating to the participants':

- Physical health diagnoses
- Mental health diagnoses
- Age-related functioning (including balance, falls risk, incontinence, chronic pain and use of therapeutic equipment/aids)
- Medications prescribed in the previous two years
- Tests/diagnostic procedures within the previous two years
- Prison-based and external healthcare utilisation in the previous two years
- External health-related appointments (e.g. hospitalisation, specialist visits, emergency visits)
- Health-related appointment refusal/cancellations

Some of these items (physical health, mental health, age-related functioning and healthcare utilisation), reflect relevant factors which were identified in the literature review as being potentially associated with psychological distress among older prisoners. All of the items were also relevant in addressing the aims of the broader study being conducted. Validity and reliability of the health file data is discussed later in this chapter (see Section 4.8.3).

4.4.3 Corrections file data collection

Data from corrections files were collected in order examine associations between various criminal justice characteristics and levels of psychological distress among older prisoners.

Participants were asked for consent for researchers to be given information extracted from their corrections files by corrections departments (Corrections Victoria and the New South Wales Department of Corrective Services). The number and proportion of participants consenting are presented in the Results Chapter (see Section 5.3.2 Corrections file data).

Information collected which is pertinent to this PhD study included:

- Indigenous status
- Most serious offence leading to current imprisonment
- Sentence length
- Protection status
- Security classification
- Number of previous sentenced terms of imprisonment
- Intellectual disability status

For the purpose of this discrete study, these either constitute factors which are of use in describing the study sample, or variables which are pertinent to participants' experiences of prison, including the conditions under which they are held.

4.5 Statistical analysis

All quantitative data were entered into IBM SPSS Statistics 20 software (http://www.spss.com) for analysis. Descriptive univariate analyses were used to provide information concerning the sample demographics, including gender, age group, and other self-reported characteristics (e.g. level of education, number of children). Other sample characteristics (independent variables) derived from survey, health file and correctional file data were also analysed using

descriptive statistics with a view to describing the older and younger prisoner samples. Each of these independent variables and their data collection source are listed in Table 4.

Table 4. List of study independent variables, including data sources

Category	Factor	Data source[1]	Variable	Level
Socio-Demographic Factors	Age	SS	Age	Continuous
			Age group[2]	Categorical
	Sex	SS	Sex	Categorical
	Indigenous status	CFD	Indigenous status	Categorical
	Born in Australia	SS	Born in Australia	Categorical
	Education	SS	Highest level of education	Categorical
Mental Health Factors	Mental health diagnosis	HFD	Mental health diagnosis listed in health file	Categorical
	History of suicide attempts	SS	Self-reported history of suicide attempts	Categorical
	History of self-harm	SS	Self-reported history of self-harm	Categorical
	History of alcohol and other drug (AOD) problems	SS	Self-reported history of AOD help-seeking	Categorical
Criminal Justice Factors	Prior imprisonments	CFD	Prior sentenced terms of imprisonment	Categorical
	Time remaining to serve	CFD	Less than 3 months remaining in sentence	Categorical
	Protection status	CFD	Protection status	Categorical
	Offence type	CFD	Most serious offence	Categorical

	Security classification	CFD	Security rating- prisoner	Categorical
		SS	Highest security rating of prison location	Categorical
Cognitive Functioning	Cognitive impairment	SS	Mini-Mental State Examination (MMSE) total score	Continuous
Physical Health Factors	Physical health conditions	HFD	Physical health issues listed in health file	Categorical
			Number of health issues listed in health file	Continuous
		SS	Self-reported current concerns regarding a physical health issue	Categorical
Physical Functioning	Functional independence	SS	Total Barthel Index Score	Continuous
	Functional issues		Barthel Index Score < 100	Categorical
	Difficulties with the built prison environment		Self-reported physical difficulties with the built environment in prison	Categorical
Healthcare Factors	Prison health clinic utilisation	SS	Number of health clinic visits over previous four weeks	Categorical
	Healthcare access	SS	Self-reported issues accessing prison healthcare	Categorical
Prison experience	Safety	SS	Self-reported victimisation in prison	Continuous
			Self-reported safety (scaled)	Continuous
	Social support	SS	Self-reported social support from another prisoner	Categorical
			Self-reported social support from prison staff	Categorical

	Employment	SS	Self-reported prison employment	Categorical
	Program participation	SS	Self-reported non-clinical program participation	Categorical

1. Data sources: SS = Structured surveys; HFD = Health file data; CFD = Corrections file data. 2. Age groups include < 50, 50-64 or ≥65 years. Note that older Indigenous prisoners aged 45-50 years are included in the 50-64 year category.

4.5.1 Level of psychological distress (Total K10 scores) among older prisoners

Levels of psychological distress as measured by the K10 Scale were then described by measures of central tendency (mean) and dispersion (standard deviation), as well as the proportion of the sample evidencing low, moderate, high and very high levels of psychological distress using categorical guidelines adopted in Australian Bureau of Statistics surveys (ABS 2012b).

4.5.2 Comparison of older prisoner K10 scores to younger prisoners and general population

Levels of psychological distress among older prisoners (mean total K10 scores) were subsequently compared to those of the younger prisoner sample, and older people in the general Australian population using bivariate statistics (t-tests where total K10 scores are expressed as a mean, and Fisher's exact tests where total K10 scores are expressed categorically as either low, moderate, high or very high levels of psychological distress).

4.5.3 Bivariate analyses – relationships between older prisoner K10 scores and individual independent variables

Independent samples t-tests were used to check for statistically significant associations in mean total K10 scores for categorical independent variables previously listed in Table 4 such as gender (p-values and Cohen's D reported). Bivariate correlations were used to analyse associations between mean total K10 scores and continuous independent variables such as

age (p-values and correlation coefficient *r* reported). One-way between groups ANOVAs were used to explore relationships between mean total K10 scores and independent variables with more than two categorical levels (e.g. prison security classification).

4.5.4 Multivariate analyses – comparing the impacts of independent variables associated with older prisoner K10 scores

Finally, inferential statistics (linear regression analyses) were used to determine:

a) which of these associated independent variables are making a unique contribution to explaining the variance in psychological distress in the older prisoner sample; and
b) the proportion of the variance in the dependent variable (psychological distress) which is explained by the associated independent variables in the older prisoner sample.

The approach taken was to initially explore these relationships thematically through a series of three regression analyses. Independent variables exhibiting a statistically significant association with total K10 scores were entered into linear regressions. The analyses were conducted as follows, each of which formed the basis of a separate results paper (Papers 2, 3 and 4):

Regression 1. Socio-demographic, criminal justice and mental health variables

Regression 2. Physical health, functional health, the built environment, healthcare utilisation and healthcare access

Regression 3. Social factors including prison employment, inmate and staff social support, safety and victimisation

This approach aimed to enable a rich exploration of these topics (that is, criminal justice and mental health factors, physical health and healthcare factors, and social factors in the prison

environment) and the relationships between variables, which may have been obscured or lacking in depth through a single, broad analysis. After these analyses, a list of independent variables exhibiting a statistically significant unique relationship to older prisoner total K10 scores was identified. A question which arises in conducting quantitative studies of this nature is the extent to which the analysis method influences the conclusions drawn. Thus, the relationships between these independent variables and older prisoner total K10 scores were investigated in the final results paper (Paper Five), via a series of three regression analyses. This approached aimed to ascertain the reliability of the results by examining differences in findings generated by various data analysis methods.

The maximum number of predictors to be entered into each of these regression analyses was determined by the final number of study participants. Tabachnick and Fiddell (2014) suggest a minimum sample size of $N > 50 + 8m$ where m = the number of independent variables. Likewise, Stevens (1996) recommends a minimum of 15 participants per predictor. These estimations were drawn upon to inform the regression analyses performed in each case.

Throughout the findings, statistical significance is reported at or less than a probability level of .05 ($p \leq .05$). This value is conventionally used in social sciences research to indicate a low possibility (≤ 5%, or a less than one in twenty probability) that the outcome observed (and more extreme outcomes) could be obtained if the null hypothesis were true (i.e. if no true association, correlation or difference existed; that is, by chance alone) (Goodman 2008; Grinnell & Unrau 2011).

4.6 Research Ethics

Ethical considerations play an integral part in structuring aspects of research methodology, therefore these issues are now discussed. Prior to the Second World War, there was little interest and attention to the ethics of research involving human subjects in either the biomedical or social sciences (Faden & Beauchamp 1986). However the exposure in the Nuremberg trials of appalling experimentation on imprisoned and involuntary subjects by Nazi doctors during the Third Reich contributed to the creation of the Nuremberg Code, ten principles intended to underpin ethical research involving human subjects (Mitscherlich & Mielke 1949). These principles were then adopted and adapted in the Declaration of Helsinki, forming the basis of contemporary human research ethics processes and protocols (Schüklenk 2000; World Medical Association 2013).

Due to this significant potential for exploitation, prisoners are often considered a vulnerable group of research participants, thereby requiring particular attention to be paid to the ethics of proposed research with this group (The National Health and Medical Research Council, The Australian Research Council & The Australian Vice-Chancellors' Committee 2007). As Roberts and Indermaur (2008, p. 310) assert, we are "dealing with a captive, vulnerable population that has historically been subjected to abusive research".

The funding of this study, as part of broader research concerning older prisoners in two Australian States, required the larger project to undergo peer review in order to confirm the perceived merit of the research. The project was deemed justifiable by the peer review process on the basis of its potential benefit to improving understanding of the needs of older prisoners. Separate ethics approvals were then obtained from the Monash University Human Research Ethics Committee (MUHREC), The Victorian Department of Justice Human Research Ethics

Committee (JHREC), the New South Wales Corrective Services Ethics Committee (CSEC) and the Justice Health New South Wales Human Research and Ethics Committee (HREC). Certificates of Approval for this study from these Ethics Committees are attached (see Appendices 10 to 14). Guillemin and Gillam (2004) use the term 'procedural ethics' in reference to the processes surrounding the procurement of formal approval from ethics committees, and distinguishes this from 'ethics in practice', which constitute the various ethical issues which are addressed throughout the process of carrying out the research.

According to Faden and Beauchamp (1986, p. 152), "…there are two primary goals for policies covering human subjects of research: controlling imposed risks - a beneficence-based consideration - and providing informed consent – an autonomy-based consideration". These ethical principles are now discussed with particular reference to the processes surrounding informed consent and participant confidentiality in this study.

4.6.1 Informed consent

Respect for autonomy, beneficence and justice are the three main ethical principles underpinning the practice of obtaining informed consent from human research subjects (Faden & Beauchamp 1986). Consideration of how best to support informed and voluntary research participation is important where prospective participants may have diminished levels of autonomy, and as such may engage in research activities which they would not under different circumstances (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research 1979).

As previously mentioned, the recruitment approach adopted in this study was for prison staff to inform eligible prisoners of the research, and those interested then opted-in to the study by

informing prison staff of their interest. The approach to recruitment was negotiated with each state as well as the individual prisons which were recruitment sites for the study. The involvement of prison (programs) staff in recruitment processes is not ideal in terms of preserving voluntariness of consent, due to the potential for prisoners to feel pressured or to want to appear cooperative (Roberts & Indermaur 2003, 2008; Waldram 1998). This needed to be balanced, however, with privacy considerations associated with researchers entering multiple correctional sites for the purposes of participant recruitment, or obtaining prisoner details to directly contact them via mail (Roberts & Indermaur 2008; Vaughn, Pettus-Davis & Shook 2012). Furthermore, there were logistical and resource considerations associated with researchers potentially attending multiple geographically isolated prison sites for the purposes of participant recruitment. Hence, the strategy involving prison programs staff, though not ideal, was pragmatically feasible.

Participants who had opted-in to the study then met with the researcher, who subsequently read the project explanatory statement with the participant, and provided an opportunity to ask questions or withdraw prior to commencing the interview process. The information contained within this explanatory statement included a declaration that the research would not be expected to have any direct benefits (including remuneration) for the participant. This was important in attempting to minimise any unrealistic expectations of the research, for example, that it would dramatically alter the current circumstances of older prisoners (The National Health and Medical Research Council, The Australian Research Council & The Australian Vice-Chancellors' Committee 2007, p. 54).

Despite these processes being in place, it has been suggested that prisoner volunteers may be "motivated by the belief that they will personally benefit from their cooperation" (Maxfield &

Babbie 2011, p. 58). Indeed, one US study found that 16 out of 30 prisoners under psychiatric care indicated that they had participated in a particular research study to appear cooperative in hope of receiving better treatment, despite being informed that there were no anticipated personal benefits (Moser et al. 2004). While prisoners in that research study were more likely to cite this influence compared to non-prisoners, the authors pointed out that "they clearly do not represent the strong-arm and/or emotionally coercive tactics that one might imagine being used in the prison system" (Moser et al. 2004, p. 7). Similarly Faden and Beauchamp (1986), in discussing informed consent, distinguish between coercion (or force) and role constraint. By role constraint, the authors refer to a sense of obligation by virtue of one's particular social role, whereby "social or cultural arrangements and expectations for the role the person assumes can function as constraints on autonomous expression" (Faden & Beauchamp 1986, p. 369). The prisoner role can broadly be "characterised by a pattern of socialized and constantly reinforced passivity" (Faden & Beauchamp 1986, p. 372). In such situations, the authors suggest that it may be helpful for the person soliciting consent to both explain the purpose of informed consent, and to not be someone who has "means-ends" control over the person from whom consent is sought (Faden & Beauchamp 1986, p. 372). Both of these strategies were operational in our study – that is, the researchers administering interviews explained the purpose of informed consent processes, and they had no capacity to influence any outcomes for participants.

There are arguments both for and against paying prisoners for research involvement which are also related to the concept of informed consent. On the one hand, reimbursement can potentially constitute inducement to participate in research, and conversely there is the possibility of discrimination inherent in not reimbursing prisoner participants (Overholser

1987; Roberts & Indermaur 2008). However, given that corrections policy prohibited prisoners from receiving remuneration for research activities in one of the states (Victoria), a decision was made to not offer remuneration in either state conducting the research due to the need for fairness and consistency in participation and data collection processes. Participants were also informed of the potential risks associated with the research (including potential upset and emotional discomfort), and advised that they could stop the interview at any time, or refuse to answer any particular questions, without subjecting themselves to any penalties for doing so.

In practice, there were instances of participants who chose not to answer specific questions or withdrew from the study. For instance:

- One prospective participant had agreed to be involved in the study, however on the day of the interview opted to not participate due to being highly emotionally distressed;
- At least one participant requested not to complete the K10 scale;
- Multiple participants declined consent for extraction of information from their prisoner health records;
- Some participants initially agreed to a follow-up interview as part of the broader study, but when contacted post-release stated that they wished to not continue their participation.

These examples support the notion that the process of informed consent was more than a tokenistic exercise in the current study - they offer practical demonstrations of participants' autonomous decisions regarding the extent of their involvement with the research.

4.6.2 Confidentiality

Confidentiality in research settings refers to circumstances whereby "a researcher is able to link information with a given person's identity but essentially promises not to do so publicly" (Maxfield & Babbie 2011, p. 59). This is distinguished from anonymity whereby the researcher cannot associate data with a particular individual (Maxfield & Babbie 2011).

Participants in this study were required to sign a consent form prior to the interview. While some researchers rightly argue that signed consent forms offer little benefit to participants, and highlight the potential risks of signed consent forms in relation to participant confidentiality (Roberts & Indermaur 2003), in the case of the current study these forms were required by Human Research Ethics Committees and also in order to permit the participants' health records and corrections files to be accessed from corrections departments. So as to minimise the potential for participant responses to be identified, signed consent forms were separated from the interview responses, and participants were allocated a case number for data entry and analysis.

Additionally, certain limits to confidentiality were stipulated in the explanatory statement, including that the researchers were required to inform the prison if the participant threatened to harm themselves or others, or if offences were disclosed (though no questions regarding offending behaviour were posed during the interviews). Although researchers vary in responses to disclosure of offending by research participants (Roberts & Indermaur 2008), in the case of this study, these stipulations were required as part of obtaining procedural ethics approval from corrections departments. As some authors have noted, such a situation results in researchers effectively "building a law-enforcement role" into their research activities (Lowman & Palys 2001, p. 23). However, given that the current study was not examining

offending behaviour, the impact of these limits to confidentiality are anticipated to be minimal. Furthermore, as noted in The National Health and Medical Research Council's National Statement on Ethical Conduct in Human Research (2007), collecting data concerning illegal activities exposes participants to potential risks which can be minimised in this study since investigating illegal activities was not central to the purpose of the research.

The discussions concerning informed consent and confidentiality illustrate some of the difficulties faced by researchers who conduct prison-based research, particularly the need to balance the concerns and needs of participants alongside the practical requirements of various institutions administering and facilitating the research. In practice, there was a need to adopt a pragmatic approach, which best attempted to understand and respect all parties involved in creating, administering and facilitating the study.

4.7 Researching in the correctional environment

The research context of this study refers to the financial and practical reliance on research funding bodies, corrections departments and individual prisons, staff and prisoners to carry out the research. It is beyond the scope of this chapter to comment on each individual influence and to reflect on its potential impacts on the study findings. However what is offered is a broad acknowledgement of the fact that research in this case, and quite often in social work research more generally, is not methodologically conceptualised and subsequently executed in a vacuum of scientific and ethical considerations (Alston & Bowles 2012).

There are numerous other influences which arise from the research context, some of which have already been alluded to in this chapter. At the most basic level, funding grants play a role in defining, or constraining, the research agenda, and influencing the conduct, dissemination

and publication of research (Carlen 2005; Hillyard et al. 2004; Piacentini 2011). Hillyard and colleagues (2004, p. 378) comment on "the subordination of research workers to the imperatives of the market" in which knowledge becomes marketised and commodified, and its production becomes an essentially utilitarian exercise. Furthermore, time and fiscal limitations of such research funding affect not just *what* can be studied, but also *how* it can be investigated. The use of certain research designs such as longitudinal studies and analytical elements which benefit from extended deliberation are often necessarily minimised in many contemporary research environments. Liebling (1999) articulately captures this issue in relation to prison research when she writes that

> …it is through our prolonged interaction with the world we entered, and alongside this our attempts to structure our exploration of it, but then through a prolonged period of reflection, that we might emerge with what we would be happy to call ('verstehen') understanding. We are not there yet – and very few funding sources are interested in employing us to do this bit. (Liebling 1999, p. 157)

Research collaboration with corrections departments requires the consent of these agencies to the proposed research, as well as adherence or agreement to research processes stipulated by these bodies. Prison researchers have variously described this process as "breaking in" (Wahidin 2004, p. 16) and "penetrating the penal periphery" (Piacentini 2011) of an institutional fortress dominated by the need for security and secrecy (Hart 1995). Furthermore, experience has shown that support from the official bureaucracy does not guarantee successful research (Piacentini 2011). Rather, gaining access to prisons, inmates, correctional staff and other data has been more accurately characterised by Wahidin (2004, p. 21) as an "ongoing" and "precarious process" which must be continually negotiated.

For instance, in the current study an initial version of the prisoner interview schedule contained items inquiring about prisoners' use of drugs and alcohol and perpetration of assaults in prison; these questions were subsequently removed at the request of project partners given that prisoners could be disclosing unprosecuted offences. As previously discussed, corrections departments and individual prisons also consented to the particular units which from which prisoner sampling would be undertaken, which subsequently excluded mental health and behaviour management units.

The impact of the research on correctional resources was also an ongoing consideration in developing the data collection tools and processes (e.g. needing to ensure that the instruments were as brief as possible to minimise the impact on prison operations or departmental resources, particularly where assistance was required to gather data). This point has been emphasised elsewhere. For example Hart (1995, p. 168) noted that it is not only research topics which can be "threatening to a correctional organization" but also research methodologies which potentially strain organisational resources. There is therefore a subsequent need for researchers to be "willing to negotiate proposed methodologies and procedures in order to gain access to the research environment" (Hart 1995).

While it is not suggested that these influences are somehow wrong or unethical, the above discussion hopefully illustrates the practicalities and potential limitations of the research study owing to the broad context in which it is carried out. These impacts lead us to reflect upon the relative autonomy and impartiality of government-funded prison research, considering whether it is a 'strings-attached' venture (Piacentini 2011). Furthermore, they illustrate the need to look beyond the dyad of researcher-researched in understanding the context and powers which shape research methodologies and findings. These constraints should not cause

us to abandon research in the prison environment, but rather to recognise the context in which knowledge is often produced in this field.

4.8 Study validity, reliability and other sources of potential bias and error

This section provides a discussion concerning the validity and reliability of the study design; validity and reliability of specific instruments have been previously described. Specifically, issues relating to the collection of self-report data and secondary data collection from health and correctional files are discussed.

4.8.1 Prisoner self-report measures

One potential limitation of this study design is its reliance on prisoner self-report measures gathered during interviews in relation to psychological distress and a range of other variables (e.g. experiences of prison-based victimisation, sense of safety, physical functioning, social connection, program participation and experience of the prison environment). Schofield and colleagues (2011, p. 75) state that "Self-report comes under particular scrutiny in populations such as prisoners who are stereotyped as being inherently dishonest, unreliable and manipulative". In order to minimise the introduction of bias:

- Some standardised measures were adopted (e.g. K10 Scale and Barthel Index);
- The majority items (other than history of victimisation in prison and total lifetime months spent in prison) inquired about participants' current circumstances, minimising the influence of recall bias;
- Record data was utilised where possible, including health and correctional file data, as a means of methodological triangulation (Hussein 2009).

Despite a potential perception of prisoners as unreliable survey respondents, previous Australian research regarding the validity of prisoner self-report in relation to health and criminal history data has concluded that prisoners are generally reliable survey respondents (Darke 1998; Schofield et al. 2011). For example, one Australian study compared prisoners' self-reported history of traumatic brain injury (TBI) with public hospital medical files and found that 70% of those who reported a TBI had a corresponding medical record of the incident, where these files could be located (Schofield et al. 2011). However that sample only consisted of male prisoners, and self-report was only assessed with respect to TBI, rather than more broadly. Bai and colleagues (2014) also examined concordance between prisoners' self-reported health and behavioural information with that contained in correctional health files in the US. The authors found that the level of concordance varied according to the variable examined. The prevalence of physical health conditions was generally higher in medical records compared to self-report, while behavioural conditions (e.g. drug use, smoking) were more likely to be underreported in the medical records compared to self-report (Bai et al. 2014). These findings support the methodological choice to collect health data from medical records for the purpose of this study.

Other potential sources of error and bias of interviewer-administered self-report measures include potential social desirability bias, acquiescence and interviewer effects (Bryman 2012), which are now discussed.

4.8.2 Social desirability

Mirowsky and Ross (1984, p. 190) define social desirability as "the tendency to give … the deferential response when the question has a normatively-correct answer". Two separate overseas studies in relation to prisoner psychological distress have found significant negative

correlations between prisoners' levels of social desirability (using original or adapted versions of the Marlowe-Crowne Social Desirability Scale), and their self-reported levels of distress (using the Brief Symptom Inventory and the Kessler Psychological Distress Scales, respectively) (Murray 2000; Rowan-Szal et al. 2012). In effect, these findings indicate that prisoners who measure high on social desirability scales tend to self-report lower levels of mental health symptoms, including psychological distress. One study reported that a negative correlation observed between social desirability and psychological distress scores among female prisoners suggested that participants "were unlikely to be responding in a manner to cause others to view them in a more favourable light" (Rowan-Szal et al. 2012, p. 71). However, while this assertion may be broadly true of prisoners reporting high levels of distress (who tended to display low levels of social desirability) it is not necessarily the case for participants who self-report low levels of psychological distress.

Though these studies are relatively preliminary and would need to be replicated with Australian samples, this negative correlation between measures of self-reported social desirability and psychological distress has also been found in non-correctional populations. For example, one study found that social desirability, or "faking good", could account for 20% of the variance in psychological distress scores among nearly 200 master's-level counsellor trainees in the US (Smith, Robinson & Young 2007). Mirowsky and Ross (1984) similarly found that social desirability was negatively associated with self-reported symptoms of psychological distress among adult samples from the US and Mexico.

Also of relevance to the current study is the observation in these samples that the tendency to give socially desirable responses increased with age and lower socio-economic status. Thus the authors hypothesised that such traits "are image-management techniques likely to be used by

persons in relatively powerless positions or in groups that stress the presentation of a good face to outsiders" and that "part of the reason it appears that older people have lower levels of psychological distress than younger people is that they are simply less willing to admit to symptoms" (Mirowsky & Ross 1984, p. 195). Furthermore, this particular study also included measures of acquiescence, which the authors defined as "the deferential response to neutral questions" (or generally answering 'yes' to questions which are not normatively charged), which they found did not affect the reporting of symptoms of psychological distress (Mirowsky & Ross 1984).

While some authors have implied that traits of social desirability are causative of lowered reporting of mental health symptoms, others have pointed out that the two factors may be somewhat overlapping. Social desirability as a trait includes dimensions of "self-deceptive positivity and adjustment" as well as "other deception or impression management" (Moum 1998, p. 301). While aspects of social desirability related to impression management should be controlled for, those reflecting self-deception and adjustment are actually indicative of mental health and subjective well-being, and thus "inextricably linked to content variance" in measures of psychological distress (Paulhus 1991, p. 23).

Despite these disagreements, a limitation of the current study is that it did not incorporate a measure of the participants' social desirability traits. There is therefore no capacity to assess their impact on the validity of the K10 measure. This is an oversight given previous findings suggesting that older people may create a "façade of adjustment" whilst in prison (Vega & Silverman 1988), and should be included in any future research in this area.

4.8.3 Validity and reliability of health file data

The advantages associated with collecting information relating to health and healthcare utilisation from prisoner files include the lower level of investment (in terms of both time and cost) compared to physical examination, and the minimisation of recall errors and thus potentially higher level of validity compared to prisoner self-report of healthcare utilisation over the previous two years (Bryman 2012; Rubin & Babbie 2013). Yet reliance on data collected from health files is not without problems, which are now discussed further.

4.8.3.1 Health file data validity. Research has raised questions regarding the use of health file data as a proxy measure for health and mental health conditions and treatment needs among older prisoners (Kakoullis, LeMesurier & Kingston 2010). For example, Fazel and colleagues (2001) assessed 203 male prisoners aged 59 years and older using a semi-structured clinical interview (GMS-AGECAT). While depressive disorder was diagnosed in 29.6% of the participants, only 11.7% of those diagnosed were being treated with antidepressant medication at the time of the interview, and only 40% of those diagnosed had a past or present history of depression recorded in their prison medical records. There were also discrepancies between health and mental health conditions listed in medical records compared to those self-reported by the sample; while musculoskeletal, hearing and eyesight problems were significantly more likely to be self-reported by prisoners compared to those listed in medical records, psychiatric illness was significantly *less* likely to be self-reported compared to medical records (Fazel, Hope, O'Donnell, Piper et al. 2001). A third paper by Fazel et al. (2004) similarly reported that health and mental health issues were undertreated (pharmacologically) among this older prisoner sample, even when health conditions were recorded in patient files. Another UK study of 121 male prisoners aged 50 years and older used the same clinical

interview (GMS-AGECAT) to assess participants; additionally, self-report data concerning physical and mental health conditions were collected, as well as information from prisoner health files (Kingston et al. 2011). Mental health conditions were diagnosed in 42% of participants, and this accorded with self-report in 80% of cases. Yet again only a minority (18%) of those diagnosed with depression were being prescribed antidepressant medication, and only 10% of the sample had a psychiatric diagnosis listed in their health files (Kingston et al. 2011). In that study, discrepancies between self-reported conditions and those listed in health files were less for physical health issues (e.g. cardiovascular and musculoskeletal conditions) compared to psychiatric conditions.

Given that past studies have reported that health issues, particularly mental health conditions, may be both under-diagnosed and undertreated among older prisoners (Fazel et al. 2004; Fazel, Hope, O'Donnell & Jacoby 2001; Kingston et al. 2011), questions are raised as to the validity of health file information as a proxy measure of prisoners' health conditions and healthcare needs. While the prevalence of self-reported health and mental health issues varied compared to those listed in medical files, participant self-report and medical file analysis underestimated psychiatric illness compared to direct assessment in both studies (Fazel, Hope, O'Donnell, Piper et al. 2001; Fazel, Hope, O'Donnell & Jacoby 2001; Kingston et al. 2011). At the same time, both of these studies were conducted in the UK and only included older male prisoners, limiting the generalisability of their findings. Still, the potential drivers behind these findings are worth exploring.

Inconsistencies between health/mental health status and information contained in correctional health files may be a result of prisoners' under-reporting symptoms and conditions, either to correctional health staff or to researchers, or not seeking treatment.

Alternatively, these findings may be reflective of the limited availability of correctional healthcare. The alternative approach in our study design would have been to employ health professionals to provide direct physical and mental health examinations for each participant. Unfortunately, this approach was beyond the scope of resources available to the project. Potentially prisoner self-reports could have been used to collect data concerning health conditions. However, this approach presents difficulties in collecting specific data concerning medication usage and health care utilisation over an extended period of time. This is both due to recall errors as well as issues specific to the prison environment (e.g. medications being dispensed to prisoners). It should therefore be acknowledged that using information contained in correctional health files as a proxy measure of physical and mental health conditions among older prisoners may underestimate the true prevalence of these issues within the population.

4.8.3.2 Inter-rater reliability of health file data collection. As outlined previously, health file data collection was conducted in Victoria by Justice Health Victoria, and in New South Wales, audits were completed by the research interviewers, one of whom was a research nurse in corrections, familiar with the format of correctional health files. The different mechanisms for collecting this data were adopted based on consultation with each state's correctional health department (Justice Health in Victoria and the New South Wales Justice Health and Forensic Mental Health Network), that is, according to what was practical and possible within each jurisdiction's policies and resources. One advantage of the data collection process used is that the vast majority of health file audits (174/219, 79%) were undertaken by staff familiar with correctional health files.

The standard instrument for health file data collection gathered relatively simple information and did not require any ratings or judgments from auditors. Previous studies involving medical

record extraction have demonstrated high inter-auditor reliability of data collection from medical records, even where extractors are non-physicians (Liddy, Wiens & Hogg 2011; Mi et al. 2013; To et al. 2008). At the same time, the absence of reporting this kind of reliability analysis has been noted in clinical research (specifically cardiology) (Gow et al. 2008).

While it appears somewhat common for inter-rater reliability analyses to be absent in health and correctional health research involving health file data collection, the lack of such analysis is nonetheless acknowledged as a limitation of the health file data collected in the current study.

4.8.4 Interviewer effects

Davis and colleagues (2010, p. 15) describe interviewer effects as "the measurement error attributable to a specific interviewer characteristic such as race or gender". They are distinguished from interviewer error or variance, which denotes "the proportion of the total response variance which can be attributed to differences among interviewers" (Dijktstra 1983, p. 179). Interviewer effects are not consistent, but rather arise as a function of the interaction between the interviewer and the respondent in the context of the particular research being conducted (Cleary, Mechanic & Weiss 1981; Davis et al. 2010). These effects are more likely to occur when interview items query attitudes in relation to socio-demographic characteristics, and the direction of these effects are generally "in deference" to the interviewer's characteristics, for example race, gender or ethnicity (Davis et al. 2010).

While the research on interviewer effects is limited (Davis et al. 2010), for the purposes of the current study, interviewer effects in relation to mental health interviewing are particularly relevant. Moum (1998) analysed data from two large scale population health surveys in

Norway, which were administered by questionnaire (N = 6,348) and interview (N = 7,502). The author found that mental health symptom reports were lower among younger male interviewers (<25 years) and that female interviewers, both young and old, obtained more symptom reports among elderly respondents (Moum 1998, p. 309). However, overall the impact of interviewer age and gender on mental health symptom reports was described as low (Moum 1998).

Cleary and colleagues (1981) also reported that various interviewer characteristics impacted on the level of mental health symptoms reported by 1,026 adults at interview with one of 14 interviewers, who had also completed the interview. A positive association between participant reports of mental health symptoms and various interviewer characteristics were found, including interviewer age, experience and mental health symptoms (gender was not examined as all interviewers were female). Interviewers who were older, who had some interviewing experience (>1 study), and lower current levels of psychological distress elicited greater reported mental health symptoms from participants (Cleary, Mechanic & Weiss 1981). The authors hypothesised that responses to sensitive questions such as mental health symptoms are most influenced by the general demeanour of the interviewer, and that interviewers who were more comfortable, enthusiastic, and less distressed were able to create an atmosphere which was conducive to disclosure of mental health symptoms (Cleary, Mechanic & Weiss 1981). Despite these speculations, it is important to note that interviewer effects only accounted for 0% to 5% of the observed variance, a similar finding to Moum et al. (1998).

While interviewer effects overall appear minimal and inconsistent, given that the current study will employ multiple interviewers, analysis of between interviewer variations is reported in the Results Chapter to check for these potential effects (Section 5.4.2).

4.9 Chapter summary and conclusion

This Methodology Chapter has provided an outline and justification of the research design, the study sample and settings, the data collection instruments and procedures, data analysis processes, as well as discussions of validity, reliability and pertinent ethical issues which were considered in the design and administration of the study.

The cross-sectional survey design adopted is directly aligned with the descriptive level of the research question, which seeks to understand the level of psychological distress among older prisoners, as well as the factors associated with distress. While the sampling strategy ultimately results in a non-random sample which cannot be considered representative of all older prisoners, analysis of the sample representativeness (presented in the next chapter) allows for this to be considered in the interpretation of findings. This chapter has also provided a discussion of issues relating to the validity and reliability of the study design. While various limitations have been identified, these represent an opportunity to view the study findings through a realistic lens. This is in accord with the post-positivistic epistemology adopted in the study, which actively seeks to understand the constraints of knowledge or findings generated by research.

Many of the limitations of the study are characteristic of prison studies more broadly, including the use of self-selecting samples, and the limited sample size. On the other hand, this study possesses several unique strengths. Firstly, it drew upon strong partnerships with corrections

agencies to facilitate access to the study sites, the prisoner sample and other key data sources. It is among the first quantitative studies of older prisoners in Australia, and includes two states which together hold a significant portion of Australia's prisoner population. The sampling strategy utilised allowed for the relatively large sample of prisoners aged 65 years and older, as well as the inclusion of older female prisoners, a group often excluded or minimally represented in research pertaining to older prisoners.

The next Results Chapter will initially describe the sample characteristics and representativeness, as well as presenting reliability analyses relating to the collection of the study data. Following this is a series of four research publications which present the study findings.

Chapter 5. Results

The Methodology Chapter provided an outline of, and justification for, the study's chosen research methods. This Results Chapter contains two components: an introductory section, followed by the presentation of the four academic papers delivering the research findings. The introductory section describes the study sample, including a detailed exploration of the sample representativeness. As outlined in the Methodology Chapter, an understanding of sample representativeness is crucial in descriptive studies in order to contextualise the generalisability of research findings (Bryman 2012). Additionally, a summary of the data collected from prisoner corrections and health files is also presented.

While the Methodology Chapter examined general issues relating to validity and reliability, the introductory section in this Results Chapter contains a further discussion of reliability as it directly relates to the implementation of the research design. Specifically, the internal consistency reliability and inter-administrator reliability of the K10 Scale as it was applied in this study are examined. The results of the K10 Scale are central to responding to the research question, and consequently the reliability of this measurement provides context to the study's results. After these discussions, the Results Chapter presents the research papers which deliver the study's findings in relation to the research questions.

5.1 Prisoner sample characteristics

The final prisoner sample comprised 173 older prisoners (n = 83 in Victoria and n = 90 in New South Wales) and 60 younger prisoners (comprising 30 younger prisoners in each state). Prisoners aged 65 years and older comprised 48% of the older prisoner sample, and females comprised 13% of both the older and younger prisoner samples. It is not suitable to describe

response rates given that the quota sampling strategy adopted resulted in certain prisoners not being approached once each quota was full (for example, older prisoners aged 50 to 64 years). However, some context can be provided for the purpose of understanding the overall sample.

According to census data published by the Australian Bureau of Statistics, the samples (numerically) represented approximately 12.2% and 7.6% of the Victorian and New South Wales older prisoner populations[3] respectively in the corresponding years of data collection (ABS 2011c, 2012c). As shown later in Table 7, the sample included 27.1% and 22.3% of the older prisoners in the Victorian and New South Wales prisons sampled, respectively.

Self-reported socio-demographic characteristics of the younger and older prisoner samples are presented in Table 5 and are compared to the general prisoner populations in Victoria (2011) and New South Wales (2012) at the time of data collection, where data were publicly available (New South Wales Department of Corrective Services 2012; Victorian Department of Justice 2011).

As shown in Table 5, the younger prisoner sample was broadly reflective of the sample states' prisoner populations in terms of the proportion that were Australian-born. However, prisoners for whom English was a second language were under-represented in both the younger and older prisoner samples. As a group, the older prisoner sample had a greater average number of children, were more highly educated, were less likely to be Indigenous, and were less likely to have been unemployed or homeless prior to entering prison compared to the younger

[3] The total older prisoner population was confined to those aged 50 years and older and did not include Indigenous prisoners aged 45-49 years due to difficulties accessing this information.

prisoners sampled. These characteristics are potentially indicative of a higher socioeconomic status among the older prisoner group compared to the younger prisoner group.

Table 5. Selected socio-demographic and prison history characteristics of the prisoner sample groups

Variable	Older prisoner sample (N = 173)	Younger prisoner sample (N = 60)	Combined Victorian and New South Wales prison populations (N = 14,380)
Mean age in years, [minimum– maximum]	63.1, [46-83]	34.4, [21-49]	36.4
Male	150 (87%)	53 (88%)	93%
Born in Australia	126 (73%)	47 (78%)	75%
English as second language	19 (11%)	6 (10%)	19%
Single	36 (21%)**	35 (58%)**	58%
Indigenous	11 (6%)	7 (12%)	18%
Mean number of children	2.69**	1.60**	N/A
Year 10 or below is highest level of completed schooling	100 (58%)	40 (67%)	N/A
Unemployed prior to prison	57 (33%)**	31 (52%)**	N/A
Receiving government payments prior to prison	106 (61%)	36 (60%)	N/A
Homeless[a] prior to prison	9 (5%)	7 (12%)	N/A
Lifetime months spent in prison (mean, median)[b]	70.6, 34	68.9, 60	N/A

a. Includes those participants who reported being homeless, couch-surfing, residing in a boarding home or being in crisis accommodation prior to entering prison. b. Self-reported lifetime months spent in prison or detention as an adult or juvenile. Note that the substantial difference in the mean and median months in prison for older inmates is driven by a small number of very long-term older prisoners within the sample. *$p < 0.05$, ** $p < 0.01$

5.2 Sample representativeness

Sample representativeness broadly refers to the degree to which the sample's aggregate characteristics are representative of those of the broader population (Rubin & Babbie 2013, p. 152). As outlined previously, the older prisoner study sample was selected based on the quota sampling strategies outlined in Section 4.3.4, and therefore did not aim to generate a representative sample of the older prisoner population. It is nonetheless useful to understand how characteristic the resulting sample was of the older prisoner population.

At the same time, attempting to discern the representativeness of the study sample is not a straightforward task. It firstly raises the issue of precisely which population one wishes to compare the sample to – for example the older and younger prisoner population in the prisons surveyed, in each state sampled, or across the country? Alongside these considerations, it must be determined exactly which characteristics will be compared between the sample and the broader population to ascertain representativeness. The most recently available national data relating to older prisoners, which was published by the Australian Institute of Criminology, relates to Australian prisoners aged 50 years and older in 1997, and is therefore not useful for the current study by virtue of its age (Grant 1999). There is therefore no publicly available source of contemporary data relating to the characteristics of the Australian older prisoner population, so it was not possible to ascertain the representativeness of the sample at the national level.

As a result, representativeness was examined first at the state level, after requesting aggregate data from Corrections Victoria and the New South Wales Department of Corrective Services regarding the older prisoner populations within each state, and subsequently within the particular prisons surveyed. As the following discussion demonstrates, experience in the

current study reaffirms that the capacity to ascertain the representativeness of a sample is shaped by the access to aggregate data concerning the broader population from which a sample is drawn.

5.2.1 Older prisoner sample representativeness

In Victoria, data were provided by Corrections Victoria regarding both the older prisoner populations at the prison sites sampled, as well as the state-wide older prisoner population at the time of the study. In New South Wales, data were provided regarding the older prisoner population at the sampled prison sites only, therefore state-wide data concerning older prisoners was accessed from a report published close to the period of data collection (Leach & Neto 2011).

Before examining sample representativeness compared to the two states, the nature of the state-wide data should be examined. First it should be noted that published data used to represent the older prisoner population in New South Wales referred to prisoners aged 55 years and older in 2009, whilst the sample included prisoners aged 50 years and older in 2012, therefore some discrepancies would be expected.

There were other differences in the aggregate data provided between the two states. Aggregate data for Victoria were provided in the form of daily average numbers for the 2010-11 financial year (i.e. 30th June 2010 to 30th June 2011). These figures are calculated by aggregating the daily prison population counts for any given variable and dividing by the number of days in the year to determine the average daily prisoner count relating to each variable. In New South Wales, data relating to the state-wide older prisoner population were derived from the yearly census snapshot conducted on 30th June 2009. Thus, the aggregate

state-wide data from Victoria could be considered more reflective of the various fluctuations in the prisoner population across the year, and therefore potentially more representative of the broader population than the New South Wales aggregate state-wide data.

A final limitation of the aggregate data obtained is that none of the data includes Indigenous prisoners aged 45 to 50 years, as were included in our sample. Table 6 below provides a summary of the sources of aggregate data which are utilised in the discussion concerning sample representativeness.

Table 6. Aggregate older prisoner population data sources (Victoria and New South Wales)

	Victorian aggregate data for sampled prisons	Victorian state- wide aggregate data	New South Wales aggregate data for sampled prisons	New South Wales state-wide aggregate data
Year	2011	2010-11 and 2009-10[a]	2012	2009
Age group	≥50 years	≥50 years	≥50 years	≥55 years
Data collection method	Census data (6th May 2011)	Daily average number	Census data (30th June 2012)	Census data (30th June 2009)

a. Data provided by Corrections Victoria for 2010-11 relates to older prisoner numbers, including proportion of older prisoners aged ≥65 years and proportion that were female. Data provided for 2009-10 relates to prior terms of imprisonment, sentence length and offence type for older prisoners across the state.

5.2.1.1 Comparison to state-wide older prisoner populations. Table 7 below compares the older prisoner samples in Victoria and New South Wales to the available state-wide data of the older prisoner population across several characteristics.

Table 7. Older prisoner population sample representativeness (state level)

	Victorian older prisoner sample	Victorian state-wide aggregate older prisoner data[a]	New South Wales older prisoner sample	New South Wales state-wide aggregate older prisoner data[c]
Size	n = 83	N = 663	n = 90	N = 808
Year	2011	2010-11 and 2009-10[a]	2012	2009
Age group	≥ 50 years[b]	≥ 50 years	≥ 50 years[b]	≥ 55 years
Female %	12.0%	7.8%	14.4%	7.4%
Indigenous[e] %	3.7%	1.8%	8.9%	26.2%
Aged ≥65 years	50.1%	18.1%	47.8%	15.3%[d]
Prior sentenced terms of imprisonment				
No priors	79.3%	57.0%	74.4%	45.4%
1 prior	14.6%	13.9%	13.3%	N/A
2 priors	1.2%	5.5%	6.7%	N/A
3 priors	0.0%	4.0%	1.1%	N/A
4 priors	0.0%	3.4%	1.1%	N/A
5+ priors	4.9%	15.6%	3.4%	N/A
Most serious offence[f]				
Homicide and related offences	8.5%	17.6%	12.2%	14%
Acts intended to cause injury	2.4%	4.7%	7.8%	N/A
Sexual assault and related offences	72.0%	42.3%	53.3%	28%

Robbery, extortion and related offences	1.2%	1.7%	1.1%	N/A
Unlawful entry with intent / burglary, break and enter	0.0%	3.1%	0.0%	N/A
Other property offences	3.7%	3.8%	2.2%	N/A
Fraud, deception and related offences	2.4%	4.3%	7.8%	N/A
Illicit drug offences	2.4%	15.6%	5.6%	N/A
Offences against government procedures, government security and government operations	6.1%	3.2%	3.3%	6.1%
Other offences[g]	1.2%	4.0%	6.7%	N/A

a. Data provided by Corrections Victoria for 2010-11 relates to older prisoner numbers, including proportion of older prisoners aged ≥65 years and proportion that were female. Data provided for 2009-10 relates to Indigenous status, prior terms of imprisonment, sentence length and offence type for older prisoners across the state. b. Older prisoner samples included Indigenous prisoners aged 45 years and older. c. Data taken from Leach and Neto (2011) except where otherwise indicated. d. Data taken from 2012 New South Wales Inmate Census (New South Wales Department of Corrective Services 2012). e. Victorian data relates to the proportion of prisoners aged ≥50 years who are Indigenous, while New South Wales data relates to the proportion of prisoners aged ≥55 years who are Indigenous. f. Most serious offence categories based upon the Australian and New Zealand Standard Code of Offence (ABS 2011a) were utilised to provide consistency in offence categories between the two states. g. Other offences include prohibited and regulated weapons and explosives offences, property damage and environmental pollution, public order offences, traffic and vehicle regulatory offences and miscellaneous offences.

As a result of the sampling strategy, over-representation of certain groups was expected within the older prisoner sample (e.g. female prisoners, prisoners aged 65 years and older) and this is reflected in Table 7 above. In New South Wales, older Indigenous prisoners were under-represented, however this was not the case in Victoria. Additionally, older people serving their first sentenced term of imprisonment, and those convicted of sexual offences were over-represented. There are two possible explanations for the over-representation of prisoners

convicted of sexual offences, both of which would have arisen due to the sampling strategy. First, prisons were selected based on those accommodating the highest numbers of co-located older prisoners. In many instances these prisons/units tended to be protection prisons/units, within which prisoners convicted of sexual offences are over-represented. Secondly, the skewed representation based on prior imprisonments and offence type is partly a result of the sampling strategy which required half of the sample to be aged 65 years and older. Data from Victoria shows that while 42.3% of prisoners aged 50 years and older were imprisoned for sexual offences in 2009-10, when considering prisoners aged 65 years and older, this figure rose to 67.8%, which is consistent with the higher proportion of sexual offenders observed within the study sample.

In discussing sample representativeness, is also useful to examine the possible impacts of the exclusion criteria that were applied in the sampling process. As mentioned previously, prisoners identified as having an intellectual disability were excluded in the Victorian sample. However, analysis of participants' scores on the Mini-Mental State Examination (MMSE) using a Kruskal-Wallis Test did not show a statistically significant difference between the states in the proportion of participants with scores suggesting mild (18-23) or severe (10-17) cognitive impairment. This suggests that this exclusion criterion is unlikely to have impacted the results.

Secondly, prisoners whom the administration had identified as potentially behaviourally or emotionally risky, due to researcher and participant safety issues, were also excluded from the research, as discussed previously in the Methodology Chapter. This included prisoners who were currently held in psychiatric or behaviour management units at the time of recruitment. While it was not possible to ascertain the number of older prisoners among those placed in such units, it is fair to assume that the level of psychological distress among prisoners held in

management or psychiatric units would be somewhat worse than the general prison population. It could be assumed that the exclusion of these groups could lead to an underestimation of the true level of psychological distress among older prisoners, assuming at least a small number of older prisoners are held in such locations. Though as discussed previously, such a position should be adopted with caution given the lack of data concerning the number of older prisoners in these units.

5.2.1.2 Comparison to older prisoners at sampled prisons. As stated previously, data were obtained from Corrections Victoria and the New South Wales Department of Corrective Services (DCS) pertaining to all prisoners aged 50 years and older at the prison sites surveyed. These data are shown in Table 8. The figures which were provided were based upon census (snapshot) data of the older prisoner populations at the prisons captured on 6th May 2011 (Victoria) and 30th June 2012 (New South Wales). These dates fell during the period of data collection in the respective states. Note that these figures only pertained to sentenced prisoners aged 50 years and older and therefore did not include Indigenous prisoners aged 45 years and older at the prison locations.

Overall, the study sample comprised 24.4% of the population of older prisoners at the surveyed prisons. As with the state-wide data, older female prisoners were over-represented, as were prisoners aged 65 years and older, as a result of the quota sampling strategy. In both states, approximately one third (30-33%) of the daily average number of older female prisoners at the surveyed prisons were included in the sample, and around one half (46-52%) of the daily average number of prisoners aged 65 years and older at the surveyed prisons also participated in the study.

Table 8. Older prisoner sample representativeness (prison level)

	Victorian older prisoner sample	Victorian sampled prisons older prisoner data	New South Wales older prisoner sample	New South Wales sampled prisons older prisoner data
Size	n = 83	N = 306	n = 90	N = 404
Year	2011	2011	2012	2012
Age group	≥ 50 years[a]	≥ 50 years	≥ 50 years[a]	≥ 50 years
Female %	12.0%	10.8%	14.4%	9.7%
Aged ≥65 years	50.1%	26.5%	47.8%	23.3%
Time in prison (current sentence)				
Days in prison (Mean)	906	1314	1675	1624
<6 months	28.0%	13.4%	12.2%	9.2%
6<12 months	17.1%	12.1%	16.7%	12.9%
1<2 years	18.3%	20.3%	12.2%	18.8%
2<5 years	23.2%	34.0%	23.3%	33.2%
5<10 years	9.8%	13.7%	22.2%	16.6%
10 years+	3.7%	6.5%	13.3%	9.4%

a. Older prisoner samples included Indigenous prisoners aged 45 years and older.

The Victorian sample was skewed towards older prisoners who had spent less time in prison (compared to the populations at the prisons surveyed). In New South Wales, older prisoners who had spent between one and five years in prison during their current sentence were under-represented, while those who had spent either less or more than this period were slightly over-represented.

5.2.2 Younger prisoner sample representativeness

This section reports on the representativeness of the younger prisoner sample, which was compared to the Victorian and New South Wales prisoner populations in the same year of data collection in each state. While it would have been preferable to compare the samples to the younger prisoner populations in each state, data were not available for such analyses.

Data representing the broader Victorian and New South Wales prisoner populations were taken from yearly prisoner census publications in each state, captured on the 30th of June in 2011 (Victorian data) and 2012 (New South Wales data) (New South Wales Department of Corrective Services 2012; Victorian Department of Justice 2011), as shown in Table 9 below.

Table 9. Younger prisoner sample representativeness (state level)

Characteristic	Victorian younger prisoner sample (2011)	Victorian prisoner population (2011)	NSW younger prisoner sample (2012)	NSW prisoner population (2012)
Population size	30	4 737	30	9 643
Average age (years)	36.3	37.3	32.5	35.9[a]
Born in Australia	73.3%	75.1%	83.3%	74.7%
English first language of country of birth	86.7%	78.8%	89.9%	80.0%
Single (never married)	50.0%	62.5%	66.7%	55.9%
Female %	20%	6.8%	3.3%	6.9%
Indigenous %	6.9%	6.2%	18.5%	23.2%
No prior sentenced imprisonments	48.3%	52.1%	44.4%	53.2%

Most serious offence				
Homicide and related offences	3.4%	11.3%	7.4%	9.0%
Acts intended to cause injury	3.4%	14.7%	7.4%	17.4%
Sexual assault and related offences	31.0%	15.4%	14.8%	10.0%
Robbery, extortion and related offences	3.4%	7.7%	7.4%	11.0%
Unlawful entry with intent/ burglary, break and enter	10.3%	11.2%	18.8%	9.0%
Other property offences	17.2%	6.3%	0.0%	4.2%
Fraud, deception and related offences	0.0%	2.9%	0.0%	2.3%
Illicit drug offences	10.3%	12.5%	7.4%	15.4%
Offences against government procedures, government security and government operations	9.9%	10.6%	11.1%	10.9%
Public order offences	0.0%	0.5%	18.5%	0.8%
Other offences[b]	3.5%	6.9%	7.2%	10.0%

a. Data taken from ABS (2012). b. Other offences include Prohibited and regulated weapons and explosives offences, property damage and environmental pollution, traffic and vehicle regulatory offences and miscellaneous offences.

The younger prisoner sample was of a slightly younger average age than the prisoner population in each state; this would be expected since the broader population includes older prisoners. As with the older prisoner sample, females were over-represented in the younger prisoner sample (overall 11.2% of the sample were female compared to around 6.9% of the prisoner population across both states). Overall, the younger prisoner sample was fairly reflective of the general prison population in the surveyed states across other socio-

demographic characteristics, including the proportion who were born in Australia, who were born in a country where English is the first language, who were single, and who were Indigenous. In terms of criminal justice characteristics, prisoners who had no prior sentenced terms of imprisonment were slightly under-represented. In relation to offence types, sexual assault and property offences were over-represented in Victoria, while sexual assault, burglary and public order offences were over-represented in New South Wales.

Overall, both the older and younger prisoner samples are non-representative in relation to gender, offence types and age breakdown (in the case of the older prisoner sample). This was anticipated given the quota sampling strategy utilised, and the skewed sample is therefore considered in reporting findings relating to the first part of the research question (i.e. the level of psychological distress among the older prisoner population). Despite the non-representativeness of the sample, the availability of aggregate data concerning the prisoner population allows us to understand some of the differences between the sample and the broader population. On the other hand, utilising the quota sampling strategy allows for the second part of the research question (relating to factors associated with psychological distress) to be uncovered within the available resources by optimising the sample for this purpose.

5.3 File data collection

This section describes the nature of the data collected from both participant health and corrections files.

5.3.1 Health file data

In total 219 of the 233 participants (94.0%) consented and were able to have their health files

audited[4], which comprised audits of 166 older prisoners' files (96.0%) and 53 younger prisoners' health files (88.3%). There was no significant difference in the total K10 scores of older prisoners who had their health files audited (M = 17.38, SD = 8.04) compared to those who had not (M = 20.57, SD = 10.21). Likewise, no differences were observed in the total K10 scores of younger prisoners who had their health files audited (M = 20.21, SD = 8.71) compared to those who had not (M = 19.43. SD = 8.02).

5.3.2 Corrections file data

In total 227 of the 233 participants (97.4%) consented to have information collected from their correctional files, which comprised 171 older prisoners' files (98.8%) and 56 younger prisoners' files (93.3%). There was no significant difference in the total K10 scores of older prisoners who consented for data to be collected from their corrections files (M=17.48, SD=8.12), compared to those who did not (M=20.50, SD=12.02). Likewise, there was no significant difference in the total K10 scores of younger prisoners who consented for data to be collected from their corrections files (M = 19.95, SD = 8.75), compared to those who did not (M = 21.83, SD = 7.08).

5.4 Study reliability

This section of the findings further investigates the reliability of the study's results. Specifically, it includes analysis and discussion of the internal consistency reliability of the K10 Scale and inter-administrator reliability of the K10 scale with the study's prisoner sample.

[4] Note that in some instances health file audits were not completed due to limited resources within the agency completing the audits rather than due to a lack of prisoner consent.

5.4.1 Internal consistency reliability of K10 Scale with the prisoner sample

As indicated in the Methodology Chapter, the internal consistency of a particular scale can vary depending on the sample (Pallant 2011). For example, a scale may consistently measure a particular concept in one sample (e.g. young people), but not others (for example, older people). For this reason, it is useful to examine the level of internal consistency of the K10 Scale with our study sample even though studies have yielded high levels of internal consistency reliability with other samples (See for example Arnaud et al. 2010; Donker et al. 2010; Hides et al. 2007; Kessler et al. 2002). A reliability analysis was conducting using the K10 Scale data for our sample (n = 231) which had been entered into IBM SPSS Statistics 20. Two participants were excluded from the analysis as they had incomplete K10 Scale data. Results of the analysis indicated that the Cronbach's alpha value was 0.89, suggesting very good internal consistency for the K10 Scale with this particular prisoner sample (Tavakol & Dennick 2011). This internal consistency reliability analysis was also repeated excluding the younger prisoner sample to determine reliability solely with the older prisoners who form the focus of this study (n = 171). This analysis similarly yielded a Cronbach's alpha value of 0.89.

5.4.2 Inter-administrator reliability of K10 Scale with prisoner sample

The use of multiple interviewers is common in quantitative correctional research, including mental health research similar to the current study. While it is often reported that interviewers may be experienced in correctional research, and both trained and supervised while conducting data collection, the investigation or reporting of the impact of interviewers on the study findings does not appear to be routine (see, for example, Australian studies such as Butler et al. (2005), Fleming et al., (2012)). There may be assumptions that the impact of interviewer

characteristics is negligible, or analyses may have been conducted which have not been reported.

While the administration of the K10 Scale does not require any specific observations or ratings on the behalf of the researchers, it was worth considering whether similar results were being found by each of the three researchers administering the scale. This analysis effectively considers whether the interviewer is a factor impacting the level of psychological distress measured among older prisoners using the K10 Scale.

In order to check for any significant differences between interviewers, a Kruskal-Wallis Test was performed with participants' total K10 scores as the dependent variable; this non-parametric test enables the comparison of scores on a continuous variable (such as the total K10 Scores) for three or more groups (Pallant 2011, p. 232). It is more suitable than a parametric test such as an analysis of variance (ANOVA) in this case, given that a normal distribution of K10 scores across the prisoner population cannot be assumed.

The results of the Kruskal-Wallis Test revealed a statistically significant difference ($p < .0001$) in the total K10 scores of participants between interviewers. One interviewer (Interviewer Three) recorded significantly lower mean total K10 scores of respondents (n = 68, M = 15.24, SD = 7.14) compared to both Interviewer One (n = 120, M = 19.53, SD=8.67) and Interviewer Two (n = 43, M = 19.12, SD = 7.94). It should be noted that Interviewers Two and Three conducted interviews in New South Wales, whilst Interviewer One conducted interviews in Victoria, so the observed effects are unlikely to be due to state location.

In order to ascertain the effect size of this difference, a Mann-Whitney U Test was performed; this test is the non-parametric equivalent of an Independent Samples T-Test. For the purposes

of this calculation the two interviewers who had recorded higher total K10 scores for participants (interviewers 1 and 2) were grouped as a single interviewer, given that a Mann-Whitney U Test determined there was not a statistically significant difference in the average (median) total K10 scores observed by these two interviewers. The effect size of the difference in the average total K10 scores between Interviewer Three and the other two interviewers was -0.3 which is considered a medium effect size by Cohen's (1988) criteria.

This reliability analysis was then repeated utilising only the older prisoner sample to ascertain whether a similar effect was present. Again, the Kruskal-Wallis Test revealed a statistically significant difference ($p < .0001$) in the total K10 scores of older prisoner participants between interviewers. As previously, Interviewer Three recorded significantly lower mean total K10 scores of older prisoner respondents (n = 49, M = 14.47, SD = 7.35) compared to those administered by Interviewer One (n = 90, M = 18.77, SD = 8.46) and Interviewer Two (n = 32, M = 18.66, SD = 7.23). A Mann-Whitney U Test revealed that the effect size of the difference in K10 scores recorded by Interviewer One compared to Interviewers Two and Three (grouped together) was medium (-0.3) equal to that seen in the analysis of the whole prisoner sample (Cohen, J 1988).

Given that a statistically significant difference in the total K10 scores of participants has been found between interviewers, it is logical to next attempt to determine whether this difference is likely to be reflective of true differences in the level of distress between the various groups of participants, or whether a unique influence of the interviewers was potentially occurring. In effect, we are inquiring if it was possible that the participants interviewed by Interviewer Three were in fact significantly *less* distressed. In order to investigate this possibility, a hierarchical linear regression was performed utilising the older prisoner sample (n=173) in which the total

K10 score was the dependent variable (see Table 10 below). The first step of this regression repeated the final regression analysis (theoretical model) presented in paper five (the final results paper) (Baidawi, Trotter & O'Connor 2016). This model included the following independent variables identified as being associated with distress: employment, exercise, gender, health concerns, healthcare access issues, healthcare utilisation, physical difficulties in the built environment, physical health, and physical functioning, as well as the computed mental health and social marginalisation variables. The second step of this regression introduced an interviewer variable, in which Interviewers One and Two were grouped together and compared to Interviewer Three.

The results of this regression analysis indicated that when the independent variables in step one are taken into account, the interviewer no longer contributed to a statistically significant unique variation in older prisoners' total K10 scores. These findings suggest that there were real differences in the characteristics of the older prisoners interviewed by Interviewers One and Two compared to those interviewed by Interviewer Three, which account for the significant differences observed in the total K10 scores between interviewers.

Table 10. Hierarchical linear regression coefficients (B, β) of the explained variance of older prisoner psychological distress (K10 Total Scores): examination of participant characteristics and interviewer effects

Step	Independent variable	B	SEB	β	t	Sig.
	Current employment	1.236	1.122	.076	1.101	.273
	Exercise	-.620	.330	-.139	-1.879	.062
	Gender	1.608	1.564	.072	1.028	.306
1	Current health concerns	-1.427	1.503	-.071	-.949	.344
	Healthcare access issues	-1.608	1.166	-.099	-1.379	.170
	Healthcare utilization	.783	.599	.095	1.308	.193
	Mental health history	1.322	.539	.169	2.455	.015*

	Physical difficulties in the built environment	-3.551	1.134	-.228	-3.131	.002**
	Physical health	.222	.197	.080	1.129	.261
	Physical functioning	-1.849	1.385	-.100	-1.335	.184
	Social marginalization	1.531	.528	.201	2.902	.004**
2	Current employment	1.045	1.126	.065	.928	.355
	Exercise	-.663	.330	-.148	-2.007	.047*
	Gender	1.200	1.585	.053	.758	.450
	Current health concerns	-1.482	1.498	-.073	-.989	.324
	Healthcare access issues	-1.560	1.163	-.096	-1.341	.182
	Healthcare utilization	.753	.597	.092	1.261	.210
	Mental health history	1.408	.540	.181	2.608	.010*
	Physical difficulties in the built environment	-2.953	1.206	-.189	-2.448	.016*
	Physical health	.267	.198	.097	1.347	.180
	Physical functioning	-1.812	1.380	-.098	-1.313	.191
	Social marginalization	1.446	.529	.190	2.734	.007**
	Interviewer	1.874	1.321	.106	1.419	.158

* $p < .05$ ** $p < .01$

A correlation matrix with the older prisoner sample revealed that the independent variables significantly associated with the interviewer variable were prisoner gender (r = .208, p = .006), physical difficulties in the built environment (r = -.398, p = .000) and the social marginalisation variable (r= .218, p = .006). That is, Interviewer Three was significantly more likely to have interviewed older male prisoners who described no physical difficulties in the prison environment, and who were less likely to report social marginalisation in prison in terms of a lack of social support, history of prison victimisation or feeling unsafe in prison.

The next section of the Results Chapter presents the four findings papers which address the study's research questions concerning the level and correlates of psychological distress among older prisoners. Specifically, these address the following study sub-questions:

a) What is the level of psychological distress (as measured by the Kessler Psychological Distress Scale) among older prisoners, including gender and age breakdowns?

b) How does this compare to i) younger prisoners and ii) the general population of older people in Australia?

c) Is the level of psychological distress among older prisoners associated with:

   i) Socio-demographic factors (age, sex, Indigenous status, country of birth, and education)?

   ii) Criminal justice factors (prior imprisonments, time remaining to serve, offence type, and security classification)?

   iii) Mental health factors (mental health diagnosis, history of suicide attempts and self-harm, history of alcohol and other drug problems)?

   iv) Cognitive functioning?

   v) Physical health factors (physical health conditions and current concerns regarding physical health)?

   vi) Physical functioning (level of functional independence, physical difficulties within the prison environment)?

   vii) Health care factors (e.g. health care access and issues accessing health care)?

   viii) Prison experience (safety/victimisation, social support, protection status, prison employment and program participation)?

d) Which factors explain relatively more of the variance in K10 scores of older prisoners?

5.5 Preamble to Paper Two

The second publication in this thesis addresses the first two research sub-questions. First it describes the level of distress as measured by the Kessler Psychological Distress (K10) Scale among the older prisoner sample (sub-question a), and then compares this to the level seen among younger prisoners and the general Australian population (sub-question b). The relationship between psychological distress and various socio-demographic, criminal justice, mental health and cognitive functioning factors in this population is then investigated (sub-questions c)i),ii), iii) and iv)).

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5.6 Paper Two: Older prisoners: psychological distress and associations with mental health history, cognitive functioning, socio-demographic and criminal justice factors

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Abstract

Background: The growth among older prisoner populations, including in Australia, necessitates an understanding of this group in order to generate effective management strategies. One particular concern is the mental wellbeing of older prisoners. The study aimed to determine the level of psychological distress among sentenced prisoners aged 50 years and older, to compare this level to that seen among younger prisoners and older people in the community, and to investigate which mental health history, cognitive functioning, socio-demographic and criminal justice characteristics were associated with psychological distress.

Methods: A cross-sectional survey of 173 older (M = 63 years) and 60 younger prisoners (M = 34 years) in two Australian jurisdictions was conducted. The Kessler Psychological Distress (K10) scale was administered with prisoners and additional data were collected from interviews and participant health and corrections files. K10 scores were compared to community norms using data from the Australian Health Survey.

Results: Average K10 scores of the older prisoners were significantly lower than the younger prisoners' ($p = .04$), though the effect size was small ($r = 0.1$). Significantly higher distress levels were observed in comparison to the general population ($p < .001$), with older prisoners being three times more likely to display very high levels of distress (12.3% vs 3.7%). Higher psychological distress scores among older prisoners were significantly associated with female gender ($p = .002$) and a history of mental health issues ($p = .002$).

Conclusion(s): While the levels of distress seen among older prisoners were significantly lower than that of younger prisoners, their higher levels of distress in comparison to community norms demonstrate a need for correctional services to be attuned to the mental health of the expanding older prisoner population.

Key words: older prisoners, ageing prisoners, elderly prisoners, psychological distress, mental health, gender differences

Introduction

Older prisoners are the fastest growing age group of inmates in various prison systems around the world, including in the US, UK and Australia among others (Aday and Krabill, 2012; Baidawi et al., 2011; Kingston et al., 2011). For instance the number of prisoners aged 50 years and older in Australia rose by 83% over the decade 2000-2010 compared to a 36% increase in the prisoner population aged less than 50 years (Baidawi et al., 2011). Three sub-populations of older prisoners are typically described: those who first enter prison at an older age, those who grow old while incarcerated for long terms, and ageing recidivist offenders who enter and exit prison over their lifetime (Aday and Krabill, 2012). Given the population growth of older

prisoners correctional services require an understanding of this group, including different subgroups of older prisoners, to enable effective planning and management strategies.

One identified issue is the psychological wellbeing of older inmates. To date, qualitative studies of older prisoners in the US and the UK have depicted a largely neglected and marginalized inmate group whose needs are often poorly catered for in the prison environment (Crawley, 2005; Wahidin, 2004). Aside from the human costs associated with poor wellbeing, there are economic incentives to examine this issue, given its bi-directional association with worsening health and functioning as well as higher levels of healthcare utilisation (Atkins et al., 2013). In the context of limited correctional budgets and high prisoner healthcare costs, studying psychological wellbeing and its correlates may prove useful to identifying interventions which can improve wellbeing, reduce expenses associated with incarceration of older prisoners, and potentially lessen social costs following release.

This study considers psychological distress among older prisoners as a proxy indicator of wellbeing, and investigates its relationship to various socio-demographic, criminal justice and mental health factors. However it is first useful to contextualize this research by understanding how psychological distress presents both across the lifespan and within prison populations.

Psychological distress across the lifespan. In large scale community samples, the proportion of individuals meeting the diagnostic criteria for mental illnesses such as depression and anxiety generally reduces across the lifespan (O'Connor and Parslow, 2010). However, when quantified by dimensional measures using scaled instruments, average levels of psychological distress remain relatively stable – although slightly decreasing throughout adulthood, and moderately rising again in later old age (i.e. at 75 to 80 years) (Byles et al., 2012; Mirowsky and Ross, 1992; O'Connor and Parslow, 2010). Atkins and others (2013) argue that later life depressive

symptoms should be considered a public health issue given their association with physical morbidity and mortality, decreased physical functioning, high health service utilisation, and increased risk of dementia. These issues become increasingly pertinent in the context of the general ageing of Western populations.

Higher levels of psychological distress are associated with various fixed factors, including female gender, lower educational status, and increasing age after the age of 75 years (Byles et al., 2012; Mirowsky and Ross, 1992). However modifiable factors associated with psychological distress are also identified, including levels of social support and engagement, physical activity, sleep cycles, functional status, and physical health burden (Atkins et al., 2013; Paul et al., 2006).

Mental illness and psychological distress among older prisoners. Quantitative studies from the UK have determined that one half of older prisoners are estimated to suffer from mental illnesses, commonly depression or anxiety (Davoren et al., 2015; Fazel et al., 2001; Hayes et al., 2012; Kakoullis et al., 2010; Koenig et al., 1995). Two UK studies have also characterized mental health problems among older male prisoners as both underdiagnosed and undertreated (Fazel et al., 2004; Kingston et al., 2011), with the mental health of older prisoners appearing worse than that of older people in the general community (Kingston et al., 2011; Koenig et al., 1995).

Previous studies (primarily from North America and the UK) indicate older prisoners experience levels of psychological distress which are similar to that of younger prisoners (Gallagher, 1988; Teller and Howell, 1982; Vega and Silverman, 1988) and higher than that of older people in the community (Burling, 1999; Vega and Silverman, 1988). These comparative studies however, are all highly dated, and none have included older female prisoners. There is also a small body of qualitative and quantitative literature concerning the factors relating to psychological

distress among older prisoners, including physical and mental health issues, access to appropriate healthcare, experiences of victimisation, issues of the prison environment, social relationships and access to prison programs (see, e.g. Aday and Krabill, 2012; Crawley, 2005; Gallagher, 1988; Murdoch et al., 2008; Wahidin, 2004).

There is a dearth of quantitative studies examining gender differences in psychological distress among older prisoners. Yet the poor health and physical functioning of older female prisoners alongside detailed qualitative studies describing the impact of imprisonment upon older women suggest a need for further analysis of gender differences in distress among older prisoners (Wahidin, 2004; Williams et al., 2006). Qualitative studies also describe both the entry and release phases of imprisonment as times of heightened distress, though there is only limited quantitative evidence to evaluate whether these are ubiquitous experiences of older prisoners (See e.g. Murdoch et al., 2008). No other findings could be located which compare distress or adjustment among older prisoners in various security settings or placement types.

Given the growth of the older prisoner group, as well as the high prevalence of mental illness among older prisoners, knowledge concerning psychological distress among this group could enable the monitoring of wellbeing, and the consideration of mediating factors and interventions which may improve the welfare of older inmates. However there remain few dedicated studies in this area; the quantitative evidence is mainly derived from studies of older male prisoners, and largely originates from North America, limiting its generalisability due to substantial international differences between correctional systems. This study therefore aimed to fill this research gap, and contribute to the broader Australian and international literature concerning the wellbeing of older prisoners, including older female inmates. Specifically, this paper aims i) to determine the level of psychological distress among older prisoners and

provide comparisons to the levels seen among younger prisoners and older people in the general community; and ii) to investigate the relationships between psychological distress among older prisoners and mental health history, socio-demographic and criminal justice factors. The research was part of a broader project examining the needs and management of older prisoners in two Australian states.

Methods

Sampling and recruitment. Prisons selected for data collection were those in two Australian states (Victoria and New South Wales) which accommodate and release the highest numbers of prisoners aged 50 years and older. The chosen age threshold is consistent with the majority of studies concerning older prisoner wellbeing published in the past few decades (Baidawi and Trotter, 2015). As is the accepted norm in this area (see, e.g. Baidawi et al., 2011; Baidawi and Trotter, 2014; Leach and Neto, 2011), a modified definition of 'older prisoner' was adopted for Indigenous prisoners (45 years and older) to account for the lower median age of death in this population (55.4 years for Indigenous males and 58.5 years for Indigenous females, compared to 78.4 years for all males and 84.6 years for all females in Australia in 2011) (ABS, 2011).

Recruitment occurred from eight sites, including both male and female prisons, a variety of security ratings and both public and private prisons (see Trotter and Baidawi (2014) for further details). A disproportionate quota sampling strategy was used with a view to representing diversity of the older prisoner population. The older prisoner sample was to be evenly distributed between sentenced prisoners aged 50 to 64 years and those who were 65 years and older, and aimed to comprise a minimum female representation of 10%, with one half of the older prisoners recruited within 90 days of their expected release date, thus allowing prisoners to reflect on their prison experience. A smaller sample of 60 younger prisoners (aged

under 50 years) from the same prison sites was included as a comparison group to identify differences between younger and older prisoners, all of whom were within 90 days of their expected release date. These criterion limiting the younger prisoner sample reflected both an aim of the broader study (comparison of the groups' post-release experiences) and resource limitations. The one exclusion criterion for all recruitment was prisoners identified by the administration as potentially behaviorally or emotionally unstable (due to researcher and participant safety issues). Prisoners aged 50 years and older meeting the above criteria were forwarded a flyer advertising the study by prison program staff. All older prisoners and every fourth younger prisoner from the prisoner list who met the research criteria were forwarded a flyer advertising the study by prison program staff. Eligible prisoners opted into the research by notifying a nominated prison staff member of their interest until all quotas were filled for each group.

Data collection. Face-to-face structured interviews were conducted with consenting prisoners in Victoria throughout 2011, and in New South Wales in 2012 by one of three interviewers, all with prior experience in social work and/or corrections research. Interviews varied between 45 and 90 minutes' duration, and took place in areas of the prison affording privacy (an office or program room with a closed door) in the absence of prison staff.

Instruments. The interview schedule comprised a combination of yes/no, scaled and short answer questions concerning a variety of topics; those reported on in this paper include socio-demographic characteristics, mental health history and current experience of psychological distress. Psychological distress was measured using the Kessler Psychological Distress (K10) Scale, a 10-item measure of non-specific psychological distress, which includes items relating to depressed mood, nervousness, restlessness, worthlessness, fatigue and hopelessness

(Kessler et al., 2002). Respondents indicated how often they had experienced each of the items relating to psychological distress over the past four weeks on a scale of one (none of the time) to five (all of the time). The K10 Scale produces a score for each respondent ranging from 10 (indicating no distress) to 50 (indicating severe distress). The K10 Scale was chosen due its ease of administration, its ability to be delivered by lay interviewers, and its availability (both free to administer and available in the public domain) (Kessler et al., 2002). Additionally, comparison data are available for the Australian community (e.g. Slade et al., 2011) as well as samples of Australian prisoners (e.g. Butler et al., 2006), and the K10 Scale has been assessed with regard to numerous measures of reliability and validity (Kessler et al., 2002).

Total and average K10 scores of the prisoner samples were then compared to the general population using the Australian Health Survey (ABS, 2013), a national survey of over 20,000 Australians conducted by the Australian Bureau of Statistics between 2011-2013; The survey included, amongst other items, the Kessler Psychological Distress (K10) Scale. Cognitive functioning was assessed using the Mini-Mental State Examination (MMSE) (Folstein et al., 1975), a widely-used screen containing items relating to orientation, registration, recall, calculation and attention, naming, repetition, comprehension, reading, writing and drawing; a score of 24 or greater (out of a maximum score of 30) is generally indicative of normal cognition.

Following interviews, other data were collected from each consenting participant's health file (e.g. mental health diagnoses and current medications) and corrections file (e.g. indigenous status, prior imprisonments and information relating to the current imprisonment). Prescribed psychiatric medication reported in results includes antidepressant, antipsychotic or mood stabiliser medications prescribed for the participant over the previous two years in prison.

Data analysis. Data were entered into IBM SPSS Statistics 20 software for analysis, with descriptive data reported in this paper (frequencies, means, and standard deviations). Independent samples t-tests were used to check for statistically significant differences in total K10 Scores for categorical dependent variables such as gender (p-values and Cohen's D reported), while bivariate correlations were used to analyse associations between total K10 scores and continuous variables such as age (p-values and correlation coefficient *r* reported). Finally, one-way between groups ANOVAs were used to explore relationships between total K10 scores and independent variables with more than two categorical levels (e.g. prison security classification). Further analysis was conducted with reference to criminal justice factors by dividing the older prisoner sample according to the three sub-populations of older prisoners typically described in the literature: first-time older prisoners (those fist entering prison for the first time older than 50 years) (81% of those classified), those received into prison aged under 50 and serving more than 4 years (9% of those classified), and ageing recidivist offenders who had served more than one prior sentenced term (10% of those classified). Most of the older prisoner sample (90%) could be classified based on this criteria.

While the dependent variable (K10 scores) is not normally distributed, the sample size is sufficient to permit the use of parametric statistical analyses. This was confirmed by the use of both parametric and non-parametric statistical techniques to analyse the data, which yielded the same findings. Where homogeneity of variance assumptions are violated, corrected values (e.g. *p,* df and t) are reported. A multiple linear regression was then used to examine the proportion of the variance in older prisoners' distress levels which can be explained by any independent variables identified as being associated with distress scores at the $p < 0.1$ level.

Results

Sample characteristics. The final sample comprised 173 older sentenced prisoners of whom 48% (n = 83) were aged 65 years and older and 13% (n = 23) were female; a comparison sample of 60 younger prisoners were also included from the same prison locations. Most participants consented for health (96%) and correctional files (99%) to be accessed to collect additional data. Other participant characteristics and variables for analysis are presented in Table 1. These variables were informed by previous research, either comprising factors suggested to be associated with distress (e.g. gender, education level, mental health history), or areas for investigation of association with distress (e.g. protection status, prison security rating, cognitive functioning).

Table 1. Selected characteristics of the older prisoner sample, *p*-values for associations with total K10 scores, and comparative data for the younger prisoner sample

Variable	Older prisoner sample (N = 173)	K10 association[a] *p*-values	Younger prisoner sample (N = 60)
Socio-demographic characteristics			
Mean age in years [min– max] (SD)	63.1, [46-83] (8.3)	.07	34.4, [21-49] (8.9)
Male	150 (86.7%)	.002	53 (88.3%)
Indigenous	11 (6.4%)	.32	7 (11.7%)
Born in Australia	126 (73.3%)	.69	47 (78.3%)
Educational level Year 10 or below	100 (58.0%)	.09	40 (66.7%)
Mental health history			
Any mental health diagnosis	83 (50.0%) (n=166)	.002	27 (50.9%) (n=53)
Depression	68 (41.0%) (n=166)		22 (41.5%) (n=53)
Anxiety	27 (16.3%) (n=166)		6 (11.3%) (n=53)
Psychosis/schizophrenia	7 (4.2%) (n=166)		7 (13.2%) (n=53)
Bipolar disorder	6 (3.6%) (n=166)		7 (13.2%) (n=53)
Personality disorder	6 (3.6%) (n=166)		2 (3.8%) (n=53)
Post-traumatic Stress disorder	4 (2.4%) (n=166)		3 (5.7%) (n=53)
Prescribed psychiatric medication	54 (33.1%) (n=163)	1.0	25 (47.2%) (n=53)
History of suicide attempts	26 (15.2%) (n=171)	.01	16 (26.7%)

History of self-harm	7 (4.1%) (n=172)	.03	8 (13.3%)
History of help-seeking for alcohol or drug problem	36 (20.9%) (n=172)	.01	39 (65.0%)
Cognitive functioning			
Mean MMSE total (SD)	26.8 (3.17) (n=170)		26.9 (3.04)
MMSE 18-23	24 (14.1%) (n=170)	.06	8 (13.3%)
MMSE 10-17	2 (1.2%) (n=170)		0 (0.0%)
Criminal justice characteristics			
Prior imprisonments	40 (23.3%) (n=172)	.43	30 (53.6%) (n=56)
Protection prisoner	130 (75.6%) (n=172)	.007	33 (58.9%) (n=56)
End of sentence prisoner (Less than 3 months of sentence remaining to serve)	84 (48.6%)	.97	60 (100%)
Highest security classification of current prison			
Maximum	84 (48.6%)	.64	41 (68.3%)
Medium	64 (37.0%)		11 (18.3%)
Minimum	25 (14.5%)		8 (13.3%)
Offence type[b]			
Sex offences	107 (61.8%)		13 (21.7%)
Homicide	18 (10.4%)		3 (5.0%)
Assault	9 (5.2%)	.48	3 (5.0%)
Fraud	9 (5.2%)		0 (0.0%)
Drug offences	7 (4.0%)		5 (8.3%)
Burglary	0 (0.0%)		8 (13.3%)
Other	23 (13.4%)		28 (46.7%)
Self-reported lifetime months in prison (mean, median, (SD))	70.6, 34 (99.6)	.66	68.9, 60 (57.2)

Note: sample numbers are given where data were not available for the entire sample of prisoners. a. Results of tests of association between independent variables and total K10 scores for older prisoners: T-tests (2-tailed) for continuous independent variables, Fisher's exact tests (2-tailed) for dichotomous variables and one-way between groups ANOVA for independent variables with more than two levels (e.g. security classification). b. Offence types classified as violent, sexual, fraud, drug and 'other' for tests of association with K10 scores.

Sample representativeness. Table 2 below compares certain characteristics of the older prisoner sample with the older prisoner populations in the included jurisdictions at the time of data collection. As a result of the sampling strategy, females and prisoners aged 65 years and

older were over-represented in the older prisoner sample, while Indigenous prisoners were under-represented. The younger prisoner sample was broadly reflective of the sample states' prisoner populations in terms of mean age, and the proportion that were Australian-born; however Indigenous prisoners are also under-represented in the younger prisoner sample.

Table 2. Comparison of study sample to total older prisoner population

	Total older prisoner population in study jurisdictions (N = 1864[a]) N (%)	Older prisoner sample in current study (N = 173) N (%)
Female	145 (6.9%)	23 (13.3%)
Aged ≥65 years	311 (16.7%)	83 (48.0%)
Indigenous ≥45 years	245 (13.1%)	11 (6.4%)

a. Based on data from the Australian Bureau of Statistics (2011, 2012) of the total older prisoner population (aged 50 years and older) in Victoria (2011) and New South Wales (2012) at the time of data collection. Total older prisoner population excludes Indigenous prisoners aged 45 to 50 years in the selected jurisdictions at the time of data collection (n = 145 prisoners).

K10 results and comparison to younger prisoners and general population. As shown in Table 3, the older prisoner sample (50 years and older) had average total K10 scores which were significantly lower than that of the younger prisoner sample, (p=.04) though the effect size of this difference was small (Cohen's D = -0.28). Additionally, mean distress scores of older prisoners were significantly higher than those of older people in the general Australian population ($p < .01$) (see Table 3) (ABS, 2013).

Table 3. Mean K10 scores: older prisoner sample, younger prisoner sample, and normative data

	Older prisoner sample				General population[a]	
K10 Results	50+ years (n=171)	50-64 years[b] (n=89)	65+ years (n=82)	Younger prisoners (n=60)	50+ years (n=7749)	65+ years (n=3546)

Mean (SD)	17.51*+ (8.13)	18.02 (8.50)	16.96** (7.72)	20.12* (8.57)	14.26+ (5.93)	14.06** (5.56)
Very High (30-50) n (%)	21 (12.3%)	13 (14.6%)	8 (9.8%)	8 (13.3%)	(3.7%)	(2.6%)

K10: Kessler Psychological Distress (10-item) Scale. [a]Weighted population estimates based on use of Australian Bureau of Statistics (ABS) CURF data (ABS, 2013). [b]Includes Indigenous older prisoners aged 45-49 years. *p = .04 +p < .0001 **p < .0001

The proportion of older prisoners presenting with very high distress scores as defined by the cut-off points suggested by population studies (Slade et al., 2011) was more than three times the proportion seen in the general community, and not significantly different to the proportion of younger prisoners presenting with very high levels of distress.

Factors associated with psychological distress

Socio-demographic factors. Average total K10 scores decreased with age across the whole sample of prisoners (n = 231, p = 0.01 (2-tailed), Pearson correlation = -0.17), however no statistically significant difference was detected in the mean K10 scores of older prisoners aged 50 to 64 years compared with those aged 65 years and older. Older female prisoners had significantly higher K10 scores (n = 22, M = 22.55, SD = 9.33) compared to older male prisoners (n = 149, M = 16.77, SD = 7.69); t(169) = -3.19, p = .002 (2-tailed), Cohen's d = -0.49. A higher proportion of older female prisoners had very high levels of distress compared to older male prisoners (22.7% vs 10.7%), though this difference was not statistically significant (p = .15). No significant associations were detected between the K10 scores of older prisoners based on Indigenous status, being born in Australia or level of education, as shown in Table 1.

Mental health history. One half of older prisoners had at least one mental health diagnosis listed in their correctional health files, most commonly depression (41.0%) and anxiety (16.3%).

Older females were significantly more likely to have a mental health diagnosis listed in their health files (77.3%, n = 22) compared to older male prisoners (45.8%, n = 144), *p* = .01 (2-tailed).

Older prisoners with psychiatric diagnoses listed on their correctional health files had significantly higher K10 scores (n = 81, M = 19.35, SD = 8.55) compared to those without any recorded diagnoses listed (n = 83, M = 15.47, SD = 7.05), t(155) = 3.164, *p* = .002 (2-tailed), Cohen's d = 0.50. Similarly, other mental health history variables were each associated with significantly higher mean K10 scores among older prisoners, including self-reported histories of suicide attempts (n = 26, M = 21.42, SD = 10.05, *p* = .033), self-harm (n = 7, M = 25.14, SD = 8.07, *p* = .011) and help-seeking for alcohol and other drug problems (n = 36, M = 20.81, SD = 8.38, *p* = .01), however the effect sizes were small in each instance (Cohen's d = 0.40-0.43), with the exception of a history of suicide attempts, where the effect size was large (Cohen's d = 0.81). No differences in total K10 scores were detected between those older prisoners prescribed and not prescribed psychiatric medication in prison over the previous two years.

Cognitive functioning. Twenty-six older prisoners (15.3%) and eight younger prisoners (13.3%) scored less than 24 on the MMSE, which is generally indicative of reduced cognitive functioning. A small negative correlation (r = -0.14) was observed among MMSE and K10 scores among older prisoners; that is, as cognitive functioning declined distress levels increased across the older prisoner sample, though this relationship was not statistically significant (*p* = .06, 2-tailed).

Criminal justice factors. With the exception of protection status, none of the criminal justice variables listed in Table 1 (prior imprisonments, time remaining to serve, offence type, security classification and lifetime months in prison) were significantly associated with K10 scores in

the older prisoner sample. Protection prisoners are those whose correctional files listed them as requiring a protection placement with limited association from the mainstream prison population due to concerns regarding their own, or other prisoners' welfare. Overall, protection prisoners (n = 129, M = 16.50, SD = 7.38) had significantly lower total K10 Scores compared to non-protection prisoners (n = 40, M = 20.41, SD = 9.54), t(168) = -2.74, *p* = .01 (2-tailed), Cohen's d = -0.42. Given that all of the older protection prisoners were male, tests were conducted to ascertain if this finding was reflective of gender differences in total K10 scores. When older female prisoners were removed from the analysis, there was no significant difference between total K10 scores of older males in protection (n = 129, M = 16.50, SD = 7.38) and those not who were not protection prisoners (n = 19, M = 17.95, SD = 9.43).

Finally, a one-way ANOVA revealed no significant differences in the mean K10 scores of first-time older prisoners (M = 17.61, SD = 8.18), those growing old in prison (M = 17.86, SD = 10.0), and chronic recidivist older offenders (M = 18.50, SD = 1.92).

Regression analysis. A multiple regression analysis was conducted with a view to understanding the relative contribution of factors associated with distress towards explaining variation in total K10 scores among older prisoners. Those variables which were found to be associated with total K10 scores (age, gender, MMSE total scores, level of education and protection status) were entered for analysis. Additionally, mental health diagnosis status was entered in lieu of the multiple mental health factors which were associated with total K10 scores in order to avoid overlap between the independent variables. The model was significant ($p < .00$), however the independent variables together only explained 16% of the variance in total K10 scores of older prisoners (i.e. R squared = 0.16). As shown in Table 4, having a mental health diagnosis made the strongest unique contribution to explaining total K10 scores after

controlling for the other independent variables (β = 0.18, *p* = .02). While MMSE total scores and gender also made large contributions to explaining the variance in distress levels among older prisoners (β = 0.15), these were not significant at the *p* < .05 level, potentially indicating overlap with other independent variables.

Table 4. Linear regression analysis of relationship between total K10 scores and associated factors among older prisoners

	Unstandardized coefficients		Standardized coefficients		
	B	SE	β	t	Sig.
Age	-.08	.08	-.08	-1.03	.30
Gender	3.60	2.53	.15	1.42	.16
Education	-1.86	1.29	-.11	-1.44	.15
Mental health diagnosis	-2.81	1.24	-.17	-2.28	.02*
MMSE total score	-.38	.21	-.15	-1.81	.07
Protection status	2.32	1.92	.12	1.21	.23

Dependent variable = Total K10 score. B = Unstandardized regression coefficient; SE = Standard error of the coefficient; β = Standardized regression coefficient. MMSE = Mini-mental state examination.

Discussion

This study examined the level of psychological distress among a sample of older prisoners in two Australian states, and subsequently analysed the relationship between distress levels and mental health history, cognitive functioning, socio-demographic and criminal justice variables.

There were limited sources of available data upon which to compare the characteristics of the sample to the broader older prisoner population. A high proportion (76.7%) of the older prisoners were first-time inmates, which accords with Australian and international data indicating that between one half and three quarters of older prisoners are serving a first term of imprisonment (Aday, 2012; Grant, 1999; Leach and Neto, 2011). While precise data regarding offence types of the broader older prisoner population were not available, older

prisoners convicted of sexual offences appear to be over-represented in the sample (62.2%, n=107) compared to the limited older prisoner population data located (28% - 42%) (Baidawi et al., 2011; Grant, 1999; Leach and Neto, 2011). Older inmates convicted of homicide (10.5%) or drug offences (4.1%) appear to be under-represented in the study sample relative to available data which suggests that between 14% and 20% of older prisoners in Australia are generally convicted of each of these offence categories (Grant, 1999; Leach and Neto, 2011). This skewing is likely to be due to the fact that (male) prisons accommodating the largest number of older prisoners tended to be primarily protection prisons, which subsequently hold high proportions of sex offenders and lower proportions of prisoners not deemed to be requiring protection from mainstream populations.

While distress levels decreased with age, no notable differences were observed in the mean distress scores of older prisoners aged 50 to 64 compared to those who were 65 years and older. The lack of difference between these subgroups suggests that the age threshold of 50 years and older may be appropriate when considering the mental wellbeing of older inmates. On the other hand, reflective of the general population, average levels of psychological distress among the older prisoner sample were significantly lower than that of a sample of younger inmates at the same prison locations, though the effect size of this difference was small. While this finding should be interpreted with caution due to the non-representative sampling frame, and the fact that all younger prisoners were nearing the end of their sentences, it aligns with results of a much earlier US study indicating lower distress levels of older prisoners compared to their younger counterparts (Teller and Howell, 1981). Conversely, it is inconsistent with much older North American studies which found no significant differences between stress levels of older and younger prisoners (Gallagher, 1988; Vega and Silverman, 1988). Given the

non-probability samples of the current and previous studies, as well as large time intervals between the studies and the different jurisdictions which were examined, these findings are not necessarily comparable. Suffice to say that more thorough sampling techniques would be necessary to draw any solid conclusions regarding the relative level of distress between older and younger prisoners. In particular, while no differences were observed in the distress levels of older prisoners who were pre-release compared to those who had more time remaining to serve, it is unclear whether the pre-release status of the younger prisoner sample resulted in greater than average distress scores for this sample compared to the younger prisoner population overall.

While the findings should be re-tested with probability samples of older prisoners, solely relying on average distress levels to compare older and younger prisoners may also be problematic. While the mean distress levels of older prisoners were lower, a similar proportion of older and younger prisoners presented with very high levels of distress. Akin to previous research, the study sample of older prisoners also had distress levels which were significantly higher than those seen in older people in the general community (Burling, 1999; Murdoch et al., 2008; Vega and Silverman, 1988). The proportion of the older prisoner sample presenting with very high levels of psychological distress was more than three times greater than that seen in general community estimates. Furthermore, since male prisoners and prisoners aged 65 years and older were over-represented in comparison to general population estimates - both groups which tend to present with lower average distress scores - the higher levels distress observed among the older prisoner sample relative to the general community should arguably be considered an underestimate. While prisoners held in mental health units were

excluded from data collection, these constituted less than 1% of prisoner placements at the time of the study, and are therefore unlikely to greatly influence the study findings.

The proportion of older prisoners with a mental health diagnosis (50.9%) was similar to that found in previous studies from the US and UK (Fazel et al., 2001; Hayes et al., 2012; Kakoullis et al., 2010; Koenig et al., 1995), and much greater than the proportion seen in the older population in the Australian community (16%) (Australian Bureau of Statistics, 2013). While a previous study (Fazel et al., 2001) found higher rates of depressive illness among older prisoners compared to their younger counterparts, this study found identical rates of depression in the two groups. However the use of health record data rather than clinical interviews could potentially underestimate the prevalence of depressive illness in the older prisoner group. Indeed, the data showed that five older prisoners presenting with very high distress scores (K10=30-50) had no mental health issues listed in their health records, compared with none of the younger prisoners interviewed. Previous studies have found that individuals with a very high K10 scores have an approximately 80% chance of having experienced a mental disorder in the previous twelve months; this reduces to around 12% for individials presenting with a low K10 score (i.e. 10-15) (Slade et al., 2011). This potentially indicates an under-diagnosis of mental health issues in the older prisoner sample, as has been found in previous studies of older prisoner mental health (Fazel et al., 2001). As would be expected, distress levels were associated with mental health history of older prisoners, with the exception of those prescribed psychiatric medication in prison. It is possible that this is reflective of the efficacy of psychiatric intervention for those older inmates who accessed such assistance. Alternatively, a contributing factor to this finding may be the relatively high distress

scores among older prisoners with a diagnosis of personality disorder (M = 23.40), most of whom (5/6) were not prescribed any psychiatric medication according to their health files.

As in the general community, older female prisoners had significantly greater levels of distress compared to older male prisoners (Byles et al., 2012). Also reflective of the general population, older female prisoners were more likely to have a documented mental health issue compared to older male inmates, though the prevalence seen among older female prisoners (77.3%) was far greater than seen in the community (18.4%) (Australian Bureau of Statistics, 2013). This is important given that the majority of studies focusing on the mental wellbeing of older prisoners have excluded females, primarily due to their smaller numbers in the prison system (Davoren et al., 2015). Yet these results suggest that significant differences exist between genders in terms of psychological distress, and the importance of including this group in future research.

An area of discrepancy between the study's findings and that of previous research (see e.g. Murdoch et al., 2008) was that no association between level of education and average distress scores was detected, which is of interest given that higher education is associated with lower risk of distress among older adults in the community (Byles et al., 2012). While replication of these findings with a representative sample would be desirable, one potential explanation is that the mechanism/s by which education influences distress among older people (e.g. increased access to socioeconomic resources) may be obstructed in the prison environment. This points to a broader question of how imprisonment supports or inhibits the mechanisms and strategies by which individuals normally seek to maintain wellbeing or cope with distress. While subgroups of older prisoners described in the previous literature (Aday & Krabill, 2012) have fairly substantial differences in offending history and time spent in prison, a key finding

of the current study was that no significant differences appeared to exist in terms of level of distress experienced by these different groups of older inmates. The findings suggest that mental health history, as well as gender and cognitive functioning, are more predictive of older prisoner distress than criminal justice history.

Strengths and limitations

This study possesses several unique strengths. It is among the first quantitative studies of older prisoners in Australia and was able to include two states which together hold a significant portion (approximately 50%) of Australia's prisoner population. The sampling strategy utilized allowed for the inclusion of older female prisoners, a group often excluded or minimally represented in research pertaining to older prisoners.

However the study is not without its limitations. Many of these are characteristic of prison studies more broadly, including the use of self-selecting samples, and the limited sample size. Some potentially significant associations may not have been detected due to the sample size (e.g. Indigenous status, cognitive functioning), and care needs to be exercized in generalising the study's findings regarding older prisoners' distress levels to other jurisdictions due to the non-probability sample.

Furthermore, the study was largely reliant on participants self-report data (whether from interviews or taken from participant health files). However despite a potential perception of prisoners as unreliable survey respondents, previous Australian research regarding the validity of prisoner self-report in relation to health and criminal history data has concluded that prisoners are generally reliable survey respondents (e.g. Schofield et al., 2011). Further bias could potentially have been introduced through the selection of prison sites. Since time and

resource constraints made it impractical to conduct the research at every prison site across the two states, the selection of prison sites accommodating larger numbers of older inmates resulted in the over-representation of certain classes of older offenders (particularly sexual offenders). These issues were acknowledged in the results and their potential impact upon findings relating to the level of psychological distress have been outlined.

Conclusions and implications for prison services

This study has documented a burden of psychological distress and mental health issues among older prisoners in two Australian states which greatly surpasses that seen among older people in the general community. While the focus of this study was upon older inmates, the findings also demonstrated high levels of distress among younger pre-release inmates. What remains unknown is the extent to which distress develops in the prison environment, or is indicative of pre-existing issues.

There is little research focusing on the mental health and wellbeing of older prisoners, in particular the best strategies to detect, minimize and respond to these issues (Kingston et al., 2011), which may require alternative approaches to those implemented for younger prisoners. Given that many older prisoners may be serving long sentences, these findings suggest a need for ongoing monitoring of mental health symptoms and cognitive functioning throughout the prison sentence. The literature to date suggests various strategies which may assist in this regard, for example implementation of specific older age screening tools (Kingston et al., 2011), training of health and custodial staff to better recognize mental health issues among older people (Kakoullis et al., 2010), and facilitation of links with old age psychiatry services (Kingston et al., 2011). Furthermore improving preventative measures by keeping older

prisoners stimulated and engaged through work and other structured programming may be of key importance, particularly for older female prisoners given their notably high distress levels.

Future research could consider the impact of other factors which the qualitative literature suggests may be related to experiences of distress among older prisoners, including the presence of physical and functional health issues and other difficulties within the prison environment (e.g. appropriateness of accommodation and social wellbeing, including experiences of victimisation). This is particularly important in light of the finding that the variables explored in this paper (mental health history, cognitive functioning, gender and protection status) explained so little of the variance in distress observed among the older prisoner sample, potentially indicating that other factors may be more predictive of distress among older prisoners. Such factors may also explain the differences in distress levels observed between older people in prison and those in the general community. Identifying these relationships may present further avenues for intervention with a view to improving older prisoner wellbeing.

Conflict of interest declaration

None.

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References

ABS – See Australian Bureau of Statistics

Aday, R. H., and Krabill, J. J. (2012). Older and Geriatric Offenders: Critical Issues for the 21st Century. In L. Gideon (Ed.), *Special Needs Offenders in Correctional Institutions* (pp. 203-232). Thousand Oaks, CA: Sage.

Atkins, J., Naismith, S. L., Luscombe, G. M., and Hickie, I. B. (2013). Psychological distress and quality of life in older persons: relative contributions of fixed and modifiable risk factors. *Biomed Central Psychiatry, 13*, 249-259.

Australian Bureau of Statistics. (2013). Australian Health Survey: Updated results, 2011-2012. (cat. no. 4364.0.55.0003), CURF, Expanded CURF, Remote Access Data Laboratory [RADL]. Canberra: Australian Bureau of Statistics.

Australian Bureau of Statistics (2011). Deaths, Australia 2011 (cat no. 3302.0). Canberra, ABS.

Baidawi, S. and Trotter, C. (2015). Psychological distress among older prisoners: A literature review. *Journal of Forensic Social Work, 5*(1-3), 234-257. doi: 10.1080/1936928X.2015.1075166

Baidawi, S. *et al*. (2011). Older prisoners - A challenge for Australian corrections. *Trends and Issues in Crime and Criminal Justice*, *426*, 1-8.

Burling, K. L. (1999). A correlational investigation of the relationship between psychological distress, life satisfaction, and health care utilization among elderly male inmates. PhD Thesis, Iowa City: The University of Iowa.

Butler, T., Andrews, G., Allnutt, S., Sakashita, C., Smith, N. E., and Basson, J. (2006). Mental disorders in Australian prisoners: a comparison with a community sample. *Australian and New Zealand Journal of Psychiatry*, *40*, 272-276.

Byles, J., Gallienne, L., Blyth, F. M., and Banks, E. (2012). Relationship of age and gender to the prevalence and correlates of psychological distress in later life. *International Psychogeriatrics, 24*(6), 1009-1018.

Crawley, E. (2005). Institutional thoughtlessness in prisons and its impacts on the day-to-day prison lives of elderly men. *Journal of Contemporary Criminal Justice, 21*, 350-363.

Davoren, M., Fitzpatrick, M., Caddow, F., Caddow, M., O'Neill, C., O'Neill, H., & Kennedy, H. G. (2015). Older men and older women remand prisoners: mental illness, physical illness, offending patterns and needs. International Psychogeriatrics, *27*, 747-755.

Fazel, S., Hope, T., O'Donnell, I., and Jacoby, R. (2004). Unmet treatment needs of older prisoners: A primary care survey. *Age and Ageing, 33*, 396-398.

Fazel, S., Hope, T., O'Donnell, I., and Jacoby, R. (2001). Hidden psychiatric morbidity in elderly prisoners. *British Journal of Psychiatry*, *179*, 535–539.

Folstein, M., Folstein, S., and McHugh, P. (1975). "Mini-mental state": a practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research, 12*, 189-198.

Gallagher, E. (1988). Older men in prison: Emotional, social, and physical health characteristics. (PhD Thesis). Burnaby, B.C.: Simon Fraser University.

Grant, A. (1999). Elderly inmates: Issues for Australia. *Trends and Issues in Crime and Criminal Justice*, *115*, 1-6.

Hayes, A. J., Burns, A., Turnbull, P., and Shaw, J. J. (2012). The health and social needs of older male prisoners. *International Journal of Geriatric Psychiatry, 27*, 1155-1162.

Kakoullis, A., LeMesurier, N., and Kingston, P. (2010). The mental health of older prisoners. *International Psychogeriatrics*, *22*, 693-701.

Kessler, R. C. *et al.* (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine, 32*, 959-976.

Kingston, P., Le Mesurier, N., Yorston, G., Wardle, S., and Heath, L. (2011). Psychiatric morbidity in older prisoners: unrecognized and undertreated. *International Psychogeriatrics, 23*, 1354-1360.

Koenig, H. G., Johnson, S., Bellard, J., Denker, M., and Fenlon, R. (1995). Depression and anxiety disorder among older male inmates at a federal correctional facility. *Psychiatric Services, 46*, 399-401.

Leach, J., and Neto, A. (2011). *Offender Population Trends: Aged Offenders in NSW, Research Bulletin*. Sydney: Corrective Services New South Wales.

Mirowsky, J., and Ross, C. E. (1992). Age and depression. *Journal of Health and Social Behavior, 33*, 187-205.

Murdoch, N., Morris, P., and Holmes, C. (2008). Depression in elderly life sentence prisoners. *International Journal of Geriatric Psychiatry, 23*, 957-962.

O'Connor, D., and Parslow, R. (2010). Mental health scales and psychiatric diagnoses: Responses to GHQ-12, K-10 and CIDI across the lifespan. *Journal of Affective Disorders, 121*, 263-267.

Paul, C., Ayis, S., and Ebrahim, S. (2006). Psychological distress, loneliness and disability in old age. *Psychology, Health and Medicine, 11*, 221-232.

Schofield, P., Butler, T., Hollis, S., and D'este, C. (2011). Are prisoners reliable survey respondents? A validation of self-reported traumatic brain injury (TBI) against hospital medical records. *Brain Injury, 25*, 74-82.

Slade, T., Grove, R., and Burgess, P. (2011). Kessler psychological distress scale: Normative data from the 2007 Australian National Survey of Mental Health and Wellbeing. *Australian and New Zealand Journal of Psychiatry, 45*, 308-316.

Teller, F. E., and Howell, R. J. (1981). The older prisoner: Criminal and psychological characteristics. *Criminology, 18*, 549-555.

Trotter, C., and Baidawi, S. (2015). Older prisoners: Challenges for inmates and prison management. *Australian and New Zealand Journal of Criminology*, *48*(2), 200-218.

Vega, M., and Silverman, M. (1988). Stress and the elderly convict. *International Journal of Offender Therapy and Comparative Criminology*, *32*, 153-162.

Wahidin, A. (2004). Older women in the criminal justice system: Running out of time. London: Jessica Kingsley Publishers.

Williams, B. A., Lindquist, K. L., Sudore, R. L., Strupp, H. M., Willmott, D. J., and Walter, L. C. (2006). Being old and doing time: Functional impairment and adverse experiences of geriatric female prisoners. *Journal of the American Geriatrics Society, 54*, 702-707.

5.7 Preamble to Paper Three

The first findings paper examined the level of psychological distress in the sample, and detailed the relationships between older prisoners' psychological distress and socio-demographic, criminal justice, mental health and cognitive functioning variables (research sub-questions a), b), and c)i) to c)iv)). The findings indicated that average K10 scores of the older prisoners were significantly lower than the younger prisoners', and significantly higher than those observed among older people in the community. Higher psychological distress scores among older prisoners were significantly associated with female gender, and a history of mental health issues. The paper identified the need to consider the impact of other factors highlighted in the literature which are possibly related to distress in this group, particularly physical and functional health issues. This second findings paper addresses this gap, presenting the findings in relation to the older prisoners' physical health, functional health and health care utilisation. It then investigates the relationships between each of these independent variables and the level of psychological distress experienced by older prisoners, addressing research sub-questions c)v), vi), and vii).

This article, paper three of the thesis, was published in the *Journal of Correctional Health Care* in 2016, a peer-reviewed journal of the US National Commission on Correctional Health Care (ISSN 1940-5200 (Online)). The journal is one of few publications specifically focusing on prisoner health and health care. Published since 1994, it is targeted toward a readership of correctional health care professionals, including physicians, nurses, psychologists and social workers. The journal publishes four issues annually, and had a 2015 Impact Factor of 0.740[6].

[6] 2015 Journal Citation Reports®, Thomson Reuters

5.8 Paper Three: Psychological distress among older prisoners: associations with health, healthcare utilisation and the prison environment

The final, definitive version of this paper has been published in the Journal of Correctional Health Care, volume 22/no 4, September/2016 published by SAGE Publishing, All rights reserved. http://journals.sagepub.com/doi/full/10.1177/1078345816669964

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Abstract

Physical and functional health issues among older prisoners may be difficult to address in an environment designed for younger inmates. This paper investigates the relationships between

older prisoners' health, their experiences of the prison environment and health services, and their levels of psychological distress. One hundred and seventy three older prisoners (aged 50 years and older) from eight Australian prisons were interviewed using the Kessler Psychological Distress (K10) Scale, with additional information collected from prisoner interviews and correctional health files. Distress scores were significantly associated with measures of physical health, functional independence and healthcare utilisation. However, a hierarchical regression analysis determined that physical difficulties in the prison environment and issues accessing prison healthcare explained a significant proportion of the variation in older prisoners' distress scores.

Keywords: older prisoners; aging prisoners; correctional health care; psychological distress; inmate health

Introduction

Older prisoners are the fastest growing age group of inmates in various prison systems around the world, including in the US, UK, Canada, New Zealand and Australia among others (Aday & Krabill, 2012; Baidawi et al., 2011; Howse, 2003; New Zealand Department of Corrections, 2014; Office of the Correctional Investigator Canada, 2011). Correctional healthcare systems are confronted with the challenging task of responding to the physical and mental health needs of this group. This paper investigates the relationships between older prisoners' physical and functional health, their experiences of the physical environment and healthcare services in prison, and their levels of psychological distress. Research with community samples indicates that psychological distress is a risk factor for deterioration in physical and functional health among older individuals (Bruce, Seeman, Merrill, & Blazer, 1994; Stuck et al., 1999). Identifying

modifiable risk factors for distress among older prisoners can potentially lead to interventions reducing health burdens in this population.

Background

Research findings to date indicate that older prisoners experience higher levels of illness (particularly chronic diseases) than both younger prisoners and their counterparts in the general population (Binswanger, Krueger, & Steiner, 2009; Fazel, Hope, O'Donnell, Piper, & Jacoby, 2001; Harzke et al., 2010; Loeb, Staffensmeier, & Lawrence, 2008; Wangmo et al., 2015). For example, research from the US and the UK has found that between 85 and 93 per cent of older male prisoners have health issues (Fazel et al., 2001; Hayes, Burns, Turnbull, & Shaw, 2012).

Evidence of functional decline has also been reported in studies of older prisoners, including issues with vision and hearing, balance, urinary continence, and the need for the use of therapeutic aids and devices (Aday & Krabill, 2012; Colsher, Wallace, Loeffelholz, & Sales, 1992; Williams et al., 2010); this is notably so for female inmates (Leigey & Hodge, 2012; Williams et al., 2006). Various studies from the US, the UK and Australia have found that significant proportions of older prisoners describe difficulties with activities of daily living (ADLs), and the prevalence of functional impairments among older prisoner populations is estimated at 10% to 31% (Colsher et al., 1992; Fazel et al., 2001; Trotter & Baidawi, 2015; Williams et al., 2006; 2010). However when prison-specific activities of daily living are considered (e.g. climbing on and off top bunks and hearing orders from staff), the proportion of older inmates who experience impairments may rise to up to two thirds.

Physical and functional health declines among older prisoners can present substantial difficulties in an environment generally designed for the young and able-bodied (Potter, Cashin, Chenoweth, & Jeon, 2007; Trotter & Baidawi, 2015). Although targeted programing, healthcare services and specialist facilities for older prisoners are emerging in many jurisdictions, the provision of a suitable environment and equivalency of healthcare services for older inmates presenting with health and functional declines remains a key challenge facing correctional service providers (Anno et al., 2004; Bretschneider & Elger, 2014; Reimer, 2008; Trotter & Baidawi, 2015; B.A. Williams, Stern, Mellow, Safer, & Grefinger, 2012; J. Williams, 2012).

This is reflected in studies of older prisoners, many of whom appear to experience serious concerns regarding the quality and accessibility of health care in prison (Aday & Krabill, 2011; Crawley & Sparks, 2005b; Wahidin, 2004). Fear of dying and of physical and mental deterioration rendering dependence in prison environments with limited healthcare resources are described in qualitative studies as distressing situations faced by older prisoners (Aday, 2003; Aday & Krabill, 2011; Crawley & Sparks, 2006; Phillips, 1996; Wahidin, 2004, 2011). On the other hand, some studies have found older inmates' ratings of prison healthcare were more positive than that of younger prisoners (Bjørngaard, Rustad, & Kjelsberg, 2009; Gallagher, 1988).

There is limited quantitative research which investigates the relationship between older inmates' physical and functional health and health care utilisation, and their relative levels of distress in prison. One UK study found that chronic physical health issues, reduced mobility and unsatisfactory experiences of prison healthcare were all significantly associated with more depressive symptoms among older male life-sentenced prisoners (Murdoch, Morris, & Holmes,

2008). Similarly, positive associations between poorer health status (as measured by number of health problems or higher healthcare utilisation) and higher scores on distress scales among older prisoners were also found in two other PhD studies of older male prisoners in the US (Burling, 1999; Gallagher, 1988).

These associations are not unusual, and parallel the relationship between physical and emotional wellbeing among older people in the community (Atkins, Naismith, Luscombe, & Hickie, 2013; Boen, Dalgard, & Bjertness, 2012; Byles, Gallienne, Blyth, & Banks, 2012). However prison is fundamentally a different environment to the community, wherein the individual inmate finds him or herself almost entirely reliant on institutional provisions of infrastructure, services and social support (Aday & Krabill, 2011; Crawley & Sparks, 2005a). Some research suggests that the level of services and support available to older people in prison are more intensive than that accessible to them in the community (See e.g. Bonta & Gendreau, 1990; Dawes, 2009), however such claims are debatable and could not be generalised to every older prisoner across all institutions and jurisdictions.

There are clearly areas where resource constraints or institutional security concerns continue to limit the capacity to provide suitable health care, personal care and accommodation to older prisoners. For example the provision of pain management, personal assistance and end-of-life care, access to specialists and preventative healthcare, and the detection of certain conditions (e.g. dementia), have been consistently highlighted as problematic in correctional environments (Aday & Krabill, 2011; Maschi, Kwak, Ko, & Morrissey, 2012; B.A. Williams et al., 2012; J. Williams, 2012).

There is little research available concerning the impact of the prison environment and services upon older prisoners' levels of distress. Although qualitative studies indicate that these issues

are pressing for many older inmates, there is limited quantitative data which assesses the degree to which older prisoners' perceptions regarding the correctional healthcare, other services and infrastructure are related to their experiences of distress in prison, over and above their own health status. In the UK, Murdoch and colleagues (2008) determined that older life-sentenced male prisoners who rated prison healthcare as unsatisfactory had more depressive symptoms than those who rated healthcare as satisfactory. However it was unclear whether this effect was confounded by the inmates' health statuses.

In summary, while a number of qualitative studies indicate that both physical and functional health, and healthcare access are major concerns of older people who are incarcerated, there has been limited exploration of the relationship between physical health, access to appropriate services and infrastructure and psychological distress among older prisoner populations. In particular, female prisoners have been excluded from the available quantitative studies. This study therefore aims to contribute to a greater understanding of the degree to which physical and functional health and experiences of prison services and infrastructure can explain variations in distress levels among older prisoners.

This is in line with a combined model of prisoner adjustment which acknowledges individual risk factors (e.g. physical health status) alongside measures of the prison environment, and suggests that it is the interaction of these individual and institutional factors which influences the distress levels of individual prisoners (Liebling, Durie, Stiles, & Tait, 2005; Slotboom, Kruttschnitt, Bijleveld, & Menting, 2011; Wright, 1991). Lindquist and colleagues (1997) use the term 'environmental stress' to describe the level of congruence between inmates' needs and prisons' capacity to meet these. Understanding these associations may enable

identification of strategies for reducing physical morbidity and psychological distress among older inmates.

Methods

Aims. This paper investigates the relationship between psychological distress among older prisoners and their i) physical health status; ii) functional health status; iii) level of healthcare utilisation; and iv) experiences of healthcare and the built environment in prison.

Sampling and recruitment. Prisons selected for data collection were those in two Australian states (Victoria and New South Wales) accommodating and release the highest numbers of prisoners aged 50 years and older. The chosen age threshold is consistent with the majority of studies concerning older prisoner wellbeing (Baidawi & Trotter, 2015). As is the accepted norm in this area, a modified definition of 'older prisoner' was adopted for Indigenous prisoners (45 years and older) to account for the shorter life expectancy in this population (See e.g. Baidawi et al., 2011; Leach & Neto, 2011).

Recruitment occurred from eight sites, including both male (n = 5) and female (n = 3) prisons, a variety of security ratings and both public and private prisons (see Authors (2015) for further details). A disproportionate quota sampling strategy was used with a view to representing diversity among the older prisoners. The older prisoner sample was to be evenly distributed between sentenced prisoners aged 50 to 64 years and those who were 65 years and older, and aimed to comprise a minimum female representation of 10%, with one half of the older prisoners recruited within 90 days of their expected release date, thus allowing prisoners to reflect on their prison experience. A smaller sample of 60 younger prisoners (aged under 50 years) from the same prison sites was included as a comparison group, all of whom were within

90 days of their expected release date. The one exclusion criterion was prisoners identified by the administration as potentially behaviourally or emotionally unstable (due to researcher and participant safety issues). All older prisoners and every fourth younger prisoner from the prisoner list who met the research criteria were forwarded a flyer advertising the study by prison program staff. Eligible prisoners opted into the research by notifying a nominated prison staff member of their interest until all group quotas were filled.

Data collection. Face-to-face structured interviews were conducted with consenting prisoners in Victoria throughout 2011, and in New South Wales in 2012 by one of three interviewers, all with prior experience in social work and/or corrections research. Interviews varied between 45 and 90 minutes' duration, and took place in areas of the prison affording privacy (an office or program room with a closed door) in the absence of prison staff.

Instruments. The interview schedule comprised a combination of yes/no, scaled and short answer questions concerning a variety of topics; those reported on in this paper include socio-demographic characteristics, current experience of psychological distress, self-reported concerns regarding health and healthcare access, and self-reported physical difficulties in the prison environment.

Psychological distress was measured using the Kessler Psychological Distress (K10) Scale, a 10-item measure of non-specific psychological distress, including items relating to depressed mood, nervousness, restlessness, worthlessness, fatigue and hopelessness (Kessler et al., 2002). Respondents indicated how often they had experienced each items relating to psychological distress over the past four weeks on a scale of one (none of the time) to five (all of the time). The K10 Scale produces respondent scores ranging from 10 (indicating no distress) to 50 (indicating severe distress). The K10 Scale was chosen due its ease of administration, its

ability to be delivered by lay interviewers, and its availability (both free to administer and available in the public domain), and has been assessed with regard to numerous measures of reliability and validity (Kessler et al., 2002).

Physical functioning was assessed using the Barthel Index, a standardised 10-item measurement of a person's level of independence in performing activities of daily living (ADLs) including bathing, grooming, continence and mobility (Mahoney & Barthel, 1965). The Barthel Index is a valid measure, reliable for use by unskilled non-healthcare professionals (Collin, Wade, Davies, & Horne, 1988; Wade & Collin, 1988). The researchers completed the Barthel Index with each prisoner utilising participant self-report responses; a score of 100 indicates that the prisoner reported functioning independently with lower scores indicating increasing levels of dependence with daily activities.

Interview data were also collected relating to any current concerns of prisoners regarding their physical health, and rating of ease of healthcare access in prison on a five-point scale (from 'very easy' to 'very difficult'). Participants were then asked to comment on their experiences of accessing healthcare in prison; these responses were dichotomised (Yes/No) to those identifying issues in this open-ended item, and those describing no issues. Healthcare utilisation was measured by the number of self-reported visits to the prison clinic over the previous four weeks (excluding medication pick-ups). Assessment of the built environment was by ascertaining any self-reported difficulties accessing or using various aspects of the environment (beds, cells, showers, basins or toilets), and asking prisoners to describe any further concerns relating to the physical environment in prison; responses were dichotomised for the purposes of this analysis (any difficulties with the physical environment/no difficulties with the physical environment).

Following interviews, other data were collected from each consenting participant's health and corrections files. Those reported in this paper are health conditions (from health files) and Indigenous status (from corrections files).

Data analysis. All data were entered into IBM SPSS Statistics 20 software for analysis, with descriptive data reported in this paper (frequencies, means, and standard deviations). Independent samples t-tests were used to check for statistically significant differences in total K10 Scores for categorical dependent variables, while bivariate correlations were used to analyse associations between total K10 scores and continuous variables such as age. While the dependent variable (K10 scores) is not normally distributed, the sample size is sufficient to permit the use of parametric statistical analyses. A hierarchical linear regression was then used to examine the proportion of the variance in older prisoners' distress levels which can be explained by those independent variables which were identified as being associated with distress scores.

Results

Sample characteristics. The final sample comprised 173 older sentenced prisoners of whom 48% (n = 83) were aged 65 years and older and 13% (n = 23) were female; a comparison sample of 60 younger prisoners were also included from the same prison locations. Most participants consented for health (96%) and correctional files (99%) to be accessed to collect additional data. In comparison to the older prisoner populations in the included jurisdictions at the time of data collection, there was an over-representation of females (13.3% vs 6.9%) and prisoners aged 65 years and older (48.0% vs 16.7%) in the older prisoner sample, while Indigenous prisoners were under-represented (6.4% vs 13.1%). A high proportion (76.7%) of the older prisoners were first-time inmates, which accords with Australian and international data

indicating that between one-half and three-quarters of older prisoners are serving a first term of imprisonment (Aday, 2012; Grant, 1999; Leach & Neto, 2011). While precise data regarding offence types of the broader older prisoner population were not available, older prisoners convicted of sexual offences appear to be over-represented in the sample (62.2%, n = 107) compared to the limited older prisoner population data located (28% - 42%) (Baidawi et al., 2011; Grant, 1999; Leach & Neto, 2011). The younger prisoner sample was broadly reflective of the sample states' prisoner populations at the time of data collection, in terms of mean age, and the proportion that were Australian-born; however Indigenous prisoners are also under-represented in the younger prisoner sample (Australian Bureau of Statistics, 2012).

Participant characteristics and variables for analysis are presented in Table 1. These variables were informed by previous research, either comprising factors suggested to be associated with distress (e.g. physical and functional health status, healthcare utilisation), or areas for investigation of association with distress (e.g. self-reported difficulties in the prison environment or issues accessing healthcare).

Table 1. Selected characteristics of the prisoner sample

Variable	Older prisoner sample (n = 173)	Younger prisoner sample (n = 60)
Socio-demographic characteristics		
Mean age in years [min–max]	63.1, [46-83]	34.4, [21-49]
Male	150 (86.7%)	53 (88.3%)
Indigenous	11 (6.4%)	7 (11.7%)
Born in Australia	126 (73.3%)	47 (78.3%)
Educational level Year 10 or below	100 (58.0%)	40 (66.7%)
Psychological distress		
Average K10 Scores (Max 50)	17.51 (SD=8.13)	20.12 (SD=8.57)
Proportion with very high K10 score (>30/50)	21 (12.3%) (n=171)	8 (13.3%)

Physical health		
Any physical health issue listed in health file	160 (96.4%) (n=166)	32 (60.4%) (n=53)
Average number of health issue listed in health file	4.32 (SD=2.74) (n=166)	1.30 (SD=1.46) (n=53)
Current self-reported concerns regarding a health issue	141 (81.5%)	30 (50.0%)
Functional health		
Barthel Index Score <100	38 (22.0%)	3 (5.0%)
Self-reported physical issues in prison	100 (57.8%)	30 (50.0%)
Healthcare utilisation and satisfaction		
Self-reported number of healthcare centre visits in previous 4 weeks	0.91 (SD=0.98) (n=172)	0.47 (SD=0.63) (n=59)
Mean ease of healthcare access[1]	3.05 (SD=1.45)	3.40 (SD=1.24)
Self-reported issues accessing healthcare	112 (65.1%) (n=172)	46 (76.7%) (n=60)

Note: sample numbers are given where data were not available for the entire sample of prisoners. 1. Ratings on a 5-point Likert scale from 1 (very easy) to 5 (very difficult).

K10 results and comparison to younger prisoners. As shown in Table 1, the older prisoner sample (50 years and older) had average total K10 scores which were significantly lower than that of the younger prisoner sample (p = .036, Cohen's D = -0.278, effect size r = 0.137), however there was no significant difference in the proportion of older and younger prisoners presenting with very high levels of psychological distress. The next section of the findings examines the relationship between the remaining variables listed in Table 1 and psychological distress among the older prisoner sample.

Physical health. The vast majority of older prisoners (96.4%, n = 166) had at least one health issue listed in their correctional health files. The most prevalent health issues among the older prisoner sample included hypertension (44.0%), hyperlipidaemia/hypercholesterolaemia (27.7%), eyesight/hearing impairment (25.9%), chronic pain (22.9%), musculoskeletal conditions (22.3%) and diabetes (21.7%). Older prisoners had a significantly greater average

number of health issues listed compared to younger prisoners (M = 4.3 (older) vs M = 1.3 (younger), $t = 7.68$, $p < 0.0001$), and this was even greater among prisoners aged 65 years and older (M = 5.1 health issues). Additionally older female prisoners had slightly more health conditions listed compared to older male prisoners (M = 4.26 (males) vs M = 4.73 (females)).

Older inmates with a physical health issue listed in their correctional health files (n = 158) had higher K10 scores compared to those with no health issues listed (n = 6) (M = 17.56 vs 12.67), though no significant differences were detected between groups due to the small number of older inmates with no health issues listed. However a small but significant correlation was detected between the number of health issues listed in older prisoners' files and their total K10 scores (Pearson correlation = 0.169, $p<.05$ (2-tailed)). Additionally, older prisoners with current health concerns at interview (n = 139) had significantly higher total K10 scores compared to those with no current health concerns (n = 32) (M = 18.52 vs 13.16, $t = 3.472$, $p < .001$).

Functional health. Just over one fifth of older prisoners (22%) required assistance with day-to-day tasks (Barthel Index score <100), with older female prisoners (39%) and prisoners aged 65 years and older (26.5%) more likely to report requiring assistance (for more detailed findings see Trotter and Baidawi (2015)). Older prisoners requiring assistance with day-to-day tasks (Barthel Index score <100) had significantly higher total K10 scores compared to those not requiring assistance (M = 20.72 vs 16.66, $t = 2.713$, $p < .001$). After completing the Barthel Index with interviewers, participants were asked if they experienced any physical difficulties with the built environment in prison. Older prisoners reporting physical difficulties in the prison environment (n = 99) (for example, difficulties with getting on and off top bunks, finding showers slippery, or problems with temperature and ventilation in cells) also had significantly

higher total K10 scores compared to those who did not identify physical difficulties (n = 72) (M = 19.83 vs 14.33, $t = 4.624$, $p < .0001$). Unsurprisingly, older prisoners requiring assistance with day-to-day tasks (n = 38) were more likely to describe problems with the physical environment in prison compared to those who were independent (n = 135) (71.1% vs 54.1%) though this association was not statistically significant at the $p < .05$ (2-tailed) level. Further detail regarding participant difficulties with the built environment is presented elsewhere (see Trotter and Baidawi (2015)).

Healthcare utilisation and satisfaction. A small but significant positive correlation was observed between older prisoners' healthcare utilisation (self-reported previous month's visits to the prison health care centre) and total K10 scores (Pearson correlation = 0.212, $p < .01$ (2-tailed)). While no association between participants' *ratings* of healthcare access and distress scores were observed, older inmates who self-reported *issues* accessing healthcare in prison (n = 111) had significantly higher total K10 scores compared to those not reporting such issues (n = 59) (M = 18.98 vs 14.54, $t = 3.518$, $p < .001$). Interestingly, older participants reporting issues accessing prison healthcare described similar rates of healthcare utilisation as those reporting no issues accessing healthcare (M = 0.91 vs 0.93 clinic visits in previous four weeks), but had a slightly greater number of health issues listed in their files (M = 4.47 vs 4.05). Older prisoners with current health concerns (n = 140) reported a significantly greater number of recent health clinic visits compared to those with no current health concerns (n = 32) (M = 0.34 vs 1.04, $t = 3.768$, $p < .001$). Furthermore, the group of older prisoners with current health concerns rated healthcare access as significantly more difficult than those with no current health concerns (M = 3.16 out of 5 vs 2.59 out of 5, $t = 2.017$, $p < .05$).

Hierarchical linear regression. In order to examine the total and unique contribution of the predictor variables to the variance in older prisoners' distress scores, a three-step hierarchical linear regression was performed using only data from older prisoners. Age and gender were entered in the first step. Number of health issues, functional dependence (i.e. Barthel Index score < 100) and healthcare utilisation were entered in the second step. Finally, subjective measures were included in the third step; that is: current concerns with regard to health, self-reported difficulties in the prison environment and self-reported issues accessing healthcare.

Table 2. Hierarchical linear regression coefficients (B, *β)* of the explained variance of older prisoner psychological distress (K10 Total Scores)

Step		B	SEB	β	R^2	ΔR^2
1	Age	-.06	.08	-.07		
	Gender	5.96	1.9	25**	.08**	.08**
2	Age	-.16	.08	-.17*		
	Gender	3.90	1.88	.16*		
	Number of health issues	.44	.23	.15		
	Functional dependence[1]	-3.38	1.53	-.17*		
	Healthcare utilisation	1.02	0.68	.12	.16**	.09**
3	Age	-.14	.07	-.15		
	Gender	3.10	1.76	.13		
	Number of health issues	.28	.22	.10		
	Functional dependence	-2.73	1.45	-.14		
	Healthcare utilisation	.82	.65	.10		
	Current health concerns	-2.07	1.56	-.10		
	Physical difficulties in prison	-3.76	1.18	-.23**		
	Issues accessing healthcare	-2.79	1.24	-.17*	.28**	.12**

*p < .05 **p < .01. 1. Functional dependence was coded for prisoners with a total Barthel Index score <100.

The model was significant and together, the entered variables explained 28.3% of the variance in older prisoners' distress levels (total K10 scores). Age and gender contributed 8%, however of the two only gender had a statistically significant unique contribution to explaining the variance in K10 scores. Measures of physical and functional health, and healthcare utilisation contributed another 9% to the explaining the variance in distress in the second step. Of these factors, only functional dependence was statistically significant. There was a slight increase in the proportion of the variance (β coefficient) explained by age in the second step, indicating that the variables introduced in this second step overlap with age, as would be expected. Additionally, there was a slight decrease in the proportion of the variance independently attributable to gender in the second step, reflecting the fact that greater physical and functional health burdens partially mediate the relationship between gender and psychological distress among older prisoners.

In the final step, older prisoners' self-reported difficulties and concerns in the prison environment added a further 12% to the explained variance in distress levels. Subjective experiences of physical difficulties in the prison environment made the greatest statistically significant unique contribution to explaining variations in distress among older prisoners across the variables analysed. This factor, together with experiences of issues accessing healthcare contributed more to explaining variations in distress levels than the actual level of physical and functional health issues of older prisoners. This is also reflected in the reduction observed in the β coefficients of physical and functional health measures between the second and third steps. This potentially indicates that difficulties experienced in the prison environment as a result of physical and functional health declines mediate the relationship between these issues and psychological distress among older prisoners.

Discussion

This paper investigated the relationship between psychological distress among older prisoners and various other factors including physical and functional health, healthcare utilisation and self-reported experiences of prison services and infrastructure. In accord with prior studies of older prisoners (Burling, 1999; Gallagher, 1988; Murdoch et al., 2008) and findings from the general population (Atkins et al., 2013; Byles et al., 2012), worsening physical and functional health status, current health concerns and higher healthcare utilisation were associated with higher distress levels among the older prisoner sample. Furthermore, this study adds to the previous literature by demonstrating that self-reported physical difficulties in the prison environment and issues accessing healthcare in prison measurably contribute to explaining variance in distress levels of older prisoners, as has previously been suggested by qualitative studies (Aday & Farney, 2014; Crawley, 2005; Wahidin, 2004).

The findings support an interactional or congruence model of prisoner distress which acknowledges the impact of both individual and institutional factors upon wellbeing (Liebling et al., 2005; Lindquist & Lindquist, 1997; Slotboom et al., 2011; Wright, 1991). An alternative explanation for these findings may be that older prisoners who experience greater distress are more inclined to perceive problematic or difficult experiences with respect to prison infrastructure and health services. This argument is not supported by the findings that older prisoners reporting issues with the physical environment in prison were more likely to present with functional declines, and that those identifying issues accessing healthcare tended to have a current health issue of concern and a greater number of health issues listed in their files. Unfortunately, the study's cross-sectional design limits the capacity to draw definitive conclusions in this regard. However, given the association between psychological distress and

deterioration in physical and functional health among community samples (Bruce et al., 1994; Stuck et al., 1999), ameliorating distress among older individuals in prison will potentially reduce health burdens in this population, regardless of the direction of causation. Conversely, ameliorating physical disability and/or adapting the physical environment are also likely to reduce distress among older prisoners. The significant impact which healthcare access and the suitability of the built environment appear to have on older prisoners' distress levels suggests that these constitute two useful areas for intervention in this regard.

Patterns of service utilisation are particularly important in correctional healthcare due to the high health and mental health needs and limited resources within these systems. This study found no unique significant relationship between the previous month's healthcare utilisation and distress among older prisoners once physical and functional health were accounted for. This indicates a low likelihood that healthcare utilisation among older inmates is driven by distress, rather than physical health needs. The focus of this paper has been the physical characteristics of older prisoners and their environment, and as such mental health issues which may be present in this group were not specifically considered. Future analysis may analyse the relative contributions of physical and mental health issues to the experience of psychological distress among older prisoners.

Conclusion

The demonstrable associations between older prisoners' physical and psychological health, functional status and physical needs in relation to the built environment reinforce the need for a strategic response to the rising number of older people in prison, which has been consistently highlighted in both the academic and grey literature over recent decades (Aday, 2003; Human Rights Watch, 2012; Maschi, Viola, & Sun, 2012; B.A. Williams et al., 2012). First, the need to

address the physical and functional health needs of older women in prison is again emphasised by the study, which indicated higher levels of physical health issues and greater prevalence of functional decline in this subgroup. Due to their smaller numbers, older female prisoners are under-represented in research concerning older prisoners, and yet as a group they tend to have proportionately higher morbidity in health issues and greater functional decline (Leigey & Hodge, 2012). Furthermore the smaller numbers of older female prisoners may impede the implementation of specific correctional and health care responses, particularly where a critical mass of older female prisoners may not be present, such as in some Australian jurisdictions.

The literature to date is supportive of inter-departmental co-ordination in responding to older prisoners which also draws upon the expertise of other relevant services and agencies (for instance disability and aged care) (UK Department of Health, 2007; United Nations Office on Drugs and Crime, 2009). The associations between health, environment and wellbeing among older prisoners points again towards the potential utility of such collaborative strategies between correctional management, custodial services and correctional health providers to address the needs of this growing group.

Finally, given the increasing proportion of prisoners who are older, and the demonstrable links between physical health, environmental factors and psychological wellbeing in this group, consideration could be given to including measures of physical health, functional capacity and environmental factors in future studies investigating prisoner wellbeing. Failure to consider both individual and environmental factors oversimplifies issues relating to prisoner distress, and may lead to an oversight of potentially useful intervention strategies.

References

Aday, R. H. (2003). *Aging prisoners: Crisis in American corrections*. Santa Barbara, CA: Praeger Publishers.

Aday, R. H., & Farney, L. (2014). Malign neglect: Assessing older women's health care experiences in prison. *Bioethical Inquiry, 11*, 359-372. doi: 10.1007/s11673-014-9561-0

Aday, R. H., & Krabill, J. J. (2011). Women aging in prison: A neglected population in the criminal justice system. Boulder, CO: Lynne Rienner.

Aday, R. H., & Krabill, J. J. (2012). Older and Geriatric Offenders: Critical Issues for the 21st Century. In L. Gideon (Ed.), *Special Needs Offenders in Correctional Institutions* (pp. 203-232). Thousand Oaks, CA: Sage.

Anno, B. J., Graham, C., Lawrence, J. E., Shansky, R., Bisbee, J., & Blackmore, J. (2004). Correctional Health Care: Addressing the needs of elderly, chronically ill and terminally ill inmates. Middletown: National Institute of Corrections.

Atkins, J., Naismith, S. L., Luscombe, G. M., & Hickie, I. B. (2013). Psychological distress and quality of life in older persons: relative contributions of fixed and modifiable risk factors. *Biomed Central Psychiatry, 13*, 249-259.

Australian Bureau of Statistics. (2012). Prisoners in Australia 2012 (cat. no. 4517.0). Canberra: Australian Bureau of Statistics.

Baidawi, S., & Trotter, C. (2015). Psychological distress among older prisoners: a literature review. *Journal of Forensic Social Work, 5*(1-3), 234-257. doi: 10.1080/1936928X.2015.1075166

Baidawi, S., Turner, S., Trotter, C., Browning, C., Collier, P., O'Connor, D., & Sheehan, R. (2011). Older prisoners - A challenge for Australian corrections. *Trends and Issues in Crime and Criminal Justice, 426*, 1-8.

Binswanger, I. A., Krueger, P. M., & Steiner, J. F. (2009). Prevalence of chronic medical conditions among jail and prison inmates in the USA compared with the general population. *Journal of Epidemiology and Community Health, 63*, 912-919. doi:10.1136/jech.2009.090662

Bjorngaard, J. H., Rustad, A.-B., & Kjelsberg, E. (2009). The prisoner as patient - a health services satisfaction survey. *BMC Health Services Research, 9*, 176. doi:10.1186/1472-6963-9-176

Boen, H., Dalgard, O. S., & Bjertness, E. (2012). The importance of social support in the associations between psychological distress and somatic health problems and socio-economic factors among older adults living at home: a cross sectional study. *Biomed Central Geriatrics, 12*, 27.

Bonta, J., & Gendreau, P. (1990). Reexamining the cruel and unusual punishment of prison life. *Law and Human Behaviour, 14*, 347-372.

Bretschneider, W., & Elger, B. S. (2014). Expert Perspectives on Western European Prison Health Services: Do Ageing Prisoners Receive Equivalent Care? *Journal of Bioethical Inquiry, 11*, 319-332. doi: 10.1007/s11673-014-9547-y

Bruce, M. L., Seeman, T. E., Merrill, S. S., & Blazer, D. G. (1994). The impact of depressive symptomatology on physical disability: MacArthur Studies of Successful Aging. *American Journal of Public Health, 84*, 1796-1799.

Burling, K. L. (1999). A correlational investigation of the relationship between psychological distress, life satisfaction, and health care utilization among elderly male inmates. (PhD Thesis). Iowa City: The University of Iowa.

Byles, J., Gallienne, L., Blyth, F. M., & Banks, E. (2012). Relationship of age and gender to the prevalence and correlates of psychological distress in later life. *International Psychogeriatrics, 24*, 1009-1018. doi:10.1017/S1041610211002602

Collin, C., Wade, D., Davies, S., & Horne, V. (1988). The Barthel Index: A reliability study. *International Disability Studies, 10*, 61-63.

Colsher, P., Wallace, R., Loeffelholz, P., & Sales, M. (1992). Health status of older male prisoners: a comprehensive survey. *American Journal of Public Health, 82*, 881-884.

Crawley, E. (2005). Institutional thoughtlessness in prisons and its impacts on the day-to-day prison lives of elderly men. *Journal of Contemporary Criminal Justice, 21*, 350-363. doi: 10.1177/1043986205282018

Crawley, E., & Sparks, R. (2005a). Hidden Injuries: Researching the experiences of older men in English prisons. *The Howard Journal, 4*, 345-356.

Crawley, E., & Sparks, R. (2005b). Older men in prison: Survival, coping and identity. In A. Liebling & S. Maruna (Eds.), *The Effects of Imprisonment* (pp. 343-366). Cullompton, Devon: Willan Publishing.

Crawley, E., & Sparks, R. (2006). Is there life after imprisonment? *Criminology and Criminal Justice, 6*, 63-82. doi: 10.1177/1748895806060667

Dawes, J. (2009). Ageing Prisoners: Issues for social work. *Australian Social Work, 62*(2), 258-271. doi: 10.1080/03124070902803475

Fazel, S., Hope, T., O'Donnell, I., Piper, M., & Jacoby, R. (2001). Health of elderly male prisoners: worse than the general population, worse than younger prisoners. *Age and Ageing, 30*, 403-407. doi: 10.1093/ageing/30.5.403

Gallagher, E. (1988). Older men in prison: Emotional, social, and physical health characteristics (PhD Thesis). Burnaby, B.C.: Simon Fraser University.

Harzke, A. J., Baillargeon, J. G., Pruitt, S. L., Pulvino, J. S., Paar, D. P., & Kelley, M. F. (2010). Prevalence of Chronic Medical Conditions among Inmates in the Texas Prison System. *Joural of Urban Health, 87*, 486-503. doi:10.1007/s11524-010-9448-2

Hayes, A. J., Burns, A., Turnbull, P., & Shaw, J. J. (2012). The health and social needs of older male prisoners. *International Journal of Geriatric Psychiatry, 27*, 1155-1162. doi: 10.1002/gps.3761

Howse, K. (2003). Growing old in prison: A scoping study on older prisoners. London: Prison Reform Trust.

Human Rights Watch. (2012). Old Behind Bars: The Aging Prison Population in the United States. New York: Human Rights Watch.

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S.-L. T.,Walters, E. E., & Zazlavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine, 32*, 959-976. doi: 10.1017}S0033291702006074

Leach, J., & Neto, A. (2011). Offender Population Trends: Aged Offenders in NSW. *Research Bulletin*, *30*, 1-12. Sydney: Corrective Services New South Wales.

Leigey, M. E., & Hodge, J. P. (2012). Gray Matters: Gender Differences in the Physical and Mental Health of Older Inmates. *Women and Criminal Justice, 22*, 289-308. doi: 10.1080/08974454.2012.716358

Liebling, A., Durie, L., Stiles, A., & Tait, S. (2005). Revisiting prison suicide: the role of fairness and distress. In A. Libeling & S. Maruna (Eds.), *The Effects of Imprisonment* (pp. 209-231). Cullompton, Devon: Willan Publishing.

Lindquist, C., & Lindquist, C. A. (1997). Gender differences in distress: Mental health consequences of enviromental stress among jail inmates. *Behavioral Sciences and the Law, 15*, 503-523.

Loeb, S., Staffensmeier, D., & Lawrence, F. (2008). Comparing incarcerated and community-living older men's health. *Western Journal of Nursing Research, 30*, 234-249. doi: 10.1177/0193945907302981

Mahoney, F. I., & Barthel, D. W. (1965). Functional evaluation: The Barthel Index. *Maryland Medical Journal, 14*, 61-65.

Maschi, T., Kwak, J., Ko, E., & Morrissey, M. B. (2012). Forget Me Not: Dementia in Prison. *The Gerontologist, 52*(4), 441-451. doi: 10.1093/geront/gnr131

Maschi, T., Viola, D., & Sun, F. (2012). The High Cost of the International Aging Prisoner Crisis: Well-Being as the Common Denominator for Action. *The Gerontologist*, *53,* 543-554. doi: 10.1093/geront/gns125

Murdoch, N., Morris, P., & Holmes, C. (2008). Depression in elderly life sentence prisoners. *International Journal of Geriatric Psychiatry, 23*, 957-962. doi: 10.1002/gps.2017

New Zealand Department of Corrections. (2014). Trends in the Offender Population. Wellington: New Zealand Department of Corrections.

Office of the Correctional Investigator Canada. (2011). Annual Report of the Office of the Correctional Investigator 2010-11. Ottawa: Office of the Correctional Investigator.

Phillips, J. (1996). Crime and older offenders. *Practice: Social work in action, 8*, 43-54. doi: 10.1080/09503159608415351

Potter, E., Cashin, A., Chenoweth, L., & Jeon, Y. (2007). The healthcare of older inmates in the correctional setting. *International Journal of Prisoner Health, 3*, 204-213. doi: 10.1080/17449200701520115

Reimer, G. (2008). The graying of the US prisoner population. *Journal of Correctional Health Care, 14*, 202-208. doi: 10.1177/1078345808318123

Slotboom, M.-A., Kruttschnitt, C., Bijleveld, C., & Menting, B. (2011). Psychological well-being of incarcerated women in the Netherlands: Importation or deprivation. *Punishment and Society, 13*, 176-197. doi: 10.1177/1462474510396313

Stuck, A. E., Walthert, J. M., Nikolaus, T., Büla, C. J., Hohmann, C., & Beck, J. C. (1999). Risk factors for functional status decline in community-living elderly people: a systematic literature review. *Social Science & Medicine, 48*, 455-469.

Trotter, C., & Baidawi, S. (2015). Older prisoners: Challenges for inmates and prison management. *Australian and New Zealand Journal of Criminology, 48*, 200-218. doi: 10.1177/0004865814530731

UK Department of Health. (2007). A pathway to care for older offenders: A toolkit for good practice. Leeds: UK Department of Health.

United Nations Office on Drugs and Crime. (2009). Handbook on Prisoners with Special Needs. New York: United Nations.

Wade, D., & Collin, C. (1988). The Barthel ADL Index: a standard measure of physical disability? *International Disability Studies, 10*, 64-67.

Wahidin, A. (2004). Older women in the criminal justice system: Running out of time. London: Jessica Kingsley Publishers.

Wahidin, A. (2011). Ageing behind bars, with particular reference to older women in prison. *Irish Probation Journal, 8*, 109-123.

Wangmo, T., Meyer, A. H., Bretschneider, W., Handtke, V., Kressig, R., Gravier, B., Büla, C., & Elger, B.S. (2015). Ageing Prisoners' Disease Burden: Is Being Old a Better Predictor than Time Served in Prison. *Gerontology, 61*, 116-123. doi: 10.1159/000363766

Williams, B. A., Lindquist, K. L., Sudore, R. L., Strupp, H. M., Willmott, D. J., & Walter, L. C. (2006). Being old and doing time: Functional impairment and adverse experiences of geriatric female prisoners. *Journal of the American Geriatrics Society, 54*, 702-707.

Williams, B. A., McGuire, J., Lindsay, R. G., Baillargeon, J., Cenzer, I. S., Lee, S. J., & Kushel, M. (2010). Coming home: health status and homelessness risk of older pre-release prisoners.

Journal of general internal medicine, 25, 1038-1044. doi: http://dx.doi.org/10.1007/s11606-010-1416-8

Williams, B. A., Stern, M. F., Mellow, J., Safer, M., & Grefinger, R. B. (2012). Aging in Correctional Custody: Setting a Policy Agenda for Older Prisoner Health Care. *American Journal of Public Health, 102*, 1475-1481. doi: 10.2105/AJPH.2012.300704

Williams, J. (2012). Social care and older prisoners. *Journal of Social Work, 13*, 471-491. doi: 10.1177/1468017311434886

Wright, K. N. (1991). A study of individual, environmental, and interactive effects in explaining adjustment to prison. *Justice Quarterly, 8*, 217-242.

5.9 Preamble to Paper Four

The previous findings paper detailed the relationships between older prisoners' levels of psychological distress and physical health, functional health and health care utilisation variables. It demonstrated associations between distress and physical health, functional health, as well as healthcare utilisation among older people in prison. Furthermore, physical difficulties in the prison environment and issues accessing healthcare were significantly explanatory of variations in distress among older inmates. This fourth findings paper broadens this investigation to consider the relationship between the social aspects of the prison environment and older prisoners' distress levels, addressing research sub-question c)viii).

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5.10 Paper Four: Prison experiences and psychological distress among older inmates

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Abstract

This study investigates relationships between older prisoners' social experiences and their levels of distress. One hundred and seventy three older prisoners (aged ≥ 50 years) from eight Australian prisons were administered the Kessler Psychological Distress (K10) Scale, with additional information collected via individual interviews. Psychological distress scores were significantly associated with measures of self-reported safety ($p < .001$), prison victimization ($p < .05$), perceived social support from staff ($p < .01$) and inmates ($p < .001$), current employment ($p < .05$) and level of exercise ($p < .001$) among older inmates. Findings suggest that strategies for improving sense of safety, social support and level of exercise may ameliorate distress among older prisoners.

Introduction

Older people are the fastest growing age subgroup of prisoners in many countries worldwide, although they tend to only comprise a minority of overall prisoner populations (Aday & Krabill, 2012; Trotter & Baidawi, 2015). Correctional facilities, regimes and programs are generally more suited to the needs of younger inmates (Aday, 2003; Kerbs & Jolley, 2009; Potter, Cashin, Chenoweth, & Jeon, 2007; Wahidin, 2004), a situation which has been suggested to contribute

to disadvantage and marginalization of older prisoners (Crawley, 2005). This paper explores the relationship between various aspects of older inmates' prison experience and their level of psychological distress. This is important given that research with community samples indicates psychological distress is a risk factor for deterioration in physical and functional health among older individuals (Lenze et al., 2001). Hence identifying modifiable risk factors for distress among older prisoners can potentially lead to interventions reducing health burdens (and hence associated costs) as well as improving well-being in this population.

While factors such as physical health problems and the built environment (i.e. physical aspects of the prison buildings and surrounds) explain some of the variation in distress levels among older prisoners (e.g. Trotter & Baidawi (2015); Murdoch, Morris, & Holmes (2008)), this paper specifically focuses on social aspects of the prison environment. Previous studies have suggested that such social aspects of the prison experience contribute to distress among older prisoners, including experiences of isolation, and fear of victimisation (Aday, 2003; Crawley & Sparks, 2005a; Maschi et al., 2011; Wahidin, 2004). Yet the wellbeing of older people in prison is a neglected area of research (Maschi et al., 2011).

Initial theories regarding prisoner wellbeing outlined the "pains of imprisonment" generated by structural deprivations, which were thought to account for prisoners' generally greater levels of distress; these include the loss of liberty, deprivation of goods and services, frustration of sexual desire, and deprivation of autonomy and security (Sykes, 1958). Later research disputed the belief that prisons were inherently damaging environments, given that not all prisoners experience psychological deterioration (Bonta & Gendreau, 1990). An alternative importation model suggests that the risk and resilience of individual prisoners – including mental health history and coping styles – also accounts for differential responses to

incarceration (Liebling et al., 2005; Slotboom et al., 2011). Finally, a combined model in which prisons are understood to expose vulnerable populations to additional risk, has gained increasing attention (Liebling et al., 2005), as have interactional models which suggest that the congruence between person and environment may explain individual experiences of incarceration (Wright, 1991).

The next section reviews the available literature concerning social aspects of the prison experience in relation to older inmates, which theoretically correspond to various deprivation factors mentioned above.

Literature review

Prison programs and activities

The availability of age-appropriate programs and activities has often been raised in qualitative studies as crucial for older prisoners' coping (Aday, 2003; Aday & Krabill, 2011; Dawes, 2009; Wahidin, 2004). However, many correctional programs have been designed with the needs of younger prisoners in mind (Aday, 2003; Crawley, 2005). In the context of this study, programs refer to structured events including work, education and offending behavior programs, while activities refer to voluntary and less structured initiatives including exercise and recreation. Qualitative studies from the US, UK and Australia have drawn attention to a lack of appropriate provisions for older prisoners in a range of areas including accommodation, healthcare, education and work (Aday, 2003; Dawes, 2009; Loeb & Steffensmeier, 2011; Mann, 2012; Shantz & Frigon, 2009; Wahidin, 2004).

For example, exercise is an important activity for promoting well-being among older people in the general community (Atkins, Naismith, Luscombe, & Hickie, 2013). However, the available

literature indicates some older prisoners encounter challenges completing exercise due to regime difficulties (e.g. availability of toilets whilst exercising), a lack of appropriate activities, or having to contend with younger inmates dominating exercise equipment or areas (Crawley, 2005; Snyder, van Wormer, Chadha, & Jaggers, 2009). Qualitative and quantitative studies with older inmates from the US, UK and Australia have also drawn attention to a lack of structure and programs to maintain engagement in daily prison life for prisoners who are past retirement age, and no longer wanting to or physically unable to work (Dawes, 2009; Wahidin, 2004). The absence of age-appropriate activities and programs is understood to intensify the multiple losses experienced by virtue of imprisonment (Crawley & Sparks, 2005a; Wahidin, 2004). Tentative quantitative evidence of this association was found in a foundational study of older male inmates in three US prisons, which reported that older inmates who were engaged in more hobbies and activities at one prison location reported fewer symptoms of psychological distress compared to older prisoners at other locations (Gallagher, 1988). At the same time, the authors acknowledged that other factors may explain this finding, including a less restrictive physical environment at the prison where older inmates were involved in more activities (Gallagher, 1988). Research which is able to specifically examine the impact of involvement in prison programs and activities upon older prisoner distress would be useful in this regard.

Social factors

Social interactions within the prison environment have alternately been depicted as distressing and supportive for older prisoners. Some literature describes interactions with prison staff (including both correctional officers and health staff) as distressing for older prisoners (Aday & Farney, 2014; Crawley & Sparks, 2005b; Loeb & Steffensmeier, 2011; Mann, 2012). For

example, one study of older female prisoners described infantalizing, unresponsive, disrespectful and degrading interactions with staff, which conflicted with older prisoners' sense of "place within the generational order" (Wahidin, 2004, p. 169). At the same time, other research describes positive relationships between older prisoners and prison staff (e.g. older prisoners feeling treated with respect by staff and feeling that there was a staff member who they could turn to with a problem) (Crawley & Sparks, 2005a; Her Majesty's Inspectorate of Prisons, 2004). The reasons behind these conflicting findings are unclear, and they may reflect institutional differences or variations in the needs and characteristics of individual prisoners. For example, one study identified evidence of prison staff difficulties in working with older sex offenders due to repulsion regarding the offending behavior (Mann, 2012).

Interactions with younger prisoners are commonly described by older inmates as a source of distress, and are often characterized by a fear of victimization, particularly for older prisoners experiencing declines in physical functioning (Aday, 2003; Dawes, 2009; Mann, 2012; Wahidin, 2004). Studies to date indicate that psychological victimization by younger prisoners (such as insults, threats, "fake punches" and cutting in while in queues) and property victimization (Dawes, 2009; Kerbs & Jolley, 2007), appear relatively common. Physical and sexual abuse have also been reported towards older prisoners, albeit less frequently than other forms of victimization (Aday, 2003; Kerbs & Jolley, 2007). There is qualitative evidence that fear of such victimization limits the level of social engagement of older prisoners, generating experiences of isolation (Dawes, 2009; Wahidin, 2004). Older prisoners have indicated their use of various strategies to manage safety, including avoiding proximity to younger prisoners, and keeping in the vicinity of prison staff and other older inmates (Trotter & Baidawi, 2015). Researchers have concluded that "Older and more frail inmates may devote a substantial portion of their day-to-

day existence trying to minimize the dangers of imprisonment" (Aday & Krabill, 2012, p. 213). *S*ome studies have found that older prisoners prefer age-segregated placement in prison provided this does not prevent access to other facilities and services (Wahidin, 2004).

The sole study directly addressing gender differences among older prisoners suggests that females are more likely to be socially isolated in prison (Kratcoski & Babb, 1990). This research suggested a number of contributing factors, including less frequent visits (potentially due to a greater proportion of divorced and separated older prisoners), a greater likelihood of older females being housed in higher security environments (leading to reduced availability of activities and greater perception or experience of aggression from younger prisoners), and poorer health among older females (again minimising engagement in activities and socialization) (Kratcoski & Babb, 1990). However there are inconsistent findings relating to the relative levels of fear of victimization among older male and female prisoners (Aday, 2003; Kratcoski & Babb, 1990). Overall studies directly examining gender differences among older prisoners are very rare, and further research in this regard would be useful to ensure that disparities can be identified in the social needs and experiences of older inmates.

Qualitative studies indicate that social support in prison also serves as a protective factor for older inmates, particularly in the context of disruption to their outside relationships, and the lowly position in the prison social hierarchy occupied by many older inmates (Mann, 2012; Wahidin, 2004). However generally prison social networks appear to diminish with age (Bond, Thompson, & Malloy, 2005). In the absence of a supportive social milieu, isolation poses significant difficulties for some older prisoners (Aday & Krabill, 2012; Crawley, 2005), and the accompanying loneliness has been found to be significantly associated with psychological distress among this group (Gallagher, 1988). These associations are not uncommon, and

correspond to experiences of older people in the general community. Research suggests that social support and engagement have a direct effect on distress levels among older people, but may also mediate the relationship between physical and functional health issues and distress in this group (Boen, Dalgard, & Bjertness, 2012; Golden, Conroy, & Lawlor, 2009).

Although consistent across a broad range of studies and jurisdictions, the available evidence concerning the social environment in prison and its impact on older prisoners is mostly qualitative and exploratory. While there are strong suggestions that these elements of the prison environment (including social support, program availability and engagement, and a sense of safety), are influential upon older inmates, research has yet to demonstrate clear evidence of a measurable association between these issues and distress among older prisoners. The current paper addresses this gap in the evidence base.

Aims

This paper assesses whether older prisoners' level of distress is associated with their sense of safety and experiences of prison victimization, or their engagement in exercise, programs, or employment. Additionally, the paper presents data concerning safety, victimization, and exercise, program and work engagement from a group of younger inmates for comparative purposes. The data for this study is drawn from a larger project focusing on the custodial and post-release experiences of older offenders in two Australian states.

Methods

Sampling and recruitment

Prisons selected for data collection were those in two Australian states (Victoria and New South Wales) accommodating and releasing the highest numbers of prisoners aged 50 years and older. The chosen age threshold is consistent with the majority of studies concerning older prisoner well-being. As is the accepted norm in this area, a modified definition of 'older prisoner' was adopted for Indigenous prisoners only (45 years and older) to account for the shorter life expectancy in this population (See e.g. Trotter & Baidawi, 2015; Leach & Neto, 2011).

Recruitment occurred from eight sites, including both male and female prisons, a variety of security ratings and both public and private prisons (see Trotter & Baidawi, 2015 for further details). A disproportionate quota sampling strategy was used with a view to representing diversity among the older prisoners. The older prisoner sample was to be evenly distributed between sentenced prisoners aged 50 to 64 years (or 45 to 64 years for Indigenous prisoners) and those who were 65 years and older, and aimed to comprise a minimum female representation of 10%, with one half of the older prisoners recruited within 90 days of their expected release date, thus allowing prisoners to reflect on recent and long term prison experience. A smaller sample of 60 younger prisoners (aged under 50 years or under 45 years for Indigenous prisoners) from the same prison sites was included as a comparison group, all of whom were within 90 days of their expected release date in order to examine post-release experiences as part of the broader study. The one exclusion criterion was prisoners identified by the administration as potentially behaviorally or emotionally unstable (due to researcher and participant safety issues). All older prisoners and every fourth younger prisoner from the prisoner list who met the research criteria were forwarded a flyer advertising the study by

prison program staff. Eligible prisoners opted into the research by notifying a nominated prison staff member of their interest until all group quotas were filled. The research received approval from the University human research ethics committee and four other correctional and correctional health department ethics committees at data collection locations.

Data collection

Face-to-face structured interviews were conducted with consenting prisoners in Victoria throughout 2011, and in New South Wales in 2012 by one of three interviewers, all with prior experience in social work and/or corrections research. Interviews varied between 45 and 90 minutes' duration, and took place in areas of the prison affording privacy (an office or program room with a closed door) in the absence of prison staff. Prior to commencing the interview, research officers read through the study explanatory statement with each participant and provided an opportunity to address any questions. All participants signed a form indicating their consent to participate in the interview, and most also consented for data to be gathered from their health (96%) and corrections (99%) files.

Instruments

The interview schedule comprised a combination of yes/no, scaled and short answer questions concerning a variety of topics; those reported on in this paper include socio-demographic characteristics, current experience of psychological distress, self-reported safety, social support, employment, exercise and program participation. These variables were identified from the previous literature as potentially associated with older prisoners' well-being.

Psychological distress was measured using the Kessler Psychological Distress (K10) Scale, a 10-item measure of non-specific psychological distress, including items relating to depressed

mood, nervousness, restlessness, worthlessness, fatigue and hopelessness (Kessler et al., 2002). Respondents indicated how often they had experienced each item relating to psychological distress over the past four weeks on a scale of one (none of the time) to five (all of the time). The K10 Scale produces respondent scores ranging from 10 (indicating no distress) to 50 (indicating severe distress), and was chosen due its ease of administration, its ability to be delivered by lay interviewers, its availability (both free to administer and available in the public domain). The K10 scale has evidenced high levels of internal consistency reliability (α = .9) and concurrent validity, distinguishing between DSM-IV cases and non-cases in large community samples (Kessler et al., 2002). Additionally, consistent psychometric properties are observed across socio-demographic groups (Kessler et al., 2002), and the scale has previously been utilised with prisoner samples (e.g. Butler et al., 2006).

Sense of safety was measured by two items: first participants were asked if they had experienced victimization in prison (specifically, verbal threats, physical or sexual victimization or stand-overs (i.e. bullying or extortion for goods or other favours)); next they were asked to report on a five-point scale (from very safe to very unsafe) how safe they felt in prison overall. Social support was measured by asking prisoners to identify whether there was a) another prisoner and/or b) a staff member with whom they could discuss their problems. Participants were also asked about their current employment status in prison, to identify any programs in which they had participated whilst in prison, and their level of exercise over the past four weeks on a five-point scale (Never, 1-3 times, 4-7 times, 8-11 times, 12+ times). Following interviews, other data were collected from each consenting participant's corrections file (e.g. Indigenous status and other information relating to the current imprisonment).

Data analysis

All data were entered into IBM SPSS Statistics 20 software for analysis, with descriptive data reported in this paper (frequencies, means, and standard deviations). Independent samples t-tests (2-tailed) were used to check for statistically significant differences in total K10 Scores for categorical dependent variables (e.g. employment status), while bivariate correlations were used to analyse associations between total K10 scores and continuous variables such as self-reported safety. While the dependent variable (K10 scores) is not normally distributed, the sample size is sufficient to permit the use of parametric statistical analyses. A linear regression was then used to examine the proportion of the variance in older prisoners' distress levels which can be explained by those independent variables which were significantly associated with distress scores in univariate analyses.

Results

Sample characteristics

The final sample comprised 173 older sentenced prisoners of whom 48% (n = 83) were aged 65 years and older and 13% (n = 23) were female; a comparison sample of 60 younger prisoners were also included from the same prison locations. Most participants consented for health (96%) and correctional files (99%) to be accessed to collect additional data. In comparison to the older prisoner populations in the included jurisdictions at the time of data collection, there was an over-representation of females (13.3% vs 6.9%) and prisoners aged 65 years and older (48.0% vs 16.7%) in the older prisoner sample, while Indigenous prisoners were under-represented (6.4% vs 13.1%) (Australian Bureau of Statistics, 2011, 2012).

A high proportion (76.7%) of the older prisoners were first-time inmates, which accords with Australian and international data indicating that between one half and three quarters of older

prisoners are serving a first term of imprisonment (Aday, 2012; Leach & Neto, 2011). While precise data regarding offence types of the broader older prisoner population were not available, older prisoners convicted of sexual offences appear to be over-represented in the sample (62.2%, n = 107) compared to the limited older prisoner population data located (28% - 42%) (Leach & Neto, 2011; Trotter & Baidawi, 2015). Accordingly, a high proportion of the older prisoner sample were in protection placements at the time of the interview (n = 130 (75.6%)), though these were all male prisoners (87.2% of the male older prisoner sample). The younger prisoner sample was broadly reflective of the sample states' prisoner populations at the time of data collection in terms of mean age, and the proportion who were Australian-born (Australian Bureau of Statistics, 2012). However Indigenous prisoners are also under-represented in the younger prisoner sample. Table 1 presents key characteristics of the sample for investigation, including average levels of distress and other independent variables.

Table 1. Participant characteristics

Variable	Older prisoner sample (n = 173)	Younger prisoner sample (n = 60)
Socio-demographic characteristics		
Mean age in years [min– max]	63.1, [46-83]	34.4, [21-49]
Male	150 (86.7%)	53 (88.3%)
Psychological distress		
Average K10 Scores (Max 50)	17.51 (SD=8.126)	20.12 (SD=8.571)
Proportion with very high K10 score[1]	21 (12.3%) (n=171)	8 (13.3%)
Safety		
Self-reported victimisation in prison	110 (64.0%) (n=172)	40 (66.7%)
Average (mean (median)) self-reported safety (1=very safe, 5=very unsafe)	2.10 (2) (n=170)	2.12 (2)
Social support		
Support from another inmate	115 (66.9%) (n=172)	44 (73.3%)
Support from a prison staff member	129 (75.4%) (n=171)	45 (75.0%)
Program participation		
Offending Behavior	49 (28.3%)	33 (55.0%)

Personal Development	37 (21.4%)	5 (8.3%)
Recreational	31 (17.9%)	5 (8.3%)
No programs	84 (48.6%)	16 (26.7%)
Current employment	109 (63.4%) (n=172)	49 (81.7%)
Exercise (previous 4 weeks)		
Never	42 (24.3%)	15 (25.0%)
1-3 times	8 (4.6%)	5 (8.3%)
4-7 times	8 (4.6%)	3 (5.0%)
8-11 times	10 (5.8%)	0 (0.0%)
12+ times	105 (60.7%)	37 (61.7%)

Note: sample numbers are given where data were not available for the entire sample of prisoners. [1]Very high K10 score ≥ 30 out of 50.

K10 results and comparison to younger prisoners

As shown in Table 1, the older prisoner sample had average total K10 scores which were significantly lower than that of the younger prisoner sample (p = .036, Cohen's D= -0.28, effect size r = 0.14), however there was no significant difference in the proportion of older and younger prisoners presenting with very high levels of psychological distress. Older female prisoners had significantly higher K10 scores (n = 22, M = 22.55, SD = 9.33) compared to older male prisoners (n = 149, M = 16.77, SD = 7.69); t(169) = -3.19, p = .002, Cohen's D = -0.49. There was no significant difference in the distress scores of older prisoners who were pre-release (< 90 days remaining to serve, M = 17.49, n = 82) and those who were earlier in their sentence (M = 17.54, n = 89). The next section of the findings examines the relationship between the remaining variables listed in Table 1 and psychological distress among the older prisoner sample.

Safety

Similar proportions of older and younger prisoners reported victimization in prison, and there were no significant gender differences among older prisoners in the reporting of victimization.

Further details regarding type of victimisation is reported on elsewhere (see Trotter & Baidawi, 2015), but most commonly involved receipt of verbal threats (47.1%) or being the victim of a stand-over (41.6%), rather than physical or sexual assault (24.4%). Older prisoners reporting the types of victimization identified in the study had significantly higher distress scores than those not reporting victimization (M = 18.71 vs 15.42, t = 2.59, p < .05), however this relationship was not apparent in the younger prisoner sample. A small but significant positive correlation was observed between feeling unsafe in prison and distress scores among the older inmate sample (r = .278, n = 169, p < .001). A similar correlation was observed in the younger prisoner sample, although the results were statistically significant only at the .10 level potentially due to the small sample size (r = .227, n = 60, p = .082).

Both the older and younger samples, on average, reported that they felt generally safe in prison, and there were no significant gender differences observed in the older prisoner sample's level of self-reported safety. While older prisoners describing a history of victimization in prison tended to report feeling more unsafe than those who had not experienced victimization (2.16 vs 1.89 out of 5), this difference was not statistically significant. In contrast, there was a significant difference in the sense of safety (1 = very safe, 5 = very unsafe) of younger prisoners based upon their self-reported history of prison victimization (2.38 vs 1.60, t = 2.59, p < .05). Finally, there was no difference in the mean level of safety reported for older male prisoners who were in protection placements, and those held in non-protection settings (M = 2.05 (n = 128) vs 2.06 (n = 19)) (note that all older female prisoners were in non-protection placements and so were removed from this analysis).

Social support

The majority of both younger and older participants (more than two thirds in each case) reported being able to access social support from both staff members and other inmates. Again, no significant gender differences were seen in the level of access to social support among older prisoners. Among older prisoners, those who indicated there was another prisoner with whom they could speak about their problems were significantly less distressed than those who indicated no such person was available (M = 15.97 vs 21.06, $t = 3.85$, $p < .001$). While the trend was also observed in the younger prisoner sample (that is, those with social support had lower distress levels, M = 19.82 vs 21.33), the difference was not statistically significant. Older prisoners who reported having a staff member to whom they could speak regarding their problems were also significantly less distressed than those who did not report having such a staff member (M = 16.73 vs 20.58, $t = 2.6575$, $p < .01$); they also reported feeling less unsafe (M = 2.06 vs 2.25 out of 5), however this difference was not statistically significant. The association between staff support and distress scores was paralleled in the younger prisoner sample, though the difference in distress scores between those reporting having and not having staff support was not statistically significant in the younger sample (M = 19.47 vs 22.14).

Employment

There was not a statistically significant difference in the distress scores of older prisoners based on whether they *had ever* worked during their time in prison (M = 16.92) or had not (M= 19.16). However older prisoners who *were currently* employed at the time of the interview were

significantly less distressed than those who were not working (M = 16.32 vs 19.21, $t = 2.32$, $p < .05$), and similar proportions of older male (63.3%) and female (63.6%) prisoners were so employed. It was anticipated that this finding may be partially explained by the health status of those not currently employed. Indeed, when the reasons for not being employed were analysed, older inmates who were not working due to health reasons had higher average distress scores (M = 22.79, n = 28) compared to those not working due to being in full-time education (M = 18.33, n = 3), those wanting to work but not finding suitable jobs available (M = 17.11, n = 18), and those who did not wish to work (M = 16.25, n = 4). The lowest distress scores among those not employed at the time of the interview were those of older prisoners who had chosen to retire in prison (M = 12.14, n = 7). Among the younger prisoner sample, distress levels among those currently employed (M = 19.67, n = 49) were also lower than those not currently employed (M = 22.09, n = 11). While the difference in K10 scores and dispersion (SD) were similar to the older prisoner sample, this difference was not statistically significant, potentially as a result of the smaller younger prisoner sample size.

Programs and Activities

There were no significant differences in the proportion of older male and female prisoners participating in each program type listed in Table 1, nor the level of reported exercise between genders of older prisoners. Similar proportions of older and younger prisoners reported low, moderate and higher levels of exercise. Additionally, there were no significant differences observed in distress levels among either older or younger prisoners based on their participation in any of the program types listed in Table 1. However it should be noted that prisoners were asked if they *had ever* participated in such programs, rather than if they *were currently* participating in these programs. This is examined further in the discussion section.

Conversely, a small but significant negative correlation was observed between older prisoners' exercise in the previous four weeks and their psychological distress scores (r=-.265, n = 171, $p < .001$); that is, older prisoners who had higher distress scores tended to have exercised less often over the previous four weeks. The same relationship was also observed among younger prisoners (r = -.314, n = 60, $p < .05$). No statistically significant association was observed between the sense of safety reported by older prisoners and their level of exercise over the previous four weeks.

Linear regression

Each variable which was significantly associated with distress among the older prisoner sample was entered into a linear regression analysis (see Table 2). Together these variables explained 48.4% of the variation in older prisoners' psychological distress scores. The analysis indicated that staff social support and current employment did not have a statistically significant unique contribution to explaining the variance in distress scores of older inmates. The remaining variables were all significantly explanatory of the variation in distress among older prisoners, with prisoners' sense of safety, level of exercise and inmate social support being the most prominent factors associated with variations in distress levels.

Table 2. Regression coefficients (B, *β)* of the explained variance of older prisoner psychological distress (K10 Total Scores)

Independent variable	B	SEB	β	t	Sig.
Gender	3.947	1.668	.165	2.366	.019*
Sense of safety	1.410	.491	.202	2.870	.005**

Self-reported victimization	-2.392	1.141	-.146	-2.096	.038*
Inmate social support	2.322	1.029	.166	2.258	.025*
Staff social support	.740	1.217	.043	.608	.544
Current employment	1.454	1.164	.089	1.249	.213
Past month exercise	-.890	.327	-.195	-2.720	.007**

***** $p < .05$ ** $p < .01$

Discussion

This study investigated the relationship between older prisoners' levels of distress and social aspects of the prison environment, particularly those factors raised in previous studies as influential to older peoples' correctional experiences. Average total K10 scores for older inmates (M = 17.51) were relatively higher than those seen in population estimates derived from samples of older people in the general Australian population (M = 14.26) (Australian Bureau of Statistics, 2013). As suggested in previous (primarily qualitative) studies, the findings indicate that a history of self-reported victimization, sense of safety, current employment, and social support from staff and other inmates were each associated with levels of psychological distress measured among older prisoners (Aday & Krabill, 2012; Crawley, 2005; Kerbs & Jolley, 2007; Mann, 2012; Wahidin, 2004).

Interestingly, program participation was not found to be related to psychological distress, even though the need for stimulating activities and engagement for older prisoners is frequently cited in the literature (Aday, 2003; Marquart, Merianos, & Doucet, 2000; Wahidin, 2004). One possible explanation for this discrepancy is that data relating to program engagement were captured for each prisoner's entire sentence, rather than participation which was current at the time of the interview. This also corresponds to the employment data, which similarly showed that older inmates' *history* of prison work was not significantly associated with their

distress levels, yet their *current* work status was. It is understandable that activities and programs completed in the past may be unrelated to prisoners' current experiences of distress, and this is a limitation of the data collected. Alternatively, it is possible that program participation in and of itself may not be associated with distress among older prisoners, but rather the nature of each program such as quality, relevance or older prisoner satisfaction with specific programs.

Also of interest was the absence of significant gender differences observed in any of the independent variables, including sense of safety, self-reported victimization, program participation, employment or exercise. At the same time, gender still remained a significant factor in the linear regression analysis, suggesting that the contribution of gender to explaining variation in distress among older prisoners is potentially associated with other factors (e.g. physical or mental health issues) or may be independently explanatory.

The same direction was observed in the relationships between distress levels and each of the independent variables in the younger and older prisoner samples. However associations between distress and four of the independent variables were weaker (i.e. smaller difference between K10 scores and smaller Pearson correlation value), and not significant among younger prisoners (victimization, safety, and inmate and staff support). Although compared to older prisoners, there was a greater difference in average K10 scores among younger prisoners based on employment status, this difference was not statistically significant potentially due to the small younger prisoner sample size. The only independent variable which was significantly associated with distress levels in both the younger and older prisoner samples was the level of exercise. While these findings require replication in larger and representative samples, they suggest a need to investigate whether the impact upon distress levels of (most) of the social

factors investigated may be greater for older prisoners compared to their younger counterparts.

In the context of the debate concerning age-segregation for older prisoners (Kerbs, Jolley, & Kanaboshi, 2015), one noteworthy finding was that older male prisoners housed in protection units did not report a significantly different sense of safety to those placed outside such units. While ostensibly this could be taken to imply a lack of impact of such units on prisoner sense of safety, the cross-sectional nature of the data collected prohibits any conclusion in this regard. The findings could potentially indicate that placement in protection units equalizes the sense of safety between more vulnerable and less vulnerable older inmates, though a longitudinal study would be necessary to investigate such a hypothesis. Additionally of interest was the finding that while older and younger inmates reported similar average levels of felt safety in prison, sense of safety was not significantly related to past experiences of prison-based victimization among older people, but it was among the younger inmates surveyed. A limitation of the data was that these items were quite broad; asking respondents how safe they felt in prison generally leads them to consider their overall experiences of imprisonment, rather than their current situation. Many respondents additionally informed researchers that their sense of safety varied greatly between institutions and over the course of their imprisonment(s). Participants also reported experiences of victimization which were not necessarily captured by the operationalization of this item (e.g. bullying without threats, property destruction). These issues could offer an explanation as to why victimization and sense of safety, as they were measured, were not correlated with distress in the older prisoner sample.

A further limitation of this paper is that it has examined the social and other activities of older prisoners, and looked at associations with distress without considering either potential mediating variables (e.g. mental, physical, and functional health). Additionally, protective factors such as coping strategies and life course considerations such as childhood trauma were not considered in this analysis (Maschi et al., 2011). The findings relating to employment in prison also demonstrate that physical health issues are likely play a part in mediating the relationship between older prisoners' activities and their level of distress in prison. In essence this paper sought to examine the impact of structural deprivations upon the experience of older inmates (Sykes, 1958), without considering the influence of, or interaction with imported vulnerabilities. Future research could attempt to disentangle these relationships.

Despite this, the findings are in agreement with the literature and augment the previous evidence-base with support of the measurable association of activity and some social factors to levels of distress among older prisoners. At the same time, these associations cannot be taken to imply causation or direct mechanisms of association. It is unclear, for example, whether older prisoners who are more distressed are less likely to exercise or access support from peers, or whether exercise and peer support buffer against experiences of distress among older prisoners. The observed relationships between these variables however, bring to light potential interventions targeting older inmate safety, peer-based social support and exercise for ameliorating psychological distress among this group.

Indeed, previous reports have suggested the utility of structured living programs, buddy schemes and age-appropriate exercise programs for older prisoners (Aday & Krabill, 2012; Snyder et al., 2009). The current findings imply that such strategies, beyond providing a more age-appropriate prison setting, have the potential to improve the psychological well-being of

older inmates, particularly if they intentionally promote physical activity and peer-based support. Continuing to evaluate the efficacy of such programs and strategies, particularly upon inmate well-being and distress, would be of value. In turn, experience in the general community (e.g. Atkins et al., 2013) suggests that lower levels of psychological distress among older people are associated with reduced physical, functional and cognitive declines.

Opportunities for improving older prisoners' sense of safety in prison have been less frequently explored in the literature. The main strategy for enhancing safety has centred on segregation of older inmates (particularly those experiencing increased frailty) from the younger prisoner population (Aday, 2003; Kerbs & Jolley, 2009; Stojkovic, 2007). At the same time, studies and commentary suggest that segregation can have deleterious effects by potentially denying certain services, or increasing boredom and isolation among older inmates (Marquart et al., 2000; Stojkovic, 2007). A previous paper has drawn attention to the role of correctional officers in providing a sense of safety for older prisoners (Trotter & Baidawi, 2015), meaning that correctional staff selection and training could play a role in enhancing well-being among older inmates. However such strategies would require careful evaluation, given the evidence in the current study suggesting that perceived staff support did not significantly contribute to explaining variations in older prisoner distress levels. Further investigation of the key factors contributing to older prisoners' sense of safety could be beneficial to identifying effective strategies for ameliorating such insecurity. For example, is a sense of safety among older inmates more influenced by the presence and behavior of younger prisoners, the attitudes and support of staff, inmate peer-support, or subjective trust in the availability and accessibility of emergency medical care? Detailed information concerning these issues will enable the development of more sound policy and practice decisions in this area.

Conclusion

This study presents evidence of the association between aspects of the social environment in prison and distress levels among older people. There is no doubt that few correctional environments, regimes and programs are specifically designed to suit the needs of the growing numbers of older people present in these settings. While prison is a potentially a distressing environment for any individual regardless of age or other circumstances (and the data here seem to indicate high levels of distress overall), promoting well-being among older inmates particularly in terms of social support and engagement is not unfeasible. Specifically, the findings suggest that strategies enhancing peer support, prisoner safety and physical activity are likely to have positive impacts upon distress levels in this group. Identifying and implementing effective approaches is likely to assist in maintaining older prisoner well-being, and reducing the physical and functional declines associated with poor well-being among older people in prison.

The study's findings hold particular implications for social work policy and practice. They should be interpreted with the understanding that older prisoners are a relatively subdued and marginalised group compared with the mainstream prison population. As such, there is firstly a specific role for social work in advocating for the wellbeing of a group who are unlikely to present as the proverbial 'squeaky wheel'. In correctional environments generally dominated by security and fiscal considerations, the needs of older prisoners may easily fall to the bottom of the list in the absence of supportive voices which are both aware and informed. Second, the findings suggest the need for specific programming in relation to older prisoners' vocational, physical and socio-emotional needs, which social work practitioners are ideally situated to both design and deliver in partnership with older prisoners and correctional facilities.

References

Aday, R. H. (2003). *Aging prisoners: Crisis in American corrections*. Santa Barbara, CA: Praeger Publishers.

Aday, R. H., & Farney, L. (2014). Malign neglect: Assessing older women's health care experiences in prison. *Bioethical Inquiry, 11*, 359-372.

Aday, R. H., & Krabill, J. J. (2011). Women aging in prison: A neglected population in the criminal justice system. Boulder, CO: Lynne Rienner.

Aday, R. H., & Krabill, J. J. (2012). Older and geriatric offenders: Critical issues for the 21st century. In L. Gideon (Ed.), *Special Needs Offenders in Correctional Institutions* (pp. 203-232). Thousand Oaks, CA: Sage.

Atkins, J., Naismith, S. L., Luscombe, G. M., & Hickie, I. B. (2013). Psychological distress and quality of life in older persons: relative contributions of fixed and modifiable risk factors. *Biomed Central Psychiatry, 13*, 249-259.

Australian Bureau of Statistics. (2011). Prisoners in Australia 2011 (cat. no. 4517.0). Canberra: Australian Bureau of Statistics.

Australian Bureau of Statistics. (2012). Prisoners in Australia 2012 (cat. no. 4517.0). Canberra: Australian Bureau of Statistics.

Australian Bureau of Statistics. (2013). Australian Health Survey: Updated results, 2011-2012. (cat. no. 4364.0.55.0003), CURF, Expanded CURF, Remote Access Data Laboratory [RADL].

Baidawi, S., & Trotter, C. (In Press). Psychological distress among older prisoners: Associations with health, healthcare utilisation and the prison environment. *Journal of Correctional Health Care*.

Boen, H., Dalgard, O. S., & Bjertness, E. (2012). The importance of social support in the associations between psychological distress and somatic health problems and socio-economic factors among older adults living at home: a cross sectional study. *Biomed Central Geriatrics, 12*, 27. doi: 10.1186/1471-2318-12-27

Bond, G., Thompson, L., & Malloy, D. (2005). Lifespan differences in the social networks of prison inmates. *International Journal of Aging and Human Development, 61*, 161-178.

Bonta, J., & Gendreau, P. (1990). Reexamining the cruel and unusual punishment of prison life. *Law and Human Behaviour, 14*, 347-372.

Butler, T., Andrews, G., Allnutt, S., Sakashita, C., Smith, N. E., & Basson, J. (2006). Mental disorders in Australian prisoners: a comparison with a community sample. *Australian and New Zealand Journal of Psychiatry, 40*, 272-276.

Crawley, E. (2005). Institutional thoughtlessness in prisons and its impacts on the day-to-day prison lives of elderly men. *Journal of Contemporary Criminal Justice, 21*, 350-363.

Crawley, E., & Sparks, R. (2005a). Hidden Injuries: Researching the experiences of older men in English prisons. *The Howard Journal, 4*, 345-356.

Crawley, E., & Sparks, R. (2005b). Older men in prison: Survival, coping and identity. In A. Liebling & S. Maruna (Eds.), *The Effects of Imprisonment* (pp. 343-366). Cullompton, Devon: Willan Publishing.

Dawes, J. (2009). Ageing prisoners: Issues for social work. *Australian Social Work, 62*(2), 258-271.

Gallagher, E. (1988). Older men in prison: Emotional, social, and physical health characteristics. (PhD Thesis). Burnaby, B.C.: Simon Fraser University.

Golden, J., Conroy, R. M., & Lawlor, B. A. (2009). Social support network structure in older people: underlying dimensions and association with psychological and physical health *Psychology, Health & Medicine, 14*, 280-290.

Her Majesty's Inspectorate of Prisons. (2004). 'No Problems - old and quiet': Older prisoners in England and Wales: A thematic review by HM Chief Inspector of prisons. London: HM Inspectorate of Prisons.

Kerbs, J., & Jolley, J. (2007). Inmate-on-inmate victimization among older male prisoners. *Crime and Delinquency, 53*, 187-218.

Kerbs, J., & Jolley, J. (2009). A commentary on age segregation for older prisoners: Philosophical and pragmatic considerations for correctional systems. *Criminal Justice Review, 34*, 119-139.

Kerbs, J., Jolley, J., & Kanaboshi, N. (2015). The interplay between law and social science in the age-segregation debate. *Journal of Crime and Justice, 38*, 77-95. doi: 10.1080/0735648X.2014.894856

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S.-L. T., Walters, E. E., & Zazlavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine, 32*, 959-976.

Kratcoski, P., & Babb, S. (1990). Adjustment of older inmates: An analysis by institutional structure and gender. *Journal of Contemporary Criminal Justice, 6*, 264-281.

Leach, J., & Neto, A. (2011). Offender Population Trends: Aged Offenders in NSW *Research Bulletin*. Sydney: Corrective Services New South Wales.

Lenze, E. J., Rogers, J. C., Martire, L. M., Mulsant, B. H., Rollman, B. L., Dew, M. A., Schulz, R., & Reynolds III, C. F. (2001). The Association of Late-Life Depression and Anxiety With Physical Disability: A Review of the Literature and Prospectus for Future Research. *The American Journal of Geriatric Psychiatry, 9*, 113-135.

Liebling, A., Durie, L., Stiles, A., & Tait, S. (2005). Revisiting prison suicide: the role of fairness and distress. In A. Liebling & S. Maruna (Eds.), *The Effects of Imprisonment* (pp. 209-231). Cullompton, Devon: Willan Publishing.

Loeb, S., & Steffensmeier, D. (2011). Older inmates: Pursuit of good health: A focus group study. *Research on Gerontological Nursing, 4*, 185-194.

Mann, N. (2012). Doing harder time?: The experiences of an ageing male prison population in England and Wales. Surrey: Ashgate Publishing Limited.

Marquart, J. W., Merianos, D. E., & Doucet, G. (2000). The health-related concerns of older prisoners: Implications for policy. *Ageing & Society, 20*, 77-96.

Maschi, T., Dennis, K. S., Gibson, S., MacMillan, T., Sternberg, S., & Hom, M. (2011). Trauma and Stress Among Older Adults in the Criminal Justice System: A review of the Literature with Implications for Social Work. *Journal of Gerontological Social Work, 54*, 390-424.

Murdoch, N., Morris, P., & Holmes, C. (2008). Depression in elderly life sentence prisoners. *International Journal of Geriatric Psychiatry, 23*, 957-962.

Potter, E., Cashin, A., Chenoweth, L., & Jeon, Y. (2007). The healthcare of older inmates in the correctional setting. *International Journal of Prisoner Health, 3*, 204-213.

Shantz, L. R., & Frigon, S. (2009). Aging, women and health: From the pains of imprisonment to the pains of reintegration. *International Journal of Prisoner Health, 5*, 3-15.

Slotboom, M.-A., Kruttschnitt, C., Bijleveld, C., & Menting, B. (2011). Psychological well-being of incarcerated women in the Netherlands: Importation or deprivation. *Punishment and Society, 13*, 176-197.

Snyder, C., van Wormer, K., Chadha, J., & Jaggers, J. (2009). Older Adult Inmates: The Challenge for Social Work. *Social Work, 54*, 117-124.

Stojkovic, S. (2007). Elderly Prisoners: A growing and forgotten group within correctional systems vulnerable to elder abuse. *Journal of elder abuse and neglect, 19*, 97-117.

Sykes, G. M. (1958). The Pains of Imprisonment. In G. M. Sykes (Ed.), *The Society of Captives: A study of a maximum security prison* (pp. 285-294). Princeton, NJ: Princeton University Press.

Trotter, C., & Baidawi, S. (2015). Older prisoners: Challenges for inmates and prison management. *Australian and New Zealand Journal of Criminology, 48*(2), 200-218.

Wahidin, A. (2004). Older women in the criminal justice system: Running out of time. London: Jessica Kingsley Publishers.

Wright, K. N. (1991). A study of individual, environmental and interactive effects in explaining adjustment to prison. *Justice Quarterly, 8*, 217-242.

5.11 Preamble to Paper Five

The previous paper investigated older prisoners' experiences of the social prison environment, and the relationship between these experiences and their level of psychological distress in prison. Findings from paper four showed that levels of self-reported safety and victimization, inmate social support, and exercise explained much of the variance in older prisoners' distress levels.

The overall findings to this point demonstrate that the burden of distress among the older prisoner sample is associated with various individual factors, including gender, history of mental health issues, as well as physical and functional health status. Several environmental factors are also associated with older inmate distress, including older prisoners' experiences of physical difficulties in the custodial environment, access to health care, and experiences of victimisation in prison.

Interactions between these individual and environmental factors can begin to be elucidated from the findings thus far. For instance, in paper three it was explained that older prisoners with lower levels of functional independence report greater physical difficulties in the prison environment (Baidawi & Trotter 2016). Additionally, while paper one established that older female prisoners are affected by significantly higher distress levels compared to their male counterparts, this appears to be partly mediated by the greater burden of physical, functional, and mental health conditions experienced by the female older prisoner sample (Baidawi 2016; Baidawi & Trotter 2016). This greater health burden experienced by older female prisoners would conceivably impact their need for health care services, or contribute to distress in the event of these needs failing to be met in the custodial environment.

Such observations of the interaction between prisoner and environment bring forth the need for this final paper. Paper five draws together all the previous findings to address research sub-question d), which seeks to identify the factors which explain relatively more of the variance in K10 scores of the older prisoners in the study sample. In particular, it provides the opportunity to consider some of the associations between factors which may have been separately considered in the previous papers, for instance the relationship between self-reported safety and the level of functional decline among older inmates.

This paper was accepted for publication in the *Journal of Forensic Psychiatry and Psychology* in 2016 (ISSN 1478-9957 (Online)). This multidisciplinary journal has a 26 year publication history (previously known as the *Journal of Forensic Psychiatry),* and a 2015 Impact Factor of 0.598[7].

[7] 2016 Journal Citation Reports®, Thomson Reuters

5.12 Paper Five: An integrated exploration of factors associated with psychological distress among older prisoners

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Abstract

This paper compares the contributions of socio-demographic, health, mental health, social, and environmental factors in explaining variations in psychological distress among older prisoners in two Australian states. One hundred and seventy-three prisoners (aged 50+ years) from eight Australian prisons were interviewed using the Kessler Psychological Distress (K10) Scale. Three regression analyses were conducted to compare different models of 14 variables significantly associated with psychological distress.

Independent variables most prominently associated with variations in psychological distress among older inmates were self-reported levels of social support, self-reported safety, and ease of healthcare access. Difficulties in the built environment and mental health history were significantly explanatory of variations in older prisoner distress in two of the three models. The findings suggest that modifiable situational factors evident in current prison contexts are reasonably explanatory of variations in prisoner distress among older inmates.

Introduction

Whilst older people are the fastest growing age subgroup of prisoners in many countries worldwide, they only form a minority of overall prisoner populations (Maschi, Viola, & Sun, 2013; Baidawi et al., 2011). Consequently correctional facilities, regimes and programs tend to be more suited to the needs of younger inmates who constitute the majority of the prisoners (Aday, 2003; Kerbs & Jolley, 2009; Potter, Cashin, Chemoweth, & Jeon, 2007; Wahidin, 2004). It has been suggested that older inmates are therefore a disadvantaged and marginalised group of prisoners (Crawley, 2005). This paper explores the relationship between various fixed and modifiable factors and the level of psychological distress among older inmates.

Background

A number of factors potentially associated with distress among older prisoners have been outlined to date. First, like their younger counterparts, older prisoners display a high prevalence of mental illness. Quantitative studies from the academic and non-government health sectors in the UK have determined that one half of older prisoners are estimated to suffer from mental illness, commonly depression or anxiety (Davoren et al., 2014; Fazel, Hope, O'Donnell, & Jacoby, 2001; Hayes, Burns, Turnbull, & Shaw, 2012; Kakoullis, LeMesurier, & Kingston, 2010; Koenig, Johnson, Bellard, Denker, & Fenlon, 1995). Some studies have reported that mental health problems among older male prisoners are both underdiagnosed and undertreated (Fazel, Hope, O'Donnell, & Jacoby, 2004; Kingston, LeMesurier, Yorston, Wardle, & Heath, 2011), with the mental health of older prisoners appearing worse than that of older people in the general community (Kingston et al., 2011; Koenig et al., 1995).

Additionally, research from the US, UK and Switzerland over the past 15 years indicates that older inmates experience higher levels of physical illness (particularly chronic disease) than both younger prisoners and their counterparts in the general population (Binswanger, Krueger, & Steiner, 2009; Fazel, Hope, O'Donnell, Piper, & Jacoby, 2001; Harzke et al., 2010; Loeb, Staffensmeier, & Lawrence, 2008; Wangmo et al., 2015). For instance, it has been reported that between 85 and 93 per cent of older male prisoners have health issues (Fazel, Hope, O'Donnell, Piper, & Jacoby, 2001; Hayes et al., 2012). Various studies from the US, the UK and Australia have also determined that significant proportions of older prisoners face difficulties with activities of daily living (ADLs), with the prevalence of functional impairments among older prisoner populations estimated at 10% to 31% (Fazel, Hope, O'Donnell, Piper, & Jacoby, 2001; Trotter & Baidawi, 2015; Williams et al., 2006). When prison-specific activities of daily living are considered (e.g. climbing on and off top bunks and hearing orders from staff), the proportion of older inmates who experience impairments increases to approximately two thirds (Williams et al., 2006). Gender differences in both physical and functional health and mental health issues have also been documented among older prisoners, with older females experiencing a greater burden of health and functional declines compared to their male counterparts (Leigey & Hodge, 2012). At the same time, few studies have directly contrasted the experiences of older male and female prisoners, and it remains a limitation to date that the bulk of health-related studies focusing on older inmates have only included older males.

Physical and functional health declines among older prisoners tend to present substantial difficulties in an environment generally designed for the young and able-bodied (Potter et al., 2007; Trotter & Baidawi, 2015). Although targeted programing, healthcare services and specialist facilities for older prisoners are emerging in some jurisdictions, the provision of a

suitable environment and equivalency of healthcare services for older inmates presenting with health and functional declines remains a key challenge facing correctional service providers (Bretschneider & Elger, 2014; Trotter & Baidawi, 2015; Williams, Stern, Mellow, Safer, & Grefinger, 2012).

These issues are reflected in smaller-scale qualitative prison studies arising from the US and UK since the turn of the century. Such research, akin to earlier studies, continues to detail older inmates' concern regarding the quality and accessibility of healthcare in a range of male and female correctional environments (Aday & Krabill, 2011b; Crawley, 2005; Loeb, Penrod, McGhan, Kitt-Lewis, & Hollenbeak, 2014; Wahidin, 2004). Such concerns include fear of death, and also fears of physical or mental deterioration rendering dependence in prison (Aday, 2003; Aday & Krabill, 2011b; Crawley & Sparks, 2006; Loeb et al., 2014; Wahidin, 2004). On the other hand, other studies from Norway and Canada have reported that older inmates' ratings of prison healthcare were more positive than that of younger prisoners (Bjørngaard, Rustad, & Kielsberg, 2009; Gallagher, 1988), consistent with studies of healthcare satisfaction with inpatient samples in the general community (see e.g. Cohen, 1996).

The availability of age-appropriate programs and activities has regularly been raised in qualitative studies as crucial for older prisoners' coping (Aday, 1994; Aday & Krabill 2011a; Dawes, 2009; Wahidin, 2004). However, qualitative and quantitative studies with older inmates from the US, UK and Australia have drawn attention to a lack of structure and programs to maintain engagement in daily prison life for prisoners who are past retirement age, and no longer wanting to or physically unable to work (Dawes, 2009; Wahidin, 2004). The absence of age-appropriate activities and programs is understood to intensify the multiple losses experienced by virtue of imprisonment (Crawley & Sparks, 2005; Wahidin, 2004).

Finally, social interactions within the prison environment have alternately been depicted as distressing and supportive for older prisoners. Some literature describes interactions with prison staff (including both correctional officers and health staff) as difficult for older prisoners (Aday & Farney, 2014; Crawley & Sparks, 2005; Gallagher, 1988; Loeb & Steffensmeier, 2011; Mann, 2012). For example, one study of older female prisoners described infantalising, unresponsive, disrespectful and degrading interactions with staff, which conflicted with older prisoners' sense of "place within the generational order" (Wahidin, 2004, p. 169). At the same time, another study described positive relationships between some older prisoners and prison staff (e.g. older prisoners feeling treated with respect by staff and feeling that there was a staff member who they could turn to with a problem) (Gallagher, 1988). The reasons behind these conflicting findings have not been explored in the scholarly literature, however they may reflect institutional differences or variations in the needs and characteristics of individual prisoners. For example, multiple studies from the UK have identified tensions for prison staff working with older sex offenders due to revulsion regarding the offending behaviour (Crawley & Sparks, 2005; Mann, 2012).

Interactions with younger prisoners are commonly described by older inmates as a source of distress, and are often characterised by a fear of victimisation, particularly for older prisoners experiencing declines in physical functioning (Aday, 2003; Dawes, 2009; Gallagher, 1988; Mann, 2012; Wahidin, 2004). Older prisoners have indicated their use of various strategies to manage safety, including avoiding proximity to younger prisoners, and keeping in the vicinity of prison staff and other older inmates (Trotter & Baidawi, 2015). Qualitative studies indicate that social support in prison may serve as a protective factor for older inmates, particularly in the context of disruption to their outside relationships, and the lowly position in the prison

social hierarchy occupied by many older inmates (Aday, 1994; Mann, 2012; Wahidin, 2004). However generally prison social networks appear to diminish with age (Bond, Thompson, & Malloy, 2005). In the absence of a supportive social milieu, isolation poses significant difficulties for some older inmates (Aday, 1994; Crawley, 2005), and the accompanying loneliness has been found to be significantly associated with psychological distress among this group (Gallagher, 1988). These associations are not uncommon, and correspond to experiences of older people in the general community. Broader research suggests that social support and engagement have a direct effect on distress levels among older people, but may also mediate the relationship between physical and functional health issues and distress in this group (Boen, Dalgard, & Biertness, 2012; Golden et al., 2009).

Although consistent across a broad range of studies and jurisdictions, the available evidence concerning physical, mental and functional health status, programs, activities and the social environment in prison and their impact on older prisoners is mostly qualitative and exploratory. Quantitative data are beginning to emerge in this area. For example, O'Hara and colleagues (2016) found a significant association between past-month psychological distress measured by the Forensic version of the Camberwell Assessment of Needs (CAN-FOR) and depressive symptomology (measured by the Geriatric Depression Scale (GDS-15)) in newly arrived older male prisoners in the UK. That study also documented significant associations between depressive symptoms and unmet needs concerning physical health, daytime activities, money and finances, treatment, company and alcohol among the older male prisoners surveyed (O'Hara et al., 2016).

Study Rationale and Aims.

There are strong suggestions that both individual and prison environmental factors are influential upon inmates, in accordance with what has alternately been termed an 'interactional', 'combined' or 'congruence' model of prisoner wellbeing (Liebling, Durie, Stiles, & Tait, 2005; Lindquist & Lindquist, 1997; Slotboom, Kruttschnitt, Bijeveld, & Menting, 2011; Wright, 1991). Such models argue that the fit or congruence between person and environment is central to understanding individuals' experience of incarceration (Wright, 1991). However research has yet to investigate which individual and environmental factors are the most explanatory of distress among older prisoners. Furthermore, the majority of research in this area to date has focused on the experiences of older male prisoners only (Baidawi & Trotter, 2015). The current paper addresses these gaps in the evidence base.

Given that research with community samples indicates that psychological distress is a risk factor for deterioration in physical and functional health among older individuals (Bruce, Seeman, Merrill, & Blazer, 1994; Stuck et al., 1999), identifying modifiable risk factors for distress can lead to interventions reducing health burdens and costs, as well as improving older prisoner wellbeing. A further question which arises in conducting quantitative studies of this nature is the extent to which the analysis method influences the conclusions drawn. A secondary aim therefore is to ascertain the reliability of the results by examining differences in findings generated by various data analysis methods.

Methods

Sampling and Recruitment.

Prisons selected for data collection were those in the two Australian states (Victoria and New South Wales) accommodating and releasing the highest numbers of prisoners aged 50 years and older. The chosen age threshold is consistent with the majority of studies concerning older prisoner wellbeing, and can be justified on intellectual and pragmatic grounds. Firstly the prison population is relatively youthful compared to the general community, thereby resulting in a younger age at which one might be considered 'older' in this context. A second argument arises from the frequently claimed 10 to 15 year differential between the health of older prisoners compared to the general population (Fazel, Hope, O'Donnell, & Jacoby, 2001, Loeb et al., 2008). The evidence for this claim is moderate as the available studies primarily include male prisoners and generally rely on self-report health measures rather than physical examination. Nonetheless the literature suggests a disproportionate health morbidity among older inmates relative to their same-aged counterparts in the community, lending support to the argument for a lower threshold for defining 'older' in prisoner populations. As in previous studies (see e.g. Baidawi et al., 2011; Leach & Neto, 2011), a modified definition of 'older prisoner' was adopted for Indigenous prisoners (45 years and older) to account for the considerably shorter life expectancy in this population (Australian Bureau of Statistics, 2011).

Recruitment occurred from eight sites, including both male and female prisons, a variety of security ratings and both public and private prisons (see Trotter and Baidawi (2015) for further details). A disproportionate quota sampling strategy was used with a view to representing diversity among the older prisoners, specifically in terms of age and gender. The older prisoner sample was to be evenly distributed between sentenced prisoners aged 50 to 64 years and

those who were 65 years and older, and aimed to comprise a minimum female representation of 10%. One half of the older prisoners were recruited within 90 days of their expected release date, thus allowing prisoners to reflect on both recent and long term prison experience. This was also to enable post-release follow-up as part of the aims of the broader project from which this study is derived. Prisoners were excluded if they were identified by the administration as potentially behaviourally or emotionally unstable (due to researcher and participant safety issues). All older prisoners from the prisoner list who met the research criteria were forwarded a flyer advertising the study by prison program staff. Eligible prisoners opted into the research by notifying prison staff of their interest until all group quotas were filled. The research received approval from the Monash University Human Research Ethics Committee and four other correctional and correctional health department ethics committees at data collection locations.

Data Collection.

Face-to-face structured interviews were conducted with consenting prisoners in Victoria throughout 2011, and in New South Wales in 2012 by one of three interviewers, all with prior experience in social work and/or corrections research. Interviews varied between 45 and 90 minutes' duration, and took place in areas of the prison affording privacy (an office or program room with a closed door) in the absence of prison staff.

Instruments.

The interview schedule comprised a combination of yes/no, scaled and short answer questions. The dependent variable psychological distress was measured using the Kessler Psychological Distress (K10) Scale, a 10-item measure of non-specific psychological distress, including items

relating to depressed mood, nervousness, restlessness, worthlessness, fatigue and hopelessness (Kessler et al., 2002). Respondents indicated how often they had experienced each of the items relating to psychological distress over the past four weeks on a scale of one (none of the time) to five (all of the time). The K10 Scale produces respondent scores ranging from 10 (indicating no distress) to 50 (indicating severe distress), and was chosen due its ease of administration, its ability to be delivered by lay interviewers, its availability (both free to administer and available in the public domain), and its reported reliability and validity (Kessler et al., 2002).

Physical functioning was assessed via self-report using the Barthel Index, a standardised and validated 10-item measurement of a person's level of independence in performing activities of daily living (ADLs) including bathing, grooming, continence and mobility (Wade & Collin, 1988). A score of 100 indicates that the prisoner reported functioning independently with lower scores indicating increasing levels of dependence with daily activities.

Participants were also asked about their current employment status in prison, and their level of exercise over the past four weeks on a five-point scale (Never, 1-3 times, 4-7 times, 8-11 times, 12+ times). Sense of safety was measured by two items: first participants were asked if they had experienced victimisation (specifically, verbal threats, physical or sexual victimisation or stand-overs (i.e. bullying or extortion for goods or other favours)) in prison; next they were asked to report on a five-point scale (from very safe to very unsafe) how safe they felt in prison overall. Social support was measured by asking prisoners to identify whether there was a) another prisoner and/or b) a staff member with whom they could discuss their problems. Self-report data were also collected relating to current health concerns (open responses dichotomised to Yes/No concerns) and number of previous-month health clinic visits

(excluding medication pick-ups). Open-ended comments concerning experiences of prison healthcare access were dichotomosed regarding the presence of reported difficulties accessing healthcare in prison (Y/N). Participants were asked if they had ever attempted suicide (Y/N), self-harmed (Y/N) or sought help for an alcohol or drug problem (Y/N). Self-report data were also collected relating to difficulties accessing or using various aspects of the prison environment (e.g. beds, showers, toilets), and participants were asked to describe any further concerns relating to the physical prison environment. These responses were dichotomised (Y/N) based on whether difficulties were, or were not reported. Finally, data were collected from participant health files (any mental health diagnoses listed on file (Y/N), number of medical conditions)), and corrections files (protection status).

Bivariate analyses were conducted to determine if these factors were significantly associated with older prisoner distress scores. *T*-tests (2-tailed) were conducted between K10 total scores and continuous independent variables, Fisher's exact tests (2-tailed) were conducted for dichotomous independent variables and one-way between groups ANOVAs were carried out for independent variables with more than two levels (e.g. level of exercise). Independent variables which were significantly associated ($p < .05$) with total K10 scores are listed in Table 1, alongside associations with K10 scores.

Table 1. Independent variables associated with older prisoner distress

Variable(s)	Associations with K10 scores	Sig. (2-tailed)
Employment	Yes (n = 109, M = 16.32, SD = 7.21) No (n = 61, M = 19.21, SD = 8.73)	<.05
Exercise	n = 171, r = -.265	<.001
Gender	Male (n = 149, M = 16.77, SD = 7.69) Female (n = 22, M = 22.55, SD = 9.33)	< .01

Health concerns		Yes (n = 139, M = 18.52, SD = 8.39) No (n = 32, M = 13.16, SD = 4.95)	<.001
Healthcare utilisation		n = 171, r = .212	<.01
Healthcare access issues		Yes (n = 111, M = 18.98) No (n = 59, M = 14.54)	<.001
Mental health variables	Any mental health diagnosis in health file	Yes (n = 81, M = 19.35, SD = 8.55) No (n = 83, M = 15.47, SD = 7.05)	<.01
	Self-reported history of suicide attempt(s)	Yes (n = 26, M = 21.42, SD = 10.05) No (n = 144, M = 16.79, SD = 7.58)	<.05
	Self-reported history of self-harm	Yes (n = 7, M = 25.14, SD = 8.07) No (n = 164, M = 17.19, SD = 7.99)	<.05
	Self-reported history of help-seeking for alcohol and other drug problems	Yes (n = 36, M = 20.81, SD = 8.38) No (n = 135, M = 16.64, SD = 7.86)	<.05
Physical difficulties in the built environment		Yes (n = 99, M = 19.83, SD = 7.92) No (n = 72, M= 14.33, SD = 7.33)	<.001
Physical functioning		Yes (n = 36, M = 20.72, SD = 8.55) No (n = 135, M = 16.66, SD = 7.82)	<.001
Physical health		n = 164, r = 0.169	<.05
Prison victimisation		Yes (n = 109, M = 18.71, SD = 8.47) No (n = 62, M= 15.42, SD = 7.07)	<.05
Protection status		Yes (n = 129, M = 16.50, SD = 7.38) No (n = 41, M = 20.41, SD = 9.54)	< .01
Safety		n = 169, r = .278	<.001
Social support	Other inmates	Yes (n = 115, M=15.97 SD = 7.48) No (n = 49, M = 21.06, SD = 8.39)	<.001
	Staff	Yes (n = 128, M=16.73, SD = 7.56) No (n = 40, M = 20.58, SD = 9.27)	< .01

[1]Past-month level of exercise as measured on the following 5-point scale: 1 = Never, 2 = 1-3 times, 3 = 4-7 times, 4 = 8-11 times, 5 = 12+ times. [2]'Standovers' refer to being a victim of bullying or extortion for goods or favours in prison.

Data Analysis.

All data were entered into IBM SPSS Statistics 20 software for analysis. While the dependent variable (K10 scores) is not normally distributed, the sample size is sufficient to permit the use of parametric statistical analyses (Pallant, 2011). A multicollinearity analysis identified a high

degree of correlation (r = 0.69) between gender and protection status, which was anticipated given that all protection prisoners in this study were male. Note that protection prisoners are those whose correctional files listed them as requiring a protection placement with limited association from the mainstream prison population due to concerns regarding their own, or other prisoners' welfare. Protection status was omitted from subsequent regression analyses following an independent samples t-test (2-tailed) which revealed no significant difference between total K10 scores of older males in protection (n = 129, M = 16.50, SD = 7.38) and those who were not protection prisoners (n = 19, M = 17.95, SD = 9.43). Most other significant correlations between independent variables were small by Cohen's (1988) criteria ($r < 0.29$). Medium strength correlations were observed between self-reported history of suicide attempts and mental health diagnoses (r = 0.33) and a self-reported history of deliberate self-harm (r = 0.32). Additionally, medium strength correlations were observed between declines in physical functioning (Barthel Index score < 100) and both lower levels of exercise (r = 0.39), as well as a greater number of past-month health clinic visits (r = .35). A final medium strength correlation was seen between physical health (number of listed health conditions) and having current health concerns (r = .32).

The following three data analysis methods were then conducted:

Method 1: Stepwise Regression – Statistical Model

For this analysis, each of the independent variables listed in Table 1 (excluding protection status) were entered into a stepwise regression analysis with prisoners' final K10 scores as the dependent variable. This automated approach analyses the data to generate the set of independent variables which maximises the model's fit (R^2 value) (Cohen & Cohen, 1983). In this regression model, mental health diagnosis status was entered in lieu of the multiple mental

health factors which were associated with total K10 scores. This was to minimise the number of variables entered in this model. This analysis method aimed to generate a model which was the most statistically predictive of psychological distress among older people in prison.

Method 2: Linear Regression – Categorical Model

Three separate linear regressions were then conducted by grouping independent variables into the following categories and controlling for gender on each occasion:

i) Mental health and criminal justice factors: gender, mental health diagnosis status, and protection status.

ii) Physical and functional health, healthcare access and utilisation: gender, health concerns, healthcare access issues, healthcare utilisation, physical difficulties in the built environment, physical functioning and physical health.

iii) Social factors: exercise, employment, gender, prison victimisation, safety, and social support variables.

Eight independent variables which retained a statistically significant ($p < .05$) unique contribution to explaining variation in the independent variable (K10 scores) in each of these three regressions were entered into a subsequent linear regression. These included: exercise, gender, healthcare access issues, inmate social support, mental health diagnosis status, prison victimisation, physical difficulties in the built environment, and sense of safety.

Method 3: Linear regression – Theoretical model

The final model is theoretical in that it aimed to incorporate a range of independent variables theoretically related to distress among older prisoners, as indicated by the previous literature. This included the development of computed variables for mental health history and social

marginalisation which amalgamated multiple independent variables. The computed mental health variable is continuous with a score from 0 to 4 generated from the number of the following mental health characteristics: mental health diagnosis, history of self-harm, history of suicide attempts and history of help-seeking for alcohol and other drug problems. The computed social marginalisation variable is a continuous variable (score 0-4), generated from the number of the following markers of social marginalisation possessed: self-reported lack of social support from i) other inmates, and ii) prison staff, history of prison victimisation, self-reporting feeling 'unsafe' or 'very unsafe' in prison. Other independent variables input in the model included: employment, exercise, gender, health concerns, healthcare access issues, healthcare utilisation, physical difficulties in the built environment, physical health, and physical functioning.

Generalist rules of thumb suggest the need for sample sizes ≥ 15 participants per predictor or ≥ 50 + 8m where m= number of predictors) for multiple regression analyses (Stevens, 1996; Tabachnick & Fidell, 2014). Given the final sample size of older prisoners (n = 173) the maximum number of predictors (independent variables) entered in either of analysis methods two and three should be between 15 and 18, which is consistent with the analysis methods presented in this paper. While it is acknowledged that a much larger sample size is recommended for stepwise regression analyses (Cohen & Cohen, 1983), there were many variables for which there was a statistically-supported association with older prisoner distress to be investigated. The limitation of the use of the stepwise regression in this context will be outlined in the discussion.

Finally, an analysis of inter-rater reliability was conducted via a Kruskal-Wallis Test, which revealed a significant difference ($p < .0001$) in the average K10 scores of older prisoner

participants between interviewers. Interviewer 3 recorded significantly lower mean total K10 scores of older prisoner respondents (n = 49, M = 14.47, SD = 7.35) compared to those administered by interviewer 1 (n = 90, M = 18.77, SD = 8.46) and interviewer 2 (n = 32, M = 18.66, SD = 7.23). A hierarchical linear regression was performed, the first step of which repeated the final regression analysis (theoretical model), while the second step added the interviewer as an independent variable. The findings indicated no significant impact of the interviewer when the selected independent variables were accounted for, suggesting that there were real differences in the characteristics of the participants interviewed by the different researchers, which accounted for the measured distress scores.

Results

Method 1: Stepwise regression – Statistical model

The stepwise model was significant, and generated a group of variables (shown in Table 2) which together explained 29.5% of the variation in the level of psychological distress (K10 scores) among older prisoners (adjusted R^2 = .295). In this model, inmate social support and physical difficulties in the built environment were the variables having the most significant statistically unique contribution to explaining variance in distress levels of the older prisoner sample.

Table 2. Stepwise regression coefficients (B, *β)* of the explained variance of older prisoner psychological distress (K10 Total Scores)

Independent variable	B	SEB	β	T	Sig.
Gender	3.558	1.588	.154	2.241	.027*
Current health concerns	-2.895	1.402	-.146	-2.064	.041*
Healthcare access issues	-2.644	1.195	-.161	-2.212	.028*
Inmate social support	3.229	.986	.226	3.274	.001**

Physical difficulties in the built environment	-3.493	1.161	-.223	-3.009	.003**
Sense of safety	1.402	.512	.194	2.740	.007**

* $p < .05$ ** $p < .01$

Method 2: Linear regression – Categorical model

The categorical linear regression model was also significant and together the independent variables shown in Table 3 explained 30.3% of the variance in psychological distress (K10 scores) among the older prisoner sample (adjusted R^2 = .303). Aside from a self-reported history of prison victimisation, each of the independent variables made a statistically significant unique contribution to explaining variance in older prisoner distress. Among the variables considered in this model, inmate social support and healthcare access issues had the largest statistically significant contributions to explaining variations in older prisoner distress levels.

Table 3. Linear regression coefficients (B, *β)* of the explained variance of older prisoner psychological distress (K10 Total Scores) – Categorical model

Independent variable	B	SEB	β	t	Sig.
Exercise	-.695	.333	-.149	-2.087	.039*
Gender	4.079	1.629	.172	2.505	.013*
Healthcare access issues	-3.188	1.177	-.189	-2.709	.008**
Inmate social support	3.039	1.011	.204	3.006	.003**
Mental health diagnosis	-2.358	1.130	-.148	-2.087	.039*
Prison victimisation	-1.353	1.128	-.082	-1.199	.232
Physical difficulties in the built environment	-2.324	1.189	-.144	-1.955	.052
Sense of safety	1.220	.529	.162	2.308	.022*

* $p < .05$ ** $p < .01$

Method 3: Linear regression – theoretical model

The final theoretical model was also significant and the independent variables (see Table 4) accounted for 37.1% of the variance in older prisoner distress levels (adjusted R^2 = .371). At the same time, only three of these variables (physical difficulties in the prison environment, and the computed social marginalisation and mental health history variables) provided unique contributions to explaining variation in distress levels. This suggests potential overlap between the independent variables included in the model.

Table 4. Linear regression coefficients (B, *β)* of the explained variance of older prisoner psychological distress (K10 Total Scores) – Theoretical model

Independent variable	B	SEB	β	t	Sig.
Current employment	1.236	1.122	.076	1.101	.273
Exercise	-620	.330	-.139	-1.879	.062
Gender	1.608	1.564	.072	1.028	.306
Current health concerns	-1.427	1.503	-.071	-.949	.344
Healthcare access issues	-1.608	1.166	-.099	-1.379	.170
Healthcare utilization	.783	.599	.095	1.308	.193
Mental health history	1.322	.539	.169	2.455	.015*
Physical difficulties in the built environment	-3.551	1.134	-.228	-3.131	.002**
Physical health	.222	.197	.080	1.129	.261
Physical functioning	-1.849	1.385	-.100	-1.335	.184
Social marginalization	1.531	.528	.201	2.902	.004**

* $p < .05$ ** $p < .01$

Discussion and Implications

This paper has presented three different models of analysis for examining the factors associated with psychological distress in a sample of older prisoners. While each of the models identified factors important to understanding differences in psychological distress levels between older inmates, the final model which input independent variables based on a thematic review of the previous literature explained slightly more of the variance in distress levels among older prisoners than the other two models. This is partly to be expected since the theoretical model incorporated a greater number of independent variables (11) than either the categorical model (8) or the statistical model (6), however comparison of adjusted R^2 values takes into account the greater number of independent variables in this final model.

While the adjusted R^2 value of the theoretical model (0.371) indicated that the input set of factors do not account for the bulk of variability in K10 scores, this is to be expected in the examination of complex phenomena such as psychological distress in the real-world fluctuating context of imprisonment (Cohen & Cohen, 1983). Lattin and colleagues (2003, p. 53) state that "When dealing with social science data … typical R^2 values might range between 0.1 and 0.5", a figure consistent with our analyses. Furthermore, the intent of these models is not to predict the level of distress among older prisoners, but rather to enhance our understanding of the relative influence of various factors upon psychological distress levels in this population, and to strengthen the reliability of the study findings.

Across all three analytical models, the variables emerging as most prominently and consistently associated with psychological distress were the levels of social support and safety reported by older prisoners. Note that the computed social marginalisation variable contained in the final model incorporated measures of staff and peer social support, safety and prison victimisation.

Other variables were identified as significantly associated with variability in K10 scores in at least two of the three models, including experiences of difficulties in the built environment, healthcare access issues and mental health history. Contrary to understandings of prisoner distress which view fixed historical factors such as mental health history as primary determinants of individual well-being, these findings suggest that modifiable situational factors concerned with the current prison context are equally strongly and reliably associated with variations in prisoner distress. This emerged as the case even when a range of mental health measures were amalgamated as a computed mental health variable in the final model, which would have theoretically strengthened this aspect.

Concerns regarding the suitability of the prison built environment for older inmates have long been described in qualitative research and policy commentary (Aday, 2003; Potter et al., 2007; Williams et al., 2012), as have issues relating to the quality and accessibility of prison healthcare (Aday & Krabill, 2011b; Wahidin, 2004), as well as the social marginalisation and victimisation of older prisoners (Crawley & Sparks, 2005; Wahidin, 2004). However this study provides the first quantitative evidence of the association between these factors and psychological distress experienced by older people in prison. The results also support those of an earlier Canadian study which found an association between measurements of distress among older male inmates and feelings of loneliness in prison, broadly comparable to our findings relating to social marginalisation (Gallagher, 1988).

This study also enhanced understandings concerning gender differences in the level of psychological distress experienced by older inmates. Previous studies of mental health or wellbeing of older prisoners have primarily focused on older males, with a smaller number concentrating on older female prisoners (see e.g. Williams et al. (2012) and Aday & Farney

(2014)). Very few have included both male and female prisoners in a single study (Baidawi & Trotter, 2015). The findings demonstrate that the relatively higher levels of distress seen in older female prisoners are mediated by the factors introduced in the third regression analysis - namely the greater burden of physical, functional and mental health issues they experience in prison relative to men. This is seen by virtue of gender no longer appearing as a statistically significant independent variable after accounting for variations in physical, functional and mental health issues among older prisoners. This was further supported by our multicollinearity analysis which demonstrated significant associations between female gender and having a mental health diagnosis ($r = .21$), a history of help-seeking for alcohol and drug problems ($r = .23$), a greater number of past-month health clinic visits ($r = .23$) and relatively greater functional decline ($r = .16$). It is worth noting at this point that the older females ($n = 23$) were in fact significantly *younger* than the older males ($n = 150$) in the prisoner sample group ($M = 57.3$ vs 63.9 years, $p < .001$), thus these gender differences would be expected to be more pronounced in age-matched samples of older prisoners. These results confirm the considerable need for specific attention to the physical and mental health needs of ageing female prisoner populations (Aday & Farney, 2014; Wahidin, 2004).

The results lend support to an interactional model of prisoner distress which acknowledges the impact of both individual, social and institutional factors upon wellbeing (Liebling et al., 2005; Lindquist & Lindquist, 1997; Slotboom et al., 2011; Wright, 1991). An alternative explanation for these findings may be that older prisoners who experience greater distress are more inclined to perceive problematic experiences with respect to prison infrastructure, social support and health services.

Unfortunately, the study's cross-sectional design limits the capacity to draw definitive conclusions in this regard. However our multicollinearity analysis provides further evidence of genuine associations between older inmates' self-reported difficulties and their level of psychological distress. For example, a sense of safety among older inmates was significantly related (p >.05) to measures of physical functioning and physical difficulties in the prison environment. This suggests that older prisoners who feel less safe in prison tend to be those experiencing functional declines. Conversely, lower levels of inmate social support were significantly associated (p > .05) with functional declines, lower levels of exercise, current unemployment in prison and lower levels of reported staff support. Again, this cluster of associated independent variables suggests more marginalised older prisoners tend to be those experiencing functional declines.

While the findings point to some valuable considerations, the R^2 values of these models indicate that other factors also impact upon the levels of distress experienced by individual older prisoners. Limitations in this data should be acknowledged, including a lack of consideration to other variables also likely to be related to psychological distress among older inmates (e.g. individual trauma histories, subjective attitudes and coping strategies or styles). Such variables have been highlighted in previous research by Maschi and colleagues (see for example Maschi, Viola, Morgen, & Koskinen (2013) and Maschi et al. (2011)).

Additionally, while the sampling strategy allowed for the inclusion of various older prisoner subgroups, the sample was accordingly unrepresentative. Furthermore, due to the voluntary nature of participation, the potential for selection bias cannot be excluded. There are no population data concerning older Australian prisoners, though 77% of the sample were first-time inmates, which is broadly consistent with the available figures (Aday & Krabill 2012; Leach

& Neto, 2011). Various subgroups of older inmates appear to be over-represented (e.g. sex offenders, older female prisoners, inmates aged 65 years and older and potentially older prisoners nearing release), while others are under-represented compared to the available data (e.g. older inmates convicted of homicide or drug offences) (Baidawi et al., 2011; Leach & Neto, 2011). The findings regarding average levels of distress are impacted by these characteristics, as well as the sample's self-selecting nature, and estimating the impact of these factors on the findings is difficult. Given that some over-represented subgroups present with *lower* average distress levels (e.g. prisoners aged 65 years and older), while others present with *higher* average distress levels (e.g. older female prisoners), there is an argument to suggest that the results should not be unreasonably skewed.

A further limitation concerns the measure of mental health history, which while attempting to capture some of the variability in mental health history among the older prisoner sample, is nevertheless a fairly rough approximation of this dimension. Needless to say, this study's findings would need to be replicated with other older prisoner populations before generalising them beyond an initial and exploratory quantitative examination of these issues. This is particularly the case for the stepwise regression findings, given the limited sample size. Nonetheless the results do have some probable implications.

First, the different results generated by the various models of analysis illustrate the benefit of using multiple data analysis models to strengthen the reliability of findings. Crucially, the findings provide quantitative evidence of the theoretical possibility of reducing older inmates' psychological distress through attention to services, facilities and social support provided in the prison environment. In particular, adapting the prison environment to meet the physical needs of older inmates who may be experiencing physical and functional declines could be

beneficial. The prison areas which were commonly identified as problematic in the study have been outlined in a previous paper, including beds and bunks, temperature and ventilation, and bathroom facilities (Trotter & Baidawi, 2015), echoing those highlighted by previous research (see e.g. Crawley & Sparks (2005) and Potter et al., (2007)).

The results also suggest that improving peer social support networks and a sense of safety among older inmates could be a useful strategy for supporting mental and physical wellbeing. These social factors are inherently related, with previous qualitative studies indicating that a fear of victimisation limits social engagement among older prisoners (Dawes, 2009; Wahidin, 2004). Finally, healthcare access emerged as the third independent variable which was significant across all the regression models. While previous qualitative studies have similarly identified healthcare access as a major concern for older inmates, this study provides quantitative evidence of its association with older prisoner distress (Aday, 2003; Aday & Krabill, 2011b; Crawley & Sparks, 2006; Wahidin, 2004).

Issues in accessing healthcare may be a result of the style of system generally implemented in the correctional environment. Reviews and commentary over the last two decades suggest that correctional health care delivery for older prisoners should shift away from traditional systems which are based upon a military-style sick-call system, and focused on acute, episodic care. According to Anno and colleagues (2004), such systems are unsuited to ageing, frail or chronically unwell prisoner populations because they operate on the assumption of a generally healthy prisoner population, encourage health care access for trivial reasons (e.g. medical certificates) and they are driven by patient demand, rather than treatment provider control, thus treatment provision and care tends to be episodic and discontinuous. Furthermore, the health and mental health conditions commonly seen among older prisoners tend to be chronic,

rather than acute in nature, and therefore can easily go unnoticed or neglected in prison (Hayes et al., 2012). As a result, correctional health care systems which are more focused on continuity and co-ordination of care, preventative health care and health promotion strategies may be better suited to the changing age and health care profiles of many Western prisoner populations (Aday, 2003; Anno et al., 2004; Williams et al., 2014).

Conclusion

While mental health history is significantly predictive of psychological distress among older prisoners, experiences of physical difficulties in the built environment, issues concerning healthcare access, and social marginalisation in prison are also strongly explanatory of the variability in distress among older inmates. These modifiable factors associated with psychological distress in older prisoners present potential avenues for intervention. Given the bi-directional association between psychological distress and deterioration in physical and functional health among community samples (Bruce et al., 1994; Stuck et al., 1999), ameliorating distress among older individuals in prison will potentially reduce health burdens in this population, regardless of the direction of causation. This would be a significant outcome given the fiscal and service system strains being generated by the burgeoning older prisoner population in many correctional systems (Aday, 2003; Maschi, Viola, & Sun, 2013).

References

Aday, R. H. (1994). Aging in prison: A case study of New Elderly Offenders. *International Journal of Offender Therapy and Comparative Criminology, 38*, 79-91.

Aday, R. H. (2003). *Aging prisoners: Crisis in American corrections.* Santa Barbara, CA: Praeger Publishers.

Aday, R. H., & Farney, L. (2014). Malign neglect: Assessing older women's health care experiences in prison. *Journal of Bioethical Inquiry*, *11,* 359-372.

Aday, R. H., & Krabill, J. J. (2011a). Health and fears of dying. In R.H. Aday & J. J. Krabill (Eds.), *Women aging in prison: A neglected population in the criminal justice system* (pp. 47-72). Boulder, CO: Lynne Rienner Publishers.

Aday, R. H., & Krabill, J. J. (2011b). Women aging in prison: A neglected population in the criminal justice system. Boulder, CO: Lynne Rienner Publishers.

Aday, R. H., and Krabill, J. J. (2012). Older and Geriatric Offenders: Critical Issues for the 21st Century. In L. Gideon (Ed.), *Special Needs Offenders in Correctional Institutions* (pp. 203-232). Thousand Oaks, CA: Sage.

Anno, B. J., Graham, C., Lawrence, J. E., Shansky, R., Bisbee, J., & Blackmore, J. (2004). *Correctional Health Care: Addressing the needs of elderly, chronically ill and terminally ill inmates.* Middletown, CT: National Institute of Corrections.

Australian Bureau of Statistics (ABS). (2011). Deaths, Australia 2011 (cat no. 3302.0). Canberra: ABS.

Baidawi, S., & Trotter, C. (2015). Psychological distress among older prisoners: A literature review. *Journal of Forensic Social Work, 5,* 234-257.

Baidawi, S., Turner, S., Trotter, C., Browning, C., Collier, P., O'Connor, D. W., & Sheehan, R. (2011). Older prisoners - A challenge for Australian corrections. *Trends and Issues in Crime and Criminal Justice, 426,* 1-7.

Binswanger, I. A., Krueger, P. M., & Steiner, J. F. (2009). Prevalence of chronic medical conditions among jail and prison inmates in the USA compared with the general population. *Journal of Epidemiology and Community Health, 63*, 912-919.

Bjørngaard, J. H., Rustad, A.-B., & Kjelsberg, E. (2009). The prisoner as patient - a health services satisfaction survey. *BMC Health Services Research, 9*, 176.

Boen, H., Dalgard, O. S., & Bjertness, E. (2012). The importance of social support in the associations between psychological distress and somatic health problems and socio-economic factors among older adults living at home: a cross sectional study. *BMC Geriatrics, 12*, 27, doi: 10.1186/1471-2318-12-27

Bretschneider, W., & Elger, B. S. (2014). Expert perspectives on Western European prison health services: Do ageing prisoners receive equivalent care? *Journal of Bioethical Inquiry, 11*, 319-332.

Bruce, M. L., Seeman, T. E., Merrill, S. S., & Blazer, D. G. (1994). The impact of depressive symptomatology on physical disability: MacArthur Studies of Successful Aging. *American Journal of Public Health, 84*, 1796-1799.

Cohen, G. (1996). Age and health status in a patient satisfaction survey. *Social Sciences & Medicine, 42,* 1085-1093.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Hillsdale, NJ: Lawrence Erlbaum & Associates.

Cohen, J., & Cohen, P. (1983). Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences. Mahwah, NJ: Lawrence Erlbaum & Associates.

Crawley, E. (2005). Institutional thoughtlessness in prisons and its impacts on the day-to-day prison lives of elderly men. *Journal of Contemporary Criminal Justice, 21*, 350-363.

Crawley, E., & Sparks, R. (2006). Is there life after imprisonment? *Criminology & Criminal Justice, 6,* 63-82.

Crawley, E., & Sparks, R. (2005). Hidden injuries: Researching the experiences of older men in English prisons. *Howard Journal of Criminal Justice, 4,* 345-356.

Davoren, M., Fitzpatrick, M., Caddow, F., Caddow, M., O'Neill, C., O'Neill, H., & Kennedy, H. G. (2014). Older men and older women remand prisoners: mental illness, physical illness, offending patterns and needs. *International Psychogeriatrics, 27*, 747-755.

Dawes, J. (2009). Ageing prisoners: Issues for social work. *Australian Social Work, 62*, 258-271.

Fazel, S., Hope, T., O'Donnell, I., & Jacoby, R. (2004). Unmet treatment needs of older prisoners: A primary care survey. *Age & Ageing, 33*, 396-398.

Fazel, S., Hope, T., O'Donnell, I., Piper, M., & Jacoby, R. (2001). Health of elderly male prisoners: worse than the general population, worse than younger prisoners. *Age & Ageing, 30*, 403-407.

Fazel, S., Hope, T., O'Donnell, I., & Jacoby, R. (2001). Hidden psychiatric morbidity in elderly prisoners. *British Journal of Psychiatry, 179*, 535-539.

Gallagher, E. (1988). Older men in prison: Emotional, social, and physical health characteristics. (PhD Thesis). Burnaby, B.C.: Simon Fraser University.

Golden, J., Conroy, R.M., & Lawlor, B.A. (2009). Social support network structure in older people: underlying dimensions and association with psychological and physical health. *Psychology, Health & Medicine, 14*, 280-290.

Harzke, A. J., Baillargeon, J. G., Pruitt, S. L., Pulvino, J. S., Paar, D. P., & Kelley, M. F. (2010). Prevalence of chronic medical conditions among inmates in the Texas prison system. *Journal of Urban Health, 87*, 486-503.

Hayes, A. J., Burns, A., Turnbull, P., & Shaw, J. J. (2012). The health and social needs of older male prisoners. *International Journal of Geriatric Psychiatry, 27,* 1155-1162.

Kakoullis, A., LeMesurier, N., & Kingston, P. (2010). The mental health of older prisoners. *International Psychogeriatrics, 22,* 693-701.

Kerbs, J., and Jolley, J. (2009). A commentary on age segregation for older prisoners: Philosophical and pragmatic considerations for correctional systems. *Criminal Justice Review, 34*, 119-139.

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S.-L. T.,Walters, E. E., & Zazlavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine, 32*, 959-976.

Kingston, P., Le Mesurier, N., Yorston, G., Wardle, S., & Heath, L. (2011). Psychiatric morbidity in older prisoners: unrecognized and undertreated. *International Psychogeriatrics, 23*, 1354-1360.

Koenig, H. G., Johnson, S., Bellard, J., Denker, M., & Fenlon, R. (1995). Depression and anxiety disorder among older male inmates at a federal correctional facility. *Psychiatric Services*, *46*, 399-401.

Lattin, J. M., Carroll, J. D., & Green, P. E. (2003). *Analyzing Multivariate Data.* Pacific Grove, CA: Thomson Brooks/Cole.

Leach, J., & Neto, A. (2011). *Offender Population Trends: Aged Offenders in NSW, Research Bulletin No. 30*. Sydney, NSW: Corrective Services New South Wales.

Leigey, M. E., & Hodge, J. P. (2012). Gray Matters: Gender Differences in the Physical and Mental Health of Older Inmates. *Women & Criminal Justice, 22*, 289-308.

Liebling, A., Durie, L., Stiles, A., & Tait, S. (2005). Revisiting prison suicide: the role of fairness and distress. In A. Liebeling & S. Maruna (Eds.), *The Effects of Imprisonment* (pp. 209-231). Cullompton, Devon: Willan Publishing.

Lindquist, C., & Lindquist, C. A. (1997). Gender differences in distress: Mental health consequences of enviromental stress among jail inmates. *Behavioral Sciences & The Law, 15,* 503-523.

Loeb, S., Penrod, J., McGhan, J., Kitt-Lewis, E., & Hollenbeak, C.S. (2014). Who wants to die in here? Perspectives of prisoners with chronic conditions. *Journal of Hospice & Palliative Nursing, 16,* 173-181.

Loeb, S., Staffensmeier, D., & Lawrence, F. (2008). Comparing incarcerated and community-living older men's health. *Western Journal of Nursing Research, 30,* 234-249.

Mann, N. (2012). Doing harder time?: The experiences of an ageing male prison population in England and Wales. Farnham, UK: Ashgate Publishing Limited.

Maschi, T., Morgen, K., Zgoba, K., Courtney, D., & Ristow, J. (2011). Age, cumulative trauma and stressful life events, and post-traumatic stress symptoms among older adults in prison: Do subjective impressions matter? *Gerontologist, 51*, 675-686.

Maschi, T., Viola, D., Morgen, K., & Koskinen, L. (2013). Trauma, stress, grief, loss, and separation among older adults in prison: the protective role of coping resources on physical and mental well-being. *Journal of Crime & Justice, 38,* 113-136.

Maschi, T., Viola, D., & Sun, F. (2013). The high cost of the international aging prisoner crisis: well-being as the common denominator for action. *Gerontologist, 53*, 543-554.

O'Hara, K., Forsyth, K., Webb, R., Senior, J., Hayes, A. J., Challis, D., Fazel, S., & Shaw, J. (2016). Links between depressive symptoms and unmet health and social care needs among older prisoners. *Age & Ageing, 45,* 158-163. doi: 10.1093/ageing/afv171

Pallant, J. (2011). *SPSS Survival Manual (Fourth Ed.).* Sydney, NSW: Allen and Unwin.

Potter, E., Cashin, A., Chenoweth, L., & Jeon, Y. (2007). The healthcare of older inmates in the correctional setting. *International Journal of Prisoner Health, 3*, 204-213.

Slotboom, M.-A., Kruttschnitt, C., Bijleveld, C., & Menting, B. (2011). Psychological well-being of incarcerated women in the Netherlands: Importation or deprivation. *Punishment & Society, 13*, 176-197.

Stevens, J. (1996). Applied Multivariate Statistics for the Social Sciences (Third ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Stuck, A. E., Walthert, J. M., Nikolaus, T., Büla, C. J., Hohmann, C., & Beck, J. C. (1999). Risk factors for functional status decline in community-living elderly people: a systematic literature review. *Social Science & Medicine, 48*, 455-469.

Tabachnick, B. G., & Fidell, L. S. (2014). *Using Multivariate Statistics (Sixth Ed., Pearson New International ed.).* Essex, England: Pearson Education Ltd.

Trotter, C., & Baidawi, S. (2015). Older prisoners: Challenges for inmates and prison management. *Australia and New Zealand Journal of Criminology, 48,* 200-218.

Wade, D., & Collin, C. (1988). The Barthel ADL Index: a standard measure of physical disability? *International Disability Studies, 10,* 64-67.

Wahidin, A. (2004). Older women in the criminal justice system: Running out of time. London, UK: Jessica Kingsley Publishers.

Wangmo, T., Meyer, A. H., Bretschneider, W., Handtke, V., Kressig, R., Gravier, B., Büla, C., & Elger, B.S. (2015). Ageing prisoners' disease burden: Is being old a better predictor than time served in prison? *Gerontology, 61,* 116-123.

Williams, B. A., Ahalt, C., & Greifinger, R. (2014). The older prisoner and complex chronic medical care. In S. Enggist, L. Møller, G. Galea, & C. Udesen (Eds.), *Prisons and Health* (pp. 165-170). Copenhagen, Denmark: World Health Organisation Europe, 165-170.

Williams, B. A., Lindquist, K. L., Sudore, R. L., Strupp, H. M., Willmott, D. J., & Walter, L. C. (2006). Being old and doing time: Functional impairment and adverse experiences of geriatric female prisoners. *Journal of the American Geriatrics Society, 54,* 702-707.

Williams, B. A., Stern, M. F., Mellow, J., Safer, M., & Grefinger, R. B. (2012). Aging in correctional custody: Setting a policy agenda for older prisoner health care. *American Journal of Public Health, 102,* 1475-1481.

Wright, K. N. (1991). A study of individual, environmental and interactive effects in explaining adjustment to prison. *Justice Quarterly, 8*, 217-242.

Chapter 6. Discussion and conclusion

6.1 Study overview

This study sought to examine the level of psychological distress experienced by older people in prison in two Australian states, and to then compare these levels to those seen among both younger prisoners, and older people in the general community. Additionally, the study examined the factors associated with psychological distress in the older prisoner sample, including analysis of a range of physical, functional and mental health factors, socio-demographic and criminal justice factors, as well as social and environmental factors.

Specifically, the subsidiary questions addressed included:

a) What is the level of psychological distress (as measured by the Kessler Psychological Distress (K10) Scale) among older prisoners, including gender and age breakdowns?

b) How does this compare to i) younger prisoners and ii) the general population of older people in Australia?

c) Is the level of psychological distress among older prisoners associated with:

   i) Socio-demographic factors (age, sex, Indigenous status, country of birth, and education)?

   ii) Criminal justice factors (prior imprisonments, time remaining to serve, offence type, and security classification)?

   iii) Mental health factors (mental health diagnosis, history of suicide attempts and self-harm, history of alcohol and other drug problems)?

   iv) Cognitive functioning?

v) Physical health factors (physical health conditions and current concerns regarding physical health)?

vi) Physical functioning (level of functional independence, physical difficulties within the prison environment)?

vii) Health care factors (e.g. health care access and issues accessing health care)?

viii) Prison experience (safety/victimisation, social support, protection status, prison employment and program participation)?

d) Which factors explain relatively more of the variance in K10 scores of older prisoners?

As explicated in the Results Chapter, the study's findings suggest that the average levels of psychological distress seen among older prisoners are somewhat lower than those observed among younger prisoners, but significantly higher than those seen in older people in the general population. A range of factors are associated with psychological distress among the older prisoner sample at the $p < .05$ level in bivariate analyses, including socio-demographic factors (e.g. gender); mental health history (including history of mental health diagnoses, suicide attempts, self-harm and help-seeking for alcohol or drug problems); criminal justice factors (protection status); physical health (number of health issues listed in health files); functional health (Barthel Index scores < 100 and experiences of physical difficulties in the prison environment); healthcare utilisation (past-month clinic visits, healthcare access issues in prison, and current health concerns); and social factors (experiences of victimisation in prison, sense of safety in prison, social support from other inmates and staff, current employment status and past month exercise). Across the final three regression analyses presented in paper five, the factors emerging as most prominently and consistently associated with variations in psychological distress among older prisoners are self-reported levels of social

support, self-reported safety, and ease of healthcare access (Baidawi, Trotter & O'Connor, 2016). Experiences of physical difficulties in the built environment, and mental health history are significantly explanatory of variations in older prisoner distress in two of the three regression models.

This Discussion Chapter firstly reviews the approach taken to the study. It considers how the utilisation of pre-existing data and the thesis structure (one which includes published works) impacts on the research, its results, and the thesis report output. The contribution of the philosophical position is also considered. It then discusses the main findings of the study as outlined above, with a view to reflecting on how these relate to the previous literature in the field. Importantly, this section highlights the changes to the knowledge landscape generated by this study. Finally, an integrated discussion considers this research in relation to theory, the study limitations, and its implications before considering directions for future research.

6.2 Overview of the research approach

6.2.1 Pre-existing data and published works

The foundations of this study are predicated on the use of pre-existing data, and the form of this thesis is shaped by the incorporation of published works. As described in the Methodology Chapter (Research context, Section 4.1), the study data were derived from a larger project completed in 2013 examining the needs and management of older prisoners in two Australian states. Certain constraints were inherent in this approach. First, only the specific data which had been collected could be utilised to generate the range of independent variables examined in relation to older prisoners' distress. As was raised in the Results Chapter (see e.g. Paper Five), this entailed the exclusion of other independent variables which may have been of

interest, for example specific coping styles of older inmates. This discrete study is also restricted by the sampling frame of the broader project, which prohibited more in-depth study of the unique circumstances of specific older prisoner subgroups. In particular, larger samples of older female and Indigenous prisoners would have enabled parallel regression analyses to be undertaken to ascertain any differences in the factors influencing psychological distress in these subpopulations.

On the other hand, the use of pre-existing data is also advantageous. Firstly, as indicated in the Methodology Chapter, the data availability provides an invaluable opportunity to carry out this PhD study. The accessibility of the data at the initiation of the PhD study allows more of the candidature period to be devoted to in-depth analysis of this data, which generated a more complex and considered analytic approach than may have been otherwise possible. It also provides the time for authoring a number of published works. In turn, this fulfils part of an ethical imperative associated with social work research to accurately and fully disseminate research findings (Australian Association of Social Workers 2010). Timely dissemination of findings also supports an enhanced potential for research impact (Morton 2015), which is valuable in relation to older people in prison as a emergent area of concern.

However there are some limitations with the inclusion of published works. For example, given that the published works were mainly confined to disseminating the study's results (rather than attending to methods, ethics, etc.), there is perhaps a sense of repetitiveness inherent in some of the thesis material. In an attempt to minimise this issue, this Discussion Chapter focuses on elements of the study which have not been discussed at any great length in the published works, and draws together key overarching themes.

An additional limitation was in the published works themselves. Understandably, these articles were restricted by the prescribed limitations of the publishing journals, including length and emphasis. On the other hand, the breadth of journal specialities publishing this material (e.g. social work, health and mental health) emphasises the interdisciplinary nature of the issues under investigation, and supports an integrative approach to the thesis.

6.2.2 Older prisoners – reviewing the adopted definitions

This discrete study is also shaped by aspects of the broader project. In particular, the choice of the age of 50 as an appropriate threshold for defining older prisoners, and 45 years and older for Indigenous prisoners. While the rationale for these choices was extensively set out in the Methodology Chapter, it is perhaps worth reflecting on these elements at this point. First, the chosen age threshold is appropriate for the current study in that it enabled sufficient numbers of older prisoners to be recruited, particularly older female prisoners who were more difficult to recruit owing to their smaller numbers. As was seen in paper two (Baidawi, 2016), there are no significant differences in the levels of distress seen among the sample of older prisoners aged between 50 and 64 years and those aged 65 years and older. This finding is supportive of the methodological choice of 50 years and older as the threshold for studying distress among older prisoners. Assuming similar trends in relation to age and distress between the prison and the general population, if the threshold of 50 years were "too young" so to speak, it would be expected that the distress levels of prisoners aged 50 to 64 years would be somewhat different to those of prisoners aged 65 years and older.

Three of the 11 Indigenous prisoner participants were aged between 45 and 49 years. As with establishing a quota for older female prisoners, the representation of Indigenous prisoners in the study was supported by the inclusion of a lower age threshold for this group. Though the

approach provides this practical advantage, it is unclear (due to the small numbers) whether this choice was conceptually sound. That is, whether it is appropriate to consider Indigenous prisoners aged between 45 and 49 years as older prisoners from a health and wellbeing perspective remains an unanswered question based on the available data. Additionally, other methodological choices (for instance partnership with an Aboriginal health organisation or Aboriginal welfare officer to support the recruitment and interviewing of Indigenous prisoners in the study) may have achieved equivalent or improved representation of this subgroup of older inmates in the project.

Overall the operationalisation of older age is appropriate for the current study. At the same time this does not suggest the necessity of adopting these definitions for the purposes of all older inmate studies. While it has been suggested that a lack of consensus of what constitutes older in the prison context may impede the development of a sound evidence base (see e.g. Baidawi et al., (2011)) the aims of a particular study must also be considered. In any case, jurisdictional differences in social, justice and correctional systems are likely to be as great a source of variation as a five or 10 year age gap in definition when it comes to comparing the findings of discrete studies (Brodeur 2007). As Tubex (2013, p. 211) describes in a review of comparative penological research, factors including welfare states, political systems and *"their relationship with legal, institutional and economical structures … do not only have an influence on quantitative measures such as imprisonment rates, but also on the qualitative conditions in which prisoners are held"*. Additionally, variations in life expectancy across jurisdictions and between prisoner subgroups may also play a part in determining the threshold of considering when prisoners should be classified as being 'older'. This is also consistent with social and gerontological research more broadly, as previously discussed in the Methodology Chapter

(Calasanti & Slevin 2001; World Health Organization 2012). Though consistency is useful, particularly in collecting long-term data within a particular jurisdiction, it is perhaps going beyond the bounds of helpfulness to be overly prescriptive in these matters. Suffice to stay each study should consider the merits of its proposed definitions in the context of the objectives of the individual piece of research, as well as the broader research landscape. Studies including large representative samples of older prisoners should lend more weight to developing data which could be utilised for comparison to either historical jurisdictional-specific data, or international studies.

6.2.3 A note on philosophical underpinnings

It is important to also reflect on the philosophical approach underpinning the study. The Methodology Chapter outlined the post-positivistic epistemological approach taken in the study, characterising this as an inherently imperfect, though nevertheless worthwhile endeavour. Ultimately it is fair to say that the findings bore this depiction out, and are able to enhance understandings of the ways in which distress may vary among older prisoners, and some of the likely drivers of these differences. The utilisation of multiple analytic models in the final results paper demonstrates a commitment to the post-positivistic principle of "science as falsification" (Popper 1963), albeit within the limitations of applying the scientific method in real-life social contexts. Such duty to enhancing rigour where possible is most important within a social work research context, where the issues under investigation are inherently emotive, and both morally and politically-charged, hence particularly vulnerable to the influence of bias.

6.3 Overview of key findings

This section summarises the main findings and discusses them in the context of previous research. It is structured so as to consider each research sub-question in turn.

6.3.1 The level of psychological distress among older prisoners with comparison to younger prisoners and older people the general population (research sub-questions a) and b))

Average levels of psychological distress (total K10 scores) in the older prisoner sample are significantly lower than those of the younger prisoner sample, though the proportion presenting with high or very high levels of distress is similar in both groups. As discussed in paper two (Baidawi, 2016), it is important to reiterate that our older prisoner sample is not representative, and to examine how this impacts on the conclusions which can be drawn in relation to the level of psychological distress in the older inmate population. The older prisoner sample is highly skewed in relation to various characteristics including disproportionately high representations of inmates aged 65 years and older, as well as sex offenders (all of whom were male). Since each of these overrepresented subgroups of older prisoner sample presents with *lower* levels of psychological distress[8] it is reasonable to suggest that the average levels of distress seen in our older prisoner sample may be an underestimate of the real older prisoner population levels of distress. At the same time, older female prisoners are slightly over-represented in the sample. Given that as a subgroup the older female sample tended to display relatively higher levels of distress overall, this may somewhat temper the impact of the over-representation of subgroups with lower average levels of distress as mentioned above.

[8] While not presented in the Paper 2 findings, older prisoners convicted of sex offences (n=106) had lower levels of distress (M=16.53, SD=7.438) compared to prisoners not convicted of sex offences in relation to their most serious offence relating to the current imprisonment (n=64, M=18.97, SD=8.951), though this difference did not reach statistical significance at the $p < .05$ level (p= .06).

It is not possible to speculate what can be generalised regarding the relative levels of psychological distress between older and younger prisoners based upon the sample data, and the lack of representativeness of both samples was a limitation in this regard. However the findings are consistent with the previous literature suggesting a negative correlation between age and distress in prisoner samples (Edwards & Potter 2004). The younger prisoner sample is not representative, and in particular it is entirely comprised of inmates very near to release. It is unclear how the levels of distress seen in the younger prisoner sample may differ from those of the broader younger prisoner population. However a previous study of adult prisoners in Queensland (Kinner 2006) provides some comparative data in relation to the pre-release population. The study administered the K10 scale with a sample of 212 prisoners (68% male, mean age = 32.6 years) within four weeks of release from five Queensland prisons, and found that 10% of male prisoners and 15% of female prisoners (12% of all prisoners) displayed 'very high' levels of psychological distress (i.e. ≥ 30/50) (Kinner 2006). This figure is very close to the 13% of younger prisoners displaying very high levels of distress in our sample, despite the slightly older mean age (34.4 years), lower proportion of female prisoners and more distal proximity to release. This gives a degree of reassurance that our younger prisoner sample is not too uncharacteristic, although both studies rely on convenience samples, and Kinner's (2006) sample did not exclude older prisoners.

In relation to community comparisons, from the findings it is fair to conclude that older prisoners appear to be significantly more distressed than the general population of older Australians. Additionally, the study's older prisoner sample was not representative of the general population in relation to gender. Had the female representation in the sample (13%)

been equivalent to the general population (~50%), a far greater difference in the average psychological distress levels would be expected between these two groups.

Nonetheless, the results are consistent with the trends of prisoner populations more broadly, which evidence greater levels of distress than community norms (Butler, T et al. 2006; Edwards & Potter 2004; Hurley & Dunne 1991; Liebling et al., 2005). As discussed in the literature review, previous studies from the US described older prisoners as displaying higher rates of depressive symptoms compared to older people in the general community (Burling 1999; Murdoch, Morris & Holmes 2008), but this is the first study to demonstrate that the same patterns are seen in relation to differences in the level of psychological distress between older people in prison and the general community.

6.3.2 Association between psychological distress and socio-demographic factors (research sub-question c)i))

In relation to the socio-demographic factors associated with distress in this group, certain relationships are consistent with community norms, (Byles et al. 2012), including the slight decline of average levels of distress between 50 and 75 years of age and the relatively higher levels of distress seen among older female prisoners. There are too few prisoners aged beyond 80 years in the sample (n = 4) to ascertain whether the increases in distress in this age bracket observed in the community are also mirrored in the prisoner population.

Conversely, the lack of association between distress and education among older people in prison deviates from that seen in the previous literature, both that relating to older male prisoners (Murdoch, Morris & Holmes 2008) and trends seen in the general population (Byles et al. 2012; Schieman, van Gundy & Taylor 2001). This is worth discussing in more depth.

This finding is not necessarily comparable to those reported by Murdoch et al. (2008) given that Murdoch et al.'s prisoner sample consisted of life-sentenced males aged 55 years and older, and the authors of that study operationalised education in terms of leaving school with qualifications. On the other hand, the current study dichotomises the education variable in relation to the completion beyond year 10 education or equivalent (e.g. Form 4 in the previous education system). The rationale behind this choice was twofold – first, year 10 is a threshold which more than half of older Australians have generally achieved (ABS 2012d), and second it enabled sufficient numbers of older people in each category to permit statistical analyses. Further analysis of the data show that changing the operationalisation of education to completion of year 12 or further education similarly showed associations with older prisoner distress levels which did not reach statistical significance at the conventional $p < .05$ level ($p = .09$).

As discussed in paper two (Baidawi 2016), replication of these findings with a representative sample is necessary, particularly given the divergent findings between this and the Murdoch et al. (2008) study. Nonetheless one potential explanation for the lack of observed relationship may be that the mechanisms by which education influences distress among older people may be obstructed in the prison environment. According to Brännlund and Hammarström (2014, p. 155), the link between higher education and lower psychological distress can be "understood through the mechanisms of social and labour-market resources" in the long-term. In this 27-year prospective Swedish cohort study, the authors observed a weakening of the direct education-distress association by the age of 43, and a strengthening of the relationship between distress and acquisition of these resources (Brännlund & Hammarström 2014). However the study did not examine this association throughout middle age and beyond.

Along the same lines, Mirowsky and Ross (2003a) contend that education is indicative of human capital, including the development of general skills and abilities fostering an autonomous life, hence its association with lower levels of distress. If these associations are not replicated in the prison environment, it could be logically hypothesised that one or both of these mechanisms are obstructed in the correctional context. For instance, conferred social or labour-market advantage by virtue of education becomes redundant without the capacity to access these resources. Similarly, the human capital generated by higher levels of education may not only be ineffectual in prison, it may even serve as a source of frustration and pain when juxtaposed with one's loss of autonomy in such environments (Sykes 1958b).

This study also contributes to the understanding of gender differences in the wellbeing of older inmates. As discussed in Paper Five, the majority of research pertaining to the mental health or wellbeing of older prisoners predominantly focuses on older males, with a smaller number concentrating on older female prisoners (see e.g. Williams et al. (2012) and Aday and Farney (2014)). Very few studies include both male and female prisoners (Baidawi & Trotter 2015). This study's findings demonstrate that the relatively higher levels of distress seen in older female prisoners are mediated by the greater burden of physical, functional and mental health issues experienced by this group in prison relative to their male counterparts. The need for specific attention to the physical and mental health needs of ageing female prisoner populations, as advocated by previous researchers, (Aday & Farney 2014; Wahidin 2004) is discussed further in the implications section.

6.3.3 Association between psychological distress and criminal justice factors (research sub-question c)ii))

The study's findings in relation to the relationship between criminal justice variables and psychological distress among older prisoners are consistent with previous quantitative

research. For instance, Murdoch et al. (2008) reported that depressive symptoms among older male life-sentenced inmates were not associated with various criminal justice variables, including prior imprisonments or time remaining to serve, as is found in the current study. The finding relating the lack of association between distress and to time left to serve appears inconsistent with qualitative research describing stressors related to release for older prisoners (see e.g. Crawley & Sparks (2006) and Mann (2012a)). At the same time, it should be noted that in both of these UK studies the authors made specific reference to the case of older sex offenders' fears regarding post-release safety, and to other older inmates with 'nothing to go out to' fearing social isolation post-release. It is also worth noting that the timeframe constituting 'pre-release' in our study was 90 days; this is potentially too long a period away from release to see substantial impacts of any pre-release anxieties on distress levels. On the other hand, perhaps our pre-release sample contains relatively even proportions of older prisoners for whom release is a positive or a negative prospect. This second argument is in agreement with research in the broader prisoner population arising from Queensland, which documented a variety of post-release trajectories in relation to prisoner distress among specific subgroups (e.g. female prisoners or those with a lifetime mental health diagnosis) (Thomas et al. 2016).

Multiple studies have concluded that distress in the broader prisoner population is associated with measures of the institutional environment, including measures of prison quality (Liebling et al. 2005), social and therapeutic climate (Day et al. 2012), and regimes (e.g. open versus closed) (Vanhooren, Leijssen & Dezutter 2015). Yet from their study of 432 older male and female prisoners across 12 correctional institutions in the US, Kratcoski and Babb (1990, p. 279) concluded that older prisoners tended to adjust as well or better in minimum security

institutions compared to those specifically designed for older prisoners unless they had "severe health problems". These later conclusions relating to older prisoners accord with the findings of the current study, which finds no difference in the level of distress of older prisoners depending on their institution's security classification. These conflicting findings between studies investigating the factors impacting the general prisoner population and older prisoners perhaps point to a distinction between simple measures of prison security and regime, and more complex measures of prison quality.

A novel finding of this study is the lack of association between protection status and older prisoner distress once gender was controlled for, and the absence of notably different levels of safety reported by protection and non-protection prisoners. This is important given the ongoing debate concerning the age-segregation or mainstreaming the placement of older prisoners (see, e.g. Wangmo et al. (2015) and Kerbs et al. (2015)), and the concerns regarding older prisoner victimisation (Kerbs & Jolley 2007). However it should be clarified that protection placements (also known as limited association placements) in the Australian context are not by definition age-segregated. Nonetheless experience during data collection in the current study showed that many protection units include by large proportions of older male sex offenders, with the implication that these data are interesting for tentatively exploring issues relating to the segregation or protection of older prisoners. As indicated in paper four, while these findings ostensibly could be taken to imply a lack of impact of protection units on prisoner sense of safety, they may also indicate that placement in protection units equalises the sense of safety between more vulnerable and less vulnerable older inmates. Furthermore, the debate concerning age-segregation for older inmates not only considers issues of prisoner safety and wellbeing, but access to health and other services as well as fiscal matters.

Another unique element of this study in relation to criminal justice factors (research sub-question c)ii)) was the investigation of the relationship between older prisoner typology and levels of psychological distress. Typologies of older inmates have been described in this research field for some time (Goetting 1984), yet few quantitative studies have investigated the differences in the characteristics of these proposed subgroups. In the current study, no significant differences are observed in distress levels reported by first-time older inmates, chronic recidivists and those growing old in prison. These findings appear to conflict with Teller and Howell's study (1981) which reported that first-time older prisoners had better adjustment (as measured by the Bipolar Psychological Inventory (BPI)) than both older chronic recidivist prisoners and younger inmates. However the authors of that study did not report the observed BPI results or give any indication of whether these differences were statistically significant. It should be noted that the BPI consists of 15 various validity, personality and characterological scales, one of which relates to the relative level of 'psychic pain' (Howell, Payne & Roe 1971). Therefore it is conceivable that the differences observed in these findings are due to the dissimilar characteristics being measured by the BPI and the K10 Scale.

6.3.4 Association between psychological distress and mental health and cognitive functioning (research sub-questions c)iii) and c)iv))

As indicated in Papers Two and Five, variables relating to mental health history in the current study are associated with K10 scores in older prisoners, and are also predictive of distress in regression analyses. This is to be expected given that the development of the K10 Scale was predicated on the capacity to discriminate between people affected and those unaffected by mental illness (Kessler et al. 2002). This study's findings also lend some support to the argument of Fazel and colleagues (2001) that psychiatric illness may be underdiagnosed among older people in prison. This was based on the finding that a small number of older prisoners

presenting with very high distress scores (K10 = 30-50) have no mental health issues listed in their files.

There appears to be an inverse relationship between cognitive functioning as assessed by MMSE scores and distress in the older prisoner sample, however this does not quite reach conventional levels of statistical significance in a 2-tailed correlation ($p = .06$). At the same time, this directional relationship accords with previous understandings of the negative correlation between cognitive functioning and psychological distress states and traits (see e.g. Wilson et al. (2007), Yates, Clare and Woods (2013)). It should further be noted that the study data are not corrected for education (Crum et al. 1993; O'Connor et al. 1989). This is likely to influence relationship particularly in the prisoner population which tends to have lower levels of literacy overall[9]. Thus these are necessarily preliminary analyses which could be replicated with representative samples of older inmates, and corrected for these mediating factors.

6.3.5 Association between psychological distress and physical health, functional health, and healthcare utilisation (research sub-questions c)v), c)vi) and c)vii))

The relationships observed between physical and functional health and distress among older prisoners also parallel those seen in the general community in relation to health and anxious or depressive states (Bruce 2001; Katon & Ciechanowski 2002; Stuck et al. 1999). That is, physical and functional health declines are typically associated with increased levels of psychological distress. The findings and support the results of Murdoch et al.'s (2008) study of older male life-sentenced prisoners. Similarly, the correlations between distress (as a proxy for

[9] A significant positive correlation was observed between MMSE total scores and the highest level of education completed in the older prisoner sample ($r = .387$, $p < .000$).

wellbeing) and both healthcare utilisation and healthcare satisfaction echo findings of previous older prisoner studies (Burling 1999; Murdoch, Morris & Holmes 2008).

The measure of physical health is somewhat less predictive of psychological distress in than would have been expected on the basis of earlier studies of older prisoners (Murdoch, Morris & Holmes 2008), though an association between these factors is observed in bivariate analyses. As indicated previously, the measure utilised (e.g. number of physical health conditions listed on the prisoners' health file) is limited by the data collected in the original study. This is perhaps a rather imprecise measure of physical health, and a standardised measure would have been preferable (e.g. Brief Symptom Inventory (Derogatis 2001)). Alternatively, a measure of the number of chronic health conditions from a common list may have been a more relevant indicator of physical health than the total number of health issues listed. The findings extend the available knowledge in this area by demonstrating the associations between both physical health healthcare utilisation, and psychological distress in a relatively heterogeneous sample of older prisoners compared to those in Burling (1999) and Murdoch et al.'s (2008) studies. The results reinforce the need for attention to physical and functional health issues in both conceptualising distress in this population and framing responses to support the wellbeing of older inmates, particularly the availability. That is, the dichotomy between physical and mental health should not be accorded considerable weight in this prisoner group.

A further noteworthy contribution of this study is its demonstration of a quantitative association between experiences of physical difficulties in the prison environment and older prisoners' levels of psychological distress. Various qualitative and policy papers concerning older prisoners have long described the difficulties faced by older inmates with functional declines in an environment predominantly unconscious to their physical needs (Aday 2003;

Crawley 2005; Crawley & Sparks 2005a; Potter et al. 2007). However this study's findings extend the understanding of these issues, demonstrating that these difficulties are not merely theoretical, nor the experience of a minority of older inmates. The significant predictive capacity of this factor upon distress is suggested by the results of the regression analyses, indicating that the aspects of prison most frequently nominated as physically troublesome by older prisoners (namely beds and bunks, temperature and ventilation, and bathroom facilities), should form priority areas for amelioration (Trotter & Baidawi 2015).

6.3.6 Association between psychological distress and prison experiences

The study's findings are also supportive of previous research suggesting that social factors such as age-appropriate work and program opportunities, a sense of safety, and social support from both inmates and staff are important for older prisoners' wellbeing (Dawes 2009; Kerbs & Jolley 2007; Loeb & Steffensmeier 2011; Wahidin 2004). Yet some of this study's findings are at odds with those of Murdoch et al.'s (2008) study of older life-sentenced males, which reported no relationship between scores on the Geriatric Depression Scale and a range of social variables including older prisoners' number of visits, sending or receiving of letters, attendance at gym or educational programs, being in prison work, having friends in prison, and 'good or bad' relationships with staff. Given that the variables contained in the two studies are not directly comparable, a number of methodological differences may account for these divergent findings. First, the Murdoch et al. (2008) study was measuring symptoms of depression rather than distress. It is possible that the associations measured in the current study in relation to social variables are more reflective of anxious symptoms relating to psychological distress, rather than depressive ones. Second, the sample characteristics between the two studies were different. The current study's sample comprises both male and female prisoners of a variety of

offence types and sentence lengths, while the Murdoch et al. study was limited to older male offenders aged 55 years and older who had life or indeterminate sentences. It is entirely possible that different social factors associated with depression would emerge for this specific subgroup of prisoners given their unique circumstances. Despite the heterogeneity of experiences among life and indeterminate sentenced prisoners (Sapsford 1978), previous studies suggest that beliefs of the importance of engagement in prison activities (Sapsford 1978), as well as the size of social networks (Crewe 2005) tend to diminish for this group.

6.4 Integrated discussion of findings

This study sought to investigate the factors associated with psychological distress among older prisoners in two Australian states. The study's findings provide quantitative support for many of the key issues identified in the literature base to date relating to older people in prison. This section of the discussion reflects on these findings in relation to theory and their policy and practice implications (Section 6.4.2). It also considers their limitations (Section 6.4.1), and proposes directions for future research (Section 6.4.3).

As indicated in the results papers, the study's findings are supportive of an interactional or congruence model of prisoner distress (Liebling et al. 2005; Lindquist & Lindquist 1997; Slotboom et al. 2011; Wright 1991). The factors which emerge as most prominently and consistently associated with psychological distress (findings in relation to research sub-question d)) are self-reported levels of social support and safety, experiences of physical difficulties in the built environment, healthcare access issues and mental health history. The results in relation to the key relationship between perceived safety and prisoner distress concur with those reported by Liebling and colleagues (2005) in their investigation of prison suicide in the UK. Furthermore, the findings suggest that modifiable situational factors

concerned with the prison context are equally powerfully and reliably associated with variations in prisoner distress as the individual's imported mental health history, as has been suggested in broader studies of prisoner wellbeing (Liebling et al. 2005; Lindquist & Lindquist 1997; Slotboom et al. 2011). This model is perhaps even more salient in the consideration of older prisoners, for whom – like prisoners with physical disabilities - the prison environment has been characterised as particularly unsuited (Crawley 2005).

6.4.1 Study limitations

A brief overview of the limitations of this study and its findings is provided given that these have already been discussed at length throughout the results papers. First, the study is limited by a non-representative sample of older prisoners, which primarily impacts upon the reliability of the findings in relation to the level of distress experienced by older prisoners. While we cannot generalise the findings to the overall older inmate population, they nonetheless offer a broad indication as to the wellbeing of this prisoner group. The capacity to appreciate the ways in which the older prisoner sample deviates from older prisoner population norms means it is possible to examine the likely effect of the nonprobability sample on the findings; that is to say these findings most likely underestimate the level of distress experienced by the general population of older prisoners in the sample jurisdictions.

Other limitations have also been widely outlined, including the limited number of independent variables which are analysed, and the use of health file data as a proxy for health status. Nevertheless, those considered do cover a broad spectrum of the issues which had been raised in the previous literature relating to older prisoners. Additionally, it is worth drawing attention to the underrepresentation of both Indigenous older prisoners and those from culturally and linguistically diverse backgrounds in the current study. Further focused research with both of

these subpopulations of older prisoners would be beneficial, particularly given the potential requirements for interpreters, translated health materials and culturally-sensitive practices and environments for these groups. Additionally, older remand prisoners were excluded from the current study, and require separate and targeted attention in future research. Finally, due to the cross-sectional nature of the study, it is only possible to draw conclusions in relation to some of the factors associated or correlated with distress among older prisoners. These associations cannot be taken to imply causation, and a longitudinal study of older inmates is necessary to unravel these relationships in more detail.

6.4.2 Implications

Although this study enhances the literature concerning the level and correlates of psychological distress among older people in prison, the perception and utility of these findings is naturally relative. As various scholars have discussed, the acceptable level of "prison pain" (Haney 1997) is a value choice exercised regionally and temporally in each specific society (Liebling et al. 2005). The directions described in this section assume both the aspiration and benefit of limiting the level of psychological distress among older people in prison. The findings of this study suggest that many of the factors associated with older prisoners' psychological distress may be amenable to intervention, given that these are predominantly modifiable, rather than fixed historical or personal factors. Therefore the main implications which arise concern correctional staff and policymakers. Some preliminary implications in terms of enhancing healthcare access, ameliorating the prison environment, and enhancing social support have already been detailed in the results papers. Broadly, these suggestions have outlined the potential benefits of addressing shortcomings in the built environment, improving access to health services, and enhancing peer social support for ameliorating psychological

distress among older prisoner populations. This section therefore considers other implications of the study, particularly in relation to future research.

6.4.2.1 Attending to the specific needs of older female prisoners. The findings of this study confirm the need for a tailored response to address the needs of older female prisoners, who are under-represented in this broad field of study (Williams, B.A. et al. 2012). Yet this and other research identifies that as a group, older female prisoners tend to experience proportionately higher morbidity in health issues and greater functional decline compared to older male prisoners (Leigey & Hodge, 2012). The generally smaller numbers of older female prisoners may impede the implementation of specific correctional and health care responses, particularly where a critical mass of older female prisoners may not be present, such as in some Australian jurisdictions. This situation has resulted in the objectionable situation of older women with high-care needs at times being placed in male-specific facilities in the study jurisdictions (NSW Inspector of Custodial Services 2015).

Previous US literature also draws attention to the lack of gender-specific policy responses in this area (Loeb & AbuDagga 2006; Reviere & Young 2004; Williams, B.A. et al. 2012). Researchers from the US recommend various policy responses, including tailored physical health programs, and specific mental health programming addressing the needs of older female inmates (Leigey & Hodge 2012). Multiple studies also call for further research into the specific needs of this older prisoner subgroup (Leigey & Hodge 2012; Reviere & Young 2004; Williams, B.A. et al. 2012). This study's results support the suggestions that attention should be devoted to addressing the physical and mental health issues of older female prisoners, and also to ensuring appropriate adaptations and environments suited to any functional declines. While the inclusion of older females was a strength of the current study, the findings are

nonetheless male-centric, and have the potential to obscure features particular to the experience of older female prisoners. The resultant necessity for ongoing research into the specific needs and characteristics of older female prisoners bears repeating.

6.4.2.2 Joint strategic planning and management. This study's results demonstrate that a broad range of physical health, mental health, social and environmental factors impact older inmates' wellbeing. The findings support the previous observation that the challenges posed by the growing older prisoner population lend themselves to a joint and inter-departmental approach to planning and decision-making (Trotter & Baidawi 2015; UK Department of Health 2007; United Nations Office on Drugs and Crime 2009). Such an approach could involve correctional management, custodial services and correctional health providers, and additionally draw on the expertise of other relevant agencies such as disability and aged care services (Trotter & Baidawi 2015). A siloed approach where by custodial, correctional health, disability and community-based services operate in an unintegrated manner perhaps fails to recognise the significant links between older prisoners' health, mental health, social and environmental circumstances which are explored in this study. An area for future research therefore might be the identification of correctional models which best integrate the range of disciplines involved in management of, and service delivery for older prisoners.

6.4.3 Other future research directions

Future research may also consider the issue of the relative levels of distress of offenders before and after release from prison. If prison-related factors do indeed play a substantive role in experiences of distress among older inmates as these data appear to suggest, then it would be of interest to ascertain whether more appropriate conditions are available to older offenders in the community. Such research has recently been conducted among the broader prisoner

population in Queensland, Australia, revealing a number of distinct trajectories of different types of post-release offenders (Thomas et al. 2016), providing an informed basis for targeting of, or referral to community-based services.

Additionally, there is a paucity of research concerning effective mental health interventions with older prisoners (Meeks et al. 2008). The findings of this study do indicate that a substantial proportion of older prisoners experience mental health issues, and that such diagnoses are associated with experiences of distress in the prison environment. Future studies could consider the appropriateness of correctional mental health services for meeting the needs of older prisoners, including older female inmates.

Finally, this study was not able to enhance understandings of the needs and experiences of older Indigenous prisoners, owing to the small sample size and the particular methodology adopted. This presents an important area for future research, particularly given the over-representation of Indigenous Australians in prison systems, as well as their greater burden of certain health and mental health issues, shorter life expectancy, and need for culturally-appropriate responses (ABS Australian Bureau of Statistics 2011b; Grace et al. 2013). Based on the experience in the current research, such a study may benefit from adopting a more qualitative methodology, and being led by Indigenous researchers.

6.4.4 Looking ahead

This study has investigated various individual and prison-related factors associated with the level of psychological distress among older prisoners, and has determined that mental health history, as well as specific factors relating to the physical and social environment of prison are important factors associated with this outcome. It is an interesting time in relation to the issue

of older prisoners in Australia. The past five years have seen the identification of this topic as a growing policy concern, and the emergence of initial policy attention in a number of jurisdictions (Trotter & Baidawi 2015).

Since the initiation of the current study and the broader project from which it proceeded, the state of Victoria has released an Ageing Prisoner and Offender Policy Framework 2015-20 (2015). The policy framework draws from the findings of the broader project[10] from which the current study arose, identifying four priority areas for action, including "ongoing system enhancement and service improvement", including multidisciplinary planning at a strategic level, "access to services and ageing informed environments", "strengthening workforce capacity" to recognise and respond to the needs of older prisoners, and "understanding the needs of ageing prisoners and offenders" through active monitoring of the population to (Department of Justice & Regulation - Corrections Victoria 2015, pp. 11-2). The Victorian Policy Framework is to be followed by a plan which is expected to detail specific actions and outcome measures in relation to the identified priority areas. Broadly speaking, the proposed Victorian policy response does conceptually address the issues identified by the current study. Though it remains to be seen which specific actions will be prioritised and implemented by correctional policy-makers and management in the state.

In New South Wales, the Inspector of Custodial Services (2015) has also released a report since the instigation of the current study and the broader project from which it arose. The Inspector's report examined the management of older prisoners in that jurisdiction, and made 22 recommendations primarily relating to the built environment, operational and strategic

[10] The study's final report is unpublished (Trotter, C. & Baidawi, S. (2013) Ageing in Prison: A strategic framework for the management of Australia's ageing offenders – Final Report. Melbourne: Monash University).

management of older inmates (including placement processes and options), responding to physical and functional health (including dietary needs), staffing requirements and activities. Again, these recommendations broadly relate to the areas identified in the current study as warranting attention. Both the Inspector's report and the Victorian Policy Framework do not however give the specific attention to social and mental health supports as this study suggests may be warranted. Additionally, while it is encouraging to note that the need for gender-specific responses was mentioned by both the NSW Inspector of Custodial Services (2015), and the Victorian Policy Framework (2015), neither document makes any specific recommendations as to what an appropriate response may entail.

It is encouraging to see issues relating to the expanding older prisoner population gaining increasing attention in the Australian policy context. Understanding the impacts of any policy changes arising from these activities upon the physical, mental and functional health trajectories, and social experiences of older prisoners would be a beneficial direction for future research. This is particularly the case where innovations in some regions are under consideration for implementation in other areas, including within the same jurisdiction (e.g. particular programming or environmental responses). This study's findings certainly suggest that efforts to improve the situation of older prisoners have the potential to be fruitful, and may certainly have the capacity to reduce psychological distress among this inmate group.

Bibliography

Aday, RH 1994a, 'Aging in prison: a case study of new elderly offenders', *International Journal of Offender Therapy and Comparative Criminology*, vol. 38, no. 1, pp. 79-91.

Aday, RH 1994b, 'Golden years behind bars. Special programs and facilities for elderly inmates', *Federal Probation*, vol. 58, pp. 47-54.

Aday, RH 2003, *Aging prisoners: crisis in American corrections*, Praeger Publishers, Santa Barbara, CA.

Aday, RH & Farney, L 2014, 'Malign neglect: assessing older women's health care experiences in prison', *Bioethical Inquiry*, vol. 11, pp. 359-372.

Aday, RH & Krabill, JJ 2011, *Women aging in prison: a neglected population in the criminal justice system*, Lynne Rienner, Boulder, CO.

Aday, RH & Krabill, JJ 2012, 'Older and geriatric offenders: critical issues for the 21st century', in L Gideon (ed.), *Special needs offenders in correctional institutions*, Sage, Thousand Oaks, CA, pp. 203-232.

Aday, RH & Webster, E 1979, 'Aging in prison: the development of a preliminary model', *Offender Rehabilitation*, vol. 3, no. 3, pp. 271-282.

Allen, RS, Harris, GM, Crowther, MR, Oliver, JS, Cavanaugh, R & Phillips, LL 2013, 'Does religiousness and spirituality moderate the relations between physical and mental health among aging prisoners?', *International Journal of Geriatric Psychiatry*, vol. 28, pp. 710-717.

Allen, RS, Phillips, LL, Roff, LL, Cavanaugh, R & Day, L 2008, 'Religiousness/spirituality and mental health among older male inmates', *The Gerontologist*, vol. 48, no. 5, pp. 692-697.

Alston, M & Bowles, W 2012, *Research for social workers: an introduction to methods*, 2nd edn, Allyn & Unwin, Sydney.

Alvey, J 2013, 'Ageing prisoners in Ireland: issues for probation and social work', *Irish Probation Journal*, vol. 10, pp. 203-215.

Andersen, HS 2004, 'Mental health in prison populations. A review – with special emphasis on a study of Danish prisoners on remand', *Acta Psychiatrica Scandinavica*, vol. 110, pp. 5-59.

Anderson, T, Sunderland, M, Andrews, G, Titov, N, Dear, BF & Sachdev, PS 2013, 'The 10-item psychological distress scale (K10) as a screening instrument in older individuals', *American Journal of Geriatric Psychiatry*, vol. 21, no. 7, pp. 596-606.

Andrews, G & Slade, T 2001, 'Interpreting scores on the Kessler Psychological Distress Scale (K10)', *Australian and New Zealand Journal of Public Health*, vol. 25, no. 6, pp. 494-497.

Anno, BJ, Graham, C, Lawrence, JE, Shansky, R, Bisbee, J & Blackmore, J 2004, *Correctional health care: addressing the needs of elderly, chronically ill and terminally ill inmates*, National Institute of Corrections, Middletown.

Arnaud, B, Malet, L, Teissedre, F, Izaute, M, Moustafa, F, Geneste, J, Schmidt, J, Llorca, PM & Brousse, G 2010, 'Validity study of Kessler's psychological distress scales conducted among patients admitted to French emergency department for alcohol consumption-related disorders.', *Alcoholism: Clinical and experimental research*, vol. 34, no. 7, pp. 1235-1245.

Atkins, J, Naismith, SL, Luscombe, GM & Hickie, IB 2013, 'Psychological distress and quality of life in older persons: relative contributions of fixed and modifiable risk factors', *Biomed Central Psychiatry*, vol. 13, pp. 249-259.

Australian Association of Social Workers 2010, *AASW Code of Ethics*, Australian Association of Social Workers, Canberra.

Australian Bureau of Statistics 1997, *Australian Social Trends 1997*, Australian Bureau of Statistics, Canberra, viewed 9th February 2016, <http://www.ausstats.abs.gov.au/ausstats/free.nsf/0/3105281F7F04C4ACCA25722500049550/$File/41020_1997.pdf>.

Australian Bureau of Statistics 2005, *Prisoners in Australia 2005 (cat. no. 4517.0)*, Australian Bureau of Statistics, Canberra.

Australian Bureau of Statistics 2009, 'Future population growth and ageing', *Australian Social Trends (cat. No. 4102.0)*, Australian Bureau of Statistics, Canberra.

Australian Bureau of Statistics 2011a, *Australian and New Zealand standard offence classification third edition (cat. no. 1234.0)*, Australian Bureau of Statistics, Canberra.

Australian Bureau of Statistics 2011b, *Deaths, Australia 2011 (cat no. 3302.0)*, Australian Bureau of Statistics, Canberra.

Australian Bureau of Statistics 2011c, *Prisoners in Australia 2011 (cat. no. 4517.0)*, Australian Bureau of Statistics, Canberra.

Australian Bureau of Statistics 2012a, *Australian Demographic Statistics Sep 2012 (cat. no 3101.0)*, Australian Bureau of Statistics, Canberra, viewed 2 August 2016, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3101.0Sep%202012?OpenDocument>.

Australian Bureau of Statistis 2012b, *Information paper: Use of the Kessler Psychological Distress Scale in ABS Health Surveys, Australia, 2007-08 (cat. no. 4817.0.55.001),* Australian Bureau of Statistics, Canberra, viewed 4th November 2015, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/4817.0.55.001Main%20Features12007-08?opendocument&tabname=Summary&prodno=4817.0.55.001&issue=2007-08&num=&view=>.

Australian Bureau of Statistics 2012c, *Prisoners in Australia 2012 (cat. no. 4517.0)*, Australian Bureau of Statistics, Canberra.

Australian Bureau of Statistics 2012d, *Who are Australia's older people? Reflecting a nation: stories from the 2011 census (cat. no. 2071.0)*, viewed 2 August 2016, <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2071.0main+features752012-2013>.

Australian Bureau of Statistics 2013a, *Australian Health Survey: Updated results, 2011-2012 (cat. no. 4364.0.55.0003), CURF, expanded CURF, Remote Access Data Laboratory [RADL],* Australian Bureau of Statistics, Canberra.

Australian Bureau of Statistics 2013b, *Prisoners in Australia 2013 (cat. no. 4517.0)*, Australian Bureau of Statistics, Canberra.

Australian Bureau of Statistics 2015, *Prisoners in Australia 2015 (cat. no. 4517.0)*, Australian Bureau of Statistics, Canberra.

Australian Institute of Health and Welfare 2007, *Older Australians at a glance, 4th edn*, Australian Institute of Health and Welfare, Canberra.

Australian Institute of Health and Welfare 2011, *Comparing life expectancy of Indigenous people in Australia, New Zealand, Canada and the United States*, Australian Institute of Health and Welfare, Canberra.

Bai, JR, Mukherjee, DV, Befus, M, Apa, Z, Lowy, FD & Larson, EL 2014, 'Concordance between medical records and interview data in correctional facilities', *BMC Medical Research Methodology*, vol. 14, no. 50, pp. 1-6.

Baidawi, S 2016, 'Older prisoners: psychological distress and associations with mental health history, cognitive functioning, socio-demographic and criminal justice factors ', *International Psychogeriatrics*, vol. 28, no. 3, pp. 385-395.

Baidawi, S & Trotter, C 2015, 'Psychological distress among older prisoners: a literature review', *Journal of Forensic Social Work*, vol. 5, no. 1-3, pp. 234-257.

Baidawi, S & Trotter, C 2016, 'Psychological distress among older prisoners: associations with health, healthcare utilisation and the prison environment', *Journal of Correctional Health Care*, vol. 22, no. 4, pp. 354-366.

Baidawi, S, Trotter, C & O'Connor, DW 2016, 'An integrated exploration of psychological distress among older prisoners ', *Journal of Forensic Psychiatry and Psychology*, vol. 27, no. 6, pp. 815-834.

Baidawi, S, Turner, S, Trotter, C, Browning, C, Collier, P, O'Connor, DW & Sheehan, R 2011, 'Older prisoners - a challenge for Australian corrections', *Trends and Issues in Crime and Criminal Justice*, no. 426, pp. 1-8.

Baillie, AJ 2005, 'Predictive gender and education bias in Kessler's Psychological Distress Scale (K10)', *Social Psychiatry and Psychiatric Epidemiology*, vol. 40, no. 9, pp. 743-748.

Beck, AT, Ward, CH, Mendelson, M, Mock, J & Erbaugh, J 1961, 'An inventory for measuring depression', *Archives of General Psychology*, vol. 4, no. 561-571.

Binswanger, IA, Krueger, PM & Steiner, JF 2009, 'Prevalence of chronic medical conditions among jail and prison inmates in the USA compared with the general population', *Journal of Epidemiology and Community Health*, vol. 63, no. 11, pp. 912-919.

Bjørngaard, JH, Rustad, A-B & Kjelsberg, E 2009, 'The prisoner as patient - a health services satisfaction survey', *BMC Health Services Research*, vol. 9, p. 176.

Blais, MA & Baer, L 2010, 'Understanding rating scales and assessment instruments', in Lee Baer & MA Blais (eds), *Handbook of clinical rating scales and assessment in psychiatry and mental health*, Humana Press, New York, NY.

Bland, J & Altman, D 1997, 'Statistics notes: Cronbach's alpha', *British Medical Journal*, vol. 314, p. 572.

Boen, H, Dalgard, OS & Bjertness, E 2012, 'The importance of social support in the associations between psychological distress and somatic health problems and socio-economic factors among older adults living at home: a cross sectional study', *Biomed Central Geriatrics*, vol. 12, p. 27.

Bond, G, Thompson, L & Malloy, D 2005, 'Lifespan differences in the social networks of prison inmates', *International Journal of Aging and Human Development*, vol. 61, pp. 161-178.

Bonta, J & Gendreau, P 1990, 'Reexamining the cruel and unusual punishment of prison life', *Law & Human Behaviour*, vol. 14, no. 4, pp. 347-372.

Bourque, L 2004, 'Cross-sectional design', in MS Lewis-Beck, A Bryman & TF Liao (eds), *The SAGE encyclopedia of social science research methods*, Sage Publications, Thousand Oaks, CA.

Brännlund, A & Hammarström, A 2014, 'Higher education and psychological distress: a 27-year prospective cohort study in Sweden', *Scandinavian Journal of Public Health*, vol. 42, no. 2, pp. 155-162.

Braranov, D 2004, 'Postpositivism', in D Baranov (ed.), *Conceptual foundations of social research methods*, Paradigm Publishers, Boulder, CO.

Bretschneider, W & Elger, BS 2014, 'Expert perspectives on Western European prison health sevices: do ageing prisoners receive equivalent care?', *Journal of Bioethical Inquiry*, vol. 11, pp. 319-332.

Brodeur, J 2007, 'Comparative penology in perspective', *Crime and Justice*, vol. 36, no. 1, pp. 49-91.

Bruce, ML 2001, 'Depression and disability in late life', *American Journal of Geriatric Psychiatry*, vol. 9, no. 2, pp. 102-112.

Bruce, ML, Seeman, TE, Merrill, SS & Blazer, DG 1994, 'The impact of depressive symptomatology on physical disability: MacArthur Studies of Successful Aging', *American Journal of Public Health*, vol. 84, no. 11, pp. 1796-1799.

Bryman, A 2012, *Social research methods*, 4th edn, Oxford University Press, New York.

Bukstel, LH & Kilmann, PR 1980, 'Psychological effects of imprisonment on confined individuals', *Psychological Bulletin*, vol. 88, no. 2, pp. 469-493.

Burling, KL 1999, 'A correlational investigation of the relationship between psychological distress, life satisfaction, and health care utilization among elderly male inmates', PhD Thesis, The University of Iowa, Iowa City.

Butler, JS, Burkhauser, RV, Mitchell, JM & Pincus, TP 1987, 'Measurement error in self-reported health variables', *The Review of Economics and Statistics*, vol. 69, no. 4, pp. 644-650.

Butler, T, Allnutt, S, Cain, D, Owens, D & Muller, C 2005, 'Mental disorder in the New South Wales prisoner population ', *Australian and New Zealand Journal of Psychiatry*, vol. 39, pp. 407-413.

Butler, T, Allnutt, S, Kariminia, A & Cain, D 2007, 'Mental health status of Aboriginal and non-Aboriginal Australian prisoners', *Australian and New Zealand Journal of Psychiatry*, vol. 41, pp. 429-435.

Butler, T, Andrews, G, Allnutt, S, Sakashita, C, Smith, NE & Basson, J 2006, 'Mental disorders in Australian prisoners: a comparison with a community sample', *Australian and New Zealand Journal of Psychiatry*, vol. 40, pp. 272-276.

Byles, J, Gallienne, L, Blyth, FM & Banks, E 2012, 'Relationship of age and gender to the prevalence and correlates of psychological distress in later life', *International Psychogeriatrics*, vol. 24, no. 6, pp. 1009-1018.

Calasanti, TM & Slevin, KF 2001, 'A gender lens on old age', in TM Calasanti & KF Slevin (eds), *Gender, social inequalities, and aging*, AltaMira Press, Walnut Creek, CA.

Carlen, P 2005, 'Imprisonment and the penal body politic: the cancer of disciplinary governance', in A Liebling & S Maruna (eds), *The effects of imprisonment*, Willan Publishing, Cullompton, Devon.

CATI Technical Reference Group 2004, *Population health monitoring and surveillance: question development field testing. Field test 2 report: alcohol consumption, cardiovascular disease and tobacco consumption*, Australian Institute of Health and Welfare, Canberra, viewed 28th October 2014, <http://www.health.vic.gov.au/archive/archive2014/nphp/catitrg/documents/fieldtest02rpt.pdf>.

Centre for Epidemiology and Research 2008, *Summary report on adult health from the New South Wales Population Health Survey*, NSW Department of Health, Sydney.

Champion, DJ 2006, *Research methods for criminal justice and criminology*, Third edn, Pearson/Prentice Hall, Upper Saddle River, NJ.

Cicchetti, DV 2001, 'The precision of reliability and validity estimates re-visited: distinguishing between clinical and statistical significance of sample size requirements', *Journal of Clinical and Experimental Neuropsychology*, vol. 23, no. 5, pp. 695-700.

Cleary, PD, Mechanic, D & Weiss, N 1981, 'The effect of interviewer characteristics on responses to a mental health interview', *Journal of Health and Social Behavior*, vol. 22, no. 2, pp. 183-193.

Cockrell, J & Folstein, M 2002, 'Mini-mental state examination', in JRM Copeland, MT Abou-Saleh & DG Blazer (eds), *Principles and practice of geriatric psychiatry*, 2nd edn, John Wiley & Sons, West Sussex, UK, pp. 140-141.

Cohen, G 1996, 'Age and health status in a patient satisfaction survey', *Social Science & Medicine*, vol. 42, no. 7, pp. 1085-1093.

Cohen, J 1968, 'Weighted kappa: nominal scale agreement with provision for scaled disagreement or partial credit', *Psychological Bulletin*, vol. 70, pp. 213-220.

Cohen, J 1988, *Statistical power analysis for the behavioral sciences*, Lawrence Erlbaum Associates, Hillsdale, NJ.

Cohen, J & Cohen, P 1983, *Applied multiple regression/correlation analysis for the behavioral sciences*, Lawrence Erlbaum and Associates Inc., Mahwah, NJ.

Collin, C, Wade, D, Davies, S & Horne, V 1988, 'The Barthel Index: a reliability study', *International Disability Studies*, vol. 10, pp. 61-63.

Colsher, P, Wallace, R, Loeffelholz, P & Sales, M 1992, 'Health status of older male prisoners: a comprehensive survey', *American Journal of Public Health*, vol. 82, no. 6, pp. 881-884.

Corbetta, P 2003, 'Social research: theory, methods and techniques', in P Corbetta (ed.), *Paradigms of social research*, Sage Publications, London.

Corrections Victoria 2014, *Remand*, Corrections Victoria, viewed 28th May 2014, <http://www.corrections.vic.gov.au/home/prison/remand/>.

Crawley, E 2005, 'Institutional thoughtlessness in prisons and its impacts on the day-to-day prison lives of elderly men', *Journal of Contemporary Criminal Justice*, vol. 21, no. 4, pp. 350-363.

Crawley, E & Sparks, R 2005a, 'Hidden injuries: researching the experiences of older men in English prisons', *The Howard Journal of Criminal Justice*, vol. 4, pp. 345-356.

Crawley, E & Sparks, R 2005b, 'Older men in prison: survival, coping and identity', in A Liebling & S Maruna (eds), *The effects of imprisonment*, Willan Publishing, Cullompton, Devon, pp. 343-366.

Crawley, E & Sparks, R 2006, 'Is there life after imprisonment?', *Criminology and Criminal Justice*, vol. 6, no. 1, pp. 63-82.

Crewe, B 2005, 'Codes and conventions: the terms and conditions of contemporary inmate values', in A Liebeling & S Maruna (eds), *The effects of imprisonment*, Willan Publishing, Cullompton, Devon.

Cronbach, LJ 1951, 'Coefficient alpha and the internal structure of tests', *Psychometrika*, vol. 16, no. 3, pp. 297-334.

Crotty, M 1998a, *The foundations of social research: meaning and perspective in the research process*, Allen & Unwin, Crows Nest, NSW.

Crotty 1998b, 'Positivism: the march of science', in M Crotty (ed.), *The foundations of social research: meaning and perspective in the research process,* Allen & Unwin, Crows Nest, NSW.

Crum, R, Anthony, J, Bassett, S & Folsteinm, MF 1993, 'Population-based norms for the Mini-Mental State Examination by age and educational level', *Journal of the American Medical Association*, vol. 269, no. 18, pp. 2386-2391.

D'Ath, P, Katona, P, Mullan, E, Evans, S & Katona, C 1994, 'Screening, detection and management of depression in elderly primary care attenders. The acceptability and performance of the 15 item GDS and the development of the short versions', *Family Practice*, vol. 11, no. 260-266.

Darke, S 1998, 'Self-report among injecting drug users: a review', *Drug and Alcohol Dependence*, vol. 51, no. 3, pp. 253-263.

Dauvergne, M 2012, *Adult correctional statistics in Canada, 2010/2011*, Canadian Centre for Justice Statistics, Statistics Canada, Ottawa, viewed 21st October 2014, <http://www.statcan.gc.ca/pub/85-002-x/2012001/article/11715-eng.htm#a16>.

Davis, RE, Couper, MP, Janz, NK, Caldwell, CH & Resnicow, K 2010, 'Interviewer effects in public health surveys', *Health Education Research*, vol. 25, no. 1, pp. 14-26.

Davoren, M, Fitzpatrick, M, Caddow, F, Caddow, M, O'Neill, C, O'Neill, H & Kennedy, HG 2015, 'Older men and older women remand prisoners: mental illness, physical illness, offending patterns and needs', *International Psychogeriatrics*, vol. 27, no. 5, pp. 747-755.

Dawes, J 2009, 'Ageing prisoners: issues for social work', *Australian Social Work*, vol. 62, no. 2, pp. 258-271.

Day, A, Casey, S, Vess, J & Huisy, G 2012, 'Assessing the therapeutic climate of prisons', *Criminal Justice and Behavior*, vol. 39, no. 2, pp. 156-168.

Department of Health 2012, *Victorian population health survey 2010*, State Government of Victoria, Melbourne.

Department of Justice & Regulation - Corrections Victoria 2015, *Corrections ageing prisoner and offender policy framework 2015-20*, State Government of Victoria, Melbourne.

Derogatis, LR 2001, *BSI–18, Brief Symptom Inventory—18: administration, scoring and procedures*, NCS Pearson, Bloomington, MN.

DeVellis, RF 2003, *Scale development: theory and applications*, 2nd edn, Sage, Thousand Oaks, CA.

Dijktstra, W 1983, 'How interviewer variance can bias the results of research on interviewer effects', *Quality and Quantity*, vol. 17, pp. 179-187.

Dohrenwend, BP, Shrout, PE, Egri, G & Mendelsohn, FS 1980, 'Nonspecific psychological distress and other dimensions of psychopathology', *Archives of General Psychiatry*, vol. 37, pp. 1229-1236.

Donker, T, Comijs, H, Cuijpers, P, Terluin, B, Nolen, W, Zitman, F & Penninx, B 2010, 'The validity of the Dutch K10 and extended K10 screening scales for depressive and anxiety disorders', *Psychiatry Research*, vol. 176, pp. 45-50.

Edwards, WT & Potter, RH 2004, 'Psychological distress, prisoner characteristics, and system experience in a prison population', *Journal of Correctional Health Care*, vol. 10, no. 2, pp. 129-149.

Faden, RR & Beauchamp, TL 1986, *A history and theory of informed consent*, Oxford University Press, New York.

Falter, RG 1999, 'Selected predictors of health services needs of inmates over age 50', *Journal of Correctional Health Care*, vol. 6, pp. 149-175.

Fazel, S, Grann, M, Kling, B & Hawton, K 2011, 'Prison suicide in 12 countries: an ecological study of 861 suicides during 2003–2007', *Social Psychiatry and Psychiatric Epidemiology*, vol. 46, no. 3, pp. 191-195.

Fazel, S, Hope, T, O'Donnell, I & Jacoby, R 2004, 'Unmet treatment needs of older prisoners: a primary care survey', *Age and Ageing*, vol. 33, no. 4, pp. 396-398.

Fazel, S, Hope, T, O'Donnell, I, Piper, M & Jacoby, R 2001, 'Health of elderly male prisoners: worse than the general population, worse than younger prisoners', *Age and Ageing*, vol. 30, no. 5, pp. 403-407.

Fazel, S, Hope, T, O'Donnell, I & Jacoby, R 2001, 'Hidden psychiatric morbidity in elderly prisoners', *British Journal of Psychiatry*, vol. 179, pp. 535–539.

Fazel, S, Hope, T, O'Donnell, I & Jacoby, R 2002, 'Psychiatric, demographic and personality characteristics of elderly sex offenders', *Psychological Medicine*, vol. 32, pp. 219-226.

Fleiss, JL, Levin, B & Paik, MC 2003, 'The measurement of interrater agreement', in JL Fleiss, B Levin & MC Paik (eds), *Statistical methods for rates and proportions*, 3rd edn, John Wiley & Sons, Hoboken, NJ.

Fleming, J, Gately, N & Kraemer, S 2012, 'Mental health in Western Australian maximum security prisons', *Psychiatry, Psychology and the Law*, vol. 19, no. 1, pp. 60-74.

Flynn, C 2013, 'Understanding the risk of offending for the children of imprisoned parents: a review of the evidence', *Children and Youth Services Review*, vol. 35, no. 2, pp. 213-217.

Folstein, M, Folstein, S & McHugh, P 1975, '"Mini-mental state": a practical method for grading the cognitive state of patients for the clinician', *Journal of Psychiatric Research*, vol. 12, pp. 189-198.

Furukawa, TA, Kessler, RC, Slade, T & Andrews, G 2003, 'The performance of the K6 and K10 screening scales for psychological distress in the Australian National Survey of Mental Health and Well-Being', *Psychological Medicine*, vol. 33, pp. 357-362.

Gallagher, E 1988, 'Older men in prison: emotional, social, and physical health characteristics', PhD thesis, Simon Fraser University, Burnaby.

Gill, S, Butterworth, P, Rodgers, B & Mackinnon, A 2007, 'Validity of the mental health component scale of the 12-item Short-Form Health Survey (MCS-12) as measure of common mental disorders in the general population', *Psychiatry Research*, vol. 152, no. 1, pp. 63-71.

Goetting, A 1984, 'The elderly in prison: a profile', *Criminal Justice Review*, vol. 9, pp. 14-24.

Goldberg, D 1972, *The Detection of Psychiatric Illness By Questionnaire*, Oxford University Press, London.

Golden, J, Conroy, RM & Lawlor, BA 2009, 'Social support network structure in older people: underlying dimensions and association with psychological and physical health ', *Psychology, Health and Medicine*, vol. 14, pp. 280-290.

Goldman, N, Lin, I-F, Weinstein, M & Lin, Y-H 2003, 'Evaluating the quality of self-reports of hypertension and diabetes', *Journal of Clinical Epidemiology*, vol. 56, pp. 148-154.

Goodman, S 2008, 'A dirty dozen: twelve p-value misconceptions', *Seminars in Hematology*, vol. 45, pp. 135-140.

Gow, RM, Barrowmana, NJ, Laib, L & Mohera, D 2008, 'A review of five cardiology journals found that observer variability of measured variables was infrequently reported', *Journal of Clinical Epidemiology*, vol. 61, no. 4, pp. 394-401.

Grace, J, Krom, I, Maling, C, Butler, T, Midford, R & Simpson, P 2013, *Review of Indigenous offender health (updated)*, Australian Indigenous HealthInfoNet, viewed 22nd March 2016, <http://www.healthinfonet.ecu.edu.au/population-groups/offender-health/reviews/our-review>.

Grant, A 1999, 'Elderly inmates: issues for Australia', *Trends and Issues in Crime and Criminal Justice*, no. 115, pp. 1-6.

Greiner, L & Allenby, K 2010, *A Descriptive Profile of Older Women Offenders*, Correctional Service of Canada, Ottawa.

Grinnell, RM & Unrau, YA 2011, *Social work research and evaluation: foundations of evidence-based practice*, Ninth edn, Oxford University Press, New York.

Grix, J 2002, 'Introducing students to the generic terminology of social research', *Politics*, vol. 22, no. 3, pp. 175-186.

Guillemin, M & Gillam, L 2004, 'Ethics, reflexivity, and "ethically important moments" in research', *Qualitative Inquiry*, vol. 10, no. 2, pp. 261-280.

Haney, C 1997, 'Psychology and the limits to prison pain: confronting the coming crisis in the eighth amendment law', *Psychology, Public Policy and Law*, vol. 3, no. 4, pp. 499-588.

Hart, CB 1995, 'A primer in prison research', *Journal of Contemporary Criminal Justice*, vol. 11, pp. 165-176.

Harzke, AJ, Baillargeon, JG, Pruitt, SL, Pulvino, JS, Paar, DP & Kelley, MF 2010, 'Prevalence of chronic medical conditions among inmates in the Texas prison system', *Journal of Urban Health*, vol. 87, no. 3, pp. 486-503.

Hayes, AJ, Burns, A, Turnbull, P & Shaw, JJ 2012, 'The health and social needs of older male prisoners', *International Journal of Geriatric Psychiatry*, vol. 27, no. 11, pp. 1155-1162.

Heckenberg, D 2006, 'Ageing prisoners: significant cohort or forgotten minority?', Masters thesis, University of Tasmania, Hobart.

Her Majesty's Inspectorate of Prisons 2004, *'No Problems - old and quiet': older prisoners in England and Wales: a thematic review by HM Chief Inspector of Prisons*, HM Inspectorate of Prisons, London.

Hides, L, Lubman, DI, Devlin, H, Cotton, S, Aitken, C, Gibbie, T & Hellard, M 2007, 'Reliability and validity of the Kessler 10 and Patient Health Questionnaire among injecting drug users', *Australian and New Zealand Journal of Psychiatry*, vol. 41, pp. 166-168.

Hillyard, P, Sim, J, Tombs, S & Whyte, D 2004, 'Leaving a 'stain upon the silence'', *British Journal of Criminology*, vol. 44, no. 3, pp. 369-390.

Hochstetler, A, Murphy, DS & Simons, RL 2004, 'Damaged goods: exploring predictors of distress in prison inmates', *Crime and Delinquency*, vol. 50, pp. 436-57.

Howell, RJ, Payne, IR & Roe, AV 1971, *Bipolar Psychological Inventory*, Psychological Associates, Provo, UT.

Howse, K 2003, *Growing old in prison: a scoping study on older prisoners*, Prison Reform Trust, London.

Human Rights Watch 2012, *Old behind bars: The aging prison population in the United States*, Human Rights Watch, New York.

Hurley, W & Dunne, MP 1991, 'Psychological distress and psychiatric morbidity in women prisoners', *Australian and New Zealand Journal of Psychiatry*, vol. 1991, no. 25, pp. 461-470.

Hussein, A 2009, 'The use of triangulation in social sciences research: can qualitative and quantitative methods be combined?', *Journal of Comparative Social Work*, vol. 4, no. 1, pp. 1-12.

Jamieson, R & Grounds, A 2005, 'Release and adjustment: perspectives from studies of wrongly convicted and politically motivated prisoners', in A Liebling & S Maruna (eds), *The effects of imprisonment*, Willan Publishing, Cullompton, Devon.

Jewkes, Y 2011, 'Autoethnography and emotion as intellectual resources: doing prison research differently', *Qualitative Inquiry*, vol. 18, no. 1, pp. 63-75.

Jewkes, Y & Bennett, J 2008, *Dictionary of prisons and punishment*, Willan Publishing, Cullompton, Devon.

Johnson, EH 2000, 'Elders and Japanese corrections', in M. B. Rothman, BD Dunlop & P Entzen (eds), *Elders, crime, and the criminal justice system*, New York, Springer, pp. 222-235.

Jorm, AF 2001, 'History of depression as a risk factor for dementia: an updated review', *Australian and New Zealand Journal of Psychiatry*, vol. 35, pp. 776-781.

Justice Health and Forensic Mental Health Network 2013, *Year in review 2012/13*, Justice Health and Forensic Mental Health Network, Malabar, New South Wales.

Kakoullis, A, LeMesurier, N & Kingston, P 2010, 'The mental health of older prisoners', *International Psychogeriatrics*, vol. 22, no. 5, pp. 693-701.

Katon, W & Ciechanowski, P 2002, 'Impact of depression on chronic medical illness', *Journal of Psychosomatic Research*, vol. 53, no. 4, pp. 859-863.

Kerbs, J & Jolley, J 2007, 'Inmate-on-inmate victimization among older male prisoners', *Crime and Delinquency*, vol. 53, no. 2, pp. 187-218.

Kerbs, J & Jolley, J 2009, 'A commentary on age segregation for older prisoners: philosophical and pragmatic considerations for correctional systems', *Criminal Justice Review*, vol. 34, no. 1, pp. 119-139.

Kerbs, J, Jolley, J & Kanaboshi, N 2015, 'The interplay between law and social science in the age-segregation debate', *Journal of Crime and Justice*, vol. 38, no. 1, pp. 77-95.

Kessler, RC 2002, 'Categorical versus dimensional assessment controversy in the sociology of mental illness', *Journal of Health and Social Behavior*, vol. 43, pp. 171-188.

Kessler, RC, Andrews, G, Colpe, LJ, Hiripi, E, Mroczek, DK, Normand, S-LT, Walters, EE & Zazlavsky, AM 2002, 'Short screening scales to monitor population prevalences and trends in non-specific psychological distress', *Psychological Medicine*, vol. 32, pp. 959-976.

Kessler, RC, Berglund, P, Demler, O, Jin, R, Merikangas, KR & Walters, EE 2005, 'Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey replication', *Archives of General Psychiatry*, vol. 62, no. 6, pp. 593-602.

Kingston, P, Le Mesurier, N, Yorston, G, Wardle, S & Heath, L 2011, 'Psychiatric morbidity in older prisoners: unrecognized and undertreated', *International Psychogeriatrics*, vol. 23, no. 8, pp. 1354-1360.

Kinner, S 2006, *The post-release experiences of prisoners in Queensland*, Queensland Alcohol and Drug Research and Education Centre (QADREC), School of Population Health, The University of Queensland, Brisbane.

Koenig, HG 1995, 'Religion and older men in prison', *International Journal of Geriatric Psychiatry*, vol. 10, pp. 219-230.

Koenig, HG, Johnson, S, Bellard, J, Denker, M & Fenlon, R 1995, 'Depression and anxiety disorder among older male inmates at a federal correctional facility', *Psychiatric Services*, vol. 46, no. 4, pp. 399-401.

Kopera-Frye, K, Harrison, MT, Iribarne, J, Dampsey, E, Adams, M, Grabreck, T, McMullen, T, Peak, K, McCown, WG, & Harrison, WO 2013, 'Veterans aging in place behind bars: a structured living program that works', *Psychological Services*, vol. 10, no. 1, pp. 79-86.

Krabill, JJ & Aday, RH 2005, 'Exploring the social world of aging female prisoners', *Women and Criminal Justice*, vol. 17, no. 1, pp. 27-53.

Kratcoski, P & Babb, S 1990, 'Adjustment of older inmates: an analysis by institutional structure and gender', *Journal of Contemporary Criminal Justice*, vol. 6, pp. 264-281.

Landis, RJ & Koch, GG 1977, 'The measurement of observer agreement for categorical data', *Biometrics*, vol. 33, pp. 157-174.

Lattin, JM, Carroll, JD & Green, PE 2003, *Analyzing multivariate data*, Thomson Brooks/Cole, Pacific Grove, CA.

Leach, J & Neto, A 2011, *Offender population trends: aged offenders in NSW*, Corrective Services New South Wales, Sydney.

Leigey, ME & Hodge, JP 2012, 'Gray matters: gender differences in the physical and mental health of older inmates', *Women and Criminal Justice*, vol. 22, pp. 289-308.

Lenze, EJ, Rogers, JC, Martire, LM, Mulsant, BH, Rollman, BL, Dew, MA, Schulz, R & Reynolds III, CF 2001, 'The association of late-life depression and anxiety with physical disability: a review of the literature and prospectus for future research', *The American Journal of Geriatric Psychiatry*, vol. 9, no. 2, pp. 113-135.

Liddy, C, Wiens, M & Hogg, W 2011, 'Methods to achieve high interrater reliability in data collection from primary care medical records', *Annals of Family Medicine*, vol. 9, no. 1, pp. 57-62.

Liebling, A 1999, 'Doing research in prison: breaking the silence?', *Theoretical Criminology*, vol. 3, no. 2, pp. 147-173.

Liebling, A 2001, 'Whose side are we on? Theory, practice and allegiances in prisons research', *The British Journal of Criminology*, vol. 41, no. 3, pp. 472-484.

Liebling, A, Durie, L, Stiles, A & Tait, S 2005, 'Revisiting prison suicide: the role of fairness and distress', in A Liebling & S Maruna (eds), *The effects of imprisonment*, Willan Publishing, Cullompton, Devon, pp. 209-231.

Lindquist, C & Lindquist, CA 1997, 'Gender differences in distress: mental health consequences of enviromental stress among jail inmates', *Behavioral Sciences and the Law*, vol. 15, no. 4, pp. 503-523.

Loeb, S & AbuDagga, A 2006, 'Health-related research on older inmates: an integrative view', *Research in Nursing and Health*, vol. 29, no. 6, pp. 556-565.

Loeb, S, Penrod, J, McGhan, J, Kitt-Lewis, E & Hollenbeak, CS 2014, 'Who wants to die in here? Perspectives of prisoners with chronic conditions', *Journal of Hospice and Palliative Nursing*, vol. 16, no. 3, pp. 173-181.

Loeb, S & Steffensmeier, D 2011, 'Older inmates' pursuit of good health: a focus group study', *Research on Gerontological Nursing*, vol. 4, no. 3, pp. 185-194.

Loeb, S, Steffensmeier, D & Lawrence, F 2008, 'Comparing incarcerated and community-living older men's health', *Western Journal of Nursing Research*, vol. 30, no. 2, pp. 234-249.

Lowman, J & Palys, T 2001, 'The ethics and law of confidentiality in criminal justice research: a comparison of Canada adn the United States', *International Criminal Justice Review*, vol. 11, pp. 1-33.

Luber, MP, Meyers, BS, Williams-Russo, PG, Hollenberg, JP, DiDomenico, TN, Charlson, ME & Alexopoulos, GS 2001, 'Depression and service utilization in elderly primary care patients', *American Journal of Geriatric Psychiatry*, vol. 9, no. 2, pp. 169-176.

Mahoney, FI & Barthel, DW 1965, 'Functional evaluation: the Barthel Index', *Maryland Medical Journal*, vol. 14, pp. 61-65.

Mann, N 2012a, 'Ageing child sex offenders in prison: denial, manipulation and community', *The Howard Journal*, vol. 51, no. 4, pp. 345-358.

Mann, N 2012b, *Doing harder time? The experiences of an ageing male prison population in England and Wales,* Ashgate Publishing Limited, Farnham.

Marquart, JW, Merianos, DE & Doucet, G 2000, 'The health-related concerns of older prisoners: implications for policy', *Ageing and Society*, vol. 20, no. 1, pp. 77-96.

Maschi, T & Baer, J 2013, 'The heterogeneity of the world assumptions of older adults in prison: do differing worldviews have a mental health effect?', *Traumatology*, vol. 19, no. 1, pp. 65-72.

Maschi, T, Dennis, KS, Gibson, S, MacMillan, T, Sternberg, S & Hom, M 2011, 'Trauma and stress among older adults in the criminal justice system: a review of the literature with implications for social work', *Journal of Gerontological Social Work*, vol. 54, no. 4, pp. 390-424.

Maschi, T, Kwak, J, Ko, E & Morrissey, M 2012, 'Forget me not: dementia in prison', *The Gerontologist*, vol. 52, no. 4, pp. 441-451.

Maschi, T, Morgen, K, Zgoba, K, Courtney, D & Ristow, J 2011, 'Age, cumulative trauma and stressful life events, and post-traumatic stress symptoms among older adults in prison: do subjective impressions matter?', *The Gerontologist*, vol. 51, no. 5, pp. 675-686.

Maschi, T, Suftin, SL & O'Connell, B 2012, 'Aging, mental health, and the criminal justice system: a content analysis of the literature', *Journal of Forensic Social Work*, vol. 2, pp. 162-185.

Maschi, T, Viola, D, Morgen, K & Koskinen, L 2013, 'Trauma, stress, grief, loss, and separation among older adults in prison: the protective role of coping resources on physical and mental well-being', *Journal of Crime and Justice*, vol. 38, no. 1, pp. 113-136.

Maschi, T, Viola, D & Sun, F 2013, 'The high cost of the international aging prisoner crisis: well-being as the common denominator for action', *The Gerontologist*, vol. 53, no. 4, pp. 543-554.

Massé, R 2000, 'Qualitative and quantitative analyses of psychological distress: methodological complementarity and ontological incommensurablity', *Qualitative Health Research*, vol. 10, no. 3, pp. 411-423.

Maxfield, M & Babbie, E 2011, *Research methods for criminal justice and criminology*, 7th edn, Wadsworth, Cengage Learning, Stamford, CT.

McNamara, BJ, Banks, E, Gubhaju, L, Williamson, A, Joshy, G, Raphael, B & Eades, SJ 2014, 'Measuring psychological distress in older Aboriginal and Torres Strait Islanders Australians: a comparison of the K-10 and K-5', *Australian and New Zealand Journal of Public Health*, vol. 38, no. 6, pp. 567-573.

Meeks, S, Sublett, R, Kostiwa, I, Rodgers, JR & Haddix, D 2008, 'Treating depression in the prison nursing home: demonstrating research-to-practice translation', *Clinical Case Studies*, vol. 7, no. 6, pp. 555-574.

Mi, MY, Collins, JE, Lerner, V, Losina, E & Katz, JN 2013, 'Reliability of medical record abstraction by non-physicians for orthopedic research', *BMC Musculoskeletal Disorders*, vol. 14, no. 181, pp. 1-7.

Mirowsky, J & Ross, CE 1984, 'Socially-desirable response and acquiescence in a cross-cultural survey of mental health', *Journal of Health and Social Behavior*, vol. 25, no. 2, pp. 189-197.

Mirowsky, J & Ross, CE 1992, 'Age and depression', *Journal of Health and Social Behavior*, vol. 33, no. 3, pp. 187-205.

Mirowsky, J & Ross, CE 2003a, *Education, social status, and health*, Aldine de Gruyter, New York.

Mirowsky, J & Ross, CE 2003b, *Social causes of psychological distress*, Aldine de Gruyter, New York.

Mitka, M 2004, 'Ageing prisoners stressing health care system', *Journal of the American Medical Association*, vol. 292, no. 4, pp. 423-424.

Mitscherlich, A & Mielke, F 1949, *Doctors of infamy: the story of the Nazi medical crimes*, Schuman, New York.

Morton, S 2015, 'Progressing research impact assessment: a ‘contributions’ approach', *Research Evaluation*, vol. 24, pp. 405-419.

Moser, DJ, Arndt, S, Kanz, JE, Benjamin, ML, Bayless, JD, Reese, RL, Paulsen, JS & Flaum, MA 2004, 'Coercion and informed consent in research involving prisoners', *Comprehensive Psychiatry*, vol. 45, no. 1, pp. 1-9.

Moum, T 1998, 'Mode of administration and interviewer effects in self-reported symptoms of anxiety and depression', *Social Indicators Research*, vol. 45, no. 1-3, pp. 279-318.

Murdoch, N, Morris, P & Holmes, C 2008, 'Depression in elderly life sentence prisoners', *International Journal of Geriatric Psychiatry*, vol. 23, pp. 957-962.

Murray, CK 2000, *Validating the Brief Symptom Inventory for use with a correctional population*, PhD Thesis, Univeristy of Iowa, Iowa City.

National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research 1979, *The Belmont Report: ethical principles and guidelines for the protection of human subjects of research (DHEW publication (OS) 78-0012)*, U.S. Department of Health, Education and Welfare, Washington, DC, <http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html#xbenefit>.

New South Wales Department of Corrective Services 2012, *NSW inmate census 2012 - summary characteristics*, New South Wales Department of Corrective Services, Sydney.

New Zealand Department of Corrections 2014, *Trends in the offender population*, New Zealand Department of Corrections, Wellington.

Newmann, JP 1989, 'Aging and depression', *Psychology and Aging*, vol. 4, no. 2, pp. 150-165.

NSW Inspector of Custodial Services 2015, *Old and inside: managing aged offenders in custody* NSW Government, Sydney.

O'Connor, DW & Parslow, RA 2010, 'Mental health scales and psychiatric diagnoses: responses to GHQ-12, K-10 and CIDI across the lifespan', *Journal of Affective Disorders*, vol. 121, pp. 263-267.

O'Connor, DW, Pollitt, PA, Hyde, JB, Fellows, JL, Miller, ND, Brook, CPB & Reiss, BB 1989, 'The reliability and validity of the mini-mental state in a British community survey', *Journal of Psychiatric Research*, vol. 23, no. 1, pp. 87-96.

O'Hara, K, Forsyth, K, Webb, R, Senior, J, Hayes, AJ, Challis, D, Fazel, S & Shaw, J 2016, 'Links between depressive symptoms and unmet health and social care needs among older prisoners', *Age and Ageing*, vol. 45, no. 1, pp. 158-163.

Office of the Correctional Investigator Canada 2011, *Annual report of the Office of the Correctional Investigator 2010-11*, Office of the Correctional Investigator, Ottawa, <http://www.oci-bec.gc.ca/cnt/rpt/annrpt/annrpt20102011-eng.aspx>.

Overholser, JC 1987, 'Ethical issues in prison research: a risk/benefit analysis', *Behavioral Sciences and the Law*, vol. 5, no. 2, pp. 187-202.

Pallant, J 2011, *SPSS survival manual*, 4th edn, Allen and Unwin, Sydney.

Parmalee, PA, Lawton, MP & Katz, IR 1989, 'Psychometric properties of the Geriatric Depression Scale among the institutionalized aged', *Psychological Assessment*, vol. 1, no. 4, pp. 331-338.

Paul, C, Ayis, S & Ebrahim, S 2006, 'Psychological distress, loneliness and disability in old age', *Psychology, Health and Medicine*, vol. 11, no. 2, pp. 221-232.

Paulhus, DL 1991, 'Measurement and control of response bias', in JP Robinson, PS Shaver & LS Wrightman (eds), *Measures of personality and social psychological attitudes*, Academic Press Inc, San Diego, CA, pp. 17-59.

Phillips, DC 1990, 'Postpositivistic science: myths and realities', in EG Guba (ed.), *The paradigm dialogue*, Sage Publications, Newbury Park, CA.

Phillips, J 1996, 'Crime and older offenders', *Practice: Social work in action*, vol. 8, no. 1, pp. 43-54.

Phillips, LL, Allen, RS, Salekin, KL & Cavanaugh, RK 2009, 'Care alternatives in prison systems: factors influencing end-of-life treatment selection', *Criminal Justice and Behaviour*, vol. 36, pp. 620-634.

Piacentini, L 2011, 'Researching Russian prisons: a consideration of new and established methodologies in prison research', in Y Jewkes (ed.), *Handbook on prisons*, Willan Publishing, Abingdon, Oxon.

Popper, KR 1963, *Conjectures and refutations: The growth of scientific knowledge*, Routledge and Kegan Paul, London.

Porporino, FJ & Zamble, E 1984, 'Coping with imprisonment', *Canadian Journal of Criminology*, vol. 26, no. 4, pp. 403-421.

Potter, E, Cashin, A, Chenoweth, L & Jeon, Y 2007, 'The healthcare of older inmates in the correctional setting', *International Journal of Prisoner Health*, vol. 3, no. 3, pp. 204-213.

Prison Reform Trust 2014, *Prison for old people can be double punishment*, Prison Reform Trust, viewed 31st October 2016, <http://www.prisonreformtrust.org.uk/PressPolicy/News/ItemId/210/vw/1>.

Redfern Legal Centre 2013, *The law handbook - your practical guide to the law in New South Wales*, Thomson Reuters, Sydney.

Reimer, G 2008, 'The graying of the US prisoner population', *Journal of Correctional Health Care*, vol. 14, no. 3, pp. 202-208.

Reviere, R & Young, VD 2004, 'Aging behind bars: health care for older female inmates', *Journal of Women and Aging*, vol. 16, no. 1-2, pp. 55-69.

Roberts, L & Indermaur, D 2003, 'Signed consent forms in criminological research: protection for researchers and ethics committees but a threat to research participants?', *Psychiatry, Psychology and the Law*, vol. 10, no. 2, pp. 289-299.

Roberts, L & Indermaur, D 2008, 'The ethics of research with prisoners', *Current Issues in Criminal Justice*, vol. 19, no. 3, pp. 309-26.

Roesch, R, Ogloff, JRP & Eaves, D 1995, 'Mental health research in the criminal justice system: the need for common approaches and international perspectives', *International Journal of Law and Psychiatry*, vol. 18, no. 1, pp. 1-14.

Rowan-Szal, GA, Joe, GW, Bartholomew, NG, Pankow, J & Simpson, DD 2012, 'Brief trauma and mental health assessments for female offenders in addiction treatment', *Journal of Offender Rehabilitation*, vol. 51, no. 1-2, pp. 57-77.

Rubin, A & Babbie, E 2013, *Essential research methods for social work*, 3rd edn, Thomson Brooks/Cole, Belmont CA.

Sapsford, RJ 1978, 'Life-sentence prisoners: psychological changes during sentence', *British Journal of Criminology*, vol. 18, no. 2, pp. 128-145.

Sayer, A 2000, *Realism and Social Science*, Sage, London.

Schieman, S, van Gundy, K & Taylor, J 2001, 'Status, role, and resource explanations for age patterns in psychological distress', *Journal of Health and Social Behavior*, vol. 42, no. 1, pp. 80-96.

Schmitt, N 1996, 'Uses and abuses of coefficient alpha', *Psychological Assessment*, vol. 8, pp. 350-353.

Schneider, K, Richters, J, Butler, T, Yap, L, Richards, A, Grant, L, Smith, AMA & Donovan, B 2011, 'Psychological distress and experience of sexual and physical assault among Australian prisoners', *Criminal Behaviour and Mental Health*, vol. 21, no. 5, pp. 333-349.

Schoeni, R & Ofstedal, M 2010, 'Key themes in research on the demography of aging', *Demography*, vol. 47, no. Suppl, pp. S5-S15.

Schofield, P, Butler, T, Hollis, S & D'este, C 2011, 'Are prisoners reliable survey respondents? A validation of self-reported traumatic brain injury (TBI) against hospital medical records', *Brain Injury*, vol. 25, no. 1, pp. 74-82.

Schüklenk, U 2000, 'Protecting the vulnerable: testing times for clinical research ethics', *Social Science and Medicine*, vol. 51, pp. 969-977.

Shantz, LR & Frigon, S 2009, 'Aging, women and health: from the pains of imprisonment to the pains of reintegration', *International Journal of Prisoner Health*, vol. 5, no. 1, pp. 3-15.

Shinar, D, Gross, CR, Bronstein, KS, Licata-Gehr, EE, Eden, DT, Cabrera, AR, Fishman, IG, Roth, AA, Barwick, JA & Kunitz, SC 1987, 'Reliability of the activities of daily living scale and its use in telephone interview', *Archives of Physical Medicine and Rehabilitation*, vol. 68, no. 10, pp. 723-728.

Singh, K 2007, *Quantitative social research methods*, Sage, New Delhi.

Slade, T, Grove, R & Burgess, P 2011, 'Kessler Psychological Distress Scale: normative data from the 2007 Australian National Survey of Mental Health and Wellbeing', *Australian and New Zealand Journal of Psychiatry*, vol. 45, pp. 308-316.

Slotboom, M-A, Kruttschnitt, C, Bijleveld, C & Menting, B 2011, 'Psychological well-being of incarcerated women in the Netherlands: importation or deprivation', *Punishment and Society*, vol. 13, pp. 176-197.

Smith, H, Robinson, E & Young, M 2007, 'The relationship among wellness, psychological distress, and social desirability of entering Master's-level counselor trainees', *Counselor Education and Supervision*, vol. 47, pp. 96-109.

Snyder, C, van Wormer, K, Chadha, J & Jaggers, J 2009, 'Older adult inmates: the challenge for social work', *Social Work*, vol. 54, no. 2, pp. 117-124.

Spielberger, C 1979, 'Preliminary Manual for the State-Trait Personality Inventory', Unpublished Manuscript.

Steering Committee for the Review of Government Service Provision 2016, *Report on government services 2016, Vol. C, Justice*, Productivity Commission, Canberra.

Sterns, AA, Lax, G, Sed, C, Keohane, P & Sterns, RS 2008, 'The growing wave of older prisoners: a national survey of older prisoner health, mental health and programming', *Corrections Today*, vol. 70, no. 4, pp. 70-72,74-76.

Stevens, J 1996, *Applied multivariate statistics for the social sciences*, 3rd edn, Lawrence Erlbaum, Mahwah, NJ.

Stojkovic, S 2007, 'Elderly prisoners: a growing and forgotten group within correctional systems vulnerable to elder abuse', *Journal of Elder Abuse and Neglect*, vol. 19, no. 3, pp. 97-117.

Strawbridge, W, Deleger, S, Roberts, R & Kaplan, G 2002, 'Physical activity reduces the risk of subsequent depression for older adults', *American Journal of Epidemiology*, vol. 156, no. 4, pp. 328-334.

Stuck, AE, Walthert, JM, Nikolaus, T, Büla, CJ, Hohmann, C & Beck, JC 1999, 'Risk factors for functional status decline in community-living elderly people: a systematic literature review', *Social Science and Medicine*, vol. 48, pp. 455-469.

Sykes, GM 1958a, 'Crisis and equilibrium', in GM Sykes (ed.), *The society of captives: a study of a maximum security prison*, Princeton University Press, Princeton, NJ.

Sykes, GM 1958b, 'The pains of imprisonment', in GM Sykes (ed.), *The society of captives: a study of a maximum security prison*, Princeton University Press, Princeton, NJ, pp. 285-294.

Tabachnick, BG & Fidell, LS 2014, *Using multivariate statistics* Sixth Ed., Pearson New International edn, Pearson Education Limited, Essex, England.

Tavakol, M & Dennick, R 2011, 'Making sense of Cronbach's alpha', *International Journal of Medical Education*, vol. 2, pp. 53-55.

Teller, FE & Howell, RJ 1981, 'The older prisoner: criminal and psychological characteristics', *Criminology*, vol. 18, no. 4, pp. 549-555.

The National Health and Medical Research Council, The Australian Research Council & The Australian Vice-Chancellors' Committee 2007, *National statement on ethical conduct in human research (Updated March 2014)*, Commonwealth of Australia, Canberra.

Thomas, EG, Spittal, MJ, Heffernan, EB, Taxman, FS, Alati, R & Kinner, S 2016, 'Trajectories of psychological distress after prison release: implications for mental health service need in ex-prisoners', *Psychological Medicine*, vol. 46, pp. 611-621.

To, T, Estrabillo, E, Wang, C & Cicutto, L 2008, 'Examining intra-rater and inter-rater response agreement: a medical chart abstraction study of a community-based asthma care program', *MBC Medical Research Methodology*, vol. 8, no. 29, pp. 1-9.

Toch, H 1977, *Living in prison: the ecology of survival*, Free Press, New York.

Trotter, C & Baidawi, S 2015, 'Older prisoners: challenges for inmates and prison management', *Australian and New Zealand Journal of Criminology*, vol. 48, no. 2, pp. 200-218.

Tubex, H 2013, 'Pitfalls of comparative (penological) research and how to overcome them', in K Beyens, C Christiaens, B Claes, S De Ridder, H Tournel & H Tubex (eds), *The pains of doing criminological research*, VUBPress, Brussels, pp. 195-215.

UK Department of Health 2007, *A pathway to care for older offenders: a toolkit for good practice*, UK Department of Health, Leeds.

United Nations 2016, *Standard minimum rules for the treatment of prisoners (the Nelson Mandela Rules)*, United Nations, Geneva, viewed 21st October 2014, <http://www.refworld.org/docid/3ae6b36e8.html>.

United Nations Office on Drugs and Crime 2009, *Handbook on prisoners with special needs*, United Nations, New York.

Uzoaba, JHE 1998, *Managing older offenders: where do we stand?*, Correctional Service of Canada, Ottawa.

Vanhooren, S, Leijssen, M & Dezutter, J 2015, 'Loss of meaning as a predictor of distress in prison', *International Journal of Offender Therapy and Comparative Criminology*. doi: 10.177/0306624X15621984

Vaughn, MG, Pettus-Davis, C & Shook, JJ 2012, 'Field research with adults in the criminal justice system', in MG Vaughn, C Pettus-Davis & JJ Shook (eds), *Conducting research in juvenile and criminal justice settings* pp. 73-96.

Vega, M & Silverman, M 1988, 'Stress and the elderly convict', *International Journal of Offender Therapy and Comparative Criminology*, vol. 32, pp. 153-162.

Victorian Department of Justice 2011, *Statistical profile of the Victorian prison system: 2006-07 to 2010-11*, Victorian Department of Justice, Melbourne.

Wade, D & Collin, C 1988, 'The Barthel ADL Index: a standard measure of physical disability?', *International Disability Studies*, vol. 10, no. 2, pp. 64-67.

Wahidin, A 2004, *Older women in the criminal justice system: running out of time*, Jessica Kingsley Publishers, London.

Wahidin, A 2011, 'Ageing behind bars, with particular reference to older women in prison', *Irish Probation Journal*, vol. 8, pp. 109-123.

Wahidin, A & Aday, RH 2005, 'The needs of older men and women in the criminal justice system: an international perspective', *Prison Service Journal*, vol. 160, pp. 13-22.

Waldram, JB 1998, 'Anthropology in prison: negotiating consent and accountability with a "captured" population', *Human Organization*, vol. 57, no. 2, pp. 238-244.

Walmsley, R 2016, *World prison population list*, Institute for Criminal Policy Research, University of London, London, viewed 11th March 2015,

<http://www.prisonstudies.org/sites/default/files/resources/downloads/world_prison_population_list_11th_edition_0.pdf>.

Wangmo, T, Handtke, V, Bretschneider, W & Elger, BS 2015, 'Prisons should mirror society: the debate on age segregated housing for older prisoners', *Ageing and Society*. doi: 10.1017/S0144686X15001373

Williams, BA, Ahalt, C & Greifinger, R 2014, 'The older prisoner and complex chronic medical care', in S Enggist, L Møller, G Galea & C Udesen (eds), *Prisons and health*, World Health Organisation Europe, Copenhagen, Denmark, pp. 165-170.

Williams, BA, Lindquist, KL, Sudore, RL, Strupp, HM, Willmott, DJ & Walter, LC 2006, 'Being old and doing time: functional impairment and adverse experiences of geriatric female prisoners', *Journal of the American Geriatrics Society*, vol. 54, no. 4, pp. 702-707.

Williams, BA, McGuire, J, Lindsay, RG, Baillargeon, J, Cenzer, IS, Lee, SJ & Kushel, M 2010, 'Coming home: health status and homelessness risk of older pre-release prisoners', *Journal of general internal medicine*, vol. 25, no. 10, pp. 1038-1044.

Williams, BA, Stern, MF, Mellow, J, Safer, M & Grefinger, RB 2012, 'Aging in correctional custody: setting a policy agenda for older prisoner health care', *American Journal of Public Health*, vol. 102, no. 8, pp. 1475-1481.

Williams, J 2012, 'Social care and older prisoners', *Journal of Social Work*, vol. 13, no. 5, pp. 471-491.

Wilson, RS, Schneider, JA, Boyle, PA, Arnold, SE, Tang, Y & Bennett, DA 2007, 'Chronic distress and incidence of mild cognitive impairment', *Neurology*, vol. 68, no. 24, pp. 2085-2092.

World Health Organization 2012, *Definition of an older or elderly person*, viewed 15th October 2014, <http://www.who.int/healthinfo/survey/ageingdefnolder/en/>.

World Medical Association 2013, 'World medical association declaration of Helsinki: ethical principles for medical research involving human subjects', *Journal of the American Medical Association*, vol. 310, no. 20, pp. 2191-2194.

Wright, KN 1991, 'A study of individual, environmental and interactive effects in explaining adjustment to prison', *Justice Quarterly*, vol. 8, no. 2, pp. 217-242.

Yates, JA, Clare, L & Woods, RT 2013, 'Mild cognitive impairment and mood: a systematic review', *Reviews in Clinical Gerontololgy*, vol. 23, pp. 317-356.

Yorston, G & Taylor, P 2006, 'Commentary: older offenders - no place to go?', *Journal of the American Academy of Psychiatry and Law*, vol. 34, no. 3, pp. 333-337.

Appendices

Appendix 1. Study flyer

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT

Very little is known about people's experiences of prison and leaving prison, and the best ways of managing their circumstances.

We would like to speak with prisoners during a one-hour interview, to find out about their experiences of being in prison.

If you are interested in participating in this project, please fill out the slip below and give it to your unit manager, and we will arrange a time to come and speak with you.

A report about the project findings will be available in the prison library.

Name:

CRN:

Prison Unit:

MONASH University

Appendix 2. Study explanatory statement – Older pre-release prisoners and younger prisoners

MONASH University

Project Title: A Strategic Framework for the Management of Australia's Ageing Offenders

This information sheet is for you to keep.

Who are we?

We are a group of researchers from Monash University, including researchers from the Department of Social Work (Associate Professor Christopher Trotter and Associate Professor Rosemary Sheehan), the School of Primary Health Care (Professor Colette Browning), the School of Psychology, Psychiatry and Psychological Medicine (Professor Daniel O'Connor) and the Department of Business and Economics (Professor Paul Collier). This project is funded by the Australian Research Council, the Victorian Department of Justice and the Victorian Association for the Care and Resettlement of Offenders (VACRO).

Why are we asking you to participate?

We want to hear from prisoners, prison staff and parole officers to understand how prisons manage older prisoners and how they could do this better.

The purpose of the research

We are hoping to find the best way that all prisons can look after older prisoners.

Possible benefits

We hope that the research can help the people working with ageing prisoners as well as the prisoners themselves. By being in the study, you will help us understand the best way to look after ageing prisoners.

What does the research involve?

You will be interviewed in two 1- hour face to face interviews about your thoughts and experiences of being in prison. These interviews will happen about 6 months apart. The first interview will be done at the prison at a time you and the programs manager decide. The second interview will be done a few months after you leave prison.

You will be asked if it is okay for:

- The researchers to look at your personal corrections and health information;
- The information collected to be used in further postgraduate research, and
- The researchers to contact you after you leave prison

Reimbursement

Participants will be reimbursed for their participation in the second interview only. This reimbursement will be in the form of a gift voucher which will be given to participants at the end of the second interview.

Inconvenience/discomfort

Even though we do not expect that being in the interview will cause you any distress, it is possible that you could find some questions upsetting or too personal. If this happens, you can either stop the interview or refuse to answer these questions. Also, we will provide you with contact details for support services you can speak to straight away or at a later time, or help you make contact with these supports, if you would like.

Can I withdraw from the research?

Being part of this study is completely voluntary and you do not have to be in the study. You will have to sign a consent form before the interview. You will not be disadvantaged in any way if you choose not to participate or withdraw from this project. If you do participate, you can only withdraw before the end of the interview. After this time your answers will be put together with other people's responses and it will be impossible to know which interview results are yours to remove them.

Confidentiality

All the information collected in this research project will be confidential and will not have your name on it. Only the researcher doing the interviews will know your name and prison details. Only the researchers will have access to the interview notes. Any published material relating to this research will not include any information that could identify you. This information is not usually shared with other people, however we will have to tell the prison if you threaten to harm anybody else or yourself. Do not disclose any matter that has not been dealt with by a court.

Storage of data

The interview notes will be kept at the University in a locked cupboard/filing cabinet for 5 years. A report of the study may be published, but it will not be possible to tell who was in the study from these reports.

Results

If you would like information about the research results, please contact Christopher Trotter on 9903 1135. The findings are accessible for 2 years.

If you would like to contact the researchers about any aspect of this study, please contact the Chief Investigator:	If you have a complaint about this research, please contact the Official Prison Visitor, who will contact:
Associate Professor Christopher Trotter Department of Social Work Monash University Caulfield Campus Tel: (03) 9903 1135 Fax: (03) 9903 1141 Email: Christopher.Trotter@med.monash.edu.au	Executive Officer, Human Research Ethics Monash University Human Research Ethics Committee (MUHREC) Project CF10/0946 - 2010000482 Building 3e Room 111 Research Office Monash University VIC 3800 Tel: +61 3 9905 2052 Fax: +61 3 9905 3831 Email: muhrec@adm.monash.edu.au

Appendix 3. Study explanatory statement – Older prisoners (early to mid-sentence)

MONASH University

Project Title: A Strategic Framework for the Management of Australia's Ageing Offenders

This information sheet is for you to keep.

Who are we?

We are a group of researchers from Monash University, including researchers from the Department of Social Work (Associate Professor Christopher Trotter and Associate Professor Rosemary Sheehan), the School of Primary Health Care (Professor Colette Browning), the School of Psychology, Psychiatry and Psychological Medicine (Professor Daniel O'Connor) and the Department of Business and Economics (Professor Paul Collier). This project is funded by the Australian Research Council, the Victorian Department of Justice and the Victorian Association for the Care and Resettlement of Offenders (VACRO).

Why are we asking you to participate?

We want to hear from prisoners, prison staff and parole officers to understand how prisons manage older prisoners and how they could do this better.

The purpose of the research

We are hoping to find the best way that all prisons can look after older prisoners.

Possible benefits

We hope that the research can help the people working with ageing prisoners as well as the prisoners themselves. By being in the study, you will help us understand the best way to look after aging prisoners.

What does the research involve?

You will be interviewed in a 1-hour face to face interview about your thoughts and experiences of being in prison. These interviews will be done at the prison at a time you and the programs manager decide.

You will be asked if it is okay for:

- The researchers to look at your personal corrections and health information
- The information collected to be used in further postgraduate research.

Reimbursement

Participants will be reimbursed for their participation in the second interview only. This reimbursement will be in the form of a gift voucher which will be given to participants at the end of the second interview.

Inconvenience/discomfort

Even though we do not expect that being in the interview will cause you any distress, it is possible that you could find some questions upsetting or too personal. If this happens, you can either stop the interview or refuse to answer these questions. Also, we will provide you with contact details for support services you can speak to straight away or at a later time, or help you make contact with these supports, if you would like.

Can I withdraw from the research?

Being part of this study is completely voluntary and you do not have to be in the study. You will have to sign a consent form before the interview. You will not be disadvantaged in any way if you choose not to participate or withdraw from this project. If you do participate, you can only withdraw before the end of the interview. After this time your answers will be put together with other people's responses and it will be impossible to know which interview results are yours to remove them.

Confidentiality

All the information collected in this research project will be confidential and will not have your name on it. Only the researcher doing the interviews will know your name and prison details. Only the researchers will have access to the interview notes. Any published material relating to this research will not include any information that could identify you.

This information is not usually shared with other people, however we will have to tell the prison if you threaten to harm anybody else or yourself. The researcher will also have to inform the authorities if you disclose any offence which you have not been apprehended, prosecuted or convicted. Do not disclose any matter that has not been dealt with by a court.

Storage of data

The interview notes will be kept at the University in a locked cupboard/filing cabinet for 5 years. A report of the study may be published, but it will not be possible to tell who was in the study from these reports.

Results

If you would like information about the research results, please contact Christopher Trotter on 9903 1135. The findings are accessible for 2 years.

If you would like to contact the researchers about any aspect of this study, please contact the Chief Investigator:	If you have a complaint about this research, please contact the Official Prison Visitor, who will contact:
Associate Professor Christopher Trotter Department of Social Work Monash University Caulfield Campus Tel: (03) 9903 1135 Fax: (03) 9903 1141 Email: Christopher.Trotter@med.monash.edu.au	Executive Officer, Human Research Ethics Monash University Human Research Ethics Committee (MUHREC) Project CF10/0946 - 2010000482 Building 3e Room 111 Research Office Monash University VIC 3800 Tel: +61 3 9905 2052 Fax: +61 3 9905 3831 Email: muhrec@adm.monash.edu.au

Thank you.

Appendix 4. Consent form – Older pre-release prisoners and younger prisoners

MONASH University

Project Title: A strategic Framework for the Management of Australia's Ageing Offenders

NOTE: This consent form will remain with the Monash University researcher for their records

I agree to take part in this research project. I have had the project explained to me, and I have read the Explanatory Statement, which I have kept. I understand that agreeing to take part means that:

I agree to be interviewed by the researcher ☐ Yes ☐ No

I agree to allow the researchers to access my personal corrections and medical information to make notes for the research ☐ Yes ☐ No

I am aware and agree that this material may be utilised in further postgraduate research ☐ Yes ☐ No

I agree to be in a second interview over the next 12 months ☐ Yes ☐ No

I agree to let the researchers access my personal information through Corrections Victoria to contact me following my release from prison ☐ Yes ☐ No

I agree to give the name and phone number of someone who will know where I am after my release from prison ☐ Yes ☐ No

Name of person 1: _____ **Phone Number of Person** _____

Name of person 2: _____ **Phone Number of Person** _____

I understand that my participation is voluntary, that I can choose not to be in part or all of the project, and that I can withdraw from the project without being penalised or disadvantaged in any way.

I understand that any published information will not, under any circumstances, contain names or identifying characteristics.

I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be written in any reports or disclosed to any other person.

I understand that the Chief Investigator will have to inform the appropriate authorities if I disclose any offence for which I have not been apprehended, prosecuted or convicted.

I understand that data from the interview will be kept in a secure place. I also understand that the data will be destroyed after a 5 year period.

Participant's name
Signature
Date

Appendix 5. Consent form – Older prisoners (early to mid-sentence)

MONASH University

Project Title: A strategic Framework for the Management of Australia's Ageing Offenders

NOTE: This consent form will remain with the Monash University researcher for their records

I agree to take part in this research project. I have had the project explained to me, and I have read the Explanatory Statement, which I have kept. I understand that agreeing to take part means that:

I agree to be interviewed by the researcher ☐ Yes ☐ No

I agree to allow the researchers to access my personal corrections and medical information to make notes for the research ☐ Yes ☐ No

I am aware and agree that this material may be utilised in further postgraduate research ☐ Yes ☐ No

I understand that my participation is voluntary, that I can choose not to be in part or all of the project, and that I can withdraw from the project without being penalised or disadvantaged in any way.

I understand that any published information will not, under any circumstances, contain names or identifying characteristics.

I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be written in any reports or disclosed to any other person.

I understand that the Chief Investigator will have to inform the appropriate authorities if I disclose any offence for which I have not been apprehended, prosecuted or convicted.

I understand that data from the interview will be kept in a secure place. I also understand that the data will be destroyed after a 5 year period.

Participant's name
Signature
Date

Appendix 6. Participant survey – Older pre-release prisoners

Participant Code: (Prison/Age/State/Signifier)		
Prison (Prison codes provided)	Age Y= <50 YO = 50-64 OO= 65+	Signifier First 3 letters of participant's Surname

Date Completed	
Person Administering Questionnaire	

Research assistant to state following to the participant: *"I want to remind you that I might ask you some questions that you could find too sensitive or personal. At any time you can tell me that you don't want to answer a question. You can also choose to stop the interview if you don't want to keep going with it. Do not disclose any matter that has not been dealt with by a court."*

Demographics			
Participant Code: (*Prison/age/signifier)*		☐ M ☐ F	Date of birth:
Country of birth:			First language:
Marital status:	☐ Single ☐ Partnered ☐ Married ☐ Separated ☐ Divorced ☐ Widowed		
No. of children:			
Highest level of education completed:	☐ No Education ☐ Primary Education ☐ Junior Secondary Education (e.g. up to year 10) ☐ Senior Secondary Education (e.g. up to year 12, Secondary Certificate of Education) ☐ Certificate Level ☐ Diploma/ Advanced Diploma ☐ Bachelor Degree ☐ Graduate Certificate/Graduate Diploma ☐ Postgraduate Degree		
Employment status 6 months prior to incarceration:	☐ Unemployed ☐ Casual Employment ☐ Part-time Employment ☐ Full-time Employment ☐ Student/training ☐ Retired		
Were you receiving a government payment prior to being incarcerated:	☐ Yes ☐ No		<u>If Yes,</u> Please choose the type of payment: ☐ Age Pension ☐ Disability Support Pension ☐ Parenting Payment ☐ Carer's Pension ☐ Sickness benefit ☐ Newstart benefit ☐ Austudy/ABSTUDY ☐ Widow pension

Accommodation prior to incarceration:	☐ Homeless ☐ Boarding house ☐ Caravan Park ☐ Crisis Accommodation ☐ Public Housing ☐ Private Rental ☐ Own House/Mortgage ☐ Aged care facility ☐ Other (Please specify) _____

Imprisonment history	
1. How many years have you spent in prison over your life (including youth institutions)?	

Physical health

2. Do you have any of the following physical problems?	
☐ Vision impairment ☐ Hearing impairment ☐ Limited mobility ☐ Incontinence ☐ Injury (please specify) _____ ☐ Other (Please specify) _____	
3. Does this disability limit your day-to-day activities in any way?	☐ Yes (please describe) _____ _____ _____ ☐ No
4. Do you use any of the following devices or aids?	
☐ Glasses ☐ Hearing aids ☐ Mobility aids (e.g. ☐ walking frame ☐ wheelchair ☐ cane) ☐ Incontinence pads ☐ Other (Please specify) _____	
Dental Health	
5. About how often do you see a dentist when <u>not in prison</u>?	☐ Every 6 months ☐ Every year ☐ Every 18 months ☐ Every 2 years ☐ Less than every 2 years
6. About how often do you see a dentist when <u>in prison</u>?	☐ Every 6 months ☐ Every year ☐ Every 18 months ☐ Every 2 years

	☐ Less than every 2 years
7. Thinking about your last visit to a prison dental service, how would you rate the healthcare you received?	☐ Not good ☐ Not too good ☐ OK ☐ Fairly Good ☐ Excellent
8. How often do you usually brush your teeth?	☐ Twice daily ☐ Once daily ☐ Less than once daily

9. What is currently your most concerning physical health issue?	
9a. For how long have you had this health issue?	
9b. What treatment did you have for this health issue before coming to prison?	
9c. What treatment have you had for this health issue since coming to prison?	
9d. How does this health issue affect your day-to-day life in prison?	
Healthcare Utilisation	
10. In the past four weeks, <u>other than picking up repeat prescriptions</u>, how many times have you visited the prison health clinic to see the nurse about your health?	☐ 0 ☐ 1-2 ☐ 3-4 ☐ 5+
11. Please list the reason(s) for these visits (e.g. injury, headache, period pain, etc.)	_____ _____ _____
12. How easy is it for you to access healthcare in prison when you need to (doctor/nurse/dentist)?	☐ Very easy ☐ Easy ☐ Neither easy or difficult ☐ Difficult ☐ Very difficult
13. Please comment on your experiences accessing healthcare in prison.	_____ _____ _____ _____

14. Thinking about your last visit to a prison outpatients health clinic, how would you rate the healthcare you received:	☐ Not at all good ☐ Not too good ☐ OK ☐ Fairly Good ☐ Excellent	
Sleeping		
15. In the past 4 weeks, how often have you had trouble getting to sleep or staying asleep?	☐Never ☐ Hardly ever ☐ Sometimes ☐ Most of the time ☐ All of the time	
16. Compared to before you were in prison, how have you been sleeping?	☐ Much better ☐ Better ☐ The same ☐ Worse ☐ Much worse	
Diet		
17. In the past 4 weeks, how often have you had little or no appetite?	☐Never ☐ Hardly ever ☐ Sometimes ☐ Most of the time ☐ All of the time	
18. Compared to before you were in prison, how has your appetite been?	☐ Much better ☐ Better ☐ The same ☐ Worse ☐ Much worse	
19. Do you have any special dietary requirements?	☐ Yes → ☐ No	If Yes, please describe (e.g. low cholesterol, low salt, halal, etc) _____ _____ _____ _____
Exercise		
20. How many times have you exercised in the past four weeks?	☐ Never ☐1-3 times ☐ 4-7 times ☐ 8-11 times ☐ 12+ times	
21. On average, how many minutes of exercise did you complete?	☐ 0-10 minutes ☐ 10-20 minutes ☐ 20-30 minutes ☐ 30-45 minutes ☐ 45-60 minutes ☐ 60+ minutes	
22. Compared to before you were in prison, how often do you exercise?	☐ Much more ☐ Slightly more ☐ About the same amount ☐ Less ☐ Much Less	
Built environment		

23. Do you have any physical difficulties accessing or using the following items in prison? (please cross all that apply)	☐ Beds ☐ Cells ☐ Showers ☐ Basins ☐ Toilets ☐ Libraries ☐ Stored property ☐ Gym/Yard
24. Please describe any concerns relating to the physical prison environment.	_____ _____ _____ _____

25. Barthel Index (Independence in ADLs)

Do you require any assistance with the following activities:		Score
1. Feeding	0 = Unable to eat independently 5 = Requires help cutting, spreading butter, etc. or requires modified diet 10= Independent	
2. Bathing	0 = dependent 5 = independent (or in shower)	
3. Grooming	0 = needs to help with personal care 5 = independent face/hair/teeth/shaving (implements provided)	
4. Dressing	0 = dependent 5 = needs help but can do about half unaided 10 = independent (including buttons, zips, laces, etc.)	
5. Bowels	0 = incontinent (or needs to be given enemas) 5 = occasional accident 10 = continent	
6. Bladder	0 = incontinent, or catheterized and unable to manage alone 5 = occasional accident 10 = continent	
7. Toilet Use	0 = dependent 5 = needs some help, but can do something alone 10 = independent (on and off, dressing, wiping)	

8. Transfers (bed to chair and back)	0 = unable, no sitting balance 5 = major help (one or two people, physical), can sit 10 = minor help (verbal or physical) 15 = independent	
9. Mobility (movement on flat surfaces)	0 = immobile or < 20 metres 5 = wheelchair independent, including corners, > 20 metres 10 = walks with help of one person (verbal or physical) > 20 metres 15 = independent (but may use any aid; for example, stick) > 20 metres	
10. Stairs	0 = unable 5 = needs help (verbal, physical, carrying aid) 10 = independent	

Total (0-100) _____

Mental health	
Treatment History	
26. Have you ever received support, counseling or treatment for a mental health problem from a doctor, psychiatrist, psychologist or counselor?	☐ Yes ☐ No

27. Kessler Psychological Distress Scale (K10)

(Research assistant please note: Questions 3 and 6 do not need to be asked if the response to the proceeding question was 'none of the time')

	All of the time (Score 5)	Most of the time (Score 4)	Some of the time (Score 3)	A little of the time (Score 2)	None of the time (Score 1)
1. In the past 4 weeks, about how often did you feel tired out for no good reason?	☐	☐	☐	☐	☐
2. In the past 4 weeks, about how often did you feel nervous?	☐	☐	☐	☐	☐

3. In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?	☐	☐	☐	☐	☐
4. In the past 4 weeks, about how often did you feel hopeless?	☐	☐	☐	☐	☐
5. In the past 4 weeks, about how often did you feel restless or fidgety?	☐	☐	☐	☐	☐
6. In the past 4 weeks, about how often did you feel so restless you could not sit still?	☐	☐	☐	☐	☐
7. In the past 4 weeks, about how often did you feel depressed?	☐	☐	☐	☐	☐
8. In the past 4 weeks, about how often did you feel that everything was an effort?	☐	☐	☐	☐	☐
9. In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?	☐	☐	☐	☐	☐
10. In the past 4 weeks, about how often did you feel worthless?	☐	☐	☐	☐	☐

Total Score _____

Suicidality and Self-Harm		
28. Have you ever had suicidal thoughts?	☐ Yes (go to question 29) ☐ No (Go to question 32) ☐ Decline to answer (go to question 32)	
29. Have you ever attempted suicide?	☐ Yes → ☐ No (Go to question 30) ☐ Decline to answer (Go to question 30)	29a. If YES, how many times have you attempted suicide? _____

30. Compared to before you were in prison, have your thoughts of suicide increased or decreased?	☐ Greatly decreased ☐ Decreased ☐ Stayed the same ☐ Increased ☐ Greatly increased ☐ Decline to answer	
31. Would you be likely to tell anybody if you were thinking of suicide?	☐ Very Likely ☐ Likely ☐ Unlikely ☐Definitely Not ☐ Don't know ☐ Decline to answer	31a. Who would you be most likely to tell? ☐ Another inmate ☐ Prison doctor/nurse ☐ Prison officer ☐ Family/friend outside prison
32. Other than during suicide attempts, have you ever deliberately harmed or injured yourself (e.g. "slashed up")?	☐ Yes (Go to question 32a) ☐ No (Go to question 35) ☐ Decline to answer (Go to question 35)	
32a. How many times have you self- harmed?	☐ Once ☐ Twice ☐ Three times ☐Four times ☐ Very often ☐ Decline to answer	
33. Where have you been when you self-harmed?	☐ In prison ☐ In the community ☐ Both ☐ Decline to answer	
34. Compared to when you are not in prison, how likely are you to self-harm whilst in prison?	☐ More likely ☐ About the same ☐ Less likely	
35. Would you be likely to tell anybody if you were thinking of deliberately self-harming?	☐ Very Likely ☐ Likely ☐ Unlikely ☐Definitely Not ☐ Don't know ☐ Decline to answer	35a. Who would you be most likely to tell? ☐ Another inmate ☐ Prison doctor/nurse ☐ Prison officer ☐ Family/friend outside prison
Substance Use		

36. Have you ever sought help for an alcohol or drug problem?	☐ Yes ☐ No ☐ Decline to answer
37. Do you feel that you currently need help with a drug problem?	☐ Yes ☐ No ☐ Decline to answer

Cognitive Functioning

38. Have you ever been told by a doctor that you have an intellectual disability?	☐ Yes (Please specify) _____ _____ ☐ No
39. How does this disability impact your day-to-day life in prison?	_____ _____ _____ _____

40. Mini Mental State Examination

"I am going to ask you some questions and give you some problems to solve. Please try to answer as best as you can" (Allow 10 seconds for each reply)

	SCORE	MAXIMUM SCORE
40a. What year is this? (Accept exact answer only)		1
40b. What season is this? (During the last week of the old season or the first week or a new season, accept either season)		1
40c. What month of the year is this? (On the first day of the new month or the last day of the previous month accept either)		1
40d. What is today's date? (Accept previous or next date. E.g. on the 7th accept 6th or 8th)		1
40e. What day of the week is this? *(Accept exact answer only)*		1
40f. What country are we in? *(Accept exact answer only)*		1
40g. What state are we in? (Accept exact answer only)		1
40h. What city are we in? (Accept exact answer only)		1
40i. What is the name of this prison? *(Accept exact answer only)*		1
40j. What prison block are we in? *(Accept exact answer only)*		1

41. "I am going to name three objects, after I have said all three objects I want you to repeat them, remember what they are because I am going to ask you to name them again in a few minutes." (Say them slowly at approximately 1 second intervals) BALL CAR MAN Please repeat the three items for me. (Score 1 point for each correct reply on the first attempt) (Allow 20 seconds for reply. If participant did not repeat all three, repeat until they are learned or up to a maximum of 5 times)		3
42. "Subtract 7 from 100 and keep subtracting seven from what's left until I tell you to stop." (may repeat three times if subject pauses – just repeat same instruction – allow one minute)		5
43. "Now what were the three objects that I asked you to remember?" BALL CAR MAN (Allow 10 seconds – score 1 point for each correct response regardless of order)		3
44. Show participant your wrist watch (off wrist). "What is this called?" (Allow 10 seconds – accept wristwatch or watch, not clock etc.)		1
45. Show participant your pencil. "What is this called" (Accept pencil only, not pen)		1
46. "I would like you to repeat a phrase after me – 'no ifs, ands, or buts'" (Allow 10 seconds – repetition must be exact)		1
47. "Read the words on this page and then do what it says". (Hand the participant the sheet with CLOSE YOUR EYES written on it) (If the participant reads and does not close their eyes – may repeat instruction a maximum of 3 times. Allow 10 seconds, score 1 point only if the participant closes their eyes. The participant does not have to read aloud.)		1
48. Ask if the participant is right or left handed. Alternate right/left hand in statement e.g. if subject is right handed, say "take this paper in your left hand…"		3
49. Hand the participant a pencil and paper. "Write any complete sentence on that piece of paper" (Allow 30 seconds. The sentence should make sense. Ignore spelling errors.)		1
50. Place design, pencil, eraser and paper in front of the participant. "Please copy this design" (Allow multiple tries until participant is finished and hands it back. Maximum time – 1 minute. See guidelines for scoring)		1
TOTAL SCORE:		30

RESEARCH ASSISTANT TO STATE THE FOLLOWING TO PARICIPANT: *"The following section may contain some questions you find too sensitive or personal. I remind you again that you do not have to answer these questions if you don't want to".*

Social wellbeing	
51. In the past 2 weeks, how many visits have you had from family or friends?	
52. In the past 2 weeks, how many phone calls did you make?	☐ 0 ☐ 1-2 ☐ 2-3 ☐ 4-5 ☐ 6-10 ☐ 10+
53. In the past 2 weeks, how many letters did you receive?	
54. Do you believe you would be able to talk about your problems with at least 1 other inmate if you needed to?	☐ Yes ☐ No ☐ Don't know
55. Do you believe you would feel able to talk about your problems with a prison staff member (e.g. prison guard/counselor /doctor /nurse) if you needed to?	☐ Yes ☐ No ☐ Don't know
56. How safe do you feel in prison?	☐ Very safe ☐ Mostly safe ☐ Neither safe or unsafe ☐ unsafe ☐ Very unsafe ☐ Decline to answer
57. Have you ever been verbally threatened in prison?	☐ Yes ☐ No ☐ Decline to answer
58. Have you ever been physically or sexually assaulted in prison?	☐ Yes ☐ No ☐ Decline to answer
Program participation	
59. What programs have you participated in whilst in prison?	☐ Violence Intervention ☐ Drug and Alcohol ☐ Cognitive Skills ☐ Sex Offender programs ☐ Education ☐ Work ☐ Other (please specify) _____ None

60. Which of these courses have been the most helpful to you and why?	_____ _____ _____ _____	
61. What courses do you intend to participate in?	☐ Violence Intervention ☐ Drug and Alcohol ☐ Cognitive Skills ☐ Sex Offender programs ☐ Education ☐ Work ☐ Other (please specify) _____ ☐ None	
62. Have you worked since being in prison?	☐ Yes (go to question 63a.) ☐ No (go to question 63c.)	
63a. What work have you been doing?	Type of work: _____ _____ _____	Hours per week: _____
63b. Did you find this work useful?	☐ Yes ☐ No	Why? _____ _____ _____ _____ _____
63c. Why have you chosen not to work since being in prison?	_____ _____ _____ _____ _____	
63. Have you commenced/completed any education/training since being in prison?	☐ Yes ⟶ ☐ No (go to question 64b.)	Please describe the nature of the education/training: _____ _____ _____ _____ (go to question 64a.)
64a. Did you find this training useful?	☐ Yes ☐ No	Why? _____ _____ _____ _____

64b. Why have you chosen not to complete any education/training since being in prison?	_____ _____ _____ _____ _____
Release planning	
64. Have you attended any information sessions about release from prison?	☐ Yes ☐ No
65. Have you accessed any services (e.g. Link-Out, VACRO) to prepare for release from prison?	☐ Yes ☐ No
66. Do you intend to access any post-release programs?	☐ Yes ☐ No (skip to question 68)
67a. Which of the following post-release programs do you intend to access?	☐ Housing ☐ Education ☐ Employment ☐ Support (e.g. VACRO, Link-Out) ☐ Clinical programs (e.g. Drug and alcohol, sex offender programs)
67. How prepared do you feel for your release from prison?	☐ Very unprepared ☐ Unprepared ☐ Neither prepared or unprepared ☐ Prepared ☐ Very prepared
68. Do you have any concerns about your release from prison?	☐ Yes ☐ No (skip to next section 'General Questions')
68a. Please describe your concerns about your release from prison.	_____ _____ _____ _____ _____ _____
General questions	
69. Please describe how being in prison has been for you.	_____ _____ _____ _____ _____ _____

70. Please describe your most recent remand experience (location, sleeping arrangements and how time was spent)	_____ _____ _____ _____ _____ _____
71. How much has your age been a problem for you in prison?	☐ Not at all a problem ☐ Only a slight problem ☐ Somewhat of a problem ☐ Quite a problem ☐ Very much a problem
72. In what way(s) has your age been a problem for you in prison?	_____ _____ _____ _____ _____

Appendix 7. Participant survey – Older early to mid-sentence prisoners

Participant Code: (Prison/Age/State/Signifier)		
Prison (Prison codes provided)	Age Y= <50 YO = 50-64 OO= 65+	Signifier First 3 letters of participant's Surname

Date Completed	
Person Administering Questionnaire	

Research Assistant to state following to the participant: *"I want to remind you that I might ask you some questions that you could find too sensitive or personal. At any time you can tell me that you don't want to answer a question. You can also choose to stop the interview if you don't want to keep going with it. Do not disclose any matter that has not been dealt with by a court."*

Demographics			
Participant Code: (*Prison/age/ signifier)*		☐ M ☐ F	Date of birth:
Country of Birth:			First language:
Marital status:	☐ Single ☐ Partnered ☐ Married ☐ Separated ☐ Divorced ☐ Widowed		
No. of children:			
Highest level of education completed:	☐ No Education ☐ Primary Education ☐ Junior Secondary Education (e.g. up to year 10) ☐ Senior Secondary Education (e.g. up to year 12, Secondary Certificate of Education) ☐ Certificate Level ☐ Diploma/ Advanced Diploma ☐ Bachelor Degree ☐ Graduate Certificate/Graduate Diploma ☐ Postgraduate Degree		
Employment status 6 months prior to incarceration:	☐ Unemployed ☐ Casual Employment ☐ Part-time Employment ☐ Full-time Employment ☐ Student/training ☐ Retired		
Were you receiving a government payment prior to being incarcerated:	☐ Yes → ☐ No		<u>If Yes,</u> Please choose the type of payment: ☐ Age Pension ☐ Disability Support Pension ☐ Parenting Payment ☐ Carer's Pension ☐ Sickness benefit ☐ Newstart benefit ☐ Austudy/ABSTUDY ☐ Widow pension

Accommodation prior to incarceration:	☐ Homeless ☐ Boarding house ☐ Caravan Park ☐ Crisis Accommodation ☐ Public Housing ☐ Private Rental ☐ Own House/Mortgage ☐ Aged care facility ☐ Other (Please specify) _____

Imprisonment history	
1. How many years have you spent in prison over your life (including youth institutions)?	

Physical health	
2. Do you have any of the following physical problems?	
☐ Vision impairment ☐ Hearing impairment ☐ Limited mobility ☐ Incontinence ☐ Injury (please specify) _____ ☐ Other (Please specify) _____	
3. Does this disability limit your day-to-day activities in any way?	☐ Yes (please describe) _____ _____ _____ ☐ No
4. Do you use any of the following devices or aids?	
☐ Glasses ☐ Hearing aids ☐ Mobility aids (e.g. ☐ walking frame ☐ wheelchair ☐ cane) ☐ Incontinence pads ☐ Other (Please specify) _____	
Dental Health	
5. About how often do you see a dentist when not in prison?	☐ Every 6 months ☐ Every year ☐ Every 18 months ☐ Every 2 years ☐ Less than every 2 years
6. How often do you usually	☐ Twice daily

brush your teeth?	☐ Once daily ☐ Less than once daily	
7. Have you seen a dentist since being in prison?	☐ Yes → ☐ No	(If Yes) Thinking about your last visit to a prison dental service, how would you rate the healthcare you received? ☐ Not good ☐ Not too good ☐ OK ☐ Fairly Good ☐ Excellent

8. What is currently your most concerning physical health issue?	
8a. For how long have you had this health issue?	
8b. What treatment did you have for this health issue before coming to prison?	
8c. What treatment have you had for this health issue since coming to prison?	
8d. How does this health issue affect your day-to-day life in prison?	
Healthcare Utilisation	
9. How many times did you visit a doctor in the 12 months before coming into prison?	☐ 0 ☐ 1 ☐ 2-5 ☐ 6-10 ☐ 10+
10. In the past four weeks, other than picking up repeat prescriptions, how many times have you visited the prison health clinic to see the nurse about your health?	☐ 0 ☐ 1-2 ☐ 3-4 ☐ 5+
11. Please list the reason(s) for these visits (e.g. injury, headache, period pain, etc.)	_____ _____ _____
12. How easy is it for you to access healthcare in prison when you need to (doctor/nurse/dentist)?	☐ Very easy ☐ Easy ☐ Neither easy or difficult ☐ Difficult ☐ Very difficult

13. Please comment on your experiences accessing healthcare in prison.	_____ _____ _____ _____
14. Thinking about your last visit to a prison outpatients health clinic, how would you rate the healthcare you received:	☐ Not at all good ☐ Not too good ☐ OK ☐ Fairly Good ☐ Excellent
Sleeping	
15. In the past 4 weeks, how often have you had trouble getting to sleep or staying asleep?	☐Never ☐ Hardly ever ☐ Sometimes ☐ Most of the time ☐ All of the time
16. Compared to before you were in prison, how have you been sleeping?	☐ Much better ☐ Better ☐ The same ☐ Worse ☐ Much worse
Diet	
17. In the past 4 weeks, how often have you had little or no appetite?	☐ Never ☐ Hardly ever ☐ Sometimes ☐ Most of the time ☐ All of the time
18. Compared to before you were in prison, how has your appetite been?	☐ Much better ☐ Better ☐ The same ☐ Worse ☐ Much worse
19. Do you have any special dietary requirements?	☐ Yes → ☐ No If Yes, please describe (e.g. low cholesterol, low salt, halal, etc.) _____ _____ _____ _____
Exercise	
20. How many times have you exercised in the past four weeks?	☐ Never ☐1-3 times ☐ 4-7 times ☐ 8-11 times ☐ 12+ times
21. On average, how many minutes of	☐ 0-10 minutes ☐ 10-20 minutes ☐ 20-30 minutes

exercise did you complete?	☐ 30-45 minutes ☐ 45-60 minutes ☐ 60+ minutes
22. Compared to before you were in prison, how often do you exercise?	☐ Much more ☐ Slightly more ☐ About the same amount ☐ Less ☐ Much Less
Built environment	
23. Do you have any physical difficulties accessing or using the following items in prison? (please cross all that apply)	☐ Beds ☐ Cells ☐ Showers ☐ Basins ☐ Toilets ☐ Libraries ☐ Stored property ☐ Gym/Yard
24. Please describe any concerns relating to the physical prison environment.	_____ _____ _____ _____

25. Barthel Index (Independence in ADLs)		
Do you require any assistance with the following activities:		Score
1. Feeding	0 = Unable to eat independently 5 = Requires help cutting, spreading butter, etc. or requires modified diet 10= Independent	
2. Bathing	0 = dependent 5 = independent (or in shower)	
3. Grooming	0 = needs to help with personal care 5 = independent face/hair/teeth/shaving (implements provided)	
4. Dressing	0 = dependent 5 = needs help but can do about half unaided 10 = independent (including buttons, zips, laces, etc.)	
5. Bowels	0 = incontinent (or needs to be given enemas) 5 = occasional accident 10 = continent	
6. Bladder	0 = incontinent, or catheterized and unable to manage alone 5 = occasional accident	

	10 = continent	
7. Toilet Use	0 = dependent 5 = needs some help, but can do something alone 10 = independent (on and off, dressing, wiping)	
8. Transfers (bed to chair and back)	0 = unable, no sitting balance 5 = major help (one or two people, physical), can sit 10 = minor help (verbal or physical) 15 = independent	
9. Mobility (movement on flat surfaces)	0 = immobile or < 20 metres 5 = wheelchair independent, including corners, > 20 metres 10 = walks with help of one person (verbal or physical) > 20 metres 15 = independent (but may use any aid; for example, stick) > 20 metres	
10. Stairs	0 = unable 5 = needs help (verbal, physical, carrying aid) 10 = independent	

Total (0-100) _____

Mental health	
Treatment History	
26. Have you ever received support, counseling or treatment for a mental health problem from a doctor, psychiatrist, psychologist or counselor?	☐ Yes ☐ No

27. Kessler Psychological Distress Scale (K10)
(Research assistant please note: Questions 3 and 6 do not need to be asked if the response to the proceeding question was 'none of the time')

	All of the time (Score 5)	Most of the time (Score 4)	Some of the time (Score 3)	A little of the time (Score 2)	None of the time (Score 1)
1. In the past 4 weeks, about how often did you feel tired out for no good reason?	☐	☐	☐	☐	☐
2. In the past 4 weeks, about how often did you feel nervous?	☐	☐	☐	☐	☐

3. In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?	☐	☐	☐	☐	☐
4. In the past 4 weeks, about how often did you feel hopeless?	☐	☐	☐	☐	☐
5. In the past 4 weeks, about how often did you feel restless or fidgety?	☐	☐	☐	☐	☐
6. In the past 4 weeks, about how often did you feel so restless you could not sit still?	☐	☐	☐	☐	☐
7. In the past 4 weeks, about how often did you feel depressed?	☐	☐	☐	☐	☐
8. In the past 4 weeks, about how often did you feel that everything was an effort?	☐	☐	☐	☐	☐
9. In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?	☐	☐	☐	☐	☐
10. In the past 4 weeks, about how often did you feel worthless?	☐	☐	☐	☐	☐

Total Score _____

Suicidality and Self-Harm		
28. Have you ever had suicidal thoughts?	☐ Yes (go to question 29) ☐ No (Go to question 32) ☐ Decline to answer (go to question 32)	
29. Have you ever attempted suicide?	☐ Yes → ☐ No ☐ Decline to answer	29a. If YES, how many times have you attempted suicide? _____

30. Compared to before you were in prison, have your thoughts of suicide increased or decreased?	☐ Greatly decreased ☐ Decreased ☐ Stayed the same ☐ Increased ☐ Greatly increased ☐ Decline to answer	
31. Would you be likely to tell anybody if you were thinking of suicide?	☐ Very Likely ☐ Likely ☐ Unlikely ☐Definitely Not ☐ Don't know ☐ Decline to answer	31a. Who would you be most likely to tell? ☐ Another inmate ☐ Prison doctor/nurse ☐ Prison officer ☐ Family/friend outside prison
32. Other than during suicide attempts, have you ever deliberately harmed or injured yourself (e.g. "slashed up")?	☐ Yes (Go to question 32a.) ☐ No (Go to question 35) ☐ Decline to answer (Go to question 35)	
32a. How many times have you self-harmed?	☐ Once ☐ Twice ☐ Three times ☐Four times ☐ Very often ☐ Decline to answer	
33. Where have you been when you self-harmed?	☐ In prison ☐ In the community ☐ Both ☐ Decline to answer	
34. Compared to when you are not in prison, how likely are you to self-harm whilst in prison?	☐ More likely ☐ About the same ☐ Less likely	
35. Would you be likely to tell anybody if you were thinking of deliberately self-harming?	☐ Very Likely ☐ Likely ☐ Unlikely ☐Definitely Not ☐ Don't know ☐ Decline to answer	35a. Who would you be most likely to tell? ☐ Another inmate ☐ Prison doctor/nurse ☐ Prison officer ☐ Family/friend outside prison

Substance Use	
36. Have you ever sought help for an alcohol or drug problem?	☐ Yes ☐ No ☐ Decline to answer

37. Do you feel that you currently need help with a drug problem?	☐ Yes ☐ No ☐ Decline to answer
Cognitive Functioning	
38. Have you ever been told by a doctor that you have an intellectual disability?	☐ Yes (Please specify) _____ _____ ☐ No
39. How does this disability impact your day-to-day life in prison?	_____ _____ _____ _____

40. Mini Mental State Examination

"I am going to ask you some questions and give you some problems to solve. Please try to answer as best as you can" (Allow 10 seconds for each reply)

	SCORE	MAXIMUM SCORE
40a. What year is this? (Accept exact answer only)		1
40b. What season is this? (During the last week of the old season or the first week or a new season, accept either season)		1
40c. What month of the year is this? (On the first day of the new month or the last day of the previous month accept either)		1
40d. What is today's date? (Accept previous or next date. E.g. on the 7th accept 6th or 8th)		1
40e. What day of the week is this? *(Accept exact answer only)*		1
40f. What country are we in? *(Accept exact answer only)*		1
40g. What state are we in? (Accept exact answer only)		1
40h. What city are we in? (Accept exact answer only)		1
40i. What is the name of this prison? *(Accept exact answer only)*		1
40j. What prison block are we in? *(Accept exact answer only)*		1

41. "I am going to name three objects, after I have said all three objects I want you to repeat them, remember what they are because I am going to ask you to name them again in a few minutes." (Say them slowly at approximately 1 second intervals) BALL CAR MAN Please repeat the three items for me. (Score 1 point for each correct reply on the first attempt) (Allow 20 seconds for reply. If participant did not repeat all three, repeat until they are learned or up to a maximum of 5 times)		3
42. "Subtract 7 from 100 and keep subtracting seven from what's left until I tell you to stop." (may repeat three times if participant pauses – just repeat same instruction – allow one minute)		5
43. "Now what were the three objects that I asked you to remember?" BALL CAR MAN (Allow 10 seconds – score 1 point for each correct response regardless of order)		3
44. Show participant your wrist watch (off wrist). "What is this called?" (Allow 10 seconds – accept wristwatch or watch, not clock etc.)		1
45. Show participant your pencil. "What is this called" (Accept pencil only, not pen)		1
46. "I would like you to repeat a phrase after me – 'no ifs, ands, or buts'" (Allow 10 seconds – repetition must be exact)		1
47. "Read the words on this page and then do what it says". (Hand the participant the sheet with CLOSE YOUR EYES written on it) (If the participant reads and does not close their eyes – may repeat instruction a maximum of 3 times. Allow 10 seconds, score 1 point only if the participant closes their eyes. The participant does not have to read aloud.)		1
48. Ask if the participant is right or left handed. Alternate right/left hand in statement e.g. if subject is right handed, say "take this paper in your left hand…" Take a piece of paper and hold it up on front of the participant and say the following: " Take this paper in your right/left hand, fold in half once with both hands, and put the paper down on the floor" (Ensure the entire instruction is read before the participant begins. Allow 30 seconds. Score 1 point for each instruction correctly executed)		3

49. Hand the participant a pencil and paper. "Write any complete sentence on that piece of paper" (Allow 30 seconds. The sentence should make sense. Ignore spelling errors.)		1
50. Place design, pencil, eraser and paper in front of the participant. "Please copy this design" (Allow multiple tries until participant is finished and hands it back. Maximum time – 1 minute. See guidelines for scoring)		1
TOTAL SCORE:		30

RESEARCH ASSISTANT TO STATE THE FOLLOWING TO PARICIPANT: *"The following section may contain some questions you find too sensitive or personal. I remind you again that you do not have to answer these questions if you don't want to".*

Social wellbeing	
51. In the past 2 weeks, how many visits have you had from family or friends?	
52. In the past 2 weeks, how many phone calls did you make?	☐ 0 ☐ 1-2 ☐ 2-3 ☐ 4-5 ☐ 6-10 ☐ 10+
53. In the past 2 weeks, how many letters did you receive?	
54. Do you believe you would be able to talk about your problems with at least 1 other inmate if you needed to?	☐ Yes ☐ No ☐ Don't know
55. Do you believe you would feel able to talk about your problems with a prison staff member (prison guard/ counselor/ doctor/nurse) if you needed to?	☐ Yes ☐ No ☐ Don't know
56. How safe do you feel in prison?	☐ Very safe ☐ Mostly safe ☐ Neither safe or unsafe ☐ unsafe ☐ Very unsafe ☐ Decline to answer
57. Have you ever been verbally threatened in prison?	☐ Yes ☐ No ☐ Decline to answer
58. Have you ever been physically or sexually assaulted in prison?	☐ Yes ☐ No ☐ Decline to answer
Program participation	

59. What programs have you participated in whilst in prison?	☐ Violence Intervention ☐ Drug and Alcohol ☐ Cognitive Skills ☐ Sex Offender programs ☐ Education ☐ Work ☐ Other (please specify) _____ ☐ None	
60. Which of these courses have been the most helpful to you and why?	_____ _____ _____ _____	
61. What courses do you intend to participate in?	☐ Violence Intervention ☐ Drug and Alcohol ☐ Cognitive Skills ☐ Sex Offender programs ☐ Education ☐ Work ☐ Other (please specify) _____ ☐ None	
62. Have you worked since being in prison?	☐ Yes (go to question 64a.) ☐ No (go to question 64c.)	
64a. What work have you been doing?	Type of work: _____ _____	Hours per week: _____
64b. Did you find this work useful?	☐ Yes ☐ No	Why? _____ _____ _____ _____
64c. Why have you chosen not to work since being in prison?	_____ _____ _____ _____ _____	
63. Have you commenced/completed any education/training since being in prison?	☐ Yes → ☐ No (go to question 65b.)	Please describe the nature of the education/training: _____ _____ _____ _____ (go to question 65a.)

65a. Did you find this training useful?	☐ Yes ☐ No	Why? _____ _____ _____ _____
65b. Why have you chosen not to complete any education/training since being in prison?	_____ _____ _____ _____ _____	
General questions		
64. Please describe how coming into prison has been for you.	_____ _____ _____ _____ _____ _____	
65. Please describe your most recent remand experience (location, sleeping arrangements and how time was spent)	_____ _____ _____ _____ _____ _____	
66. How much has your age been a problem for you in prison?	☐ Not at all a problem ☐ Only a slight problem ☐ Somewhat of a problem ☐ Quite a problem ☐ Very much a problem	
67. In what way(s) has your age been a problem for you in prison?	_____ _____ _____ _____ _____	

Appendix 8. Participant survey – Younger prisoners

Participant Code: (Prison/Age/Signifier)		
Prison (Prison codes provided)	Age Y= <50 YO = 50-64 OO= 65+	Signifier First 3 letters of participant's surname

Date Completed	
Person Administering Questionnaire	

RESEARCH ASSISTANT TO STATE FOLLOWING TO THE PARTICIPANT: "I want to remind you that I might ask you some questions that you could find too sensitive or personal. At any time you can tell me that you don't want to answer a question. You can also choose to stop the interview if you don't want to keep going with it. Do not disclose any matter that has not been dealt with by a court."

Demographics			
Participant Code: (*Prison/age/ signifier)*		☐ M ☐ F	Date of birth:
Country of birth:			First language:
Marital status:	☐ Single ☐ Partnered ☐ Married ☐ Separated ☐ Divorced ☐ Widowed		
No. of children:			
Highest level of education completed:	☐ No Education ☐ Primary Education ☐ Junior Secondary Education (e.g. up to year 10) ☐ Senior Secondary Education (e.g. up to year 12, Secondary Certificate of Education) ☐ Certificate Level ☐ Diploma/ Advanced Diploma ☐ Bachelor Degree ☐ Graduate Certificate/Graduate Diploma ☐ Postgraduate Degree		
Employment status 6 months prior to incarceration:	☐ Unemployed ☐ Casual Employment ☐ Part-time Employment ☐ Full-time Employment ☐ Student		

Were you receiving a government payment prior to being incarcerated:	☐ Yes → ☐ No	If Yes, Please choose the type of payment: ☐ Age Pension ☐ Disability Support Pension ☐ Parenting Payment ☐ Carer's Pension ☐ Sickness benefit ☐ Newstart benefit ☐ Austudy/ABSTUDY ☐ Widow pension
Accommodation prior to incarceration:	☐ Homeless ☐ Boarding house ☐ Caravan Park ☐ Crisis Accommodation ☐ Public Housing ☐ Private Rental ☐ Own House/Mortgage ☐ Other (Please specify) _____	

Imprisonment history	
1. How many years have you spent in prison over your life (including youth institutions)?	

Physical health	
2. Do you have any of the following physical problems?	
☐ Vision impairment ☐ Hearing impairment ☐ Limited mobility ☐ Incontinence ☐ Injury (please specify) _____ ☐ Other (Please specify) _____	
3. Does this disability limit your day-to-day activities in any way?	☐ Yes (please describe) _____ _____ _____ ☐ No
4. Do you use any of the following devices or aids?	
☐ Glasses ☐ Hearing aids ☐ Mobility aids (e.g. ☐ walking frame ☐ wheelchair ☐ cane) ☐ Incontinence pads ☐ Other (Please specify) _____	
Dental Health	

5. About how often do you see a dentist when not in prison?	☐ Every 6 months ☐ Every year ☐ Every 18 months ☐ Every 2 years ☐ Less than every 2 years
6. About how often do you see a dentist when in prison?	☐ Every 6 months ☐ Every year ☐ Every 18 months ☐ Every 2 years ☐ Less than every 2 years
7. Thinking about your last visit to a prison dental service, how would you rate the healthcare you received?	☐ Not good ☐ Not too good ☐ OK ☐ Fairly Good ☐ Excellent
8. How often do you usually brush your teeth?	☐ Twice daily ☐ Once daily ☐ Less than once daily

9. What is currently your most concerning physical health issue?	
9a. For how long have you had this health issue?	
9b. What treatment did you have for this health issue before coming to prison?	
9c. What treatment have you had for this health issue since coming to prison?	
9d. How does this health issue affect your day-to-day life in prison?	
Healthcare Utilisation	
10. In the past four weeks, other than picking up repeat prescriptions, how many times have you visited the prison health clinic to see the nurse about your health?	☐ 0 ☐ 1-2 ☐ 3-4 ☐ 5+
11. Please list the reason(s) for these visits (e.g. injury, headache, period pain, etc.)	

12. How easy is it for you to access healthcare in prison when you need to (doctor/nurse/dentist)?	☐ Very easy ☐ Easy ☐ Neither easy or difficult ☐ Difficult ☐ Very difficult
13. Please comment on your experiences accessing healthcare in prison.	_____ _____ _____ _____
14. Thinking about your last visit to a prison outpatients health clinic, how would you rate the healthcare you received:	☐ Not at all good ☐ Not too good ☐ OK ☐ Fairly Good ☐ Excellent
Sleeping	
15. In the past 4 weeks, how often have you had trouble getting to sleep or staying asleep?	☐Never ☐ Hardly ever ☐ Sometimes ☐ Most of the time ☐ All of the time
16. Compared to before you were in prison, how have you been sleeping?	☐ Much better ☐ Better ☐ The same ☐ Worse ☐ Much worse
Diet	
17. In the past 4 weeks, how often have you had little or no appetite?	☐Never ☐ Hardly ever ☐ Sometimes ☐ Most of the time ☐ All of the time
18. Compared to before you were in prison, how has your appetite been?	☐ Much better ☐ Better ☐ The same ☐ Worse ☐ Much worse
19. Do you have any special dietary requirements?	☐ Yes → If Yes, please describe (e.g. low cholesterol, low salt, halal, etc) _____ _____ _____ _____ ☐ No
Exercise	
20. How many times have you exercised in the past four weeks?	☐ Never ☐1-3 times ☐ 4-7 times ☐ 8-11 times ☐ 12+ times
21. On average, how many minutes of exercise did you complete?	☐ 0-10 minutes ☐ 10-20 minutes ☐ 20-30 minutes

	☐ 30-45 minutes ☐ 45-60 minutes ☐ 60+ minutes
22. Compared to before you were in prison, how often do you exercise?	☐ Much more ☐ Slightly more ☐ About the same amount ☐ Less ☐ Much Less
Built environment	
23. Do you have any physical difficulties accessing or using the following items in prison? (please cross all that apply)	☐ Beds ☐ Cells ☐ Showers ☐ Basins ☐ Toilets ☐ Libraries ☐ Stored property ☐ Gym/Yard
24. Please describe any concerns relating to the physical prison environment.	_____ _____ _____ _____

25. Barthel Index (Independence in ADLs)

Do you require any assistance with the following activities:		Score
1. Feeding	0 = Unable to eat independently 5 = Requires help cutting, spreading butter, etc. or requires modified diet 10= Independent	
2. Bathing	0 = dependent 5 = independent (or in shower)	
3. Grooming	0 = needs to help with personal care 5 = independent face/hair/teeth/shaving (implements provided)	
4. Dressing	0 = dependent 5 = needs help but can do about half unaided 10 = independent (including buttons, zips, laces, etc.)	
5. Bowels	0 = incontinent (or needs to be given enemas) 5 = occasional accident 10 = continent	
6. Bladder	0 = incontinent, or catheterized and unable to manage alone 5 = occasional accident 10 = continent	
7. Toilet Use	0 = dependent	

	5 = needs some help, but can do something alone 10 = independent (on and off, dressing, wiping)	
8. Transfers (bed to chair and back)	0 = unable, no sitting balance 5 = major help (one or two people, physical), can sit 10 = minor help (verbal or physical) 15 = independent	
9. Mobility (movement on flat surfaces)	0 = immobile or < 20 metres 5 = wheelchair independent, including corners, > 20 metres 10 = walks with help of one person (verbal or physical) > 20 metres 15 = independent (but may use any aid; for example, stick) > 20 metres	
10. Stairs	0 = unable 5 = needs help (verbal, physical, carrying aid) 10 = independent	

Total (0-100) _____

Mental health					
Treatment History					
26. Have you ever received support, counseling or treatment for a mental health problem from a doctor, psychiatrist, psychologist or counselor?	☐ Yes ☐ No				
Kessler Psychological Distress Scale (K10) (Research assistant please note: Questions 3 and 6 do not need to be asked if the response to the proceeding question was 'none of the time')					
	All of the time (Score 5)	Most of the time (Score 4)	Some of the time (Score 3)	A little of the time (Score 2)	None of the time (Score 1)
1. In the past 4 weeks, about how often did you feel tired out for no good reason?	☐	☐	☐	☐	☐
2. In the past 4 weeks, about how often did you feel nervous?	☐	☐	☐	☐	☐

3. In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?	☐	☐	☐	☐	☐
4. In the past 4 weeks, about how often did you feel hopeless?	☐	☐	☐	☐	☐
5. In the past 4 weeks, about how often did you feel restless or fidgety?	☐	☐	☐	☐	☐
6. In the past 4 weeks, about how often did you feel so restless you could not sit still?	☐	☐	☐	☐	☐
7. In the past 4 weeks, about how often did you feel depressed?	☐	☐	☐	☐	☐
8. In the past 4 weeks, about how often did you feel that everything was an effort?	☐	☐	☐	☐	☐
9. In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?	☐	☐	☐	☐	☐
10. In the past 4 weeks, about how often did you feel worthless?	☐	☐	☐	☐	☐

Total Score _____

Suicidality and Self-Harm		
27. Have you ever had suicidal thoughts?	☐ Yes (go to question 38) ☐ No (Go to question 41) ☐ Decline to answer (go to question 41)	
28. Have you ever attempted suicide?	☐ Yes → ☐ No (Go to question 39) ☐ Decline to answer (Go to question 39)	38a. If YES, how many times have you attempted suicide? _____

29. Compared to before you were in prison, have your thoughts of suicide increased or decreased?	☐ Greatly decreased ☐ Decreased ☐ Stayed the same ☐ Increased ☐ Greatly increased ☐ Decline to answer	
30. Would you be likely to tell anybody if you were thinking of suicide?	☐ Very Likely ☐ Likely ☐ Unlikely ☐Definitely Not ☐ Don't know ☐ Decline to answer	40a. Who would you be most likely to tell? ☐ Another inmate ☐ Prison doctor/nurse ☐ Prison officer ☐ Family/friend outside prison
31. Other than during suicide attempts, have you ever deliberately harmed or injured yourself (e.g. "slashed up")?	☐ Yes (Go to question 42a) ☐ No (Go to question 45) ☐ Decline to answer (Go to question 45)	
32a. How many times have you self- harmed?	☐ Once ☐ Twice ☐ Three times ☐Four times ☐ Very often ☐ Decline to answer	
32. Where have you been when you self-harmed?	☐ In prison ☐ In the community ☐ Both ☐ Decline to answer	
33. Compared to when you are not in prison, how likely are you to self-harm whilst in prison?	☐ More likely ☐ About the same ☐ Less likely	
34. Would you be likely to tell anybody if you were thinking of deliberately self-harming?	☐ Very Likely ☐ Likely ☐ Unlikely ☐Definitely Not ☐ Don't know ☐ Decline to answer	44a. Who would you be most likely to tell? ☐ Another inmate ☐ Prison doctor/nurse ☐ Prison officer ☐ Family/friend outside prison
Substance Use		
35. Have you ever sought help for a drug problem?	☐ Yes ☐ No ☐ Decline to answer	
36. Do you feel that you currently need help with a drug problem?	☐ Yes ☐ No ☐ Decline to answer	
Cognitive Functioning		

37. Have you ever been told by a doctor that you have an intellectual disability?	☐ Yes (Please specify) _____ _____ ☐ No
38. How does this disability impact your day-to-day life in prison?	_____ _____ _____ _____

39. Mini Mental State Examination

"I am going to ask you some questions and give you some problems to solve. Please try to answer as best as you can"
(Allow 10 seconds for each reply)

	SCORE	MAXIMUM SCORE
39a. What year is this? (Accept exact answer only)		1
39b. What season is this? (During the last week of the old season or the first week or a new season, accept either season)		1
39c. What month of the year is this? (On the first day of the new month or the last day of the previous month accept either)		1
39d. What is today's date? (Accept previous or next date. E.g. on the 7th accept 6th or 8th)		1
39e. What day of the week is this? *(Accept exact answer only)*		1
39f. What country are we in? *(Accept exact answer only)*		1
39g. What state are we in? (Accept exact answer only)		1
39h. What city are we in? (Accept exact answer only)		1
39i. What is the name of this prison? *(Accept exact answer only)*		1
39j. What prison block are we in? *(Accept exact answer only)*		1
40. "I am going to name three objects, after I have said all three objects I want you to repeat them, remember what they are because I am going to ask you to name them again in a few minutes." (Say them slowly at approximately 1 second intervals) BALL CAR MAN "Please repeat the three items for me" (Score 1 point for each correct reply on the first attempt) (Allow 20 seconds for reply. If participant did not repeat all three, repeat until they are learned or up to a maximum of 5 times)		3

41. "Subtract 7 from 100 and keep subtracting seven from what's left until I tell you to stop." (may repeat three times if participant pauses – just repeat same instruction – allow one minute)		5
42. "Now what were the three objects that I asked you to remember?" BALL CAR MAN (Allow 10 seconds – score 1 point for each correct response regardless of order)		3
43. Show participant your wrist watch (off wrist). "What is this called?" (Allow 10 seconds – accept wristwatch or watch, not clock etc.)		1
44. Show participant your pencil. "What is this called" (Accept pencil only, not pen)		1
45. "I would like you to repeat a phrase after me – 'no ifs, ands, or buts'" (Allow 10 seconds – repetition must be exact)		1
46. "Read the words on this page and then do what it says". (Hand the participant the sheet with CLOSE YOUR EYES written on it) (If the participant reads and does not close their eyes – may repeat instruction a maximum of 3 times. Allow 10 seconds, score 1 point only if the participant closes their eyes. The participant does not have to read aloud.)		1
47. Ask if the participant is right or left handed. Alternate right/left hand in statement e.g. if subject is right handed, say "take this paper in your left hand…" Take a piece of paper and hold it up on front of the participant and say the following: " Take this paper in your right/left hand, fold in half once with both hands, and put the paper down on the floor" (Ensure the entire instruction is read before the participant begins. Allow 30 seconds. Score 1 point for each instruction correctly executed)		3
48. Hand the participant a pencil and paper. "Write any complete sentence on that piece of paper" (Allow 30 seconds. The sentence should make sense. Ignore spelling errors.)		1
49. Place design, pencil, eraser and paper in front of the participant. "Please copy this design" (Allow multiple tries until participant is finished and hands it back. Maximum time – 1 minute. See guidelines for scoring)		1
TOTAL SCORE:		30

RESEARCH ASSISTANT TO STATE THE FOLLOWING TO PARICIPANT*: "The following section may contain some questions you find too sensitive or personal. I remind you again that you do not have to answer these questions if you don't want to".*

Social wellbeing	
50. In the past 2 weeks, how many visits have you had from family or friends?	
51. In the past 2 weeks, how many phone calls did you make?	☐ 0 ☐ 1-2 ☐ 2-3 ☐ 4-5 ☐ 6-10 ☐ 10+
52. In the past 2 weeks, how many letters did you receive?	
53. Do you believe you would be able to talk about your problems with at least 1 other	☐ Yes ☐ No ☐ Don't know
54. Do you believe you would feel able to talk about your problems with a prison staff member (e.g. counselor/doctor/nurse /prison guard) if you needed to?	☐ Yes ☐ No ☐ Don't know
55. How safe do you feel in prison?	☐ Very safe ☐ Mostly safe ☐ Neither safe or unsafe ☐ unsafe ☐ Very unsafe ☐ Decline to answer
56. Have you ever been verbally threatened in prison?	☐ Yes ☐ No ☐ Decline to answer
57. Have you ever been physically or sexually assaulted in prison?	☐ Yes ☐ No ☐ Decline to answer
Program participation	
58. What programs have you participated in whilst in prison?	☐ Violence Intervention ☐ Drug and Alcohol ☐ Cognitive Skills ☐ Sex Offender programs ☐ Education ☐ Work ☐ Other (please specify) _____ ☐ None

59. Which of these courses have been the most helpful to you and why?	_____ _____ _____ _____	
60. What courses do you intend to participate in?	☐ Violence Intervention ☐ Drug and Alcohol ☐ Cognitive Skills ☐ Sex Offender programs ☐ Education ☐ Work ☐ Other (please specify) _____ ☐ None	
61. Have you worked since being in prison?	☐ Yes (go to question 61a.) ☐ No (go to question 61c.)	
61a. What work have you been doing?	Type of work: _____ _____ _____	Hours per week: _____
61b. Did you find this work useful?	☐ Yes ☐ No	Why? _____ _____ _____ _____
61c. Why have you chosen not to work since being in prison?	_____ _____ _____ _____ _____	
62. Have you commenced/completed any education/training since being in prison?	☐ Yes → ☐ No (go to question 62b.)	Please describe the nature of the education/training: _____ _____ _____ _____ (go to question 62a.)
62a. Did you find this training useful?	☐ Yes ☐ No	Why? _____ _____ _____ _____

62b. Why have you chosen not to complete any education/training since being in prison?	_____ _____ _____ _____ _____
Release planning	
63. Have you attended any information sessions about release from prison?	☐ Yes ☐ No
64. Have you accessed any services (e.g. Link-Out, VACRO) to prepare for release from prison?	☐ Yes ☐ No
65. Do you intend to access any post-release programs?	☐ Yes ☐ No (skip to question 76)
75a. Which of the following post-release programs do you intend to access?	☐ Housing ☐ Education ☐ Employment ☐ Support (e.g. VACRO, Link-Out) ☐ Clinical programs (e.g. Drug and alcohol, sex offender programs)
66. How prepared do you feel for your release from prison?	☐ Very unprepared ☐ Unprepared ☐ Neither prepared or unprepared ☐ Prepared ☐ Very prepared
67. Do you have any concerns about your release from prison?	☐ Yes ☐ No (skip to next section 'General Questions')
67a. Please describe your concerns about your release from prison.	_____ _____ _____ _____ _____ _____
General questions	
68. Please describe how being in prison has been for you.	_____ _____ _____ _____ _____ _____

69. Please describe your most recent remand experience (location, sleeping arrangements and how time was spent)	_____ _____ _____ _____ _____ _____
70. How much has your age been a problem for you in prison?	☐ Not at all a problem ☐ Only a slight problem ☐ Somewhat of a problem ☐ Quite a problem ☐ Very much a problem

Appendix 9. Health file data collection instrument

Please note: Items 5 to 12 should only include information from the prisoner's health record for the previous 2 years. If the prisoner has been released, please include information from the health record for the 2 years prior to the date of release.

Demographic & Incarceration Information
CRN/MIN:
Date of birth: / / _
Sex: ☐ Male ☐ female
Date of most recent arrival into custody: ____/____/____
(if available) Date(s) of incarceration for the previous 2 years or the two years prior to most recent release: / / _ to / / _ / / _ to / / _ / / _ to / / _ / / _ to / / _ / / _ to / / _ / / _ to / / _
Health conditions
1. Please check the physical health conditions has the participant been diagnosed with *OR* record the participant's physical conditions individually on page 2:

☐ Anaemia	☐Musculoskeletal Disease (e.g. arthritis)
☐ Cataracts	☐ Osteoporosis
☐ Glaucoma	☐ Thyroid problems
☐ Asthma	☐ Diabetes
☐ Chronic obstructive airways disease (COAD)	☐ Kidney (renal) or bladder problems
☐ Emphysema	☐ Prostate problems (eg BPH)
☐Chronic bronchitis	☐ Liver problems or jaundice
☐ High blood pressure (hypertension)	☐ Blood-borne virus (e.g. HIV, HepB or C
☐ High cholesterol (hypercholesterolaemia)	☐ Skin cancer

☐ Heart attack/myocardial infarction/stroke

☐ Low blood pressure

☐ Gout

☐ Problems with feet and legs

☐ Varicose veins

☐Eczema/dermatitis/psoriasis

☐ Gastro-oesophageal reflux disorder (GORD)

☐ Stomach/intestinal Ulcers

☐ Other intestinal tract disease (Crohn’s disease, ulcerative colitis, irritable bowel syndrome)

☐ Chronic pain (persistent or bothersome pain that limits activities) Please indicate source (e.g. back, hip etc)_________________

☐ Neurological Disease (e.g. Parkinson’s, Alzheimer’s)

☐ Migraines

☐ Other growths or cancers

☐ Other ______________________________________

☐ Other ______________________________________

☐ Other ______________________________________

☐ Other ______________________________________

☐ Other ______________________________________

☐ Other ______________________________________

☐ Other ______________________________________

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☐ Other ______________________________________

☐ Other ______________________________________

Participant’s physical health conditions

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2. Which of the following mental health conditions has the participant been diagnosed with:

☐ Depression
☐ Anxiety
☐ Schizophrenia/psychosis
☐Bipolar disorder
☐ Personality disorder
☐ Post- Traumatic Stress Disorder (PTSD)
☐ Other (please specify) _____
☐ Other (please specify) _____
☐ Other (please specify) _____

3. Which of the following additional health issues has the participant been diagnosed with:

☐ Balance problems
☐ Falls risk
☐ Incontinence
☐ Chronic pain (eg back pain)

Therapeutic Equipment/Aids

4. Which of the following therapeutic equipment/aids have been provided to the participant whilst in prison?

☐ Cane/walking stick
☐ Walking frame
☐ Wheelie frame
☐ Wheelchair
☐ Shower chair
☐ Hearing aid(s)
☐ Glasses
☐ Incontinence pads
☐ Other (please specify) _____
☐ Other (please specify) _____
☐ Other (please specify) _____
☐ Other (please specify) _____

Medications

5. Please list the medications (including over-the -counter medications) prescribed to the participant in the previous 2 years.

Medication	Strength (mgs)	Frequency taken (e.g. daily, twice daily)	Period of time prescribed (dates)

Dental health	
6. How many times has the participant seen a prison dentist in the previous 2 years?	_____

7. Please indicate the type and frequency of dental procedures the participant has had in the previous 2 years:

Dental procedure	Number of procedures	Comments
☐ Tooth extractions		
☐ Fillings		
☐ Root canals		
☐ Dentures fitted		
☐ Other (please specify type) _____		
☐ Other (please specify type) _____		

☐ Other (please specify type) _____		
☐ Other (please specify type) _____		

Healthcare utilization

8. Please indicate which of the following health professionals the participant has seen in a prison health environment in the previous 2 years: *(Please do not include any health professionals seen outside the prison)*

Health professional	Number of sessions/visits	Comments
☐ General Nurse		
☐ General practitioner		
☐ Psychiatrist		
☐ Psychiatric Nurse		
☐ Physiotherapist		
☐ Podiatrist		
☐ Occupational therapist		
☐ Optometrist		
☐ Specialist (please specify) _____		
☐ Specialist (please specify) _____		
☐ Specialist (please specify) _____		
☐ Other (please specify) _____		
☐ Other (please specify) _____		

9. Please indicate which of the following health professionals the participant has seen outside of prison in the previous 2 years: *(i.e. in a tertiary environment/public hospital)*		
Health professional	Number of sessions/visits	Comments
☐ General Nurse		
☐ General practitioner		
☐ Psychiatrist		
☐ Psychiatric Nurse		
☐ Physiotherapist		
☐ Podiatrist		
☐ Occupational therapist		
☐ Optometrist		
☐ Specialist (please specify) _____		
☐ Specialist (please specify) _____		
☐ Specialist (please specify) _____		
☐ Other (please specify) _____		
☐ Other (please specify) _____		

10. Please list the health-related tests have been conducted for the participant in the previous 2 years: (e.g. blood sugar levels, other blood tests, biopsies, urine drug screens, X-Rays, CT Scans, preventative screening including pap smears, mammograms, prostate checks etc.)	
Test	Frequency (please indicate how many times this test was performed either in whole numbers or how frequently; see examples below)

e.g. FBC	x 2
e.g. BSL	3 x daily from January 2010 to August 2010

11. Please list the participant's hospitalizations whilst in prison in the previous 2 years?

Year	Reason for hospitalization	Hospital Location (Public or Prison)	Type of ward (Medical or Psychiatric)	Length of Stay (Days)	Planned or unplanned Stay
		☐ Public ☐Prison	☐Medical ☐ Psychiatric		☐Planned ☐ Unplanned
		☐ Public ☐Prison	☐Medical ☐ Psychiatric		☐Planned ☐ Unplanned
		☐ Public ☐Prison	☐Medical ☐ Psychiatric		☐Planned ☐ Unplanned
		☐ Public ☐Prison	☐Medical ☐ Psychiatric		☐Planned ☐ Unplanned
		☐ Public ☐Prison	☐Medical ☐ Psychiatric		☐Planned ☐ Unplanned

		☐ Public ☐Prison	☐Medical ☐ Psychiatric		☐Planned ☐ Unplanned
		☐ Public ☐Prison	☐Medical ☐ Psychiatric		☐Planned ☐ Unplanned
		☐ Public ☐Prison	☐Medical ☐ Psychiatric		☐Planned ☐ Unplanned
		☐ Public ☐Prison	☐Medical ☐ Psychiatric		☐Planned ☐ Unplanned
		☐ Public ☐Prison	☐Medical ☐ Psychiatric		☐Planned ☐ Unplanned
		☐ Public ☐Prison	☐Medical ☐ Psychiatric		☐Planned ☐ Unplanned

12. Please indicate the other occasions on which the participant has been taken to a public hospital <u>but not</u> admitted as an inpatient in the past 2 years:

Reason for hospital visit	Number of occasions
☐ Emergency treatment	
☐ Specialist appointment	
☐ Day procedure/diagnostic procedure	
☐ Other (please specify) ___________________________	

Prisoner refusal

13. Please indicate how many times the participant has cancelled/refused to attend the following appointments in the past 2 years:

Type of appointment	Number of times refused/cancelled
☐ Prison-based health appointment	
☐ External health appointment (e.g. public hospital)	

Other information

Appendix 10. Ethics approval from Monash University Human Research Ethics Committee

MONASH University

Monash University Human Research Ethics Committee (MUHREC)
Research Office

Human Ethics Certificate of Approval

Date:	**18 June 2010**
Project Number:	**CF10/0946 – 2010000482**
Project Title:	**A strategic framework for the management of Australia's aging offenders**
Chief Investigator:	**Assoc Prof Christopher Trotter**
Approved:	**From: 18 June 2010 To: 18 June 2015**

Terms of approval

1. The Chief investigator is responsible for ensuring that permission letters are obtained, if relevant, and a copy forwarded to MUHREC before any data collection can occur at the specified organisation. **Failure to provide permission letters to MUHREC before data collection commences is in breach of the National Statement on Ethical Conduct in Human Research and the Australian Code for the Responsible Conduct of Research.**
2. Approval is only valid whilst you hold a position at Monash University.
3. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash University letterhead and the Monash University complaints clause must contain your project number.
6. **Amendments to the approved project (including changes in personnel):** Requires the submission of a Request for Amendment form to MUHREC and must not begin without written approval from MUHREC. Substantial variations may require a new application.
7. **Future correspondence:** Please quote the project number and project title above in any further correspondence.
8. **Annual reports:** Continued approval of this project is dependent on the submission of an Annual Report. This is determined by the date of your letter of approval.
9. **Final report:** A Final Report should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected date of completion.
10. **Monitoring:** Projects may be subject to an audit or any other form of monitoring by MUHREC at any time.
11. **Retention and storage of data:** The Chief Investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

[redacted]

Professor Ben Canny
Chair, MUHREC

cc: Prof Colette Joy Browning; Prof Paul Michael Collier; Prof Daniel William O'Connor; Assoc Prof Rosemary Joan Sheehan

Postal – Monash University, Vic 3800, Australia
Building 3E, Room 111, Clayton Campus, Wellington Road, Clayton
Telephone +61 3 9905 5490 Facsimile +61 3 9905 3831
Email muhrec@adm.monash.edu.au www.monash.edu/research/ethics/human/index/html
ABN 12 377 614 012 CRICOS Provider #00008C

Appendix 11. Ethics approval from Victorian Department of Justice Human Research Ethics Committee (JHREC)

Department of Justice

Human Research Ethics Committee

Level 21, 121 Exhibition
Street Melbourne 3000
Telephone: (03) 8684 1514
Facsimile: (03) 8684 1525
DX210077

9 Friday 2010

Reference: CF/10/11281

Associate Professor Christopher Trotter
Monash University, Criminal Justice Research Consortium

Re: A strategic framework for the management of Australia's ageing offenders

Dear Associate Professor Christopher Trotter,

I am happy to inform you that the Department of Justice Human Research Ethics Committee (JHREC) considered your response to the issues raised in relation to the project *A strategic framework for the management of Australia's ageing offenders* and granted full approval for the duration of the investigation. The Department of Justice reference number for this project is CF/10/11281. Please note the following requirements:

- Sign the Undertaking form attached and provide both an electronic and hardcopy version within ten business days.
- The JHREC is to be notified immediately of any matter that arises that may affect the conduct or continuation of the approved project.
- You are required to provide an Annual Report every 12 months (if applicable) and to provide a completion report at the end of the project project. These forms are available on the Department of Justice website.
- Note that for long term/ongoing projects approval is only granted for three years, after which time a completion report is to be submitted and the original application renewed with a new application.
- The Department of Justice would also appreciate receiving copies of any relevant publications, papers, theses, conferences presentations or audiovisual materials that result from this research.
- All future correspondence regarding this project must be sent electronically to ethics@justice.vic.gov.au and include the reference number and the project title. Hard copies of signed documents or original correspondence are to be sent to The Secretary, JHREC, Level 21, 121 Exhibition St, Melbourne, VIC 3000.

If you have any queries regarding this application you are welcome to contact me on (03) 8684 1514 or email: ethics@justice.vic.gov.au.

Yours sincerely,

[redacted]

Dr Yasmine Fauzee
Secretary,
Department of Justice Human Research Ethics Committee

Victoria
The Place To Be

Appendix 12. Ethics approval from New South Wales Department of Corrective Services

Corrective Services NSW

10/29929

Associate Professor C Trotter
Social Work Department
Monash University
PO Box 197
Caulfield East VIC 3145

Dear Associate Professor Trotter

I refer to your research application entitled "A strategic framework for the management of Australia's Ageing offenders". The project will seek to develop a framework for the management of Australia's ageing offender population to contribute to improvements in planning and facilities for these offenders.

I am pleased to inform you that conditional approval has been given for your research project. The conditions of approval are that you comply with the 'Terms and Conditions of Research Approval' [Attachment A]

I wish you every success in your endeavours.

Yours sincerely

[redacted]

Ron WOODHAM
Commissioner

3/ March 2011

Henry Deane Building, 20 Lee Street, Sydney NSW 2000; GPO Box 31 Sydney NSW 2001
Tel: 02 8346 1333 Fax: 02 8346 1010 DX:22 www.correctiveservices.nsw.gov.au

Appendix 13. Ethics approval from New South Wales Justice Health Human Research and Ethics Committee

JUSTICE HEALTH
STATEWIDE SERVICE | NSW HEALTH

Ref: G984/10
Doc: D1719/11

A/Professor Christopher Trotter
Deputy Head
Social Work Department
Monash University
PO Box 197
CAULFIELD VIC 3145

Dear Professor Trotter

Re: A Strategic Framework for the Management of Australia's Ageing Offenders

The Committee considered your response at its meeting held on 17th February 2011 and decided to grant approval to the proposal.

According to the *National Statement on Ethical Conduct in Research Involving Humans*, a regular report is required on all approved projects. You will be required to report on your progress, by 28 February 2012. The report template will be emailed to you.

Additionally, researchers must immediately report anything which might warrant review of the approval, including:

a) Serious or unexpected adverse effects on participants;
b) Proposed changes in the protocol; or
c) Unforeseen events that might affect continued ethical acceptability of the project.

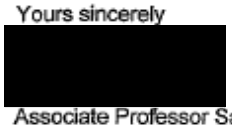
You are also requested to inform the Human Research & Ethics Committee if the research project is discontinued prematurely.

The National Statement on Ethical Conduct in Human Research is available on http://www.nhmrc.gov.au/publications/synopses/_files/e72.pdf, for your information.

Please note that though Justice Health ethics approval has been granted, the administrative requirements regarding the conduct of the study are yet to be considered by Justice Health. For advice on receiving Justice Health administrative approval and support, please contact Dr Devon Indig, Head of Research Centre for Health and Research in Criminal Justice on (02) 8372 3010.

Should you require further information, please do not hesitate to contact me on (02) 8372 3000.

Yours sincerely



Associate Professor Sandra Egger
CHAIRPERSON
HUMAN RESEARCH & ETHICS COMMITTEE

25 March 2011

Justice Health
ABN 70 194 595 506
PO Box 150 Matraville NSW 2036
Tel (02) 9700 3000 Fax (02) 9700 3493
Website www.justicehealth.nsw.gov.au

Appendix 14. Candidate's further publications

The following research outputs in the area of older prisoners were also published by the candidate during the candidature period:

Trotter, C., & Baidawi, S. (2015). Older prisoners: Challenges for inmates and prison management. *Australian and New Zealand Journal of Criminology, 48*(2), 200-218. doi: 10.1177/0004865814530731

Forrest, G., Baidawi, S., Atkinson, T., Small, H., & Bernoth, M. (2016). Previously unrecognised issues: Managing the health of an ageing prison and homeless population. In Bernoth & Winkler (Eds.), *Healthy Ageing and Aged Care*. South Melbourne: Oxford University Press.