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Mental health and spirituality of female prisoners in a women's prison in Chile

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Abstract

Background

The mental health of prisoners is of growing global health importance as prison populations increase exponentially. Though additional risks of mental disorder and poor mental wellbeing of prisoners are now better understood, women, especially those in low and middle income countries, and in regions outside North America and Europe are underrepresented in prison mental health studies. There is strong evidence of associations between religion and spirituality (RS) and mental health in the general population in North America and Europe. This thesis aims to measure and explain any associations between RS and depression and mental wellbeing among female prisoners in Chile.

Methods

An explanatory sequential mixed methods approach comprised an initial quantitative study linked to a subsequent qualitative study. In the quantitative phase, 94 randomly sampled female prisoners in Chile participated in a pooled two-stage cross-sectional survey which collected data on background, mental health and RS variables. Mental wellbeing was measured using the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS). Self-report depression data were collected and 40 prisoners were also administered the Mini International Neuropsychiatric Interview (MINI). RS variables included: affiliation, personal importance, involvement (frequency of attending services), benefits and beliefs. The design of the qualitative phase was informed by quantitative study findings. Six prisoners who had participated in the cross-sectional survey attended one of two focus groups. Individual in-depth interviews were conducted with 3 prison chaplains and 2 health professionals from the prison health centre. Topic guides for focus groups and interviews were used to facilitate discussions on the mental health and RS of female prisoners and to elicit views on selected findings from the quantitative study. Logistical regression techniques were used to statistically test the hypothesis of no association between RS and depression and mental wellbeing. Audio-recorded qualitative data were transcribed in Spanish and analysed thematically in English.

Results

Of the 94 women, 11 (11.7%) reported a current professional diagnosis of depression, while major depression was confirmed in 13 (32.5%) of the 40 women assessed using the MINI. The women had a median WEMWBS score of 55 (IQR 43-61) out of 70. Religiosity was high among the sample with 86 (91.5%) women affiliated to mainstream Christianity and 69 (73.4%) who considered RS to be personally very important. In a sample of 40 women, frequency of attendance at RS services was significantly higher in prison than during the year prior to incarceration (Wilcoxon Sign Ranks Test $Z=3.1$; $p<0.002$). No significant associations were found between depression and mental wellbeing, and the key RS variables. However, 61 (89.7%) women believed there was a connection between their mental health and spirituality. The qualitative data revealed differences within and between participant groups in understandings of mental health and RS terminology and concepts. Themes emerged around the prison determinants of mental health and the mental health effects of the female gender. Prisoners identified RS variables that influenced mental health which had not been measured in the survey. Explanations were found for the divergent survey results of the association between RS and mental health. The data showed how RS shapes prisoners' help-seeking behaviour and attitudes to mental health care.

Conclusion

The association between RS and mental health among prisoners in Chile remains unclear but may differ from established patterns reported in non-prisoner populations. This a challenging area of study with an additional layer of complexity present in prison populations where there are high levels of religiosity and spirituality. Larger studies are needed to confirm the quantitative findings, while qualitative findings should lead to raised awareness of RS in the development of prison mental health strategies in accordance with the needs of a given population.

Lay summary

There are over 10 million prisoners worldwide and this number is growing rapidly. Prisoners experience poorer mental health than non-prisoners. Prisoners in less developed countries and females seem to have a higher risk of having depression. In Europe and North America, moderately high levels of religion and spirituality (RS) are associated with less depression and better mental wellbeing in non-prisoners. Could this also be true for prisoners outside of these regions? This study aims to identify and understand any association between RS and both depression and mental wellbeing among female prisoners in Latin America.

Two different methods were used to meet the aims of the study. To identify the presence of an association, 94 female prisoners in Chile completed a survey in which questions were asked about depression, mental wellbeing, religion, personal importance of religion, frequency of attending religious services, RS beliefs and RS benefits. Survey responses were used to calculate whether there was an association between RS and mental health (depression and mental wellbeing). The survey results were used to plan the second part of the study. To understand any association between RS and mental health, six prisoners were invited to one of two focus groups in which the topic of RS and mental health was discussed. To provide other perspectives, 3 prison chaplains and 2 prison health professionals were interviewed in depth about the same topic. Focus groups and interviews were recorded. Important themes discussed in the focus groups and interviews were identified and noted in a structured way.

The association between RS and mental health in prisoners is complicated and needs to be better understood through larger surveys. Prison mental healthcare should consider the RS needs of prisoners

Poem

“Lachica”

A woman inside

Finds faith to help her mood stay up –

She’s well,

Despite the knocks

Declaration

I declare that I have composed this thesis and that:

1. The work presented in this thesis is my own;
2. This work has not been submitted for any other degree or professional qualification;
3. Where I have consulted the published work of others, this is clearly attributed;
4. I have acknowledged all main sources of help

Signed:

Anne Aboaja

Dedication

To my dear mother

Acknowledgements

I thank God for my two excellent supervisors, Prof Liz Grant and Prof Douglas Blackwood, who have journeyed with me for four years, fuelling my passion for the topic, teaching and guiding me, believing in me, keeping me on track and helping me to grow academically. Your feedback has been invaluable. I am grateful to you both for giving me a chance to undertake this PhD project and showing much kindness. Thank you for helping my dreams come true and going far beyond the description of a good supervisor. I am blessed to be your PhD student!

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> *"The Spirit of the Lord is upon Me because He has anointed Me to preach the gospel to the poor; He has sent me to heal the brokenhearted, to proclaim liberty to the captives and recovery of sight to the blind, to set at liberty those who are oppressed."* (Luke 4:18, New International Version, The Bible)
>
> S.D.G.

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Abbreviations

APA	American Psychiatric Association
AMSTAR	Assessing the Methodological Quality of Systematic Reviews
AXIS	Appraisal tool for Cross-Sectional Studies
BDI	Beck Depression Inventory
CES-D	Centre for Epidemiological Studies Depression Scale
CIDI	Composite International Diagnostic Interview
CRD	Centre for Reviews and Dissemination
DALYs	Disability-adjusted Life Years
DSES	Daily Spiritual Experiences Scale
DSM	Diagnostic and Statistical Manual of Mental Disorders (DSM-IIIR = DSM version 3 revised; DSM-IV = DSM version 4; DSM-5 = DSM version 5)
EMBASE	Excerpta Medica Database
FPPR	Female prison population rate = number of female prisoners per 100,000 population (males and females)
GHQ	General Health Questionnaire
ICD	International Statistical Classification of Diseases and Related Health Problems - classification of mental and behavioural disorders (ICD-10 = ICD version 10)
LILACS	Latin American and Caribbean Health Sciences Literature (Portuguese: Literatura Latino Americana em Ciências da Saúde)

MINI	Mini International Neuropsychiatric Interview
MMRS	Multidimensional Measure of Religiousness/Spirituality
NHS	National Health Service
OR	Odds ratio
PAHO	Pan-American Health Organisation
PPR	Prison population rate = number of prisoners per 100,000 population
PTSD	Post-traumatic stress disorder
RCPsych	Royal College of Psychiatrists
RFIRSB	Royal Free Interview for Religious and Spiritual Beliefs
RPSS	Religious Problem-Solving Scale
RS	Religion (or Religiosity) and Spirituality
SCID	Structured Clinical Interview for DSM-III-R
SciELO	Scientific Electronic Library Online
SPS	Scottish Prison Survey
SWBS	Spiritual Well-Being Scale
UDHR	Universal Declaration of Human Rights
UK	United Kingdom
UN	United Nations
USA	United States of America
WEMWBS	Warwick-Edinburgh Mental Wellbeing Scale
WHO	World Health Organisation

WHOQOL-SRPB World Health Organisation's Quality of Life – Spiritual, Religious and Personal Beliefs

WPA World Psychiatric Association

WPB World Prison Brief

YDLs Years Lived With Disability

YLLs Years of Life Lost to premature morbidity

Chapter 1 Definitions of mental health

1.1 Introduction

Mental disorders are a leading cause of the global health burden in terms of years lived with a disability. Worldwide, depressive disorders contribute to over 40% of the mental health burden and suffering. (Whiteford et al., 2013). The improvement of mental health and wellbeing is included in Goal 3 of the United Nations Sustainable Development Goals (UN, 2015b). The identification of modifiable factors associated with mental disorders such as depression is a research priority for global mental health (Collins et al., 2011).

The World Health Organisation recognises that vulnerable and marginalised communities tend to have a disproportionately high burden of health problems (WHO, 2014c). There are over 10 million prisoners worldwide who represent a significant population of marginalised individuals who have an increased risk of mental disorders and poor mental wellbeing (Walmsley, 2016, WHO, 2014c). Compared to the general population, prisoners have lower levels of mental wellbeing (Tennant et al., 2007, SPS, 2015a) and are over three times more likely to have depression (Fazel and Seewald, 2012, Ferrari et al., 2013). In the general population, depression is associated with religion and spirituality (Bonelli and Koenig, 2013). However, little is known about this association among prisoners (Eytan, 2011). This thesis aims to understand whether religious and spiritual factors are associated with depression and mental wellbeing in the prison population, with a focus on women in a prison in Chile.

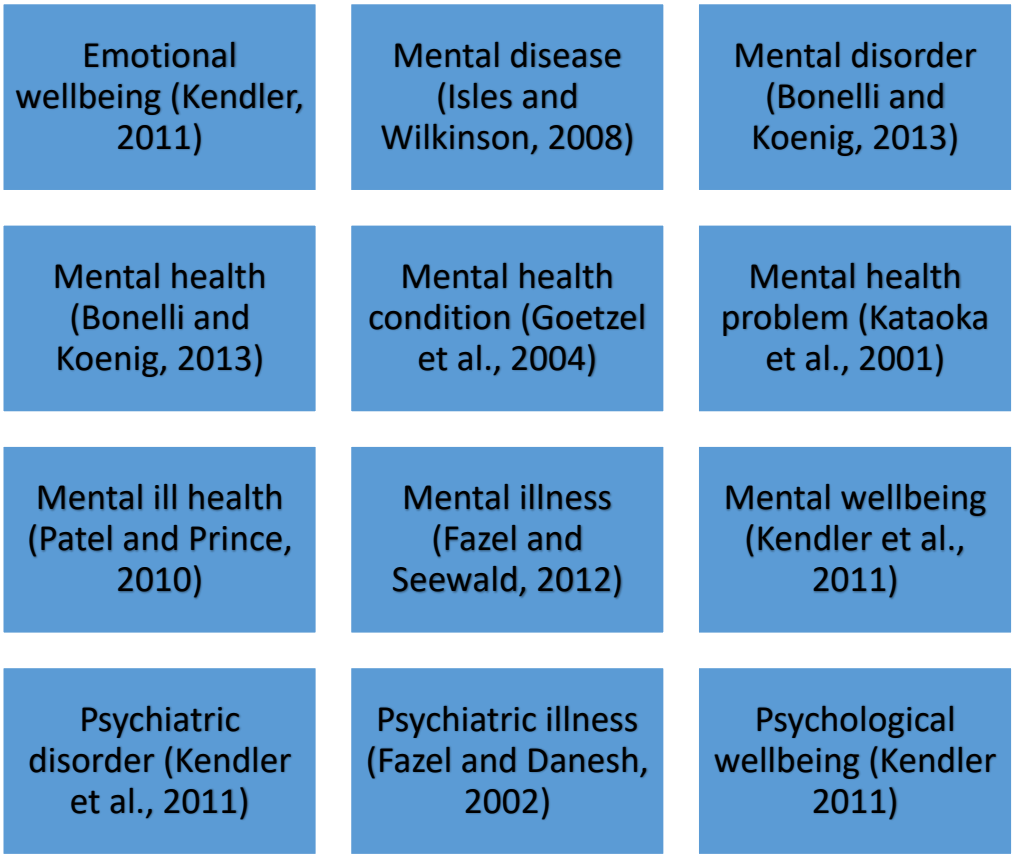
Research into mental health and religion and spirituality is complex and challenging because each term has several definitions. To minimise the risk of confusion, this chapter discusses and clarifies mental health terminology and presents the model for mental health adopted in this thesis.

1.2 Mental health terminology

The terminology used within mental health has been challenged and changed through the centuries. Whilst in 19th century Britain, “lunacy” and “insanity” formed part of the mental health vocabulary of the medical profession (Robertson, 1867), today

such terms are considered outdated and pejorative. They have been superseded by words and phrases that continue to be challenged, redefined and changed. Figure 1-1 lists in alphabetical order some terms that have been used by mental health researchers in the 21st century (Isles and Wilkinson, 2008, Goetzel et al., 2004, Fazel and Seewald, 2012, Fazel and Danesh, 2002, Kendler et al., 2011, Bonelli and Koenig, 2013, Kataoka et al., 2001, Patel and Prince, 2010).

Figure 1-1: Examples of "mental health" terminology in usage in the 21st century



Clarity on definitions is useful within fields of research that seek to: develop valid instruments which measure aspects of health, describe the health of a population, construct useful health information systems, make meaningful comparisons between the health of populations, study factors which may be associated with health, and to evaluate the effectiveness of interventions designed to improve health (Üstün and Jakob, 2005). Revised medical classification systems, changes in medical legislation, de-medicalisation and anti-psychiatry movements, the rise in multidisciplinary clinical work and research, linguistic and philosophical debates over medical

concepts, globalisation, the growth of media health interest, and socio-cultural development, have all contributed to the usage in the English language of several overlapping or related terms including the four used most widely in this thesis: mental health, mental wellbeing, mental disorder and mental illness.

1.3 Mental disorder

1.3.1 Mental disorder or mental illness?

Just as there has been debate on the most appropriate definition and the scope of mental disorder, there has also been debate on whether the term is preferred to others such as: psychiatric disorder, mental illness and mental disease (Kendell, 2002, Fazel and Seewald, 2012, Isles and Wilkinson, 2008). While the terms are frequently used interchangeably, it has been argued that no term is value-free (Fulford, 2001). Depending on the context and culture, sometimes both substance use disorders and personality disorders are described as mental disorders but not mental illnesses (Tyrer et al., 2015, Merikangas et al., 2010, Mundt et al., 2016, Fazel and Seewald, 2012), and on other occasions substance use disorders are considered distinct from mental disorders (Whiteford et al., 2013). Despite the absence of a single universal definition, clinicians and academics are able to communicate clearly about diagnoses through the use of two international classification systems: the International Classification of Diseases (ICD) of the World Health Organisation (WHO, 1992) and the Diagnostic and Statistical Manual of Mental Disorders (DSM) of the American Psychiatric Association (APA, 2013). Recognising the research and clinical value of the classification systems in forensic psychiatry and global health, and acknowledging the range of practices in different parts of the world, mental disorder is the preferred term used in this thesis and is used synonymously with mental illness. Any diagnosis that appears within the DSM and ICD classification systems is considered a mental disorder for this thesis. On this basis, the spectrum of mental disorders includes dementia, schizophrenia, bipolar affective disorder, obsessive-compulsive disorder, attention deficit hyperactivity disorder, emotionally unstable personality disorder and depression.

1.3.2 Depression

The term depression used in the thesis includes the DSM-5 term major depressive episode or major depression and the ICD-10 term depressive episode or depression. Dysthymia, a chronic form of mild depression which fails to fulfil the criteria for a diagnosis of depression, is not included in the thesis understanding of depression. Depression is characterised by a combination of features which include: persistent low mood, anhedonia (the loss of interest in previously pleasurable activities) fatigue or reduced energy levels, poor concentration or indecisiveness, psychomotor agitation or slowing, loss of confidence, suicidal thoughts, feelings of worthlessness or excessive guilt, disturbed sleep and altered appetite with associated weight changes (APA, 2013, WHO, 1992).

Depression is a common mental disorder (Chisholm et al., 2016) with a global point prevalence of approximately 5% (Ferrari et al., 2013). Estimates suggest that depressive disorders and dysthymia make the largest single contribution to non-fatal health loss worldwide, particularly in lower and middle income countries in the Americas (WHO, 2017). Table 1-1 shows that although globally depressive disorders and dysthymia do not make a substantial contribution to years lost due to premature morbidity (YLDs), they are major contributors to the health burden attributable to all mental and substance use disorders, as measured by disability-adjusted life years (DALYs) (40.5%) and years lived with disability (YLLs) (42.5%).

Table 1-1: Contribution to global mental health burden, by disorder category

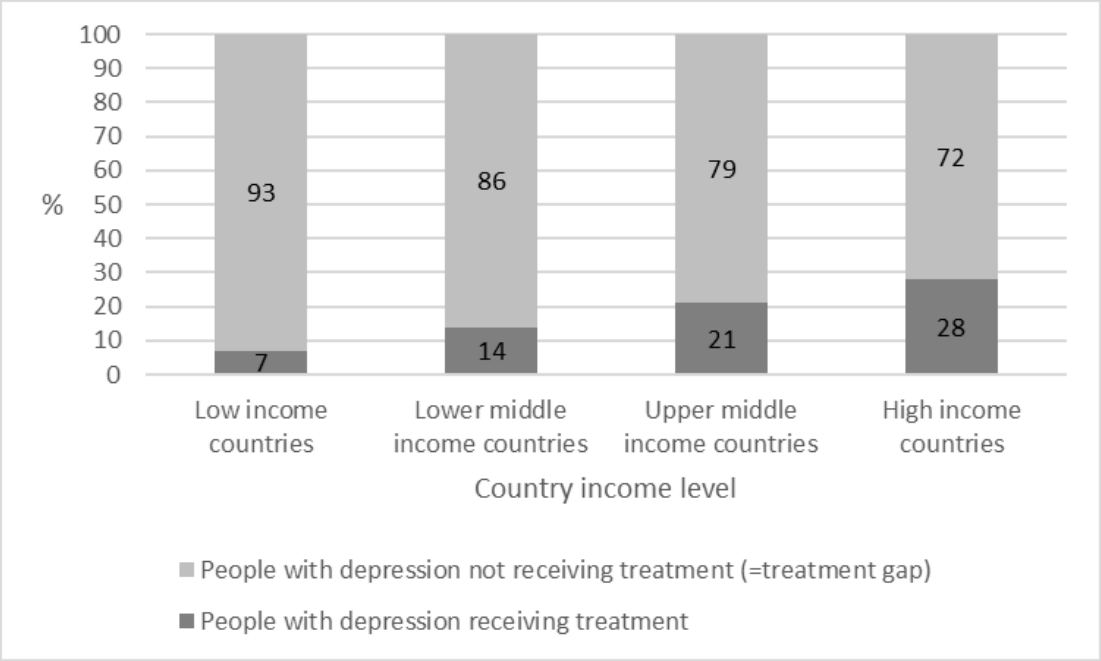
Category of mental disorders and substance use disorders	**Contribution to global mental health burden**		
	DALYs	**YLDs**	**YLLs**
Depressive disorders and dysthymia	40.5%	42.5%	Not reported
Anxiety disorders	14.6%	15.3%	Not reported
Drus use disorders	10.9%	9.4%	41.7%
Alcohol use disorders	9.6%	7.9%	44.4%
Schizophrenia	7.4%	7.4%	7.1%
Other mental disorders	17.0%	17.5%	6.8%

However, the reported high global burden of depression has been challenged by a growing minority asserting that depression is a Western biomedical concept that may not hold the same meaning for individuals in non-Western communities (Summerfield, 2017, Bracken et al., 2016, Kirmayer et al., 2017). Notwithstanding the debates over the epistemology of "depression" and the most appropriate health research response, depression remains an important focus in public and global health research, policy and practice (Kirmayer et al., 2017, WHO, 2017).

The aetiology of depression is multifactorial and recent systematic reviews have identified a combination of biological (Valkanova et al., 2013), psychological and social factors (Madsen et al., 2017) associated with depression such as the significant effect of stressful life events moderated by genes (Hosang et al., 2014). Treatments for depression, therefore, target biopsychosocial factors through interventions such as antidepressant medication and cognitive-behavioural therapy. Strategies to prevent the onset of depression, which may also improve existing depression, include the modification of risk factors of the disorder. In the case of stressful life events, this might involve reducing the risk of stressful life events occurring or reducing the psychological impact of stressful life events by increasing resilience (Southwick et al., 2005). Genetic studies have shown that individuals with a genetic predisposition to depression may also be genetically predisposed to low levels of resilience when encountering stressful life events, and that environmental factors may influence levels of resilience (Amstadter et al., 2016). Therefore, environmental factors may be identified and modified to increase resilience and lower the risk of an individual expressing the genes for depression when faced with a stressful life event such as the loss of a significant relationship, imprisonment or victimisation.

Worldwide, between 7% and 28% of individuals with depression receive the interventions for depression; the remainder do not receive the treatment which might benefit them (Chisholm et al., 2016). Figure 1-2 shows that this 'treatment gap' increases as country income level decreases.

Figure 1-2: Global depression treatment gap by country income level (based on data presented by Chisholm et al., 2016)



Concerns have been raised that certain treatments for depression developed for Western populations may prove inappropriate or ineffective in the short- or long-term among other populations due to human resource, economic, epistemological and socio-cultural differences between countries (Bracken et al., 2016). Diagnostic, preventative and treatment approaches to depression in any culture should, using a biopsychosocial model (Patel, 2014), consider these differences and seek to understand and incorporate existing systems which have traditionally provided care for those reporting or exhibiting symptoms of depression (Bracken et al., 2016).

1.3.3 Measurement of mental disorder

Mental disorders are commonly classified using either of the two international diagnostic systems: DSM-5 and ICD-10 (WHO, 1992, APA, 2013). In practice, mental disorders are usually diagnosed by medically qualified clinicians who make a judgment informed by a detailed clinical interview and a review of medical records, if available. Diagnoses may be made instantly or over an extended period during which further observations are made and collateral information is obtained. For most

mental disorders, standardised diagnostic tools are not routinely used in the clinical setting.

However, a number of validated tools have been used in research to measure and diagnose mental disorders according to these classification systems including: the Mini International Neuropsychiatric Interview (MINI) (Lecrubier et al., 1997), the Composite International Diagnostic Interview (CIDI) (WHO, 1993) and the Structured Clinical Interview for DSM (SCID) (Spitzer et al., 1992). These standardised diagnostic tools enable meaningful comparisons to be made between different populations or within the same population over a period of time.

A systematic review and meta-analysis of the global prevalence of depression among prisoners included studies that had measured the disorder according to ICD and DSM diagnostic criteria using a range of diagnostic tools including the MINI, CIDI and SCID (Fazel and Seewald, 2012). Variation in the classification system used was found to be a significant source of heterogeneity in the meta-analysis, with studies using DSM criteria reporting a higher prevalence of depression than was found in studies using the ICD criteria for depression (Fazel and Seewald, 2012). Comparisons between studies are limited when different diagnostic instruments have been used.

Instruments have been developed and validated for screening, rather than diagnosing, mental disorder. The Centre for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977) and the Beck Depression Inventory (BDI) (Beck et al., 1996) have been used worldwide to screen for depression among prisoners (Boothby and Durham, 1999, Scheyett et al., 2010). Although screening tools can be useful for identifying individuals who might benefit from a detailed diagnostic assessment or who might most likely benefit from a preventive intervention, they do not give an accurate estimate of the number of people in a given population with a confirmed diagnosis in need of specific treatment (Maizels et al., 2006).

In the absence of a validated structured instrument to diagnose or screen for depression, proxy methods can be used. For example, in a study of depression and coping styles among prisoners in the USA, an attempt was made to identify

depressed subjects without the use of instruments using three approaches: 1) a diagnosis was recorded in the medical records, 2) the prisoner was prescribed an antidepressant and 3) the prisoner responded affirmatively when asked if a doctor had given him or her a diagnosis of depression (Scheyett et al., 2010). Whilst not providing a definitive ICD or DSM diagnosis of depression, these three approaches give additional information about clinical practice and the perspective of patients, and may be preferred for prison research on occasions when it is not possible to apply a structured tool to individual prisoners due to resource or permission constraints.

1.4 Mental wellbeing

1.4.1 What is mental wellbeing?

In an early 20th century medical journal, mental wellbeing was conceptualised in terms of a continuum ranging from a dysphoric state of unease, mental unrest and unhappiness to a euphoric state characterised by cheerfulness in the absence of dysphoria. It was also understood to be an affective construct with domains relating to emotions that were distinct from but linked to physical wellbeing (Cottrell and Wilson, 1926). Since then, several alternative definitions of mental wellbeing have been proposed, and although there has been much overlap, reflecting a growing consensus, the distinctions between each definition have led to the development of different instruments to measure the concept (Kamman and Flett, 1983, Tennant et al., 2007). A review of 99 studies describing the development of wellbeing instruments found that although there was agreement that the concept was multidimensional, authors rarely provided a full and clear definition of wellbeing, (Linton et al., 2016). Therefore, given the current lack of consensus regarding a definition, in the study of mental wellbeing, researchers might simply choose a specific mental wellbeing instrument based on distinguishing factors (Linton et al., 2016) and then adopt a mental wellbeing definition that reflects the dimensions measured by the instrument. The Warwick-Edinburgh Mental Wellbeing Scale was designed specifically to measure mental wellbeing and its authors define mental wellbeing as a concept that covers two perspectives:

"(1) the subjective experience of happiness (affect) and life satisfaction (the hedonic perspective); and (2) positive psychological functioning, good relationships with others and self-realisation (the eudaimonic perspective)." (Stewart-Brown and Janmohamed, 2008)

The scope of hedonia and eudaimonia are broad. Hedonia is generally concerned with subjective feelings of: happiness, pleasure, enjoyment, comfort, and satisfaction with life. In contrast, eudaimonia has a focus on functioning: achieving goals, good relationships, autonomy, using character to serve the greater good, purpose and social responsiveness (Huta and Waterman, 2014). The above hedonic-eudaimonic definition of mental wellbeing is adopted in this thesis.

1.4.2 Mental wellbeing and depression

The thesis definition of mental wellbeing (Stewart-Brown and Janmohamed, 2008) reflects current thinking that mental wellbeing does not lie at one end of a single continuum at the opposite end of which lies mental disorder, as was once believed, but is a distinct concept which co-exists alongside the presence or absence of mental disorder (de Cates et al., 2015). This is the basis of the two-continuum model comprising one continuum of mental disorder and another of mental wellbeing (Westerhof and Keyes, 2010). Regarding depression, this means that a person may be classified within any one of the following four groups:

1) depressed with a low level of mental wellbeing
2) depressed with a high level of mental wellbeing
3) not depressed with a low level of mental wellbeing
4) not depressed with a high level of mental wellbeing.

The study of the relationship between mental wellbeing and mental disorder reveals a bidirectional picture in which the mental wellbeing continuum is associated with the mental disorder continuum in two directions. Several studies report findings that suggest the predictive value of mental wellbeing for mental disorder (Keyes et al., 2010, Lamers et al., 2015, Grant et al., 2013). After controlling for confounders, such

as physical health, it was shown that increases in mental wellbeing reduced the odds of mental illness, while decreases in mental wellbeing increased the odds of mental illness (Keyes et al., 2010). In adults undergoing a stressful period in life, low levels of mental wellbeing were found to increase symptoms of depression across time (Grant et al., 2013). These findings were replicated in a study that found mental wellbeing to be a predictor of symptoms of mental disorder and vice-versa (Lamers et al., 2015). However, this apparently simple bidirectional relationship was shown to be more complex in a study that found older adults do not have better mental wellbeing than younger adults, despite experiencing fewer symptoms of mental illness (Westerhof and Keyes, 2010).

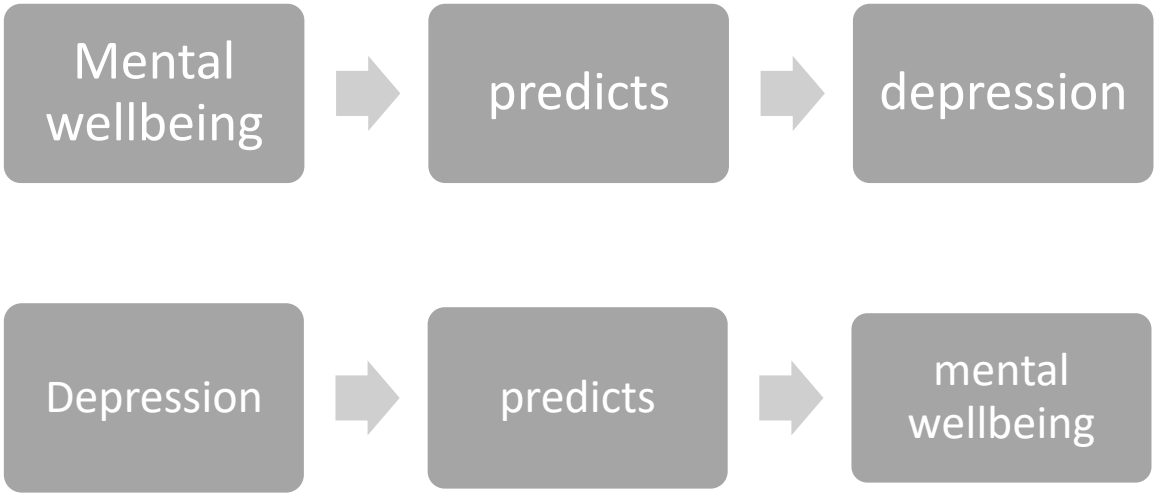
Studies have focused mainly on common mental disorders such as depression which intuitively would appear to be correlated with mental wellbeing as defined above (Stewart-Brown and Janmohamed, 2008). It is logical to deduce that a person with depressive features such as low mood, social withdrawal, low self-esteem, excessive guilt and recurrent suicidal thoughts would be less likely to experience happiness and positive relationships with others and would therefore have a lower overall mental wellbeing score. However, a person in the manic phase of a bipolar affective disorder presenting with elated mood, grandiose ideas about future life plans and increased sociability might subjectively experience high mental wellbeing. This comparison again highlights that the bidirectional relationship between mental wellbeing and mental disorder is more complex than some studies conclude.

Genetic studies provide further understanding of the complex relationship between mental wellbeing and mental disorder. A recent Australian twin study found variation in mental wellbeing in a population without mental disorder and confirmed that mental wellbeing has a strong negative association with depressive symptoms (Routledge et al., 2016b). Genetic factors explained approximately 50% of this phenotypic correlation. However, of the 50% of mental wellbeing variance attributable to genes, half was unique to wellbeing and not shared with anxiety and depressive symptoms, while of the 50% attributable to environmental factors, just under one-fifth was shared with the symptoms of mental disorder. The authors concluded that while environmental predictors of depression and anxiety might also

predict mental wellbeing, some interventions that improve mental wellbeing might not prevent or reduce these mental disorders (Routledge et al., 2016b). A twin study in the USA reported that whilst individuals with a strong genetic risk for anxiety and depression can, perhaps with some difficulty, achieve high mental wellbeing, those with a weak genetic predisposition to anxiety and depression cannot assume that they will have the highest levels of mental wellbeing or that they will be protected against low levels of mental wellbeing (Kendler et al., 2011).

These findings highlight the need for greater understanding of mental wellbeing in psychiatry (Routledge et al., 2016a). It has been suggested that, given the associations between mental wellbeing and mental disorder (Keyes and Simoes, 2012, Keyes et al., 2010, Kendler et al., 2011), both should be studied together in future exploratory and clinical research examining underlying mechanisms (Routledge et al., 2016b). Figure 1-3 summarises the key findings of the bidirectional relationship between mental wellbeing and depression.

Figure 1-3: Summary of current findings of the bidirectional relationship between mental wellbeing and depression



1.4.3 Measurement of mental wellbeing

Unlike mental disorder, mental wellbeing has no internationally agreed definition or classification system. Thus, there is no gold standard for measuring mental wellbeing. Rather, several instruments have been developed and widely validated.

Each instrument measures and defines mental wellbeing slightly differently (Bech et al., 2003, Skevington et al., 2004, Stewart-Brown et al., 2009, Tennant et al., 2007). It has been suggested that the choice of instrument used to measure mental wellbeing in research should depend on the dimension of mental wellbeing the researcher wishes to measure (Linton et al., 2016). However, additional factors might influence the choice of instrument. For example, in time-limited research, a shorter tool might be preferred over a longer tool. To maintain academic rigour, it is important that the instrument used has been validated and shown to be reliable. Furthermore, a validated version should be used in the language spoken by the those in whom mental wellbeing is being measured. An older instrument might no longer reflect conceptual advances in the field or might contain phrases that are no longer culturally relevant or acceptable. The evidence for using a particular instrument with a specific population may also guide the choice of mental wellbeing tool. For example, while it is common to develop and validate a new instrument among the general adult population, researchers may prefer to use an instrument which has already been used successfully in the subpopulation of interest. Validated instruments have been used to measure mental wellbeing among diverse groups including: adolescents in Australia using the General Health Questionnaire-12 (Tait et al., 2003); female inpatients on a perinatal psychiatry unit in the USA (Beckham et al., 2013) using the Warwick-Edinburgh Mental Well-being Scale; and migrant workers in China using the WHO Well-being Index (Li et al., 2014).

Of these, the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) has been adopted by NHS Scotland to provide a measure of mental wellbeing of male and female prisoners in Scotland as part of an annual national prisoner survey (Carnie and Rosisin, 2011, SPS, 2015b). Based on the New Zealand Affectometer 2 (Kamman and Flett, 1983, Tennant et al., 2006), the WEMWBS was originally developed in the English language to measure population mental well-being in the UK (Tennant et al., 2007). It has been adapted and validated for use in different languages and countries including Spanish for use in Spain (López et al., 2013), Chile (Carvajal et al., 2015) and Argentina (Serrani Azcurra, 2015). It shows sensitivity to change in the mental well-being of individuals and populations over time and has been used to measure the effectiveness of mental health interventions

(Maheswaran et al., 2012, Millar and Donnelly, 2014). An unpublished cross-cultural study based on UK and Italian populations discussed the suitability of the WEMWBS as a valid tool able to screen for a high risk of depression and to identify those with a possible diagnosis of major depression, as well as measure mental wellbeing (Bianco, 2011). The underlying assumption of the findings in the study is that a very low mental wellbeing score indicates a high risk of depression; a moderately low score indicates the possibility of major depression and a very low score flags up the need for a clinical diagnostic assessment for depression. This is consistent with the evidence that mental wellbeing predicts mental disorder (Lamers et al., 2015, Keyes et al., 2010, Grant et al., 2013, Kendler et al., 2011). However, this field of study of the WEMWBS as a screening tool for depression has not been developed further.

1.5 Mental health

1.5.1 Definition and measurement of mental health

There is much variation in the usage of the term "mental health" in research, public health policy, clinical practice and lay conversation. Some researchers use the term "mental health" as a synonym for mental wellbeing (Westerhof and Keyes, 2010), while policies and strategies discussed at national and international levels have used the term interchangeably with mental illness and mental wellbeing, as well as in reference to both collectively (RCPsych, 2012, Herrman and Swartz, 2007, Prince et al., 2007, Patel and Prince, 2010). In some countries mental health services exist for the assessment and treatment of mental disorder and are used by individuals who have "problems" with their mental health, or "mental health problems" (Andrews et al., 2001). An unpublished study found that a lay sample conceptualised mental health in terms of mental illness and mental wellbeing, reflecting the two-continuum model (Drawert, 2013). The confusion around the current usage of the term "mental health" is related to the lack of consensus on a definition of the term.

The World Health Organisation (WHO) defines mental health as "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community" that is more than merely the absence of mental

illness, and considers it an integral part of overall health alongside physical and social wellbeing (WHO, 2014b). This description is similar to the eudaimonic perspective of the thesis understanding of mental wellbeing (Stewart-Brown and Janmohamed, 2008). Although the WHO definition is classically quoted in global health, it has been challenged in a Canadian study of multidisciplinary researchers from low, middle and high income countries who were asked to select their most preferred definition, if any, from a list of four definitions of mental health. Only 20% or participants preferred the WHO definition, while 30% felt none of the offered definitions was satisfactory (Manwell et al., 2015).

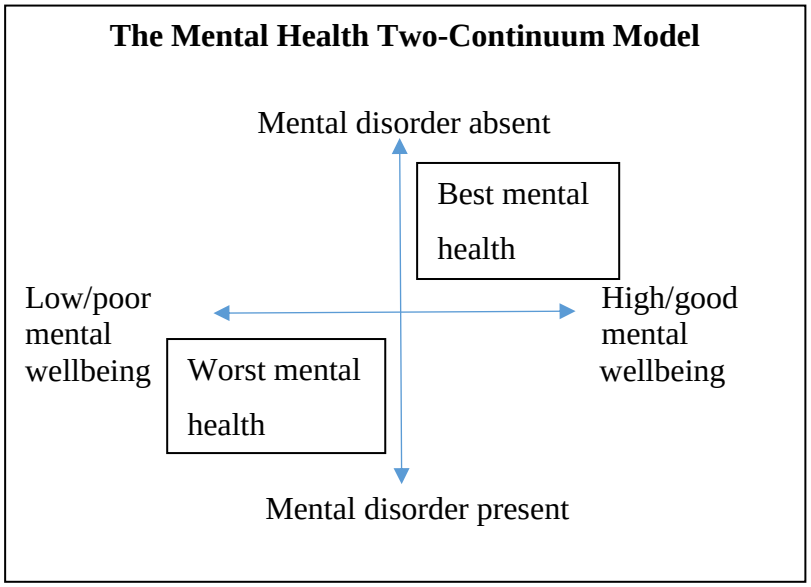
NHS Health Scotland, uses a broader definition of mental health which includes two axes: "mental wellbeing" and "mental health problems" (NHS, 2010). The latter encompasses both diagnosable mental illnesses found in recognised classification systems such as ICD-10 and DSM-5 and sub-threshold clinical conditions, whilst the former includes the WHO definition which bears some resemblance to the thesis definition of mental wellbeing described above. However, the term "mental health problems" can still be problematic in psychiatric research, especially epidemiological studies, because the boundaries of definition are unclear and therefore bring measurement challenges. For example, there is no definition of a sub-threshold simple phobia. Notwithstanding this limitation, this wider definition of mental health encapsulates the recent findings of an association between mental wellbeing and mental disorder, and supports the two-continuum model of mental illness and mental wellbeing.

Finally, the measurement of mental health is determined by the definition of mental health and so a definition that includes mental disorder would require the use of instruments validated to diagnose the presence of mental disorders as per ICD or DSM classification systems. Similarly, where the conceptualisation of mental health includes mental wellbeing, an appropriate validated tool to measure mental wellbeing is required.

1.5.2 The model of mental health adopted in this thesis

Based on evidence from genetic and observational studies, this thesis adopts the two-continuum model as applied to mental illness and mental wellbeing. Considering the current wide variation of the term "mental health" internationally, the NHS Health Scotland approach has been adapted and mental health is considered an umbrella term which covers both mental disorder and mental wellbeing as related but distinct concepts. Figure 1-4 shows the adapted model which has been applied to the study of prisoner mental health in this thesis. It sufficiently supports findings from genetic research of the relationship between mental disorder and mental wellbeing (Kendler et al., 2011). Within this model, the best mental health attainable is a high level of mental wellbeing and the absence of a mental disorder, and would be measured using a combination of instruments to diagnose mental disorder and measure mental wellbeing. For research into depression and mental wellbeing, this might include the MINI for DSM or ICD and the WEMWBS.

Figure 1-4: Thesis two-continuum model of mental health (adapted from Keys, 2002)



Chapter 2 Characteristics of prisons

2.1 International profile of prisons

The Institute for Criminal Policy Research reported in the 2016 World Prison Brief (WPB) that at least 10.35 million prisoners were detained in over 223 countries worldwide (Walmsley, 2016). The estimate is based on data reported primarily by Ministries of Justice and is not verified by an independent body. Due to unavailable data from North Korea, Eritrea and Somalia and incomplete data from China, it is likely that there are over 11 million people detained in prisons across the globe (Walmsley, 2016). From an epidemiological perspective, this represents a substantial number of people which is equivalent to the combined country populations of Iceland, Gambia, Uruguay and New Zealand (WorldBank, 2016c).

Understanding not only the absolute number of individuals imprisoned in a specific country or region, but also the rate at which individuals are imprisoned is important from a public health perspective. The prison population rate is defined as the number of prisoners per 100,000 of the country's population (Walmsley, 2016). Table 2-1 compares the prison population total and the prison population rate between selected countries. Considering the prison population rate alongside the prison population total differentiates countries with a high number of prisoners due to the large population of the whole country, such as Indonesia, from countries with a high number of prisoners due to a high prison population rate, such as Iran.

Table 2-1: Comparison of prison population and prison population rate in selected countries, adapted from World Prison Brief (WPB, 2017)

Country	**Prison population total, males and females (world ranking) Median = 7,067**	**Prison population rate, number of prisoners per 100,000 population (world ranking) Median = 138.5**
USA	2,145,100 (1)	666 (2)
China	1,649,804 (2)	118 (136)
Brazil	659,020 (3)	319 (30)
Russian Federation	623,642 (4)	431 (12)
India	419,623 (5)	33 (213)
Thailand	286,861 (6)	424 (14)
Mexico	233,469 (7)	192 (73)
Iran	225,624 (8)	287 (39)
Indonesia	210,682 (9)	81 (161)
Turkey	201,177 (10)	254 (48)
United Kingdom (England & Wales)	85,211 (17)	145 (103)
Chile	42,819 (44)	237 (53)
United Kingdom (Scotland)	7,459 (110)	138 (112)
Seychelles	735 (172)	799 (1)

Globally, it is estimated that there are approximately 144 prisoners per 100,000 of the world's total population (Walmsley, 2016). However, there is great variation in the prison population rate of individual countries within regions, for example, the United Kingdom and Russia in Europe as shown in Table 2-1 above. Within Europe, the prison population rate ranges from less than 20 in the Danish Faroe Islands to over 400 in Russia (Walmsley, 2016). Table 2-2 shows how the regional median prison population rate varies between regions, with the highest rates found in the Americas and the widest range of rates found in Africa.

Table 2-2: Prison population rates (number of prisoners per 100,000 population), by world region, adapted from Walmsley (2016)

Region	No. of independent states and dependent territories	Minimum prison population rate	Maximum prison population rate	Median prison population rate
Africa	54	16	799	82
Asia	32	33	583	134
Caribbean	23	102	542	327
North America	4	114	693	290
Central America	8	124	568	275
South America	13	130	326	238
Europe	57	19	439	127
Middle East	12	36	301	126
Oceania	20	46	438	162
All regions	223	16	799	138

Prisons are used to detain individuals who are serving a final sentence and those who have not reached this stage of the penal system. The terms “pre-trial” and “remand” can be used together to describe the following categories of prisoner: awaiting trial; undergoing trial; convicted but unsentenced; and provisionally sentenced but awaiting a final sentence after an appeal (Walmsley, 2017). Worldwide, there are over 2.5 million pre-trial/remand prisoners. While the number of pre-trial/remand prisoners has increased by 15% since 2000, this trend has not been consistent across all global regions, with decreases of 20% and 42% in Africa and Europe respectively and increases of over 60% and 175% in the Americas and Oceania respectively (Walmsley, 2017). Table 2-3 compares the percentage of pre-trial/remand prisoners in the total prison population by country and against the median of 26.8%. Pre-trial/ remand prisoners form 0% of the prison population in Tuvalu, compared to 100% in San Marino (WPB, 2017). However, these statistics should not be taken at face value; an awareness of related factors is essential for interpreting the data. For example, knowing that San Marino has a prison population total of two (WPB, 2017) and that offenders receiving sentences longer than six months would usually be imprisoned outside of San Marino (Alqadi and Gentile, 2010), allows the seemingly high percentage of pre-trial/remand prisoners to be interpreted within the context of the country’s unique criminal justice system. Similarly, in Tuvalu, cultural norms

which include traditional justice undertaken by community elders in preference to the state justice system (Cain, 2001) may account for the low percentage of pre-trial/ remand detainees in its sole prison which is able to accommodate up to 55 prisoners (WPB, 2017). These two examples illustrate the importance of understanding the cultural, social, criminal justice factors of countries when comparing prison statistics and undertaking prison research.

Table 2-3: Percentage of pre-trial/remand detainees in total prison population, by country, data extracted from the World Prison Brief (WPB, 2017)

World ranking	**County/state/territory**	**Percentage of pre-trial/remand detainees among total prison population (%) Median = 26.8**
1	San Marino	100.0
2	Libya	90.0
3	Paraguay	77.9
4	Benin	74.9
5	Bangladesh	74.0
6	Democratic Republic of Congo	73.0
7	Haiti	72.0
8	Cambodia	70.6
9	Central African Republic	70.2
10	Yemen	70.1
84	Chile	34.2
144	USA	20.3
151	UK – Scotland	17.7
194	UK – England & Wales	10.9
217	Tuvalu	0.0

The tables above show that the numbers of prisoners, including pre-trial/remand detainees, are very high in some countries. Even in countries with a low number of prisoners, there remains a risk of overcrowding if adequate space and resources are not provided (van Ginneken et al., 2017). Overcrowding can place a strain on prison resources such as mental health services, education, rehabilitation programmes, prison escorts, space, and leisure and work opportunities. A high prison population density contributes to a negative prisoner experience which lacks comfort and privacy (van Ginneken et al., 2017). The occupancy level of a prison is the number

of prisoners in a prison expressed as a percentage of the maximum official capacity of the prison. Table 2-4 list countries by prison occupancy level.

Table 2-4: Comparison of country occupancy level, data extracted from the World Prison Brief (WPB, 2017)

World ranking	**County/state/territory**	**Occupancy level (%) Median = 110.1**
1	Haiti	454.4
2	El Salvador	348.2
3	Philippines	316.0
4	Guatemala	296.2
5	Uganda	293.2
6	Antigua and Barbuda	258.0
7	Sudan	255.3
8	Bolivia	253.9
9	Comoros	241.7
10	Benin	240.0
91	UK – England & Wales	112.8
99	Chile	110.9
113	USA	103.9
128	UK – Scotland	96.6

There are limitations to the use of occupancy level as a measure of overcrowding (van Ginneken et al., 2017). It should therefore be interpreted cautiously. For example, the official capacity of a prison may be increased by building additional prisoner accommodation without increasing the number of prison staff (van Ginneken et al., 2017) or by increasing the number of prisoners in each cell or dormitory while reducing personal space to an unacceptable level. Figure 2-1 displays six hypothetical scenarios which together illustrate these limitations and show that the terms overcrowding and occupancy level may not always be used interchangeably. Each scenario represents a prison equipped with bathroom facilities and a doctor providing physical and mental health care. For illustrative purposes, the scenarios assume overcrowding occurs when either of the following standards are not met: 1) a maximum of one prisoner per cell and 2) a maximum ratio of 2 patients:1 toilet:1 doctor.

Figure 2-1: Scenarios illustrating the difference between occupancy level and overcrowding

Scenario 1 100% occupancy and no overcrowding		**Scenario 2** 50% occupancy and no overcrowding	
Prisoner	Toilet	Prisoner	Toilet
Prisoner	Doctor	Empty single cell	Doctor
Scenario 3 200% occupancy and overcrowding due to insufficient personal space		**Scenario 4** 200% occupancy and overcrowding due to insufficient personal space and inadequately resourced bathroom facilities and health services.	
Prisoner Prisoner	Toilet Toilet	Prisoner Prisoner	Toilet
Prisoner Prisoner	Doctor Doctor	Prisoner Prisoner	Doctor
Scenario 5 100% occupancy and overcrowding due to inadequately resourced bathroom facilities and health services		**Scenario 6** 50% occupancy and overcrowding due to inadequately resourced bathroom facilities and health services	
Prisoner	Toilet	Prisoner	Toilet
Prisoner	Doctor	Prisoner	Doctor
Prisoner	Prisoner	Prisoner	Empty single cell
Prisoner	Prisoner	Empty single cell	Empty single cell

The occupancy level of a prison is influenced by processes such as crime rates, sentencing trends and the efficiency of the criminal justice system, which determine the number of prisoners entering and exiting a prison and the rate at which this movement takes place. Some countries accommodate a high number of foreign prisoners in addition to their own citizens. The world median percentage of foreign prisoners is 4.9% (WPB, 2017). In contrast to this estimate, foreign prisoners constitute 96.4% of the total prison population in Monaco (WPB, 2017). Yet this is not surprising, given that only 16% of the national population are Monegasque or Monacan (CIA, 2016). Like Monaco, Spain has a high percentage (28%) of foreign prisoners compared to the world median. However, not all the foreign prisoners in

Spain are foreign nationals. A response to the transnational drug trade is the arrest and trial of drug-traffickers, particularly females, who arrive in Spain from other countries such as Brazil and then serve sentences in a foreign prison (Padovani, 2016). These two examples highlight the importance of correctly identifying the non-prison populations from which a given prison population is drawn so that prison research findings can be interpreted within the appropriate cultural context and compared with those from the equivalent non-prison population.

2.2 Gender and prisons

There are at least 700,000 females who form 4.4% of the world's prison population total (Walmsley, 2015), though data is incomplete from Chad, China, Cuba, Equatorial Guinea, Eritrea, Gabon, Guinea Bissau, North Korea, Somalia, Syria, and Uzbekistan. The percentage of females in the prison population is highest in the Americas (Walmsley, 2015). Between 2000 and 2014, the global female prison population total increased by 50%, whilst the population of females worldwide increased by only 18% (Walmsley, 2015). Since 2000, the female prison population total has grown at a faster rate than that of the male prison population total, 50% and 18% respectively (Walmsley, 2016).

The world median female prison population rate (FPPR) is estimated at 6.0 female prisoners per 100,000 of the national population (Walmsley, 2015). The Americas has a FPPR of 12.2, the highest of all global regions. A criticism of the female prison population rate is that it fails to take into account the total male-to-female sex ratio of each country which can vary from 0.8:1 in Djibouti to 3.4:1 in Qatar (CIA, 2016). For example, two countries may have identical female prison population rates suggesting no imprisonment gender inequality between the countries until it is recognised that one country has a much lower female-to-male sex ratio than the other.

Table 2-5 shows the percentage of females in the total prison population and the female prison population rates and highlights prison gender differences between countries. At least one in eight (13.8%) prisoners in both Greenland and Kuwait are female but the difference in FPPR between the two countries suggests that the

likelihood of a female being imprisoned is greater if she lives in Greenland (FPPR=28.7) than if she is in Kuwait (FPPR=11.9). Likewise, females living in Myanmar and Chile have a similar likelihood of imprisonment, yet females form a higher percentage of the total prison population in Myanmar (16.7% or at least one in six prisoners) than in Chile (8.3% or at least one in twelve prisoners).

Table 2-5: Female prison profile by country, adapted from the World Prison Brief (2017) and Walmsley (2015)

Country	**Percentage of female prisoners (world ranking in 2017) Median = 4.4**	**Female prison population rate (female prisoners per 100,000 of national population) Median = 6.0**
Andorra	21.2 (1)	13.1
Hong Kong (China)	20.8 (2)	22.1
Laos	18.3 (3)	7.4
Myanmar	16.3 (4)	18.8
Macau (China)	15.3 (5)	33.6
Qatar	14.7 (6)	5.5
Greenland (Denmark)	13.8 (7)	28.7
Kuwait	13.8 (7)	11.9
Thailand	13.5 (9)	66.4
Liechtenstein	12.5 (10)	5.4
USA	9.7 (18)	64.6
Chile	8.4 (23)	18.0
UK (England & Wales)	4.6 (103)	6.8
UK (Scotland	4.6 (103)	7.1

2.3 Purpose of imprisonment

Having established that a sizeable proportion of the world population is detained in prisons and that overcrowding is an issue, the purpose of imprisonment must be reviewed. There are four overarching purposes of imprisonment: incapacitation, deterrence, rehabilitation and retribution (Cotton, 2000).

Where incapacitation is the primary goal of imprisonment, the emphasis is on placing the offender within the secure confines of a prison to protect society from further harm. During the period of imprisonment, the offender is deemed less capable of perpetrating crimes towards society. However, while incapacitation may benefit the

wider society, it does not offer the same level of protection to those detained or working within the prison environment who may encounter offenders each day.

Imprisonment as a response to crime can serve as a disincentive to criminal activity, deterring both the criminal from reoffending (specific deterrence) and potential offenders from committing crimes (general deterrence). Imprisonment for deterrence may therefore offer benefits to both society and the incarcerated offender.

A third utilitarian purpose of prison is rehabilitation which sets out to reform the prisoner so that his or her risk of recidivism will be reduced. In addition to the societal benefits of less crime, effective and sustained rehabilitation allows the offender upon release to live a life less compatible with crime and to enjoy a reduced risk of reincarceration.

Retribution is considered a non-utilitarian purpose of imprisonment (Cotton, 2000) in which the act of detaining an individual in prison is itself considered a deserved response to the crime committed. Retribution is also described as merited punishment or just payment to the offender.

Any combination of these four purposes may be adopted with equal or differential weighting. The purpose of imprisonment will determine the priority given to different types of research in a country. For example, where rehabilitation is highly prioritised, research that seeks to improve the mental health of prisoners is likely to be valued by the prison administration in the hope that improved mental health may increase prisoner engagement with rehabilitation programmes. On the other hand, attempts to improve prisoner mental health might be considered unnecessary and even counterproductive to imprisonment by those who believe its purposes should be solely deterrence and retribution, with little regard for the promotion of health rights and healthcare for prisoners.

2.4 Imprisonment and human rights

The Universal Declaration of Human Rights, the basis for international human rights law, states that all humans should have the right to liberty (Article 3) and the right to freedom of movement and residence in their own country (Article 13) (UN, 1948).

However, imprisonment lawfully deprives individuals of these two human rights. The intentional application of international human rights law to custodial settings is therefore important to ensure unlawful breaches of the human rights of prisoners do not occur. The Standard Minimum Rules for the Treatment of Prisoners provides detailed guidance for meeting the basic requirements of human rights in prisons (UN, 2015a). Table 2-6 lists human rights most relevant to the thesis (UN, 1948), describes examples of how these rights might be breached in prison, and highlights how international prison guidance seeks to protect the human rights of all prisoners (UN, 2015a).

Table 2-6: International guidance to prevent breaches of the human rights of prisoners

Human rights (UN,1948)	**Illustrations of how human rights might be breached in prisons**	**Guidance to protect the human rights of prisoners (UN, 2015)**
Article 1 **All humans are born free with equal rights and dignity**	Prison regime promotes a culture which reduces the dignity of prisoners	All prisoners should be treated with respect (Rule 1); prison regime must minimise difference between prisoners and non-prisoners that threaten to diminish personal responsibility and lessen their respect and dignity (Rule 5)
Article 2 **All human beings are entitled to the human rights**	Breach of right to health for prisoners whose mental state or belief system might prevent them from equally accessing and effectively engaging with health education and medical treatment	Prison must take account of the individual needs of prisoners and avoid discrimination (Rule 2); steps should be taken to ensure prisoners with mental disorders have full and effective access to prison life (Rule 5)
Article 5 **Not to be subjected to torture or ill-treatment**	Prisoners participate through coercion in harmful physical or mental health experiments; bullying from prison staff towards prisoner	Prohibition of prisoner participation, even with consent, in medical/scientific research that may be detrimental to health, for example the removal of organs (Rule 32); prisoner may participate in research with lawful, voluntary and informed consent if direct and significant health benefits are expected to the prisoner (Rule 32); prison officers should be trained to respect the human dignity of prisoners and not engage in cruel treatment of prisoners (Rule 76)
Article 16 **Right to have a family**	Prohibition of contact between prisoners and their spouses, children or other near relatives	Prisoner allowed to communicate regularly with her family by receiving visits in the prison or other means such as: writing, making telephone calls and sending emails (Rule 58).

Article 18 Right to freedom of thought, conscience and religion	Prohibition of observance of religious practices such as public worship or private prayer	Approved religious leaders can hold services and make pastoral visits to the prisoner in private (Rule 65); prisoner allowed to practise her religion (Rule 66)
Article 25 Right to health: right to a standard of living adequate for health and wellbeing	Severely overcrowded accommodation; inadequate mental health care with delayed or inappropriate identification and treatment of mental disorder, resulting in a significant deterioration in mental state	Provision of adequate accommodation (Rule 13), bedding and clothing (Rule 19); nutritional and adequate food (Rule 22); standard of mental health care provided should be the same as that of the community (Rule 24); prison should have a health care service which evaluates and improves prisoner mental health (Rule 25); prison health service should have sufficient expertise in psychiatry and psychology (Rule 26); prisoner offered health assessment on admission during which evidence of stress due to imprisonment should be noted (Rule 30); all prison staff to receive training on the psychosocial needs of prisoners and the early detection of poor mental health (Rule 76); provision of psychiatric treatment for prisoners who do not require transfer to specialist psychiatric facilities (Rule 109)
Article 27 Right to freely participate in the cultural life of the community		Provision of optional cultural and recreational activities beneficial for the mental and physical health of the prisoner (Rule 105)

In the classic concept of the 'total institution', Goffman (1961) theorised that establishments which were relatively closed and impermeable to the wider society, such as prisons and psychiatric hospitals, comprised collectively regimented people who spent work, leisure and rest time together in an environment, characterised by highly authoritative control structures and privilege systems, were at risk of accommodating severe punishment and inhumane treatment. The theory has been criticised for failing to adequately describe modern prisons in societies which: oppose the ill-treatment of any human being, regardless of prison status; allow prisoners to maintain contact with friends and family through telephone calls, child visits and even conjugal visits; and welcome prison inspections by external agencies who would be well-positioned to identify and challenge prisoner abuse (Farrington, 1992). However, recognising the features and risks of a total institution remains crucial in understanding why certain prisoner human rights are breached and how they might be protected. Finally, it is the prison that wishes to avoid being a total institution that opens its doors to external professionals such as researchers who can observe the prison regime, take note of the conditions in which prisoners are detained, and respond to any breaches of prisoner human rights witnessed or reported.

Chapter 3 Prison mental health

3.1 Mental health of prisoners

3.1.1 Global estimates of mental disorder among prisoners

Studies of the mental health of prisoners globally have focussed particularly on depression, psychosis and substance disorders (Fazel et al., 2016). Some of these studies have measured the effect of gender and country income on the prevalence of mental disorders. A comparison of findings from the wider psychiatric literature highlights where rates of mental disorder among prisoners are higher than those in the general population.

Depression

The global estimate of the 12-month prevalence of depression in the general population is 3.7% and is significantly higher in females than males, and the risk of depression is significantly higher in lower-income regions such as Africa, South America and South Asia than in higher-income Western Europe (Ferrari et al., 2013).

In contrast to findings in the general population, a systematic review of the 6-month prevalence of depression in 30,635 prisoners from high and middle income countries estimated a pooled prevalence of 11.4% (95% CI: 9.8-12.8) for all prisoners and 10.2% (95% CI: 8.8-11.7) in men and 14.1% (95% CI: 10.2-18.1) in women with no significant difference according to gender (Fazel and Seewald, 2012). The lower estimate for the general population is notable because, compared to the prisoner estimate, it is based on a 12-month rather than 6-month prevalence. Table 3-1 compares the global estimates of the prevalence of depression by gender between prisoner and general populations. Notwithstanding the difference of six months in the prevalence between the two populations, the data point towards a higher prevalence of depression in the prisoner population than in the general population.

Table 3-1: Comparison of the prevalence of depression by gender between prisoner and general populations

Prevalence of depression					
Prisoner population			**General population**		
Pooled 6-month prevalence, % (95% CI) (Fazel and Seewald, 2012)			Pooled 12-month prevalence, % (95% CI) (Ferrari et al., 2013)		
All	Men	Women	All	Men	Women
11.4 (9.9-12.8)	10.2 (8.8-11.7)	14.1 (10.2-18.1)	3.7 (2.7-5.0)	3.9 (3.0-5.1)	7.2 (6.0-8.9)

The significant increase in female depression seen in the general population that has not been observed in the prison population could reflect the low total number and overall proportion of female prisoners included in the prisoner systematic review. In the prisoner systematic review, the included studies measured depression in a total of 16,021 men and 4028 women, with females representing one-quarter of the total sample (Fazel and Seewald, 2012). This can be compared to the sample of one study included in the systematic review of the general population (Ferrari et al., 2013) which examined fairly equal numbers of men (30,734) and women (32,274) and discovered a significant difference ($p<0.001$) in the prevalence of depression between the genders (Phillips et al., 2009).

The estimate of depression is 22.5% (95%CI: 10.6-34.4) for prisoners in middle income countries compared to 10.0% (95% CI: 8.7-11.2) for those in high income countries, although only 9 of the 54 publications included in the review described samples from middle-income countries (Fazel and Seewald, 2012). This small number of countries from LMICs may explain the lower level of certainty of an effect of county income on depression among prisoners than in the general population. If a real difference exists, it could be explained by a number of factors which may vary between countries such as criminal justice systems, prison conditions, transcultural psychiatric morbidity and access to psychiatric treatment (Andersen, 2004).

The meta-analysis showed that the prevalence of depression of sentenced prisoners (10.5%) was not significantly lower than that of remand prisoners (12.3%) (Fazel and Seewald, 2012). The studies included in the systematic review were significantly heterogeneous and this was attributed to several factors such as the diagnostic classification used (ICD v. DSM) and the income level of a country (high v middle). Except for an apparent increase in the prevalence of depression in the USA based on twenty-five studies over a forty-year period starting in the 1970's, the findings point towards a stable prevalence over time worldwide in other high income countries. There was insufficient data to determine whether this stability is also found in lower income countries.

A systematic review of high-income country data indicates that prisoners are most likely to be depressed during the initial period of imprisonment but are likely to subsequently improve during the period of incarceration, although not to the pre-incarceration level (Walker et al., 2014). The generalisability of these findings to low and middle income countries is uncertain because all the studies reviewed were based on populations in Europe, North America and Australia. These findings suggest that the increased prevalence of depression in prisoners, compared to that in the general population, might be due to a high proportion of depressed people entering the prison system, rather than a high proportion of people becoming depressed once they enter prison, although prisoners have retrospectively reported experiencing more symptoms of depression on reception than during the pre-incarceration period (Walker et al., 2014). The results also indicate that the increased prevalence of depression in prisons might be attributable to the effect of entering the prison, rather than merely being in prison, with the depression risk reducing once prisoners have been in prison for a period of time. Furthermore, prison itself might be a precipitating but not a perpetuating factor of depression. Prisoners are a relatively accessible population for health services, and the findings might reflect the results of effective treatment for depression given to prisoners in a well-resourced high income country. This would explain a reduction in the proportion of prisoners who fulfil the criteria for a diagnosis of depression after they have been in prison for a period of time.

Suicide is related to depression. An ecological study involving 861 prisoners found that in most countries, the suicide rates were at least six times higher in prisoners than in the general population (Fazel et al., 2011).

Psychosis

It has been estimated that in the general population the global one-to-twelve month prevalence for schizophrenia is 0.33% and shows little variation according to gender and country income (Saha et al., 2005). In contrast, a systematic review of schizophrenia and other psychotic disorders in the prison population estimated a global six-month prevalence of 3.5% (95% CI: 3.0-3.9) among prisoners in high income countries and 5.5% (95% CI: 4.2-6.8) among prisoners in low and middle income countries, but no significant gender difference (Fazel and Seewald, 2012). An important factor that may explain some of the differences between estimates from prison and those from the general population is the broad definition of "psychosis" used in the prisoner systematic review which included schizophrenia as well as other psychotic disorders such as mania and schizophreniform disorders. Unlike the general population, prisoners in middle income countries have significantly higher rates of psychosis compared to prisoners in high income countries (Fazel and Seewald, 2012).

Substance misuse

Given the illicit nature of many substance disorders which may lead to significant under-reporting, it is difficult to obtain a global estimate relating to illicit drug use in the general population (Degenhardt and Hall, 2012). Systematic reviews of the general population have reported the following estimates of the point prevalence for dependence disorders: cannabis 0.11% and opioids 0.22% mainly in high income Western countries (Degenhardt et al., 2014b, Degenhardt et al., 2013) and cocaine 0.11% and amphetamines 0.25% particularly in Latin America and South-east Asia (Degenhardt et al., 2014a). In comparison, a worldwide systematic review of prisoners arriving in prison estimates that 30% (95% CI: 22-38) of males and 51% (95% CI: 43-58) of females have drug use disorder (Fazel et al., 2017).

A large national cross-sectional study of over 43,000 members of the general population in the USA reported a 12-month prevalence for alcohol dependence and

alcohol abuse of 3.8% and 4.7% respectively, which was higher among males than females (Hasin et al., 2007). In contrast, global findings from a systematic review showed that on reception, 24% (95% CI: 21-27) of prisoners have alcohol use disorder (Fazel et al., 2017).

These data give some indication of the illicit substances most likely to be used in prisons in certain regions of the world. In addition to local availability, prison illicit drug use is likely to be influenced by the method of usage and the ease with which the substance can be detected by standard screening methods used in prisons (Fazel et al., 2016). Furthermore, different prevalence rates of alcohol use disorders may be found between countries due to differing cultural-religious attitudes and practices regarding the consumption of alcohol (Sirdifield et al., 2009).

Other mental disorders

A recent review reported rates of any personality disorder in the general population in high income countries ranging between 4% and 15% (Tyrer et al., 2015). In an earlier review, the lifetime prevalence of antisocial (dissocial) personality disorder was 2-3% in three higher income countries and much lower in a lower income country (Weissman, 1993). It is estimated that among prisoners in higher income countries, 47% of men and 42% of women have a personality disorder of any type; 47% of men and 21% of women have antisocial (dissocial) personality disorder; and 25% of females have borderline personality disorder (Fazel and Danesh, 2002). Moreover, prisoners may be diagnosed with more than one personality disorder and compared to the general population, prisoners in high income countries have a higher prevalence of personality disorders, with antisocial (dissocial) and paranoid types being the most prevalent of all personality disorders in prisoners (Sirdifield et al., 2009).

A narrative systematic review (Sirdifield et al., 2009) found higher levels of post-traumatic stress disorder (PTSD) and generalised anxiety disorder among prisoners compared to people in the community, where the global estimate for anxiety disorders is 7.3% and the risk is twice as high in males compared to females, and higher in Euro/Anglo cultures compared to all other cultures (Baxter et al., 2013). The prevalence of PTSD is estimated between 4% and 21% of the prison population,

based on a systematic review of studies in North America and Australasia which suggested that the disorder may be more prevalent in females than males (Goff et al., 2007). The global prevalence of bipolar affective disorder is less than 1% in the general population but has not yet been estimated among prisoners worldwide (Ferrari et al., 2011).

According to a systematic review, attention-deficit hyperactivity disorder (ADHD) is five times more prevalent in the prison population (26.2%) than in the general population (1-5%), and there is no significant difference between male prisoners (30.3%, 23.9-38.2 95% CI) and female prisoners (26.1%, 19.3-35.2 95% CI) (Young et al., 2015). These estimates were obtained from a meta-analysis of results from heterogeneous studies conducted in both high and middle income countries. The inclusion of small studies of lower quality in the review may have resulted in an overestimation of the global estimates (Fazel et al., 2016). Although there was no significant difference in the prevalence by region (North America, Europe, Rest of the world), there were marked differences between individual countries as was reflected in the prevalence that ranged from 6.6% in Brazil to 65.2% in Sweden, with an overall global estimate of ADHD prevalence of 25.5% (Young et al., 2015). A systematic review of almost 12000 prisoners in ten studies originating from the UK, the USA, Australia, New Zealand and the UAE estimated a prevalence of intellectual disability of 0.5-1.5% among prisoners (Fazel et al., 2008). This is similar to the global prevalence for intellectual disability of 1% (Maulik et al., 2011) but the similarity could reflect a more complex picture. On the one hand, having an intellectual disability might be expected to increase the likelihood of a person being arrested and charged for an alleged offence but on the other hand, individuals with an intellectual disaibility might be diverted away from the prison towards community or hospital-based services.

Comorbidity

High levels of co-morbidity of mental disorders have been reported among prisoners in high and middle income countries (Sirdifield et al., 2009). The aetiology of the reported co-morbidity of substance misuse and common mental disorders such as depression remains unclear because it is possible that while some depressed prisoners

might self-medicate using substances, other prisoners may feel depressed as a consequence of using substances (Andersen, 2004).

Summary

The prevalence of mental disorder is higher among prisoners compared to that of the general population and the reason for this is not yet fully understood. One in seven prisoners worldwide have major depression or psychosis (Fazel and Seewald, 2012). The mental health of many prisoners is complicated by the presence of a substance misuse or a personality disorder, a finding that is not surprising given that such disorders may be linked to behaviour that may include criminal activity punishable by imprisonment. For example, the complex relationship between violence and substance misuse includes participation in violent criminal activity in order to acquire subtances (Boles and Miotto, 2003). Similarly, antisocial (dissocial) personality disorder may include a disregard for rules such as the law and a low threshold for being aggressive, including violent (WHO, 1992). The significance of gender on the risk of mental disorders in prisons, compared to that in the general population, needs further study.

There is wide variation in the estimates of mental disorder between individual studies which poses challenges for systematic reviews, often renders meta-analysis inappropriate, limits generalisability of findings and makes interpretation at best tentative. Some of the variation can be explained by methodological factors such as the sampling strategy including sample size (Young et al., 2015), the instrument used to measure mental disorder (Sirdifield et al., 2009), and the person used to collect diagnostic data. That some studies measure the point prevalence while others measure the prevalence over the previous six to twelve months makes it difficult to compare individual studies. Another explanation for the variation is the existence of real differences in the prevalence of mental disorder among prisoners in different countries. This may reflect differences in criminal justice systems and prison health systems between countries. For example, in some countries people with mental disorders who might otherwise be incarcerated are deliberately diverted away from the criminal justice system towards non-prison mental health services. Also, some countries provide high quality prison mental health care services that allow the early

detection and effective treatment of mental disorder in prisoners. Current systematic review estimates may not accurately reflect prison psychiatric morbidity outside of these high-income regions. The literature highlights a need for more prison psychiatry research on populations in countries outside of Europe, North America and Australasia.

3.1.2 Mental wellbeing of prisoners

There are no systematic reviews of the global estimate of mental wellbeing, as defined using the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) among the general population or prisoners. Table 3-2 shows the mental wellbeing of nine non-prisoner populations in Asia (Waqas et al., 2015, Kim et al., 2014), Europe (Castellví et al., 2013, Lang and Bachinger, 2017, Trousselard et al., 2016, Tennant et al., 2007) and Latin America (Santos et al., 2015, Serrani Azcurra, 2015, Carvajal et al., 2015) measured using the WEMWBS. In these populations, the mean WEMWBS score ranges from 48.1 in Pakistan (Waqas et al., 2015) to 59.9 in Spain (Castellví et al., 2013); the median WEMWBS ranges from 48.0 in Pakistan (Waqas et al., 2015) to 59.0 in the UK (Tennant et al., 2007).

Table 3-2: WEMWBS mental wellbeing of non-prisoner populations in 10 selected countries

Country (First author, year of publication)	Sample size	Sample population (% female)	WEMWBS score range, where given (min=14, max=70)	Median (IQR, where given)	Mean (SD)
Argentina (Serrani, 2015)	910	Older adults (59.1)	---	50.0 (---)	49.1 (9.0)
Austria (Lang, 2017)	625	Adults (58.4)	25-70	55.0	54.5 (8.1)
Brazil (Santos, 2015)	122	Student adults (81.1)	---	---	51.8 (8.0)
Chile (Carvajal, 2015)	220	Adult (51.4)	31-70	57.0 (51.0-62.0)	56.2 (7.7)
France (Trousselard, 2016)	319	Adult workers (19.7)	27-70	53.0 (---)	51.5 (7.2)
Pakistan (Waqas, 2015)	1271	Adult healthcare professionals (57.0)	---	48.0 (---)	48.1 (9.4)
South Korea (Kim, 2014)	117	Adults (61.5)	---	---	51.8 (8.8)
Spain (Castellví, 2014)	1900	Adults (50.2)	---	59.0 (54.0-66.0)	59.9 (7.8)
United Kingdom (Tennant, 2007)	1752	Adults	14-70	51.0 (45.0-56.0)	---

There is a lack of cross-sectional studies reporting the WEMWBS mental wellbeing of prisoners. The Scottish Prison Service (SPS) conducts a biennial prisoner survey which includes a measurement of mental wellbeing using the WEMWBS. Table 3-3 presents findings from these surveys (SPS, 2009, SPS, 2011) and non-prisoner data (Tennant et al., 2007), compares the mental wellbeing of male prisoners, female prisoners and the general British population, and shows a relative stability over time in the prison populations. The limited data available suggest that prisoners have poorer mental wellbeing compared to the general population on most items on the

WEMWBS. For all but six of the fourteen WEMWBS items, female prisoners appear to have poorer mental wellbeing than their male counterparts, suggesting that overall males may have better mental wellbeing than females. This difference was significant ($p<0.05$) in the general population (Tennant et al., 2007). Compared to male prisoners, female prisoners experience more frequently positive interpersonal aspects of mental wellbeing such as feeling close to others and feeling interested in other people.

Table 3-3: Mental wellbeing (WEMWBS) of prisoners, by gender, between 2011 and 2015 and of the general population in 2006.

WEMWBS item – mental wellbeing	% of people who experienced the mental wellbeing items in the preceding two weeks "some of the time", "often" or "all of the time"						
	Prisoners (SPS, 2011, SPS, 2013, SPS, 2015)						General population (Tennant, 2007)
	Male			Female			
	2011	2013	2015	2011	2013	2015	2006
I've been feeling optimistic about the future	73	70	68	75	63	71	>80
I've been feeling useful	62	62	63	61	58	64	>80
I've been feeling relaxed	74	72	68	61	60	59	>80
I've been feeling interested in other people	55	56	51	58	58	65	>80
I've had energy to spare	71	70	67	61	61	61	>60
I've been dealing with problems well	79	78	75	71	71	62	>90
I've been thinking clearly	81	79	76	69	72	72	>90
I've been feeling good about myself	72	70	68	60	57	53	>80
I've been feeling close to other people	56	56	51	61	58	61	>80
I've been feeling confident	73	72	70	59	57	61	>80
I've been able to make up my own mind about things	86	85	88	84	79	82	>90
I've been feeling loved	55	54	54	52	50	62	>80
I've been interested in new things	68	68	65	64	64	69	>80
I've been feeling cheerful	69	70	67	63	64	63	>90

3.1.3 Impact of poor mental health on prisoners

Whilst many studies have attempted to measure the mental health of prisoners (Fazel and Seewald, 2012, Fazel et al., 2017) and describe the impact of prison on the mental health of a prisoner (Walker et al., 2014, Douglas et al., 2009, Nurse et al.,

2003), few studies have sought to understand the impact of poor mental health, particularly mental disorder, among prisoners (Yang et al., 2009, Baskin et al., 1991, Fazel and Yu, 2011).

Prison experience

A qualitative study of 59 incarcerated men in France concluded that compared to those with no mental disorder, prisoners with psychotic disorders were less likely to reflect introspectively on their lives and to understand the purpose of incarceration, and were more likely to feel threatened in prison and withdraw from others (Yang et al., 2009). This could result in reduced engagement with prison services such as education and training, rehabilitation, health, work, addiction, chaplaincy and forensic psychology. Similarly, the nature of depression which is characterised by low levels of motivation and energy levels, poor concentration and social withdrawal, could lead to reduced or non-engagement in these areas. Consequently, without adequate treatment, prisoners with severe and untreated forms of such mental disorders are less likely to benefit from prison programmes and opportunities which could not only improve their short-term and long-term health outcomes, but also address the forensic and socio-economic risk factors for further offending either in prison or following release, as described below. According to a study of over 7000 US inmates, compared to prisoners with no mental disorder, prisoners with mental disorders are more likely to have experienced pre-incarceration interpersonal trauma of a sexual or physical nature either in childhood or adulthood (Wolff and Shi, 2009) and this may result in re-traumatisation through the prison process and is likely to increase their need for trauma-related intervention and other mental health services in prison.

Behaviour in prison

In a study of over 3,000 prisoners in the USA, compared to those without depressive symptoms, prisoners with depressive symptoms were involved in significantly ($p<0.001$) more acts of violence towards themselves or property, but not towards prison staff or other inmates (Baskin et al., 1991). A large survey found that 71% of suicides in English prisons occurred in prisoners who had at least one mental disorder (Shaw et al., 2004). Different results were obtained from a larger and more

recent study of over 16,000 prisoners, in which prisoners diagnosed with major depression and those with psychosis were more likely than other prisoners to engage in verbal and physical acts of aggression towards staff and other inmates and to be found in possession of a weapon (Felson et al., 2012). In the same study, prisoners who offended while serving a sentence were more likely to receive punishments and receive extended sentences. In the study sample, having a diagnosis of an anxiety disorder was a weaker predictor of offending behaviour in prison compared to diagnoses of depression and psychosis. Furthermore, unlike psychotic prisoners, depressed prisoners were significantly more likely to use illicit substances (Felson et al., 2012).

Recidivism

Findings from a longitudinal study of 9,000 prisoners in Utah released over a four-year period who were each followed up for three years from release date found significantly higher recidivism rates ($p<0.001$) in prisoners with a serious mental disorder (including dementia, schizophrenia, bipolar affective disorder, major depression, and borderline personality disorder) who returned to prison almost one year earlier than did prisoners without a serious mental disorder (Cloyes et al., 2010a). The results of the study were consistent with those of a systematic review and meta-analysis which found a significantly increased risk of repeat offending among individuals with a psychotic disorder compared to those with no mental disorder (Fazel and Yu, 2011). The possible explanation of these findings is a complex interplay between multiple social, health and justice factors arising both in prison and in the community. Prisoners who have not successfully completed rehabilitation programmes in prison because of depression or psychosis, for example, might be released without the necessary skills and perspective to help them live lives less compatible with crime in the community and to healthily and safely fulfil the expectations of society. Prisoners who use illicit substances in prison are likely to continue this behaviour following release and will return to the community with the associated risk factors and an increased risk of reoffending.

3.2 Associations between prison and mental health

The relationship between poor mental health and crime is complex and has multiple pathways (Lorenc et al., 2012) and has been widely studied in higher income countries (Peterson et al., 2014, Fazel et al., 2009). However, in considering the associations between poor mental health, particularly mental disorders, and imprisonment, it must be emphasised that not all criminal activity leads to imprisonment.

3.2.1 Poor mental health as a risk factor for imprisonment

The importation hypothesis attributes the increased prevalence of mental disorders among prisoners to the increased incarceration of people with mental disorders (Fazel et al., 2016). In a study of over 400 crimes committed by individuals with a mental illness, one-fifth were mostly related to symptoms of mental illness (Peterson et al., 2014). Features of mental disorders which can result in criminal behaviour include a low threshold for anger in antisocial (dissocial) personality disorder and sexual disinhibition in a manic episode of bipolar affective disorder (WHO, 1992). Harmful use of alcohol has also been associated with increased violence (Rossow, 1996). The abuse of illicit substances is unlawful and may attract a criminal penalty, although not necessarily a prison sentence. Individuals who are dependent on illicit substances may commit acquisitive offences to fund addictions (Boles and Miotto, 2003). A systematic review reported that compared to the general population, people with schizophrenia (and other psychoses) were at higher risk of being violent and that this risk was increased even further by the presence of co-morbid substance abuse. The review also found that risk of violence in people with psychosis and co-morbid substance abuse was no higher than that of people with substance disorders alone; the risk of homicide was higher in individuals with psychosis irrespective of co-morbid substance abuse than in the general population (Fazel et al., 2009).

3.2.2 Prison as a risk factor for poor mental health

Risk factors for poor mental health can be considered from four perspectives: (i) prison reception, (ii) prison environment, (iii) prison regime and (iv) interpersonal issues arising from separation from family (extra-mural) and new relationships inside the prison (intra-mural).

Prison reception

The potential impact of prison on the mental health risk of a prisoner commences the moment a prisoner is received into the penal establishment. The initial rise in symptoms of depression and anxiety upon admission to prison has already been described (Walker et al., 2014) and prisoners have described the reception process as stressful (Durcan, 2008). The living and sleeping area chosen for a newly admitted prisoner is important because incompatibility of prisoners sharing a living space can negatively impact mental health (Durcan, 2008).

Prison environment

A systematic review of longitudinal studies examining the effect of the prison environment on mental health, which did not identify any studies from low and middle income countries, concluded that solitary confinement in prisons is associated with an increased risk of psychiatric disorder, although it is also possible that some prisoners are placed in solitary confinement as a consequence of their mental disorder (Walker et al., 2014). At the other extreme of social density, overcrowding in prisons is associated with an increased rate of prisoner transfer to psychiatric facilities, and this is seen where prisoners live in dormitories with several other inmates and where the prison population increases without a proportionate increase in facilities (Walker et al., 2014). An alternative explanation for the latter finding is that the increased psychiatric transfer does not represent an increase in mental illness as a result of overcrowding, but an increase in transfers as a means of managing the problem of overcrowding. An ecological study of prisons in England and Wales found that after adjusting for a high prisoner turnover, overcrowding was not associated with increased suicide rates (van Ginneken et al., 2017).

Prison regime

British prisoners reported in a qualitative study that the lack of activity and mental stimulation in prison contributes to increased stress, anger and frustration and that understaffing of prison officers resulted in more time spent in their cells which also increased their stress levels. Inactive and under stimulated prisoners may be more likely to engage in substance misuse, including for the first time, in order to relieve boredom (Nurse et al., 2003). A qualitative study in the UK of 98 prisoners identified

a number of additional factors with contributed to poor mental health including: lack of privacy, inadequate diet, difficulty in accessing healthcare services, low levels of physical activity and a lack of a confidante (Durcan, 2008). Furthermore, where prisoners in high income countries perceive that such needs are not being met, they are likely to have more depressive symptoms (Walker et al., 2014).

Prison interpersonal relationships

Interpersonal difficulties can arise from intra-mural relationships which are those a prisoner forms inside the prison. These difficulties may be expressed verbally, sexually, financially, physically or psychologically (Leddy and O'Connell, 2002, Pont et al., 2015). Prisoners have reported both poor mental health and the development of mental disorder as a consequence of being bullied in prison, and it has been noted that prisoners who have committed sexual crimes or crimes against children are particularly vulnerable to bullying from other inmates (Nurse et al., 2003). Difficulties also stem from extra-mural relationships which are affected when prisoners are separated from family and friends outside of prison. Qualitative studies have found that the worries prisoners have about family and the difficulties prisoners may experience in maintaining contact with family can have a negative impact on their own mental health (Nurse et al., 2003, Durcan, 2008).

3.3 Mental health of female prisoners

3.3.1 Gender in mental health research

Gender is a topic of growing interest in the field of prison mental health (Corston, 2007). Failure to consider gender in medical research can be disadvantageous to health whilst giving adequate consideration to gender during every stage of research can contribute to a better understanding of the influences on mental disorder and poor mental wellbeing and subsequently inform the development of interventions to improve mental health (McGregor et al., 2016). However, gender research has been criticised for exaggerating the differences between males and females particularly where societal factors have not been considered, and for promoting dichotomous thinking that could lead to gender stereotyping and stigmatisation (Vanwesenbeeck, 2009). Inflated differences between men and women may arise from a failure to adjust for confounders in quantitative studies.

The literature contains evidence of two methodologies and three overarching approaches mostly used to study the mental health of female prisoners worldwide. Individual quantitative studies have measured the prevalence of mental disorder, symptoms of mental disorder, levels of wellbeing, exposure to abuse and trauma, prison behaviour, and several risk factors for poor mental health. Cross-sectional, case-control and longitudinal designs have been used for this purpose. Qualitative studies have sought to understand the influences of prison and known risk factors on the mental health of prisoners through interviews and focus groups which give the prisoner perspectives and experiences a central position in the literature.

In considering the mental health of female prisoners, a few approaches have been commonly taken. One approach involves a chosen methodology being applied to a mixed-gender study sample and then the sample stratified by gender for analysis. This enables comparisons to be made between the mental health of male prisoners and female prisoners, and in the case of quantitative analysis, may provide an indication of the magnitude and statistical significance of any gender differences found. In qualitative studies, it is necessary to consider gender during the study design and data analysis

stages, and unless gender is stated within the objectives of the study, it may be difficult to discover gender-related themes. An alternative approach has been to study a female-only population. Whilst this approach may result in a larger sample size of female prisoners than might be feasible in a mixed-gender study, it does not allow within-study gender differences to be reliably studied. However, particularly in the case of qualitative research, an all-female study is well-suited for gender-specific questions and discussion material during data collection, and provides hypotheses that can be tested in a mixed-gender study.

A third approach makes quantitative or qualitative comparisons about mental health between male and female prisoners through the review methodology which may vary from meta-analysis of data from systematically reviewed literature to a non-systematic narrative review. This approach makes use of data obtained from both mixed-gender and single-gender studies.

3.3.2 Life course identities and mental health

Throughout the course of her life, a woman may assume different identities which reflect different domestic relationships and often a woman may assume more than one of these identities at a time. Although pre-incarceration identities relating to employment and the wider community are important to women, it is the domestic identities such as being a parent or a partner, which have been reported most widely to impact on the mental health of female prisoners.

Women as expectant mothers

A qualitative study in the USA revealed that pregnant women report a reduction in mental wellbeing, as a result of being in prison (Wismont, 2000). Pregnant prisoners feel frustrated by the lack of personal autonomy in prison which restricts the choices of obstetric healthcare provider and nutritious food. They worry that they will harm the foetus because of their elevated levels of stress in response to the prison environment. They experience deep sadness over the anticipated separation from the child, apprehension about finding a suitable care-giver, fear that they may lose all contact with

the child following separation and eventually grieve over the loss of the active, daily maternal role. Women manage these additional stressors associated with a prison pregnancy by using their own resilience and finding strength from the child and God, with some women turning to faith at this time of high stress (Wismont, 2000).

Women as carers of dependents

Women are the primary care-givers in many cultures around the world and this maternal role provides additional challenges for women who are imprisoned and separated from their children. Some countries provide child-sensitive facilities for women to care for young children up to a certain age, usually early infancy. Elsewhere, older children reside with their imprisoned mothers in adult facilities but the mental health impact has not been studied (Aboaja et al., 2015). For female prisoners with children in the community, worry arises from the emotional pain of separation itself and concern about the child's welfare (Douglas et al., 2009). The absence of qualitative studies comparing the mental health of men and women in their roles as care-givers has led to a bias in the literature which tends to focus on the parenting roles of female prisoners, rather than male prisoners. However, even if male prisoners also experience poor mental health in relation to being fathers, the parenting role is particularly important to female prisoners given the findings of a USA descriptive report on the 55-66% of prisoners who are parents which suggests that traditionally compared to fathers: 1) more mothers lived with their children at the time of prison admission, 2) fewer mothers leave their children with the other parent and more with a grandparent, and 3) more women have frequent contact with their children while in prison (Mumola, 2000).

Women as partners

Women who have husbands or stable partners in the community may experience psychological stress as a result of the forced separation from a non-abusive domestic setting (Douglas et al., 2009). However, some women leave behind a domestic situation of intimate partner violence or sexual abuse. Intimate partner violence and sexual abuse are significantly associated in high, middle and low income countries with increased emotional distress, suicidal thoughts and suicide attempts (Ellsberg et al., 2008) and has

also been associated with an increase in depressive symptoms (Coker et al., 2002). For some of these women, incarceration provides separation from the perpetrator and serves as a period of respite from such abuse which may have a positive impact on mental health (Douglas et al., 2009). However, it is likely that anxiety levels would increase in anticipation of release from prison and further contact with the perpetrator of the abuse. Whilst intimate partner violence affects both men and women, the reporting of such abuse is much greater among women (Coker et al., 2002).

3.3.3 Depression and mental wellbeing in female prisoners

Gender, income level and prevalence of depression

The recent systematic review and meta-analysis which estimated the global prevalence of depression did not find a statistically significant difference in depression between male and female prisoners worldwide but highlighted non-significant differences according to the income level of a country (Fazel and Seewald, 2012). However, the review did not further analyse the data by both gender and country income. Table 3-4 list the seven studies from the systematic review that were not based on high income populations. The table highlights the lack of gender-sensitivity in the sampling and analysis of these studies, of which two (Agbahowe et al., 1998, Bermudez et al., 2007) included females in the sample, and five were undertaken with exclusively male prison populations. (Assadi et al., 2006, Fido and Al-Jabally, 1993, Ghubash and El-Rafaie, 1997, Ponde et al., 2011, Zahari et al., 2010). In the only mixed-gender study, the prevalence of depression was not reported by gender (Agbahowe et al., 1998).

Table 3-4: Gender-sensitivity of studies in low and middle income countries included in a recent systematic review reporting the prevalence of depression in prisoners (Fazel and Seewald, 2012)

Number	Citation	Country	Study population	Gender difference in prevalence of depression
1	Agbahowe et al., 1998	Nigeria	93 males, 7 females	Not studied
2	Assadi et al., 2006	Iran	351 males	Not studied
3	Bermudéz et al., 2007	Mexico	213 females	Not studied
4	Fido and Al-Jabally, 1993	Kuwait	84 males	Not studied
5	Ghubash and El-Rafaie, 1997	United Arab Emirates	142 males	Not studied
6	Ponde et al., 2011	Brazil	497 males	Not studied
7	Zahari et al., 2010	Malaysia	400 males	Not studied

The lack of data on the prevalence of depression among females in prisons outside of Europe, North America and Australasia means that the most recent global estimate of prisoner depression in females (Fazel and Seewald, 2012) is not based on data representative of all regions in the world. Furthermore, the findings of the gender analyses largely reflect the high-income regions. It is therefore difficult to comment on the estimates of mental disorder in female prisoners outside of these regions.

Prison factors and the mental health of female prisoners

A disproportionately negative impact of imprisonment in the mental health of women compared to men has been described and attributed to factors prior to entering the prison, such as high levels of pre-existing poor mental health including substance misuse, psychiatric morbidity and self-harm (Corston, 2007). A mixed-gender prospective cohort study in the UK found that the high level of suicidality and poor mental wellbeing in prisoners during the first week of admission to prison significantly

reduces over time in males but not in females, and that after two months in prison women have a significantly higher level of suicidality and significantly worse mental wellbeing (Hassan et al., 2011).

The prison environment and regime to which female prisoners are subjected have been criticised for lacking gender-sensitivity (Corston, 2007). A British qualitative study of the perceptions of health needs of 49 female prisoners found boredom, living with other prisoners with poor mental health, losing personal autonomy, and previous exposure to substance misuse, affected mental health in prison (Douglas et al., 2009). Some women respond to the boredom that results from limited access to meaningful activity by seeking psychotropic medicines or overeating for comfort which leads to significant weight gain and subsequent poor self-image and low self-esteem. In prison, some women experience fear, distress and psychological trauma from witnessing the process or effects of the poor mental health of other prisoners experiencing difficult drug detoxification, non-fatal self-harm and suicide. Women with no previous exposure to substance misuse may find it particularly distressing to observe the effects of illicit substance use and detoxification in women around them. Women describe prison system regimes which leave them feeling disempowered and less able to take control of their own health. This reduced responsibility is a relief to some women who have led extremely chaotic lives prior to imprisonment. However, most women report increased stress, anxiety and frustration in response to the loss of personal autonomy (Douglas et al., 2009). Female prisoners report that they experience psychological stress as a result of being in prison and whilst some feel they have the resilience to manage this additional stress, others struggle and experience increased levels of depression and on occasions attempt suicide (Douglas et al., 2009). These findings are consistent with those of a later study in which female prisoners reported that anger, frustration and depression contributed to their acts of near-lethal self-harm (Marzano et al., 2011b).

A study of 213 male and 19 female Irish prisoners found that a higher number of females (42.1%) than males (23.9%) reported interpersonal difficulties in terms of having been bullied in prison by another prisoner (Leddy and O'Connell, 2002). Whilst

a genuine gender difference in bullying in prisons may exist, this finding could be due to the small number of females in the study or a cultural under-reporting by males of being a victim of bullying. Compared to prisoners who denied having been bullied, the study also found poorer psychological health among prison victims of bullying (Leddy and O'Connell, 2002). The small number of prisons for women, in comparison to the large number of prisons for men, increases the chances of a woman being imprisoned far away from her home which makes it difficult for family visits to take place frequently and family relationships to be maintained, and has a negative impact on the mental health of female prisoners (Corston, 2007). The impact of such extra-mural interpersonal factors on the mental health of female prisoners has been discussed.

The impact of poor mental health of female prisoners extends beyond the prisoner and her period of incarceration. A study of male and female prisoners in the USA showed that having a serious mental disorder such as major depression or bipolar affective disorder has a significantly greater impact on men than women, where the impact is returning to prison sooner following initial release (Cloyes et al., 2010b).

Although the literature does not claim that overall prison is beneficial for mental health, there is some evidence that it can provide an opportunity for improved mental health for certain female prisoners. For example, some women with pre-existing substance abuse find imprisonment provides respite from regular substance abuse and an opportunity to reflect and seek substance abuse help. Prison also provides opportunities for improved mental health to some women whose index offences were associated with poor mental health including substance misuse because they perceive they have greater opportunity to access healthcare and substance abuse services within a prison setting (Douglas et al., 2009).

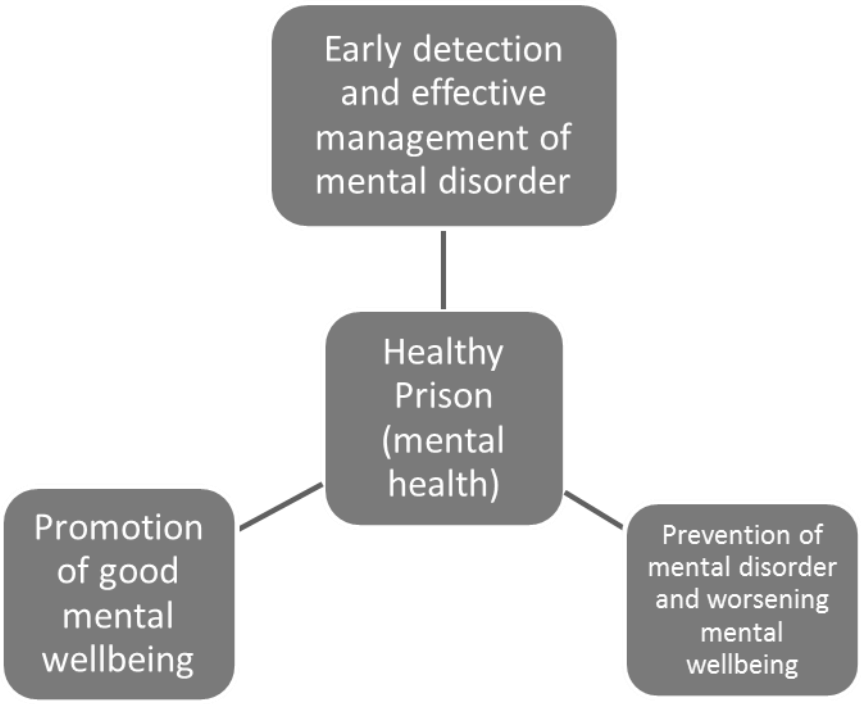
3.4 The healthy prison and mental health

3.4.1 A prison model for mental health

In its report ‘Prisons and Health’, the WHO (2014c) recommends that all prisoners undergo detailed mental health screening within the first few days of entering the prison

so that pre-existing mental disorders can be identified and treatment provided with continuity of care. The report highlights the importance of ensuring that basic human rights and needs are met to prevent a deterioration in mental wellbeing or an exacerbation of an existing mental disorder. Providing prisoners with access to facilities such as substance misuse programmes and healthcare services is advocated as a means of promoting better mental wellbeing (WHO, 1998). Preventable deaths, including suicide which is the most common cause of prisoner death (Fazel and Baillargeon, 2011), are a health and security concern for prison authorities. Addressing mental wellbeing, which was found to predict suicidal thinking and behaviour among students, may be effective as part of a wider suicide prevention strategy (Keyes et al., 2012). In terms of mental health, a healthy prison is therefore one that seeks to improve the mental health of prisoners by addressing both mental illness and mental wellbeing, as shown in Figure 3-1.

Figure 3-1: Mental health foci of a healthy prison



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The concept of equivalence has been embraced at an international level to guide policy makers and health providers globally in ensuring that prisoners have access to quality healthcare services (WHO, 2014c). In the community, mental health services are tailored to the specific needs of the population served and provided in a way to maximise accessibility to service users. An equivalent prison service would meet the specific mental health needs of prisoners and ensure maximum accessibility to prisoners (WHO, 2014c). Proportionate universalism is a related concept that arose from general health promotion in which actions are applied universally to the whole population and that the action is applied proportionately to the level of disadvantage (Marmot, 2010). The purpose of proportionate universalism is to reduce health inequalities within a population and is achieved by appropriate needs-based allocation of health resources and delivery of care. This ensures that within a country those at greatest risk of poor mental health, for example homeless people, prisoners and refugees, receive mental health care and investment on a larger scale and of higher intensity than those with the least risk. Applied to the context of prison mental health, proportionate universalism would ensure that mental health investments are made for all prisoners through strategies to alleviate poor mental wellbeing, with bigger investments made for those with raised levels of mental health need, and with the greatest investments being made for those with a combination of severe mental disorder and poor mental wellbeing.

The associations between mental health and both crime and prison discussed previously should motivate Ministries of Justice to work with Ministries of Health to improve prisoner mental health as part of a wider strategy to directly reduce the risk of future offending. Addressing risk factors for mental health would therefore contribute to this strategy. In addition to the direct associations, there are common factors that are associated with both mental health and criminality. The social determinants of criminality, and recidivism, include long-term unemployment and poor education (Aaltonen et al., 2011, Makarios et al., 2010). Studies of predictors of mental disorders have found that common mental disorders, namely anxiety and depression, are more likely to be present in individuals with poor education, unemployment, material

disadvantage and debt (Fryers et al., 2005, Jenkins et al., 2008). A review of studies from low and middle income countries found that these common mental disorders are associated are poverty (Lund et al., 2010). A narrative review of large surveys reported that social disadvantage is strongly associated with poorer mental wellbeing. The review found that poorer mental wellbeing is associated with ageing, low family income, being widowed or separated, and urban living; while better mental wellbeing is associated with being male, paid employment, higher education, high social support and low levels of loneliness (Barry, 2009). It could be argued that by improving the mental health of prisoners, associated factors relating to unemployment and poor education would be addressed and may in turn indirectly reduce the risk of future offending. Improving the mental health of prisoners, which may also directly or indirectly reduce the risk of future offending, should be the key objective of a healthy prison.

3.4.2 Opportunities to improve the mental health of prisoners

During the period of incarceration with limited freedom of movement, prisoners reside in close proximity and are more likely to be receptive to health services which they are less likely to have accessed in the community, a finding that is also true for other prison-based services such as education and chaplaincy (WHO, 1998). For this reason, the period of incarceration can be viewed as providing a good window of opportunity for improving the mental health of prisoners, primarily through the prison health service, and reflects the life-course approach to mental health care which acknowledges that in any particular life stage the mental health of an individual will be influenced by factors unique to that life stage, as well as factors common to other stages of life (WHO, 2014d). Prison could therefore be considered a significant stage in the life of a person who is incarcerated and therefore subjected to a unique set of mental health risk factors in addition to those they faced in the community as part of the working-age or family-building life stages.

In an extensive review of health and prisons, it was reported that, due to prison resource limitations, mental health care services have been traditionally reserved only for those prisoners with the most severe mental health disorders, leaving patients with less severe

or subthreshold mental disorders undiagnosed and untreated (WHO, 2014c). Tradition has also restricted the concern and responsibility for mental health to health care professionals. In keeping with the concept of the healthy prison described above, the WHO recommends a "whole-prison" approach to mental health care which gives responsibility to all staff members working in a prison and goes beyond mental illness to include mental wellbeing as well. Table 3-5 illustrates a whole-prison approach which seeks to improve the mental health of prisoners by using existing limited resources more effectively within the healthy prison model (WHO, 2014c).

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Table 3-5: Illustrative comparison of workforce involvement in traditional and whole-prison approaches to mental health care

	Early detection and effective management of mental disorder	**Prevention of mental disorder and worsening mental wellbeing**	**Promotion of good mental wellbeing**
Example	Identifying a prisoner with a major depressive episode and commencing effective non-pharmacological and/or pharmacological treatment as indicated for an optimal duration, encouraging full concordance with treatment plan	Providing a prisoner with early mood-altering substance misuse intervention to prevent the onset of a substance-related depressive or psychotic episode	Instilling hope and equipping a prisoner with the knowledge and skills to manage problems
Target population	Prisoners with a mental disorder	Prisoners at risk of developing a mental disorder or with low mental wellbeing	All prisoners
Staff responsible in traditional (not whole-prison) approach	Prison health professionals	Prison health professionals	Prison health professionals
Staff responsible in whole-prison approach	Prison health professionals, prison officers, all people working in the prison who have contact with prisoners, for example, teachers, chaplains, non-health social workers	Prison health professionals, prison officers, all people working in the prison who have contact with prisoners, for example, teachers, chaplains, non-health social workers	Prison health professionals, prison officers, all people working in the prison who have contact with prisoners, for example, teachers, chaplains, non-health social workers

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3.5 Global challenges in prison mental health

The global scope of prisoner mental health makes it an appropriate topic of concern for global health (Koplan et al., 2009). First, the 11 million prisoners worldwide come from every country and the literature estimates these prisoners have a higher prevalence of mental disorders and poorer mental wellbeing than the general population. Second, the factors which contribute to imprisonment often extend beyond a single nation to transnational issues such as illicit drug trading and global issues such as poverty. Third, factors that impact on the conditions and systems associated with prisoner mental health may be determined by regional and international influences. For example, the Caracas Declaration for the restructuring of psychiatric care in Latin America (PAHO, 1990) and the Universal Declaration of Human Rights (UN, 1948).

The top 25 challenges in global mental health have been identified through a Delphi system involving representatives from over 60 countries and published to highlight the priority areas for research (Collins et al., 2011). Each challenge was grouped under a common goal; an example was given of a research question which might help to address each challenge. One of the six goals was the identification of the root causes, risk factors and protective factors for mental disorders, which raised the important challenge of identifying "modifiable social risk factors across the life course", as illustrated by the research question: "What factors promote resilience and prevent mental disorder in persons at extreme social disadvantage?" (Collins et al., 2011). Mental wellbeing has been used as a measure of resilience (Cosco et al., 2016) and was shown in Table 3-3 to be lower among prisoners than in the general population. It also shows some overlap with depression and ideally both should be studied together (Routledge et al., 2016b). Depression is a high priority diagnosis for research because it makes a large contribution to the global burden of mental and neurological disorders (Collins et al., 2011); it is also prevalent among prisoners (Fazel and Seewald, 2012). Imprisonment is an important stage in the life course of men and women whose mental health needs and risk factors show both similarities and differences in prison, and require further study,

especially in countries outside of Europe, Australasia and North America where the overwhelming majority of prison mental health research to date has focused.

Global mental health research seeks to identify and reduce health inequalities between and within populations, understand the factors which influence mental health, and then use this knowledge to develop and evaluate appropriate interventions which might improve mental health and reduce the identified health inequalities. The mental health of female prisoners has been recognised as an important public health concern globally, with the acknowledgement that they have a set of mental health needs distinct to that of their male counterparts relating to: caregiving roles within the family, histories of being victims of violence and other forms of abuse, poverty, human rights factors, cultural gender roles, and social and general health inequalities (Van den Bergh et al., 2011). In response to the global health challenges highlighted above, this thesis will focus on the mental health, namely depression and mental wellbeing, of female prisoners in Latin America, recognising the overlap between these two mental health variables.

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Chapter 4 Systematic review and meta-analysis of the prevalence of depression among prisoners in Latin America

4.1 Background

4.1.1 Questions arising from the literature

Latin America is a region with high economic inequality within and between countries (Tejada, 2016), a high median prison population rate (Walmsley, 2016) and a high proportion of females in the prison population (Walmsley, 2015). Furthermore, Latin America was poorly represented in the worldwide systematic review and meta-analysis of depression among prisoners discussed in chapter 3. (Fazel and Seewald, 2012). Only two of 54 included publications reported findings from Latin American prisons. Four questions pertinent to the Latin American prison context arose in relation to the findings of this systematic review which was conducted using studies published between 1966 and 2010 (Fazel and Seewald, 2012):

1. The authors estimated a global prevalence of depression among prisoners of 11.4% (95% CI 9.9-12.8). To what extent does the global estimate reflect that of Latin American?
2. The authors reported a high level of certainty that the global prevalence of depression was similar between males and females. Is this true for Latin America?
3. The authors were uncertain whether the global prevalence of depression differed between low and middle income countries and high income countries. Does the prevalence of depression among prisoners in Latin America differ between more prevalent in low and middle income countries and high income countries?
4. Have any studies based on Latin American prisoners been published since 2010?

These four questions were addressed by using systematic review and meta-analytical methods to estimate the prevalence of depression among prisoners in Latin America and examining differences in the estimate according to gender and country income level.

4.1.2 Definition of systematic review and meta-analysis

A systematic review is a scientific technique which seeks to "comprehensively identify, appraise and synthesize all the relevant studies on a given topic" (Petticrew and Roberts, 2006). It is an efficient method of discovering the answer to a research question because it makes use of data in existing literature as an alternative to conducting a new study at the outset (Mulrow, 1994). A narrative analysis describes and synthesises the data qualitatively, without the use of statistics; meta-analysis is a statistical method of pooling together data from the different studies identified to obtain a single estimate in answer to the research question (Mulrow, 1994). Conducting a systematic review and meta-analysis of the prevalence of depression among Latin American prisoners, by gender and county income can yield several benefits including: summary of the prisoner depression profile in the region; identification of gender and economic inequality; revealing of gaps in the research (eg, countries which have no published data on the prison prevalence of depression); highlighting of areas of methodological limitation in studies; and discovery of new research questions.

4.1.3 Overview of Latin America

Latin America is a region between the Pacific and Atlantic oceans. It comprises 20 countries in South America, Central America and the Caribbean where Spanish, Portuguese and French are spoken: (1) Argentina, (2) Bolivia, (3) Brazil, (4) Chile, (5) Colombia, (6) Costa Rica, (7) Cuba, (8) Dominican Republic, (9) Ecuador, (10) El Salvador, (11) Guatemala, (12) Haiti, (13) Honduras, (14) Mexico, (15) Nicaragua, (16) Panama, (17) Paraguay, (18) Peru, (19) Uruguay, (20) Venezuela. In addition, there are 6 dependent territories or constituent entities: (1) French Guiana, (2) Guadeloupe, (3) Martinique, (4) Puerto Rico, (5) Saint-Barthelemy and (6) Saint-Martin. High-income, upper middle-income, lower middle-income and low-income countries are represented within the region. Ibero-America is the term used to describe the parts of Latin America in which Spanish and Portuguese are spoken. However, for the remainder of this thesis, the term Latin America will be used as a synonym for Ibero-America encompassing

Puerto Rico and the 20 countries above except for Haiti and other regions where French is the primary language spoken.

1.49 million prisoners are detained in Latin America (Walmsley, 2016). Table 4-1 shows that prison profiles vary between countries in this region and how Latin American prisons compare to the rest of the world. The data show that in Latin America the prison population rate, percentage of females in the total prison population, and occupancy levels are high (WPB, 2017).

Table 4-1: Profile of the highest and lowest prison rankings of 20 Latin American countries in thesis (data extracted from Walmsley 2015, Walmsley 2016, WPB 2017)

Ranking in Latin America of 20 countries in thesis	**Prison population total**	**Prisoner population rate (prisoners per 100,000 national population)** **World median = 138**	**Female prisoner population rate (female prisoners per 100,000 national population)** **World median = 6.0**	**Percentage of females in total prison population (%)** **World median = 4.4%**	**Occupancy level (%)** **World median = 110.5%**
1	607,731 Brazil	510 Cuba	45.9 El Salvador	14.7 Bolivia	348.2 El Salvador
2	255,138 Mexico	492 El Salvador	27.5 Panama	9.7 El Salvador	296.2 Guatemala
3	121,389 Colombia	392 Panama	20.4 Costa Rica	9.0 Guatemala	253.9 Bolivia
4	75,379 Peru	352 Costa Rica	18.5 Brazil	7.7 Ecuador	230.7 Peru
5	69,060 Argentina	350 Puerto Rico	18.0 Chile	7.5 Chile	178.6 Paraguay
16	13,468 Bolivia	162 Ecuador	7.6 Honduras	4.9 Nicaragua	111.6 Mexico
17	12,327 Puerto Rico	160 Argentina	7.5 Nicaragua	4.4 Argentina	110.9 Chile
18	10,949 Paraguay	158 Paraguay	6.8 Argentina	4.3 Honduras	106.2 Argentina
19	10,569 Nicaragua	122 Bolivia	5.9 Dominican Republic	2.5 Dominican Republic	89.1 Puerto Rico
20	9,996 Uruguay	121 Guatemala	No data for Cuba	No data for Cuba	No data for Cuba

4.1.4 Aim and objectives

The aim was to systematically review quantitative studies measuring the prevalence of depression to obtain an estimate of the prevalence of depression among prisoners in Latin America and estimates by gender and country income level.

The three null hypotheses were that there would be no significant difference in the estimated prevalence of depression:

1. Between prisoners in Latin America and prisoners worldwide
2. Between male and female prisoners
3. Between countries with different income levels

4.2 Methodology

4.2.1 Search strategy and data management

An initial scoping exercise was undertaken to test and refine the eligibility criteria, determine the most suitable search strategy and pilot the data extraction and quality assessment forms. Initial systematic searches were conducted in 2014 using online databases described in Table 4-2. Where possible, fortnightly electronic updates of search results were requested from databases. Where this was not available, searches were repeated in May 2017.

Table 4-2: Description of databases accessed in systematic review

Database (short)	Earliest publication coverage date (in 2014)	Strengths	Limitations
EMBASE	1980	Good content for psychiatry	Content bias towards Europe
Global Health	1910	International focus and includes subject area of epidemiology	No limitation identified
Google Scholar	1964	Estimated 80-90% coverage of all English language articles	Poor reliability; "Matthew effect" – most frequently cited papers listed first (Serenko and Dumay, 2015)
LILACS	1982	Focus on journals from Latin America and the Caribbean	Short period of time covered by publications
Medline	1966	Large database	Content bias towards North America
Open Grey (previously SIGLE)	1992	Specialist database for grey literature	Content bias towards Europe
PsycINFO	1887	Focus on mental health topics	Small database
PubMed	Before 1966	Includes titles from earlier version of Medline	Content bias towards North America
SciELO (and SciELO Brasil)	1997	Brazilian-founded network of mainly Latin American countries including 12 studied in thesis; open access; can search in English, Spanish and Portuguese	Bias against Latin American research published by non-Latin American professionals
Web of Science	1900	Strong coverage; bibliographic and citation data extend to 1900	No limitation identified

English, Spanish and Portuguese keywords were used when searching electronic bibliographic databases. The following terms were used in the PsycINFO search strategy and were adapted for application in others databases:

1. "latin america" OR "central america" OR "south america" OR "central america" OR sudamerica OR argentina OR bolivia OR brazil OR chile OR colombia or costa rica OR cuba OR dominican republic OR ecuador OR "el salvador" OR guatemala OR honduras OR mexico OR nicaragua OR panama OR paraguay or peru OR "puerto rico" OR uruguay or venezuela
2. (depression OR psychiatr* OR mental OR psiquiatr* OR depresion OR depressao).mp. [mp= title, abstract, heading word, table of contents, key concepts, original title, tests & measures]
3. (detain* OR prison* OR jail* OR gaol OR incarcerat* OR penitenci* OR felon OR correctional OR offender* OR carcel* OR preso* OR presa* OR penal OR detenid* OR reclus* OR recluid* OR delito* OR delita* OR prision OR presidio OR prisao OR incarcerad* OR penitence* OR correcao OR detencao OR crimin* OR carcere OR detento). mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]
4. (prisoners OR prisons OR "prison complexes").mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]
5. affective disorders/ OR exp mental disorders/ OR exp major depression/
6. 2 OR 5
7. 3 OR 4
8. 1 AND 6 AND 7

Unlike the other electronic databases, Google Scholar is a non-traditional database and operates as an internet search engine. Adaptations of the above search terms were used in six separate searches on Google Scholar. The first 100 references yielded from each search were screened by both title and abstract against eligibility criteria described below, and any duplicate studies were removed.

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To identify relevant unpublished studies, communication was made with experts in the field. To complement the electronic database Open Grey, attempts were made to find additional grey literature through the governmental mental health and justice websites of eligible countries. EndNote® version 7, an electronic reference management system, was used to keep a record of all studies obtained from electronic bibliographic databases.

4.2.2 Eligibility criteria

In stage 1 of the search, titles identified through the traditional electronic databases were screened by one reviewer and tested against the eligibility criteria described in Table 4-3. Studies were excluded if it was clear from the title that eligibility criteria were not met. Duplicate studies were removed. The remaining studies entered the second stage of the search strategy.

Table 4-3: Eligibility criteria applied in the search strategy of the systematic review

Eligibility criteria	Details of eligibility criteria
1. Country	The study must measure depression in prisoners detained in one of the 20 Latin American (Ibero-American) countries and territories described above.
2. Study design	The study must be cross-sectional.
3. Participant type	The study must involve prisoners at least 15 years old, of any status (eg, remand or sentenced), and detained in a correctional facility, of any level of security, in relation to any type of alleged crime or misdemeanour. Participants must be representative of the population of the prison from which they are recruited (eg, they must not be prisoners attending a prison mental health clinic and the sampling strategy must minimise sampling bias). Prisoners must not be detained in a facility owned by a non-Latin American country or territory (eg, they must not be in the USA military prison in Cuba).
4. Outcome measure	The study must measure the prevalence of depression as a primary outcome. It may measure any form and severity of depression, including the general term 'depressive disorders' but not dysthymia. The study must use a validated diagnostic instrument for the measurement of depression in accordance with an international classification system (eg, it must not rely on participant subjective self-report or the results of a screening tool).

In stage 2, I screened the abstract of each study retained, rejecting studies that failed to meet the eligibility criteria. Studies not excluded at this stage were retained for assessment in the next stage.

The purpose of Stage 3 was to identify those studies which were eligible for inclusion in the final review and analysis. First, the full text version of every study that passed the screening stages was retrieved and read by three reviewers (AA, EB, NA)[1] who independently judged whether each study fulfilled all the eligibility criteria. Then, decisions were shared and in cases of disagreement, the paper was discussed by reviewers until a consensus was reached. Studies that completely satisfied the eligibility

[1] Evelyn Balsells (EB), Nkechi Adeeko (NA) and I (AA) were the three independent reviewers. EB has a Master in Public Health and is from Guatemala. NA has a Master of Arts in International Studies.

criteria described in Table 4-3 entered the final stage of the search strategy. The reasons for ineligibility for Stage 4 were noted. All studies eligible for Stage 4 then underwent data extraction and quality assessment.

4.2.3 Data extraction

Key study details were extracted from each full-text study in Stage 4 using a purpose-designed data extraction form which had been piloted and revised during the scoping exercise (Appendix 1). Extracted data included: title, author and year of publication, how the eligibility criteria were fulfilled and outcome data. Attempts were made before and during data extraction to contact authors directly to obtain clarification of methodology, results or missing data.

4.2.4 Quality assessment of individual studies

The quality of each Stage 4 study was assessed to help determine the weight that should be given to the findings of each study in the overall results and conclusions of the systematic review (CRD, 2009). The quality of each study was assessed against an adaptation of the Appraisal tool for Cross-Sectional Studies (AXIS) which is a 20-item instrument developed through the Delphi method with medical academics for the purpose of critically appraising the quality of cross-sectional studies (Downes et al., 2016). The original AXIS includes an item that requires the study to demonstrate having obtained either ethics approval or participant consent. To ensure that the studies had been conducted with due regard to the vulnerable nature of a prisoner population (Nuffield, 2002), this AXIS item was adapted to ensure that the highest quality assessment of ethics would be awarded only to studies that demonstrated all three of the following: ethics approval, participant consent and voluntary participation. A second adaptation was the introduction of a scoring system in which each item was scored between 0 and 2: 0 = absent or highly inadequate; 1 = partial; 2 = sufficient/complete. For each study, the individual item scores were then summed to give an overall assessment score ranging between 0 and 40, where a higher score reflected a higher quality of study. Table 4-4 shows the system of interpreting the scores that was devised to support decision-making in subsequent stages of the systematic review and meta-

analysis. Nomenclature was chosen to recognise higher quality studies and to ensure that the findings of lower quality studies would be used and interpreted with an appropriate level of caution.

Table 4-4: Interpretation of adapted AXIS quality assessment scores

Total adapted AXIS score	**Quality category**	**Response to study in the systematic review**	**Response to study in meta-analysis**
0 – 10	Very low quality study	Interpret with extreme caution	Exclude from meta-analysis
11 – 20	Low quality study	Interpret with much caution	Consider exclusion from meta-analysis
21 – 30	Moderate quality study	Interpret with some caution	Include in meta-analysis with some caution
31 – 40	High quality study	Interpret with minimal caution	Include in meta-analysis with caution, as appropriate

4.2.5 Data analysis

Descriptive statistics were used for study characteristics, demographic data, and the raw prevalence values for each individual study. Extracted data of depression prevalence from each study were entered into three worksheets (both genders, males, females) on Microsoft Excel for all statistical analyses using a method for meta-analysis described by Neyeloff at al. (2012). To determine whether it was appropriate to undertake meta-analysis and which meta-analysis assumptions to make, an assessment of the heterogeneity between included studies was undertaken qualitatively and quantitatively.

First, the data extracted from the included studies and the quality assessment results were used to make a qualitative assessment of the degree of heterogeneity between included studies. The full text of studies was consulted where additional data were required for the assessment. Next, two quantitative tests of heterogeneity were conducted which yielded three statistics: the χ^2, the p value of the χ^2, and the I^2. The χ^2 statistic is also known as Cochran's *Q*. or *Q*. The χ^2 and I^2 values were calculated using Microsoft Excel as described above; the p value, which takes into account the number

of studies tested, was obtained from a standard χ^2 distribution table (Kirkwood and Sterne, 2003).

The first of the quantitative approaches, the χ^2 test, is based on the null hypothesis of no difference between the studies, that is, no heterogeneity. It tests the significance of heterogeneity between studies (Higgins et al., 2003). A p value of χ^2 below 0.05 suggested that heterogeneity calculated between studies was not likely to have arisen due to chance and was therefore considered as evidence for rejecting the null hypothesis (Kirkwood and Sterne, 2003). The second quantitative test for heterogeneity produced the I^2 value. It is a more recent test of heterogeneity and measures "the percentage of total variation across studies that is due to heterogeneity rather than chance", quantifying the effect of the heterogeneity (Higgins et al., 2003). By convention, negative values of I^2 were noted as 0% and the following established categories of I^2 values were used: 0% = no heterogeneity; 25% = low heterogeneity; 50% = moderate heterogeneity; 75% = high heterogeneity (Higgins et al., 2003).

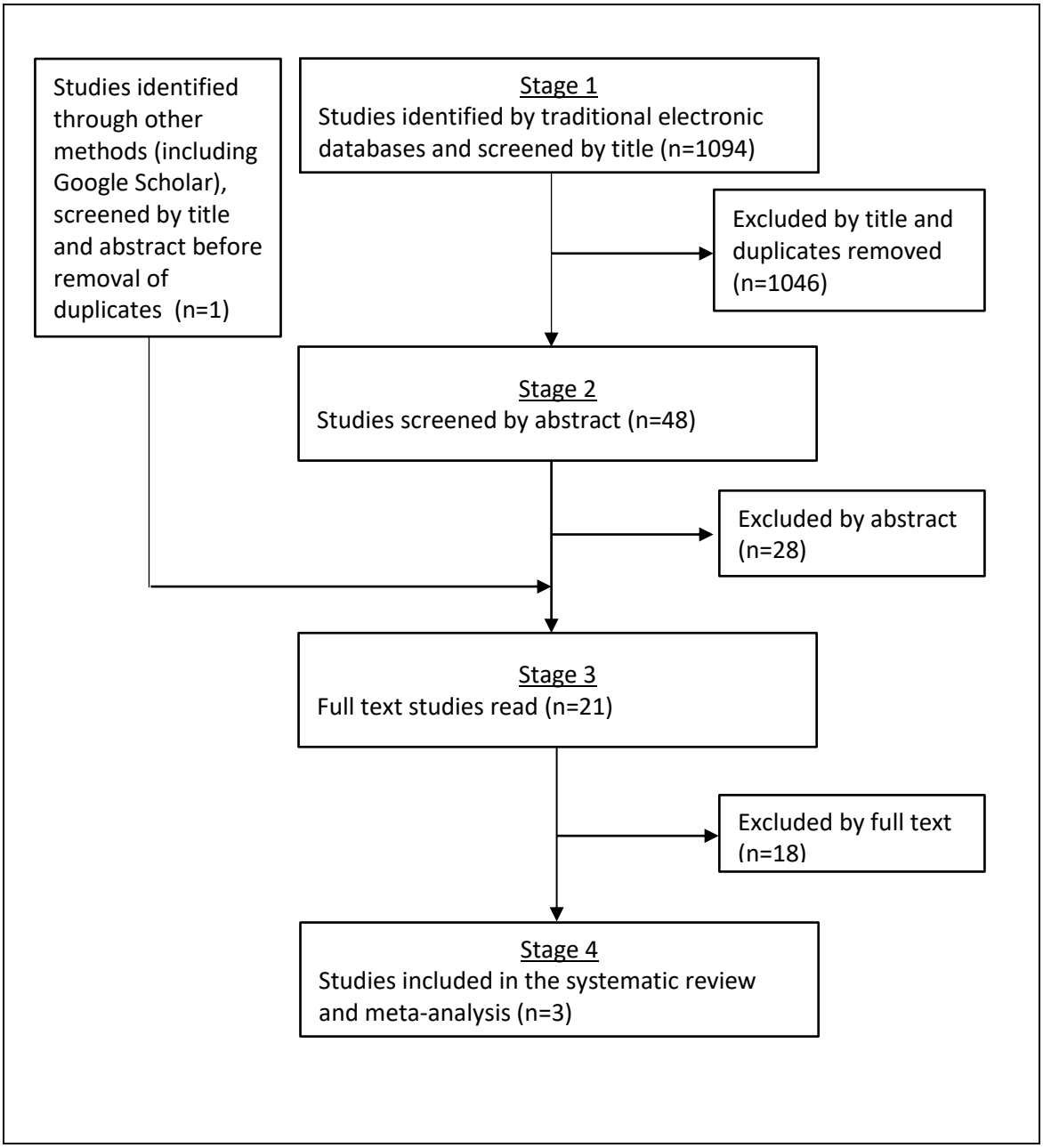
Meta-analysis was conducted using an appropriate model of effects and post hoc meta-analyses were performed where there was concern about sources of heterogeneity. Data were compared with findings from the systematic review and meta-analysis of the prevalence of depression among prisoners worldwide conducted by Fazel & Seewald (2012).

4.3 Results

4.3.1 Search strategy and data management

Figure 4-1 shows the flow diagram of the search strategy used and the results of the systematic search. From a total of 1094 studies identified through searches on traditional electronic databases and one study identified following a search and screening on Google Scholar, three studies met the eligibility criteria of the systematic review. No additional studies were identified in the grey literature or through communication with experts in the field.

Figure 4-1: Flow diagram of the systematic search strategy for the systematic review



4.3.2 Eligibility criteria

Table 4-5 gives examples of how 28 of the 48 studies screened by abstract during Stage 2 failed to meet the eligibility criteria. The most common reason for excluding a study at this stage was the absence of a cross-sectional study design.

Table 4-5: Rationale for excluding studies during Stage 2 of the search strategy

Eligibility criteria	**Minimum number of studies excluded for not meeting criteria**	**Examples of reasons for failing to meet criteria**
1. Country	4	New Mexico (USA)
2. Study design	13	Review article; retrospective case series; comment
3. Participant	10	Participants who had died from suicide; sexual offenders; participants from custody hospital in prison
4. Outcome measure	1	Substance misuse

The 21 full-text studies reviewed during Stage 3 involved the prisoners in the following countries: Argentina (Folino and Urrutia, 2001); Costa Rica (Leal Maleos and Salazar Solís, 2004); Chile (Mundt et al., 2013, Osses-Paredes and Riquelme-Pereira, 2013); Mexico (Pulido-Criollo et al., 2009, Bermudez et al., 2007, Martínez-Lanz et al., 2012); Colombia (Mojica et al., 2009, Ruiz, 2007, Uribe-Rodríguez et al., 2012, Perez et al., 2011, Silva et al., 2011); and Brazil (Andreoli et al., 2014, Canazaro and Argimon, 2010, de Moraes and Dalgalarrondo, 2006, de Carvalho et al., 2013, Ponde et al., 2014, Ponde et al., 2011, Reed et al., 2009, Quitete et al., 2012, Tavares et al., 2012). Two studies from Brazil (Ponde et al., 2011, Andreoli et al., 2014) and one study from Chile (Mundt et al., 2016) fulfilled the four eligibility criteria for inclusion in the systematic review. Table 4-6 shows the reasons for excluding the remaining 18 studies. Table 4-6 Table 4-6: Rationale for excluding studies after full text reading during Stage 3 of the search strategy for the systematic review

1st Author	Eligibility criteria met? 1=County 2=Study design 3=Participant 4=Outcome measure					If not included, main reasons for exclusion
	1	2	3	4	Accept	
Andreoli	**Brazil**	✓	✓	✓	✓	**N/A**
Bermudez	Mexico	✓	X	✓	X	Participant eligibility criteria included substance misuse; non-probabilistic sampling.
Canazaro	Brazil	✓	✓	**X**	**X**	BDI used to screen for depression; depression diagnosis not confirmed.
de Moraes	Brazil	**X**	**X**	**X**	**X**	General Health Questionnaire screening tool used; depression diagnosis not confirmed.
de Carvalho	Brazil	✓	✓	**X**	**X**	Prevalence data from mixed-gender sample not analysed by gender.
Folino	Argentina	**X**	**X**	**X**	**X**	Retrospective case-control study; not a prison population; patients in secure hospital.
Leal	Costa Rica	✓	**X**	**X**	**X**	Sample restricted to elderly prisoners; geriatric depression scale used to screen for depression; depression diagnosis not confirmed.
Martinez	Mexico	✓	**X**	**X**	**X**	Non-probabilistic sampling. CES-D used to screen depression; diagnosis not confirmed.
Perez	Colombia	✓	**X**	**X**	**X**	BDI used to screen for depression; depression diagnosis not confirmed.
Mojica	Colombia	✓	✓	**X**	**X**	BDI used to screen for depression; depression diagnosis not confirmed.
Mundt	**Chile**	✓	✓	✓	✓	**N/A**
Osses	Chile	✓	✓	**X**	**X**	Depression diagnoses through medical records review; no validated instrument used
Ponde	**Brazil**	✓	✓	✓	✓	**N/A**
Ponde	Brazil	✓	✓	**X**	**X**	Depression prevalence not reported; sample a subsection of sample above (Ponde, 2011)
Pulido	Mexico	✓	**X**	**X**	**X**	Non-probabilistic sampling; Hamilton Depression Scale used; diagnosis not confirmed.
Quitete	Brazil	✓	**X**	**X**	**X**	BDI used to screen depression; depression diagnosis not confirmed.
Reed	Brazil	✓	✓	**X**	**X**	CES-D used to screen depression; depression diagnosis not confirmed.
Ruiz	Colombia	✓	**X**	**X**	**X**	No diagnosis of depression.
Silva	Brazil	✓	✓	**X**	**X**	Lifetime prevalence of depression measured.
Tavares	Brazil	✓	**X**	✓	**X**	No evidence of random sampling or unbiased sampling.
Uribe	Colombia	✓	**X**	**X**	**X**	Participants recruited from a prison treatment induction programme; depression State/Feature Inventory used; depression diagnosis not confirmed.

4.3.3 Data extraction

Table 4-7and Table 4-8 display the country, study design and participant characteristics of the three included studies. Collectively, the three studies of prisons in Brazil and Chile provided data on a total of 3,314 prisoners, of which 2,544 (76.8%) were males and 770 (23.2%) were females. Prisoners were detained in closed or semi-open prisons and had a minimum age of 15 years. Table 4-9 shows the measurement of depression for the three studies. Estimates of depression prevalence ranged from 6.0% to 18.8%. All studies had been conducted in upper middle income countries.

Table 4-7: Characteristics of studies: country, income level, study design

First author of study (year)	Journal	Databases within search strategy in which study was not identified	Country	Country income level at time of publication	Year of data collection	County income level at time of data collection	Language of publication	Main language spoken in country	Study design
Andreoli (2014)	PLoS ONE	LILACS, Medline, PsycINFO, SciELO, SciELO Brasil	Brazil	Upper middle income	2006-2007	Upper middle income	English	Portuguese	Cross-sectional
Mundt (2013)	PLoS ONE	LILACS, SciELO, SciELO Brasil	Chile	High income	2007	Upper middle income	English	Spanish	Cross-sectional
Ponde (2011)	Journal of Forensic Sciences	Google Scholar, LILACS, SciELO, SciELO Brasil	Brazil	Upper middle income	2006	Upper middle income	English	Portuguese	Cross-sectional

Table 4-8: Characteristics of studies: participants, gender

First author of study (year)	Total in sample	Sampling	Participation rate	Prison type	Number of prisons	Age range of participants (years)	Mean age of participants (years)	Prisoner status	Males (%)	Females (%)
Andreoli (2014)	1,809	Random sampling	77.9%	Closed	105	Min 18-27 Max >57	Not stated	Sentenced	1,192 (65.9)	617 (34.1)
Mundt (2013)	1,008	Random sampling	99.0%	Closed	7	Min 15-24 Max >65	32.8 +/-10.1	Sentenced and pre-trial	855 (84.8)	153 (15.2)
Ponde (2011)	497	Random sampling (n=290); whole group (n=207)	>93.0%	Closed, semi-open	1	Min 19 Max 65	33.0 +/-8.5 closed; 29.5 +/-7.8 semi-open	Sentenced	497 (100)	0 (0)

Table 4-9: Characteristics of studies: depression

First author of study (year)	Outcome	Diagnostic criteria/ Instrument	Instrument interviewer	Depressed participants/ Total	Percentage depressed participants (95% CI)	Depressed males/ total males	Percentage depressed males (95% CI)	Depressed females/ total females	Percentage depressed females (95% CI)
Andreoli (2014)	Depression in previous 12 months	ICD-10/ CIDI	Law interviewers supervised by CIDI trainers	198/1809	10.9 (not reported)	82/1192	6.9 (5.8-8.1)	116/617	18.8 (17.3-20.4)
Mundt (2013)	Major depression in previous 12 months	DSM-IV/ CIDI 3.0	28 field workers trained and supervised by 3 CIDI-trained individuals (2 doctors, 1 IT specialist)	69/1008	6.9 (5.4-8.6)	52/855	6.1 (4.9-7.9)	17/153	11.1 (6.6-17.2)
Ponde (2011)	Current major depression	DSM-IV/ MINI-plus	5 trained medical students	30/497	6.0 (not reported)	30/497	6.0 (not reported)	N/A	N/A

4.3.4 Quality assessment of individual studies

Table 4-10 and Table 4-11 show the results of the adapted quality assessment. All three studies used an appropriate study design for their clearly stated aims and objectives. However, no study displayed the results of non-participants and one study (Ponde et al., 2011) made no reference to ethical approval, participant consent or voluntary participation

Table 4-12 shows that two studies were assessed to be at the upper end of moderate quality and one study was at the upper end of low quality, and all were interpreted and analysed accordingly.

Table 4-10: Results of quality assessment of studies using adapted version of AXIS (Downes, 2016) - Part 1

First author (year)	1 Clear aim or objectives	2 Study design suits aims	3 Sample size justified	4 Clearly defined target population	5 Sample frame from suitable population to represent target population	6 Selection process likely to produce representative participants	7 Measured taken to address and categorise non-participants	8 Depression measured according to study aim	9 Depression measured using trialled, piloted or published instrument	10 Clearly stated how significance or precision estimates were determined
Andreoli (2014)	2	2	1	2	2	2	2	2	2	2
Mundt (2013)	2	2	0	2	2	2	1	2	1	2
Ponde (2011)	2	2	0	2	2	1	0	2	2	0

Table 4-11: Results of quality assessment of studies using adapted version of the AXIS (Downes et al., 2016) - Part 2

First author (year)	11 Methods described to enable repeating	12 Basic data described adequately	13 Response rate does not raise concerns	14 Results described of those who did not participate	15 Results were internally consistent	16 Results for analyses described in methods were presented	17 Discussion and conclusion were justified	18 Study limitations were discussed	19 Funding or conflicts of interest may have affected how study was interpreted	20 Ethical approval and voluntary participant consent obtained
Andreoli (2014)	1	1	1	0	0	2	1	1	1	2
Mundt (2013)	1	2	2	0	0	2	2	2	1	2
Ponde (2011)	1	1	1	0	0	2	1	0	1	0

Table 4-12: Conclusions of study quality assessment

First author (year)	Adapted AXIS total score	Overall assessment of study quality	Plan for interpretation and meta-analysis
Andreoli (2014)	29	Moderate quality	Findings to be interpreted with some caution and study to be included in meta-analysis
Mundt (2013)	30	Moderate quality	Findings to be interpreted with some caution and study to be included in meta-analysis
Ponde (2011)	20	Low quality	Findings to be interpreted with much caution and, based on a high score within the 'low quality' category, study to be included in meta-analysis

4.3.5 Brief narrative account of systematic review results

The study by Mundt et al (2013) gave a 12-month prevalence of depression in a mixed-gender population of prisoners in Chile of 6.9% (5.4-8.6, 95% CI). Andreoli et al. (2014) found a higher prevalence of 10.9% in a mixed-gender sample in Brazil but did not report the associated confidence intervals. Mundt et al (2013) also reported a depression prevalence of 6.1% (4.7-7.9, 95% CI) for male prisoners and 11.1% (6.6-17.2, 95% CI) for female prisoners. Raw effect sizes suggest that in Chile, female prisoners may be almost twice as likely as male prisoners to have depression. However, the uncertainty around the estimated effect sizes by gender suggests that among Chilean prisoners there may be no difference in depression risk between the genders. In contrast, among prisoners in Brazil, Andreoli et al. (2014) found prevalence rates of depression in prisoners of 6.9% (95% CI: 5.8-8.1) in males and 18.8 (17.3-20.4, 95% CI) in females, leaving little doubt that in the study population depression was more prevalence among female prisoners than their male counterparts. Ponde et al. (2011) studied an all-male sample of prisoners in Brazil and calculated a point prevalence of depression of 6.0% (95% CI: not reported) which was similar to the 12-month prevalence reported by Mundt et al. (2013) and Andreoli et al. (2014). Overall, the three studies offer estimates of the prevalence of

depression among prisoners in Latin America that range from: 6.0 to 10.9% in mixed-gender samples; 6.0% to 10.9% in males; and 11.1% and 18.8% in females.

4.3.6 Assessment of heterogeneity

Table 4-13 shows potential sources of between-study heterogeneity identified qualitatively. Areas of difference included: the gender of participants, the outcome measured, the diagnostic criteria used and study quality. These results suggest a high level of heterogeneity across all gender groups, particularly males and point to the use of the random-effects model rather than the fixed-effects model for meta-analysis.

Table 4-13: Potential sources of between-study heterogeneity

Potential sources of heterogeneity between studies and number of studies with each variable		**Evidence of study heterogeneity, by gender group**		
		Mixed-gender	**Male prisoners**	**Female prisoners**
Gender	1 male-only v. 2 mixed-gender	✓	**X**	**X**
Country	1 Chile v. 2 Brazil	✓	✓	✓
Prison type	1 semi-open and closed v. 2 closed	✓	✓	**X**
Prisoner status	1 sentenced and pre-trial v. 2 sentenced	✓	✓	**Not stated**
Outcome	1 current depression v. 2 twelve-month depression	✓	✓	**X**
Diagnostic criteria	1 ICD-10 v. 2 DSM-IV	✓	✓	✓
Diagnostic instrument	1 MINI-plus v. 2 CIDI	✓	✓	**X**
Quality	1 low quality v. 2 moderate quality	✓	✓	**X**

Table 4-14 shows the results of the quantitative tests of heterogeneity, by gender. The χ^2 test provided strong evidence of statistical heterogeneity, yielding a *Q* statistic with a low p value ($p<0.03$) for the mixed-gender and female-only groups. In contrast, there was insufficient evidence to reject the null hypothesis of no

heterogeneity for the male-only group. The I^2 test showed that 89.4% of the variability of depression in all prisoners between the three studies was a result of true study differences and 10.6% was due to chance.

Table 4-14: Results of the adjusted χ^2 and I^2 tests of heterogeneity Q) of studies, by gender

	All prisoners	**Male prisoners**	**Female prisoners**
No. of studies	3	3	2
Degrees of freedom	2	2	1
Q (χ^2)	18.9	0.7	5.7
P value of Q (χ^2)	<0.001	>0.5	<0.03
I^2	89.4%	0%	82.6%

Considering the results of the qualitative and quantitative assessments of heterogeneity, a random effects model was assumed for all studies, using adjusted weights. Table 4-15 shows that the weight-adjusted χ_v^2 tests of heterogeneity did not show significant heterogeneity between studies in any gender group. Weight-adjusted I_v^2 values for the mixed-gender and female-only groups were zero, suggesting that between-study variability in the prevalence of depression was all due to chance, while a higher value (43.4%) for male-only group indicated a low to moderate degree of heterogeneity. The results demonstrate the effectiveness of the random effects model in adjusting for differences between studies which then reduced the level of heterogeneity between the three studies across the three gender groups.

Table 4-15: Results of the random effects model weight-adjusted χ_v^2 and I_v^2 tests of heterogeneity of studies, by gender

	All prisoners	**Male prisoners**	**Female prisoners**
No. of studies	3	3	2
Degrees of freedom	2	2	1
Q_v (χ_v^2)	1.9	3.5	1.0
P	>0.5	>0.1	>0.5
I_v^2	0%	43.4%	0%

4.3.7 Meta-analysis: estimated prevalence of depression among prisoners in Latin America

Table 4-16 shows the pooled estimated of the prevalence of depression based on the three studies. Under the meta-analysis assumptions of the random effects model, the average estimated prevalence of depression among 3,314 prisoners was 8.0% (95% CI: 4.9-11.1). The prevalence was higher in female prisoners (15.2%, 95% CI: 7.7-22.8) than in male prisoners (6.7%, 95% CI 6.3-7.1), reflecting the trends in Chile and especially in Brazil, shown in Table 4-17.

Table 4-16: Poled estimates of prevalence of depression among prisoners in Latin America, by gender

Statistic	All (men and women)	Men	Women
Pooled sample size	3,314	2,544	770
Pooled estimate of prevalence of depression	8.0%	6.7%	15.2%
SE	0.016	0.002	0.038
95% CI	4.9-11.1	6.3-7.1	7.7-22.8

Table 4-17: Prevalence of depression by gender, by study

	All (men and women)		Men		Women	
1st author of study (year) – country	**Total**	**% depressed (95% CI)**	**Total**	**% depressed (95% CI)**	**Total**	**% depressed (95% CI)**
Andreoli (2014) Brazil	1809	10.9 (not reported)	1192	6.9 (5.8-8.1)	617	18.8 (17.3-20.4)
Mundt (2013) Chile	1,008	6.9 (5.4-8.6)	855	6.1 (4.9-7.9)	153	11.1 (6.6-17.2)
Ponde (2012) Brazil	497	6.0 (not reported)	497	6.0 (not reported)	0	N/A
Total	3,314	See Table 4-16 for pooled estimate	2,544	See Table 4-16 for pooled estimate	770	See Table 4-16 for pooled estimate

Post-hoc analyses excluding first the semi-open data from the Ponde et al (2011) study and then all data from the Ponde et al (2011) study did not alter the pattern of results, as shown in Table 4-18 and Table 4-19.

Table 4-18: Post-hoc analyses - pooled estimates of prevalence of depression by gender (omitted semi-open data from Ponde et al, 2011)

Statistic	**All (men and women)**	**Men (Ponde semi-open data omitted)**	**Women**
Pooled sample size	3,107	2,237	770
Pooled estimate of prevalence of depression	7.8%	6.4%	15.2%
95% CI	4.4-11.1	6.4-7.2	7.7-22.8

Table 4-19: Post hoc analyses - pooled estimates of prevalence of depression by gender (omitted all data from Ponde et al, 2011)

Statistic	All (men and women)	Men (Ponde study omitted)	Women
Pooled sample size	2,817	2,047	770
Pooled estimate of prevalence of depression	8.9%	6.6%	15.2%
95% CI	4.9-12.9	5.8-7.3	7.7-22.8

4.4 Discussion

4.4.1 Main findings

The meta-analysis estimated an overall pooled prevalence of depression in Latin American prisoners of 8.0% (95% CI: 4.9-11.1, based on data from 3314 prisoners. This estimate is not significantly different from the global estimate of 11.4% (95% CI: 9.9-12.8) (Fazel and Seewald, 2012) and so the first hypothesis was not rejected.

The present review estimated a prevalence of depression in prisoners of 15.2% (95% CI: 7.7-22.8) among females and 6.7% (95% CI: 6.3-7.1) among males. The findings suggest that among prisoners in Latin America, depression is significantly more prevalent in females than in males. Therefore, the second hypothesis was rejected.

All three studies included in the review were from upper middle income countries. There was insufficient data to estimate the prevalence of depression among prisoners in Latin America, according to county income. Therefore, the third hypothesis, which could not be tested, was not rejected.

4.4.2 Critique of systematic review and meta-analysis

This is the first systematic review to estimate the prevalence of depression among prisoners in Latin America and to compare findings with global estimates. Strengths and limitations of the systematic review and meta-analysis are acknowledged. However, the limitations do not affect the overall value of the study.

Consistent with guidance, a protocol of the review rationale, hypothesis and methodology was written prior to conducting the search (Moher et al., 2015). A protocol protects the systematic reviewer from making arbitrary procedural decisions and reporting results selectively (Shamseer et al., 2015) and makes clear whether any post-protocol modifications to the methodology may have introduced bias and affected the final results of the review (Moher et al., 2015).

The systematic review question was considered complex because it involved the identification and retrieval of middle-and lower income country data which might be unavailable in the English language and are less likely to be published in peer-reviewed journals. Therefore it was necessary to use a wide range of search methods and not depend solely on traditional electronic databases (Greenhalgh and Peacock, 2005). The search was therefore designed to be comprehensive by accessing several databases including LILACS and SciELO databases which were not used in a previous systematic review of the global prevalence of depression by Fazel and Seewald (2012), but were included in the present review because they focus on Latin American and could increase the number of relevant studies identified. Also, Spanish and Portuguese search terms were used to avoid language bias. Publication bias was minimised by searching for both published and unpublished studies and searching the grey literature. Reference scanning, hand-searching, forward citation searching and backward citation searching were additional methods that could have been employed to identify additional studies and improve the quality of the review. A sensitive search strategy was used with detailed, narrow and clearly-defined eligibility criteria which had the advantage of reducing heterogeneity between included studies and improving the three-person reviewer process. A strength of the study was the use of multiple reviewers to minimise reviewer bias when identifying study eligibility (Shea et al., 2009). However, recent guidance suggests tha the use of multiple reviewers at the stage of data extraction would have further improved the methodological quality of the review (Shea et al., 2017).

The data extraction form was designed to collect information about the diagnostic classification system used. This enabled the qualitative assessment of whether this

might be a source of heterogeneity between included studies in the present review as had been reported through meta-regression analysis in a previous review (Fazel and Seewald, 2012).

A notable limitation of the present review was the adaptation of the AXIS to assign numerical values to the assessment items. Although this quantitative approach helped to identify cut-off points for judging quality, a serious disadvantage is the risk of disguising important quality deficiencies in one item such as "depression measured using a trialled, piloted or published instrument" through the strengths in an item such as "funding" which might be considered of lesser importance for systematic review.

Higgins (2009) defines a small meta-analysis as one that pools data from 2-4 studies. The present study is therefore considered small as only three studies were included. The main area for critical discussion in data analysis is whether it was appropriate to meta-analyse data from so few studies. Higgins (2009) does not suggest a minimum number of studies for undertaking meta-analysis but recognises that tests for heterogeneity will have low power when few studies are included, and leaves individual researchers to decide whether to present the results of individual studies or to attempt meta-analysis. The limitation of meta-analysing few studies was overcome in the present study by conducting a narrative analysis and presenting the non-pooled results of the three studies which would reveal differences between meta-analysed and non-meta-analysed findings.

The random-effects model was a fair assumption because it is unlikely that the effect size (prevalence of depression) would be fixed across the studies given the identified sources of heterogeneity. Furthermore, the model was able to account for unknown sources of heterogeneity (Borenstein et al., 2009). For example, the availability of prison mental health care to provide effective treatment for depression, and the existence of legislation to allow the most severely depressed prisoners to be transferred from prison to hospital for emergency treatment.

The present systematic review failed to test for publication bias which might have influenced the results of the meta-analysis. While a funnel plot is a common method of assessing both publication bias and the effect of small studies with positive results on the results (Hunter et al., 2014, Mavridis and Salanti, 2014), a funnel plot is not recommended in small meta-analyses of fewer than ten studies (Shea et al., 2017).

4.4.3 Interpretation of findings in the context of previous research

Table 4-20 shows a comparison of the pooled estimate of the prevalence of depression in prisoners in Latin America with global estimates among prisoners and the general population. With heavily overlapping confidence intervals, there is broad agreement between the prevalence of depression among prisoners in Latin America and the prevalence among the worldwide prison population and prisoners in middle-income countries reported by Fazel and Seewald (2012). The estimate of the 12-month prevalence of depression in the global general population is marginally lower than that found among prisoners in Latin America. The results of the present review support the current understanding that depression is more prevalent among prisoners than non-prisoners, and provide evidence that this holds true in Latin America.

Table 4-20: Pooled estimates of the prevalence of depression in prisoners and the general population

Pooled estimate of prevalence of depression	**All prisoners, % (95% CI)**
12-month prevalence among prisoners in Latin America (present study)	8.0 (4.9-11.1)
6-month prevalence among prisoners worldwide (Fazel and Seewald, 2012)	11.4 (9.8-12.0)
6-month prevalence among prisoners in middle-income countries (Fazel and Seewald, 2012)	10.0 (8.7-11.2)
12-month prevalence among the general population worldwide (Ferrari et al., 2013)	3.7 (2.7-5.0)

It is surprising that the 12-month prevalence in Latin America was not higher than the 6-month prevalence worldwide. Similar unexpected results were reported by Ferrari et al. (2013) who attributed this to the heterogeneity between included studies. Fazel and Seewald (2012) identified a source of such heterogeneity in a study of female prisoners in Mexico with a history of substance misuse which reported a very high prevalence of depression (Bermudez et al., 2007), However, this study was excluded from the present review because it included a sample that was not representative of the wider prison population. Furthermore, the known association between substance use and depression was likely to yield an elevated prevalence of depression in the sample.

Table 4-21 compares the prevalence of depression between men and women. The gender differences in the prevalence of depression among prisoners found in Latin America do not reflect those of previous research among prisoners worldwide (Fazel and Seewald, 2012). Divergent findings might reflect differences between prisoners in Latin America and those elsewhere. For example, there may be factors unique to the Latin America that place female prisoners at a higher risk of depression than their male counterparts. Whilst data from a larger number of studies might yield results similar to the global prisoner estimate, the findings are highly consistent with the established pattern in the general population where depression is more prevalent among females than males (Ferrari et al., 2013).

Table 4-21: Pooled estimates of the prevalence of depression in prisoners and the general population, by gender

Pooled estimate of prevalence of depression	**Men, % (95% CI)**	**Women, % (95% CI)**
12-month prevalence among prisoners in Latin America (present study)	6.7 (6.3-7.1)	15.2 (7.7-22.8)
6-month prevalence among prisoners worldwide (Fazel and Seewald, 2012)	10.2 (8.8-11.7)	14.1 (10.2-18.1)
6-month prevalence among prisoners in middle-income countries (Fazel and Seewald, 2012)	Not reported	Not reported
12-month prevalence among the general population worldwide (Ferrari et al., 2013)	3.9 (3.0-5.1)	7.2 (6.0-8.9)

4.5 Implications of findings

The systematic review highlights the gross lack of high quality epidemiological studies in prison psychiatry from individual Latin American countries. Ministries of health and justice from unrepresented countries can respond to this need by supporting or commissioning research to measure the prevalence of depression among prisoners. There is added value in organising trans-national studies to reduce heterogeneity in study design and to make efficient use of skill, financial and time resources.

Understanding the elevated rates of depression in prisoners around the world was beyond the scope of this study. In addition to ensuring prisoners in Latin America have access to equivalent mental healthcare, modifiable factors associated with depression ought to be identified and addressed in this population that is also at risk of poor mental wellbeing. Whilst quantitative studies may be used to measure these factors and test for associations with depression, qualitative studies may be useful in identifying or clarifying potential risk factors. Furthermore, the additional risk of depression carried by female prisoners in Latin America calls for prison mental health research in the region to consider the female perspective. Taking forward the implications of this systematic review, the remainder of the thesis will focus on

religion and spiritualty as potential factors which may be linked to depression and mental wellbeing in female prisoners in Latin America.

Chapter 4: Systematic review and meta-analysis of the prevalence of depression

Chapter 4: Systematic review and meta-analysis of the prevalence of depression

Chapter 5 Mental health and spirituality

5.1 Key concepts in religion and spirituality

5.1.1 Definitions: a challenge in mental health research

As a concept which might be associated with mental health, spirituality presents an academic challenge due to the lack of consensus on its definition (Brown et al., 2013). The obvious problem is that over 200 different definitions of spirituality can be found in the literature (Underwood, 2006). Reasons for the difficulty in reaching consensus on a definition include the constructional complexity of spirituality, which is discussed in more detail below, and its presentation in different cultures at different times in history (Hill et al., 2000, Koenig, 2008, Dein et al., 2012, Swinton and Pattison, 2010).

Despite this longstanding and important challenge to the study of spirituality, some definitional agreement is found in the references made to religion, with many proposed definitions of spirituality including traditionally religious language such as "the sacred", "God", and a "higher power", (Grant et al., 2010, Koenig, 2008). That such a step towards reaching an agreed definition might be helpful for advancing research in the field, is a view that is not shared by Hill *et al.* (2000), who argue that single definitions of either spirituality or religion present perspectives far too limiting and narrow for complex constructs that are still poorly understood. It has been said of spirituality that "definitions are too cold, too abstract, too unfeeling to do proper justice to what they are trying to elucidate" (Mitroff, 2003). However, Cook (2004) expresses concern over the decision made by some researchers to leave the terms undefined in studies.

Thesis definitions of religion and spirituality

Whilst acknowledging the stated definitional limitations, in keeping with authors of studies in the field of mental health and spirituality relating to the prison population (Eytan, 2011) and to a Latin American population (Moreira-Almeida et al., 2006), this thesis will adopt the following definitions recommended by Koenig (2012), a psychiatrist and eminent academic in the global field of spirituality and mental health. He first defines religion as involving:

> *"beliefs, practices, and rituals related to the transcendent, where the transcendent is God, Allah, HaShem, or a Higher Power in Western religious traditions, or to Brahman, manifestations of Brahman, Buddha, Dao, or ultimate truth/reality in Eastern traditions. This often involves the mystical or supernatural. Religions usually have specific beliefs about life after death and rules about conduct within a social group. Religion is a multidimensional construct that includes beliefs, behaviors, rituals, and ceremonies that may be held or practiced in private or public settings, but are in some way derived from established traditions that developed over time within a community. Religion is also an organized system of beliefs, practices, and symbols designed (a) to facilitate closeness to the transcendent, and (b) to foster an understanding of one's relationship and responsibility to others in living together in a community."*

Koenig (2012) also proposes a definition of spirituality which overlaps considerably with the above definition of religion:

> *"Spirituality is distinguished from all other things— humanism, values, morals, and mental health—by its connection to that which is sacred, the transcendent. The transcendent is that which is outside of the self, and yet also within the self—and in Western traditions is called God, Allah, HaShem, or a Higher Power, and in Eastern traditions may be called Brahman, manifestations of Brahman, Buddha, Dao, or ultimate truth/reality. Spirituality is intimately connected to the supernatural, the mystical, and to organized religion, although also extends beyond organized religion (and begins before it). Spirituality includes both a search for the transcendent and the discovery of the transcendent and so involves traveling along the path that leads from nonconsideration to questioning to either staunch nonbelief or belief, and if belief, then ultimately to devotion and finally, surrender."*

There are two notable observations of this definition of spirituality which are pertinent to the thesis. First, the definition includes religion. Whilst the traditional-historical model of religion and spirituality describes a spirituality which occurs exclusively within religion, modern models conceptualise spirituality as inclusive of, but not limited to, formal religion (Koenig, 2008). The subsequent chapters of this thesis focus on a population in Latin America, a region reported to be predominantly Christian in which an estimated 17% of the population does not identify with the Christian religion but may be affiliated to folk and other non-Christian religions (CIA, 2013). The chosen definition of spirituality used within a modern conceptualisation of spirituality is therefore appropriate to reflect these statistics and describe a country in which most people are likely to express a spirituality informed by the Christian religion.

Second, the definition excludes descriptors of mental health such as: hope, connectedness, self-worth, emotions and purpose (Koenig, 2008). To support good methodological practice in mental health and spirituality research "definitions and categorizations of [both] spirituality [and] mental health…must each be clear, distinct and nonoverlapping" (Koenig, 2008). This thesis adopts a definition of spirituality that is distinct from the definitions of mental health discussed in Chapter 1 and avoids the tautological error which has been criticised in the field and would lead to less meaningful conclusions about associations between spirituality and mental health (Dein et al., 2012, Koenig, 2008).

An important limitation of using Koenig's (2012), or any other, definitions in the thesis is that they may not be recognised by the study population. Just as notions of mental health may vary between cultures and subcultures, culture may influence local understandings of religion and spirituality (Dein et al., 2012). There may even be differences in defining the concepts between people with a shared culture. However, this does not preclude the use of these terminologies during research data collection from lay participants. For example, although participants in a British study had difficulty in defining spirituality, they were all able to describe the significance and impact of spirituality on their circumstances and life (King et al., 2006).

An analytical review of the conceptualisation of religion and spirituality by Hill *et al.* (2000) concluded that these two concepts, religion and spirituality, were not only multidimensional constructs and to be researched as such, but also intertwined to such a degree that one ought not be studied without the other. Table 5-1 and Table 5-2 list dimensions of the definitions for religion and spirituality adopted from Koenig (2012) and apply them to Christianity.

Table 5-1: Dimensions of religion (Koenig, 2012) applied to Christianity

Definitional components of religion	**Examples from Christian religion**
Religion	Christianity +/- Christian denomination
Transcendent	God
Beliefs	Belief in God (1 Peter 1:21) Belief that the Bible is from God (2 Tim 3:16) Belief in biblical principles and teachings including: • Individual is important to God (Luke 12:6-7) • God is in control (1 Chronicles 29:10-13) • Individual should have faith in God (1 Peter 1:21; Mark 11:22)
Practices (Private or public)	Reading the Bible Praying or talking to God Reading about God Attending church services
Rituals	Participating in Holy Communion
Ceremonies	Baptism

Table 5-2: Dimensions of spirituality (Koenig, 2012) applied to Christianity

Dimensions	**Examples from Christian spirituality**
Sacred/transcendent	God
Connection to sacred/transcendent	Spiritual experiences such as: • Being spiritually moved by the beauty of creation • Feeling thankful for blessings from God
Connection to organised religion	Affiliation to Christianity or a Christian denomination
Discovery of the transcendent through journey from non-consideration to unbelief or devotion with surrender	Positioning along spectrum of personal importance of Christian spirituality/religion

In order to reflect the overlap of spirituality with religion, it has been proposed that the two terms are combined for research purposes, (Underwood, 2006, Koenig, 2012), a stance taken in a recent systematic review of religion and spirituality and mental health during incarceration (Eytan, 2011). Henceforth, this thesis will use the term "religion and spirituality", abbreviated to "RS", to encompass both religion and spirituality.

5.1.2 Questions and scales used to measure religion and spirituality in mental health

It is no surprise that the diversity of definitions of RS in existence in recent decades has contributed to a diverse range of instruments developed to measure RS. In the absence of an agreed "gold standard" for measuring RS, academic rigour in the field can be maintained by using RS instruments with higher validity. In his review paper of 265 publications on spirituality and addiction, Cook (2004) describes and criticises 32 empirical studies in which either conceptual components of the stated RS definitions are not measured, or measurement takes place of conceptual components outside of the stated RS definitions. It is therefore important that the research instruments selected for measuring religion and spirituality accurately reflect the content of the definitions chosen for the research (Dein et al., 2012).

Miller et al. (2014) report that the three questions most widely used in RS and health research address the dimensions of: religious affiliation, personal importance of RS and religious involvement. Dimensions of RS are briefly discussed below with examples of stand-alone questions and instruments that have been used in research.

Religious affiliation

In a longitudinal study examining associations between RS and the cortical thickness in individuals at risk of depression, religious affiliation was measured by asking participants: "*How would you describe your current religious beliefs? Is there a particular denomination or religious organisation that you are part of?*" (Miller et al., 2014). Participants were offered a choice of 10 religious denominations including the option of stating "other", denoting categories that had not already been listed. Although the response list allows researchers to collect data on other categories of religious affiliation reported by participants, it does not easily capture data from

respondents who have no religious affiliation. This limitation is overcome in a secondary analysis of data from a cross-sectional survey of 10587 older adults living in Caribbean and Latin American countries, including Chile, in which participants were simply asked, "What is your religion?" (Reyes-Ortiz et al., 2007). Categories of response options included a number of Christian denominations, "Jewish", "None", "Other" and "Unknown" and whilst descriptive analyses were re-categorised into "Catholic", "Protestant" and "other" (where "other" included syncretic and indigenous religious traditions), regression analyses used binary categories of "religious affiliation" versus "no religious affiliation" (Reyes-Ortiz et al., 2007).

However, the above questions for measuring religious affiliation provide limited information because they are based entirely on self-report in response to one or two questions and assume that the participant is responding in accordance with the chosen definition. In other words, when a participant states that he or she is Catholic, there may be an assumption that the participant is communicating his or her affiliation to a set of beliefs, practices, rituals and ceremonies in relation to God. However, this may be the affirmative response of a person who was baptised into the Catholic denomination as an infant, underwent Catholic confirmation in childhood, and received his or her first Catholic communion but in adulthood is uncertain of the existence of God, does not attend Mass except on Christmas Day, and chooses not to undertake the religious practices associated with Catholicism. If respondents are asked to choose from a list of religions and denominations, researchers may encounter the challenge of deciding which responses to offer and will need to carefully research the religious profile of the community from which participants are drawn. For example, in the UK Pentecostalism and Methodism are considered distinct and unrelated Christian denominations, whereas in Chile, in addition to these two denominations, there exists a unique, culture-bound denomination of Methodist-Pentecostalism (Gooren, 2015). Globalisation has led to increased religious pluralism and secularisation in societies that previously expressed greater RS homogeneity. Cross-cultural researchers may face difficulty in interpreting the same religious affiliation in different cultural contexts. For example, the high degree of religious syncretism reported among Latin American populations (de la Torre and Martín, 2016) should be considered when comparing the Catholic affiliation of British

individuals with that of Latin Americans whose Catholicism is blended with aspects of indigenous religions.

Religious involvement

In the study described above, (Miller et al., 2014) obtained a measure of religious involvement by asking, "*How often, if at all, do you attend church, synagogue, or other religious or spiritual services?*" to which participants were invited to select one of four categories ranging from "never" to "once a week or more". The question is inclusive enough to be relevant for respondents affiliated to non-Christian religions and for those who might attend religious meetings held in homes or outdoors. An alternative question, *"How often do you go to religious meetings or services?"*, asked in a study examining the association between religious involvement and suicide in women (VanderWeele et al., 2016) is even more inclusive because it asks about the frequency of attendance at meetings as well as services. It is therefore likely to elicit responses which include attendance at prayer meetings and bible studies, in addition to formal Sunday services. An important limitation of this dimension of RS is that it measures involvement only in terms of attendance without clarification of the following: active participation during the service; cognitive, emotional or spiritual engagement during the service; voluntariness of attendance; motivation for involvement or duration of attendance on each occasion.

Personal importance of religion and spirituality

Miller et al. (2014) also measured a dimension of RS using one of the three questions traditionally used in the field: "*How important to you is religion or spirituality?*" seeking one of four categorical responses ranging from (1) not important at all to (4) highly important. A similarly phrased question, "*How important would you say religion is in your life?*" was used in the study in Latin America and the Caribbean in which respondents could select an option of "No response" on the basis of having no religious affiliation (Reyes-Ortiz et al., 2007). Balbuena et al. (2013) addressed the same dimension from a different perspective asking, "*Do spiritual values or your faith play an important role in your life?*". The highly subjective nature of this personal importance dimension could be criticised for being inaccessible to more objective and verifiable measurement, although it is not difficult to argue that

personal importance is a subjective concept and rightly should be defined and interpreted by the subject. Asking for evidence of the personal importance of RS would add validity to the response obtained.

Religious problem-solving and coping styles

Brown et al. (2013) used the Religious Problem-Solving Scale (RPSS) to study the association between religious coping styles and both anxiety and mental health in a U.S. student population. This validated instrument deconstructs this RS dimension into three sub-dimensions: self-directing (the individual assumes responsibility for solving problems), collaborative (the individual considers God as a co-partner in solving problems, with neither party assuming a passive role) and deferring (the locus of responsibility for the resolution of the individual's problems lies with God), where the "problems" refer to any in life and are not restricted to traumatic life events (Pargament et al., 1988, Fox et al., 1998). The following statement from the 36-item instrument describes a deferring religious coping style: *"In carrying out solutions to my problems, I wait for God to take control and know somehow He'll work it out" (Pargament et al., 1988).*

The RPSS was developed almost 30 years ago and was first validated in a mixed-gender population of U.S. church attendees who were mainly of white ethnicity (Pargament et al., 1988). It has been criticised for failing to provide a more comprehensive measurement of religious problem-solving (Pargament et al., 2011), yet this might be preferred in studies which use other RS scales in addition to the RPSS to obtain a holistic measurement of RS that is not limited to RS problem-solving and coping (Brown et al., 2013). On one hand the authors of RPSS criticised the scale for disregarding the possible adverse forms of religious coping; on the other hand they acknowledged that no coping style, whether generally accepted to be positive or negative, is inherently so in every situation (Pargament et al., 2011). For example, a self-directing style in which one obtains control through oneself may be considered helpful for a person faced with intolerable side-effects of psychotropic medication, yet potentially harmful for the person contemplating suicide in response to the initial stress of imprisonment.

Pargament et al. (2011) later developed the Brief RCOPE, a 14-item scale which measures both positive coping methods which "reflect a secure relationship with a transcendent force, a sense of spiritual connectedness with others, and a benevolent world view" and negative coping methods which "reflect underlying spiritual tensions and struggles within oneself, with others, and with the divine." While negative religious coping may be problematic, individuals may benefit from this style and discover that successful negotiation through the tensions and struggles may lead to longer-term personal growth (Pargament et al., 2011). Likewise, there may be disadvantages of using positive religious coping styles. Table 5-3 lists examples of positive and religious coping adapted from the Brief RCOPE and illustrates the possible consequences of such coping styles.

Table 5-3: Examples of types and consequences of positive and negative religious coping styles

Examples of religious coping (adapted from Pargament, 2011)	**Religious coping style**	**Possible consequences of religious coping**
Looking to God for help with managing anger	Positive religious coping	• Improved anger management (Benefit) • Acknowledging that help is needed (Benefit) • Not taking personal responsibility for anger outbursts (Harm)
Turning focus away from life's worries towards religion	Positive religious coping	• Feeling less worried and anxious (Benefit) • Avoidance and unresolved problems may lead to greater problems with more serious and worrying consequences (Harm)
Attributing difficult circumstances and ill-health to demonic influences	Negative religious coping	• Not worrying about situations outside of personal sphere of control and influence (Benefit) • Distressing feeling a lack of control over life and increased vulnerability to external attack (Harm) • Refusal to acknowledge personal responsibility for health (Harm) • Reluctance to take responsibility for solving problems and learning from past mistakes (Harm)
Feeling abandoned by God	Negative religious coping	• Questioning and seeking God and making eventual progress along spiritual journey (Benefit) • Increased loneliness (Harm) • Loss of purpose in life (Harm)

Spiritual well-being

Brown et al. (2013) used the Spiritual Well-Being Scale (SWBS) to obtain a global measure of both religious well-being and existential well-being. The SWBS comprises a subscale of religious well-being and a subscale of existential well-being. Through questions such as "*I don't enjoy much about life*" *and "I feel unsettled*

about my future", the latter subscale has been criticised for providing a psychological measure of RS that is tautologically related to mental health (Koenig et al., 2012b, 42-43, 143).

Religious beliefs

The World Health Organisation's Quality of Life – Spiritual, Religious and Personal Beliefs (WHOQOL-SRPB) was developed for use in conjunction with the WHOQOL-100 (WHO, 2006). It consists of 32 items grouped under 8 domains and extends the meaning of spirituality to include beliefs in "Nature" and philosophy, thus measuring a form of RS much broader than the definition proposed by Koenig (2012).

The WHOQOL-SRPB might interest global health researchers seeking a validated RS instrument to be used among populations outside of countries in the Global North due to its international development across 18 study sites in countries including Argentina, Brazil and Uruguay. However, the instrument is somewhat limited in global mental health research due to the tautological error which could lead to spurious findings (Koenig et al., 2012b). For example, the tool includes the question, "*How hopeful do you feel?*" (WHO, 2006) which overlaps with the mental wellbeing question included in the WEMWBS, "*I've been feeling optimistic about the future*" (Tennant et al., 2007).

The Royal Free Interview for Religious and Spiritual Beliefs (RFIRSB) was developed and validated among individuals in the United Kingdom from different religions and from no religious background, and is suitable for use in mental health research as it is free from the tautological error described above (King et al., 1995). The RFIRSB was designed to be useful not only for individuals with reported RS beliefs but also those with no religious or spiritual beliefs, hence the inclusion of questions about philosophical beliefs, which the authors acknowledge were not validated and state could be omitted if not required (King et al., 1995). However, the definition of spirituality, reflected in the spirituality questions in the instrument, is much broader than that adopted in this thesis which states that spirituality is "*is intimately connected … to organized religion,*"(Koenig, 2012). If a mental health and RS researcher using a narrower definition of spirituality were to omit the

philosophical and spirituality sections of the RFIRSB, the instrument would then consist of three introductory questions, two questions about illness, and the five questions in the section on religion which reflect the three most frequently used questions in this field of research: religious affiliation, religious involvement and personal importance of RS.

Religious practices

The frequency of praying and reading the bible or other religious literature is measured in the private religious practices dimension of the Multidimensional Measure of Religiousness/Spirituality (MMRS) (Idler et al., 2003). It is estimated that the MMRS would take one hour to complete compared to approximately 20 minutes for its shorter from, the brief MMRS. The instruments seek to measure several dimensions of RS through several subscales including: private religious practices, values/beliefs, RS coping and daily spiritual experiences. Although this comprehensive scale was developed among a predominantly Judeo-Christian population, the complete instrument reflects a very broad definition of spirituality. For example, within the values/beliefs subscale, respondents are asked to weight the value they place on friendship, social justice, self-discipline and wealth. Concern has been expressed that the MMRS assumes that these values are held only by those who are "spiritual" without acknowledging that atheists and secularists may also hold these values (Koenig, 2008). Furthermore, these items on the values-beliefs subscale bear little or no relation to the transcendent and are far removed from the content of the thesis definitions of religion and spirituality. However, the religious practices subscale is compatible with the thesis definition of religion.

Religious orientation

In a study of the association between depressive symptoms and RS in British students, Maltby and Day (2000) applied an adapted version of the Religious Orientation Scale, developed by Gorsuch and Venable (1983). The scale determines the degree to which an individual is intrinsically or extrinsically orientated towards RS. A person with intrinsic religious orientation considers religion as an end to itself and holds her religion as the chief motivator in life, influencing his attitudes, beliefs, behaviour and choices. In contrast, a person with extrinsic religious orientation

considers religion as a means to an end and hence adheres to religious doctrine superficially in order to obtain benefits for herself such as friendship, help and comfort. Conceptually, religious orientation can complement the dimension of religious involvement, providing the motivation for attending RS services and meetings.

Spiritual experiences

As mentioned above, spiritual experiences are measured through the Daily Spiritual Experiences Scale (DSES), a subscale of the MMRS (Idler et al., 2003, Underwood and Teresi, 2002). It has been translated into several languages including Spanish. The instrument measures the frequency of 16 spiritual experiences during everyday life such as: awe, gratitude, deep inner peace, divine help and perceptions of divine love. It has been argued that these experiences are characteristics of mental health and therefore tautologically would always lead to results that suggest a high frequency of daily spiritual experiences is associated with better mental health. (Koenig, 2008, Koenig et al., 2012b). Due to the positive psychological constructs of some aspects of RS, it is recommended that in the research of health outcomes, religious rather than non-religious spirituality measures are adopted (Randall and Bishop, 2013). Nevertheless, in research these items may still be useful in describing the spiritual profile of individuals who do not describe themselves as religious.

5.1.3 Approaches to measuring religion and spirituality in mental health research

The three questions assessing the dimensions commonly investigated in RS health research have been used without the additional use of RS scales both together, as a trio set (Miller et al., 2012), and individually as in a study which examined the relationship between the frequency of attendance at religious services and mental health (Robinson et al., 2012). As described above there are a growing numbers of validated RS instruments used instead of the stand-alone questions that are widely used in the field, ranging from those which assess one dimension (WHO, 2006) to those which attempt to comprehensively assess multiple dimensions of RS (Idler et al., 2003). However, in practice some authors adopt a more eclectic approach to

measuring RS, adapting and combining questions and sections of scales to meet the needs of individual studies.

The DSES can be used as a stand-alone scale to measure daily spiritual experiences or can be used as part of the full version of the MMRS, depending on the objectives of the study (Underwood and Teresi, 2002). King et al. (1995) suggested that the philosophical section of the Royal Free Interview for Religious and Spiritual Beliefs could be omitted if not required. Omitting irrelevant parts of validated scales requires caution in order that the validity of the retained questions is maintained. In order to measure the broadest constellation of RS dimensions possible and obtain the best reflection of underlying RS constructs, Kendler et al. (2003) reviewed the existing RS instruments in the literature and compiled a tool which was a combination of: one complete validated RS instrument; items used in one of their previous studies; selected items from validated RS instruments and individual items developed by the authors. The use of *ad hoc* items in the study allowed the authors to assess the aspects of RS that were inadequately covered by existing instruments (Kendler et al., 2003). A limitation of this approach to measuring RS is the lack of validation of the final combined set of item. In terms of validating any spirituality instrument, challenges inherent to RS must be acknowledged, even if they cannot be fully overcome. For example, there is difficulty in applying a material instrument to measure the immaterial such as the presence of a supernatural being or force, and the quantity of faith a person has in a divine being.

The ideal RS tool for a study is the one which not only reflects the RS definitions stated in a particular study and facilitates the measurement of the specific RS dimensions of interest to the study, but also supports the culturally-appropriate measurement of RS relevant to the studied population (Moberg, 2002). For example, in a predominantly Muslim population it would be more appropriate to refer to faith in “Allah” rather than “God” and to the reading of the “Qur’an” rather than “Bible”. Similarly, certain RS questions may be more, or less, relevant in a prison population. For example, depending on the study design, measuring the current frequency of attendance at religious services may be less relevant if prisoners are either denied access to religious services or forced to attend a weekly religious service. This is

particularly important in global health research in countries which may not have a wide range of multi-dimensional RS instruments developed and validated for use in the local population in the local language. The limited availability of translated and validated RS instruments in different languages and dialects is another challenge for global health RS research. Therefore, the thesis is guided by evidence in the literature supporting the use of spirituality questions derived from multiple sources to develop an instrument which reflects the diverse constructs of RS and is suitable for the desired purpose and population.

5.2 Religiosity and spirituality: a relevant factor in prison populations

Much of the literature on the relationship between RS and crime reports findings from non-offending adolescent samples (Johnson, 2004, Koenig et al., 2012a, Kewley et al., 2015) which have been replicated in studies of adult prisoners. A narrative review concluded that in the majority of high quality studies, increased religiosity in adolescents is associated with less criminal behaviour, where religiosity is measured against several dimensions such as parental religiosity, personal importance of RS, and the frequency of religious attendance and private prayer; and criminality includes selling illicit substances, acquisitive acts, and weapons-related violence (Koenig et al., 2012a). A meta-analysis of 62 international studies involving adolescents, reported an association between RS (frequent church attendance and high personal importance of religion), and criminal behaviour (decreased illicit drug use and nondrug delinquency) (Kelly et al., 2015).

Findings from a systematic review of 21 empirical studies of adult sexual offenders corroborated the inverse relationship between religious involvement and criminality reported in adolescents (Kewley et al., 2015). The authors found that prisoners with increased religious involvement: have lower levels of recidivism; are less likely to break prison rules and fight with other inmates; cope better with life in prison; and form more pro-social relationships. However, an association between increased religious involvement and increased criminality in prisoners whose "misinterpretation" of religious texts influences their belief systems about God,

punishment and the after-life, providing them with the motivation and justification for offending behaviour (Kewley et al., 2015).

RS interventions in prisons range from prison chaplaincy services and faith-informed programmes, to faith-based programmes and religious prison wings. There are few high-quality studies that have measured the impact of prison faith-based programmes on criminality. A longitudinal study of 402 matched adult males over eight years following prison release in the USA, found no difference in recidivism rates between those who had participated in a Christian volunteer-led Prison Fellowship programme and those who had not joined the Christian faith-based programme (Johnson, 2004). The study reported lower rates of recidivism which were not significant in individuals who frequently attended Prison Fellowship sessions compared to those who attended fewer sessions. Furthermore, the slightly reduced rate of post-release arrest was not maintained beyond 3 years post-release (Johnson, 2004). Greater effectiveness was reported of InnerChangeFreedom, an adapted version of the Prison Fellowship programme, which offered post-release support and found that prisoners who entered the programme were less likely to reoffend in the first year after release from prison (Duwe and King, 2013). However, reoffending was not associated with RS affiliation, and programme benefits were reported for both Christians and non-Christians. The authors cited a small sample size as the reason for not reporting findings from female prisoners who entered the InnerChangeFreedom programme, and questioned the generalisability of their findings in males to a comparable female population.

It is not surprising that there are few studies describing the RS profile of female prisoners and reporting the association between RS and crime with gender-sensitivity, given the disproportionately low number of women in prisons worldwide. A single-gender study by Levitt and Loper (2009) reported higher RS involvement in women who have served fewer months in prison than those who have been in prison for longer. An explanation offered by the authors is the attempt of prisoners to seeks respite and support through religious and spiritual channels to manage the deprivation of imprisonment that experience on arriving at the prison. In contrast, women who had been in prison for longer periods, form alternative supportive

networks outside of public religious activities. The study also found that female prisoners who receive high levels of support through attending religious activities have better prison adjustment and committed fewer violent acts in prison than prisoners who did not attend religious activities (Levitt and Loper, 2009).

Although there is no strong evidence of a causal relationship between RS and crime, a small number of highest quality studies and systematic reviews offer evidence supporting an association between religious involvement and criminality. Table 5-4 lists the theories that have developed over time to explain this relationship. RS involvement also provides respite from the deprived, harsh and stressful conditions of prison which might otherwise lead to increased aggression as a maladaptive response to the prison environment (Levitt and Loper, 2009).

Table 5-4: Explanation and limitation of theories of the association between religion and crime

Theory	Theory explanation with application to prison context	Theory limitations
"Hellfire" (Hirschi and Stark, 1969)	Religious prisoner has a belief in the afterlife which includes the options of eternal life and eternal damnation. Religious prisoner is deterred from criminal acts through fear that the consequences of crime would lead to eternal damnation.	Religious prisoner may hold the belief that all criminal acts, if confessed, can be forgiven and will not result in eternal damnation. Religious prisoner may believe that, having already committed a crime, eternal damnation is inevitable and therefore desisting from further crime would be of no eternal benefit.
Social control and social learning (Akers, 1990)	Religious prisoner surrounds herself with a religious community which holds, models and promotes pro-social religious values. Religious prisoner is deterred from criminal acts though implicit pressure to conform to community norms and uphold pro-social values.	Social control might be ineffective in deterring religious prisoner from engaging in criminal acts which could be hidden from the religious community and prison authorities. For example: financial, sexual or emotional abuse of a vulnerable person. Religious prisoners will be surrounded by a religious community comprising chaplains as well as prisoners who may not yet have adopted and be modelling pro-social values.
Rational choice (Grasmick et al., 1991)	Religious prisoner has a religious belief system which deters her from criminal acts through the shame she is likely to experience through cognitive dissonance	Religious prisoner might make an alternative or irrational interpretation of religious texts which might justify criminal act and possibly cause satisfaction rather than shame. Secularist prisoner with a secularist belief system may also be deterred from crime for similar reasons.

5.3 Positioning religiosity and spirituality in psychiatry

5.3.1 Historical overview of spirituality in psychiatry

In his book, 'Is Faith Delusion?', Sims (2009) suggests that in order to understand the current relationship between RS and psychiatry, it is necessary to undertake a historical review of the development of the relationship beginning with ancient religious traditions which preceded the modern concepts of psychiatry, mental

illness, mental health care, psychopharmacology and mental wellbeing. This section provides a chronological overview of the beliefs, practices and events which have influenced the current positioning of RS in psychiatry and which continue to have an impact on the interpretation of research in the field today.

Ancient Judeo-Christian perspectives on religion, mental illness and mental health care

The Bible is the main religious book for Christians worldwide and comprises the Old Testament originally written in Hebrew and the Christian New Testament originally written in Greek (Hart, 2007). Although the terms "psychiatry" or "mental illness" are not present in English translations, the Bible contains historical accounts and poetry describing cognitive, behavioural and emotional states which might present in a 21st century medical practice and be coded under "mental health".

According to the Old Testament, Jewish King Saul was tormented by an evil spirit sent to him by God and was relieved only when music was played (1 Samuel 16: 14-16, 28; The Bible, New International Version). Whilst a metaphorical understanding of the text might conclude that Saul experienced panic attacks, as part of a panic disorder (perhaps described metaphorically as an evil spirit), which were relieved in a relaxing environment, a literal interpretation might conclude that "an evil spirit from the Lord tormented him" (1 Samuel 16:14, The Bible) and that when music was played "then relief would come to Saul; [and] he would feel better" (1 Samuel 16:23, The Bible). The Psalms provide vivid descriptions of the experiences of another Jewish king, David. In Psalm 42 (The Bible) David describes three symptoms found in modern classifications of depression: tearfulness, low mood and hopeless. However, although David acknowledges his suffering, he does not conclude that he might have an illness or require the help of a physician. Unlike the account of Saul, David does not attribute the source of his suffering to God or any other aspect of RS, but instead believes that he might find relief through placing his hope in God (Psalm 42: 3,5, The Bible). In the New Testament, after Jesus makes a speech, some of his Jewish listeners accuse him of being both mentally ill and demon-possessed: "He is demon-possessed and raving mad. Why listen to him?" (John 10:20, The Bible). From the information given it appears that the audience may have reached their

conclusions based on the content of Jesus' speech, rather than the form of his speech. The limited information provided in this text suggests the possibility that the accusers may have held the belief that RS by means of demon-possession was closely related to, if not responsible for, mental ill-health. Alternative interpretations of the text might apply less literal hermeneutics to "demon-possession" and "raving madness", concluding that the accusers did not believe Jesus was demon-possessed or mentally ill, but were demonstrating the degree to which they opposed the content of his speech which they may have found outrageous, incredulous, sacrilegious, offensive or simply nonsensical, but non-pathological.

These three texts illustrate how different interpretations of the Bible could lead to a wide range of views regarding RS and mental health. This diversity of belief within one religion is an added challenge for research in the field. It also explains the understandings of mental health and approaches to mental health care that have subsequently been promoted and challenged by individuals and in societies influenced by Christianity.

The historical relationship between religion and psychiatry beyond the Bible era

Beyond the scope of this thesis, Samuel Thielman (2009) provides a more detailed description of RS and mental health care (at times known as the "care of madness") from the ancient Greek world through to the 18th century, demonstrating oscillating and overlapping beliefs that mental disturbance either represents non-RS, naturalistic phenomenology or arises directly from RS aetiology. Briefly, he refers to Hippocratic medical teaching abandoning religious ideas of a supernatural aetiology of mental illness; influential Christian bishop Chyrsostom who held a holistic view of mental illness that gave consideration to both physical and spiritual factors, the Tatian belief that madness is healed by God and not by [medicines] "herbs and roots", Anglo-Saxon physicians on the one hand treating demon-possession through a combination of herbal medicines and Bible readings and on the other hand treating lunacy by beating the patient with a whip; sixteenth century naturalistic understandings of melancholy; Puritan advice to follow medical advice for melancholy and a belief that both medical and ministerial roles were of value in

treating depression (Thielman, 2009). Although there are reports of Islamic hospitals in the Middle East and North Africa providing mental health care since the Middle Ages (Dols, 1987), the influences and contributions of Islam and Eastern religions on MH are not mentioned in detail by Thielman in his historical review on the basis that North American and European Christianity "has shaped modern psychiatry's way of dealing with religious and spiritual issues" (Thielman, 2009). Acknowledging the limitations of this narrow approach especially in increasingly pluralistic Western societies, this thesis assumes a similar position in view of the strong European influence on the development of medicine and RS in Latin America since the late fifteenth century. Within its scope of Christian religion and spirituality, this thesis will briefly review RS influences during the modern psychiatric era in the Western and predominantly Christian world, beginning from the early 19th century when the term "psychiatry" was used by Johann Reil in Germany (Marneros, 2008).

Historical accounts show that in the last two hundred years RS has been given roles of greater and lesser importance in the practice of psychiatry and mental health care. During different eras RS has been considered beneficial, harmful and harmless to mental health. When ill-treatment was reported in many mental asylums in Britain, the York Retreat was established and managed by British Quakers in 1796 as a religious environment for providing alternative and more humane residential care for people with mental disorders (Charland, 2007). The Retreat sought to achieve recovery from mental disorders through an holistic package of moral care which included the promotion of Christian virtues and the application of Christian principles and practices such as Bible reading (Charland, 2007). The medical interest in RS as an important factor in mental health care was not limited to Europe. According to Thielman (2009), at the turn of the nineteenth century, North American physician Benjamin Rush wrote about both the benefits and harms of religion, suggesting that on the one hand the management of depression should include reading the Bible and on the other hand excessive studying of eschatological biblical texts might precipitate an episode of "madness" . Although Thielman (2009) describes growing concerns within the mental health profession about the adverse effects of RS on mental health, not all of the dissenters he reports held polarised views. For example, Isaac Ray, a founder of the medical specialty of forensic

psychiatry in the USA (Pollack, 1974), acknowledged the mental health benefits of RS, writing:

> *"Let me not be misunderstood. God forbid that I should wish to undervalue the benefits of true religion. Of all the influences exerted upon the mind, none are more conservative of its health and vigor than that of the great truths of Christianity, clearly discerned, and properly applied to the life. They, and they alone, sometimes, are capable of keeping it sure and steadfast under the trials that assail it, exalting and strengthening while they preserve."* (Ray, 1863 ,193)

However, Ray (1863) warned against excessive RS practices and states which he believed, in certain cases, caused mental illness, especially during a time of religious revival:

> *"The evil in question must be attributed, however, not to religion, but to a certain form of excitement by which it is frequently, though not necessarily accompanied. The fact that insanity is often produced in this way cannot fairly be denied; and it is the part of true religion as well as true philosophy, to recognize the evil, and provide, if possible, a suitable remedy."* (Ray, 1863 ,187)

It was not until the late 19th century and the early twentieth century that a significant change occurred in the medical profession's beliefs about RS in relation to mental health. One of the most remarkable influences was that of Sigmund Freud, a neurologist and psychoanalyst who, according to historians, not only considered religion to be mythical and in direct opposition to science, but also taught that religion was in itself a mental illness, namely an obsessional neurosis with delusional content (Palmer, 2003 ,9-13). Dein (2010) reports that Freud's thinking contributed to the societal schism between RS and mental health, and the deconstruction of a more holistic conceptualisation of mental health in psychiatry that included RS. Until towards the end of the twentieth century, the prevailing practice among psychiatrists was to reject ideas that RS might bring benefits to the specialty and to conduct clinical practice disregarding aspects of religion and spirituality (Dein, 2010). However, these attitudes were challenged in the medical field as: more research in the field was published suggesting greater importance of RS in mental health; traditional anti-religious philosophies weakened (Thielman, 2009); and a rise in globalisation resulted in increased multiculturalism in developed Western societies

(Abdul-Hamid, 2011, Kirmayer and Minas, 2000) and greater interest in spirituality in the broadest sense (van Rensburg et al., 2013).

5.3.2 Implications for psychiatry of a renewed interest in religion and spirituality

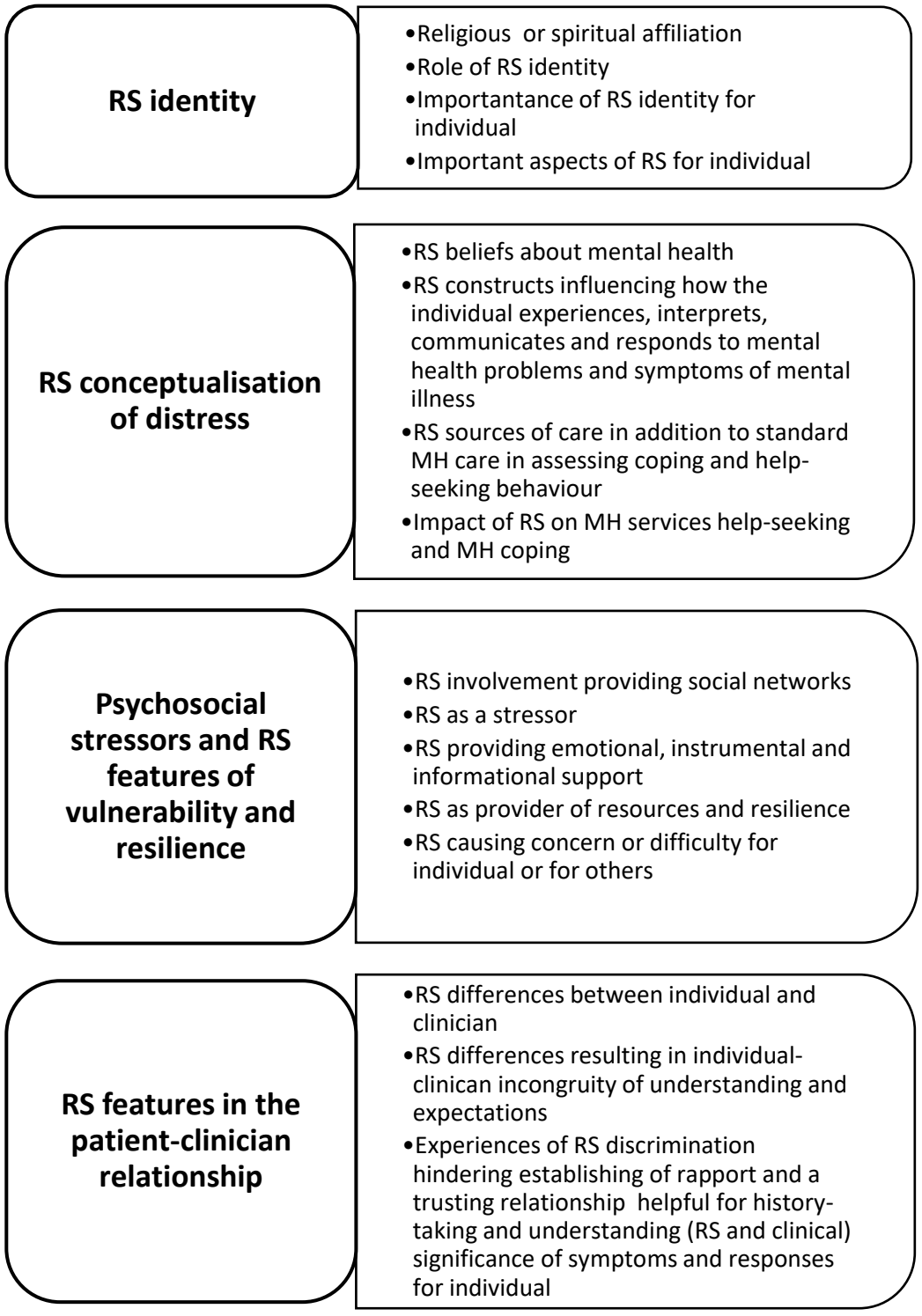
The rise in the perceived relevance of RS in psychiatry has been reflected in publications by international authorities in the specialty such as the American Psychiatric Association (APA), the Royal College of Psychiatrists (RCPsych), and the World Psychiatric Association (WPA). In a chapter devoted to the topic, the American Psychiatric Association states that understanding an individual's culture is "essential" in effectively undertaking a diagnostic assessment and formulating a clinical management plan, and provides a definition of culture which includes religion and spirituality:

> *"Culture refers to systems of knowledge, concepts, rules, and practices that are learned and transmitted across generations. Culture includes language, religion and spirituality, family structures, life-cycle stages, ceremonial rituals, and customs, as well as moral and legal systems. Cultures are open, dynamic systems that undergo continuous change over time; in the contemporary world, most individuals and groups are exposed to multiple cultures, which they use to fashion their own identities and make sense of experience. These features of culture make it crucial not to overgeneralize cultural information or stereotype groups in terms of fixed cultural traits." (APA, 2013, p.749)*

The fifth version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5®) published by the American Psychiatric Association (APA, 2013) describes the impact culture can have on: help-seeking for symptoms of mental illness, acceptance of a psychiatric diagnosis, provision of coping strategies, adherence to and expectations of psychiatric treatment, illness adaptation, mental illness stigma experienced from others, and the nature and effectiveness of the patient-clinician relationship (APA, 2013). This recently revised global classification system of mental disorders offers clinicians an outline of a cultural interview assessment which can be used as part of a standard psychiatric examination for formulating an understanding of the impact of culture on the mental health of the patient (APA, 2013). Within this cultural assessment, religion and spirituality are together recognised as one of many cultural factors relevant to mental health in

clinical practice (APA, 2013). Figure 5-1 represents an RS adaptation of this DSM-5 cultural formulation.

Figure 5-1: Formulation of religion and spirituality in clinical practice. Adapted from the DSM-5 Cultural Formulation Interview (APA, 2013)



In 2011 the Royal College of Psychiatrists published in its International Psychiatry journal a series of thematic papers on faith and psychiatry which included a call for

the revision of ICD-10 to give greater consideration to RS in the application of diagnostic categories of mental and behavioural disorders (Abdul-Hamid, 2011). These recommendations echoed those of Peteet *et al.* (2011) who collated evidence from international experts in the field to successfully lobby for similar changes in the DSM-IV revision described above. At the same time, a former president of the Royal College of Psychiatrists and the Chairman of the World Psychiatric Association Section on Religion, Spirituality and Psychiatry proposed that the traditional person-centred biopsychosocial model of psychiatry be broadened to include RS (Cox and Verhagen, 2011). Using this biopsychosocial-spiritual approach, they proposed a theoretical model to explain the complex pathways connecting RS with mental health and their mediating factors which will be discussed towards the end of this chapter (Cox and Verhagen, 2011).

In the last 100 years there has been a significant shift in the attitudes of psychiatrists and their colleagues towards religion and spirituality. Cox (2011) describes the profession's journey from being reluctant to engage with the neglected and "taboo" concept of RS for much of the 20th century, to developing a renewed interest in discovering the importance of the RS dimension in mental healthcare. It is unlikely that mainstream medicine today would advocate the use of some of the RS-informed mental health interventions practised in earlier centuries which would today either be considered inhumane or be considered inappropriate in post-Christian societies that are increasingly secular (Hwang et al., 2011, Thielman, 2009). It is also unlikely that mainstream psychiatry would revise understandings and practice of mental health based solely on ancient or medieval traditions or the anecdotes and personal opinions of individuals or religious organisations.

In the 21st century, the evidence obtained from the scientific method is the preferred foundation in Western medicine upon which mental health theory and practice is built. It is this evidence, or lack thereof, that fuels the debate in four topical issues in the field of RS and mental health: definitions of RS; associations between RS and mental health; faith-based mental healthcare; RS in clinical practice (Hwang et al., 2011). The ongoing challenges of defining RS and the dissenting view that any definition would be inappropriate have already been discussed. Any factor such as

RS, as defined in a study, which might be associated with significant benefit or harm to mental health needs to be identified and understood through the application of sound and robust scientific methodologies. If such associations exist, they should inform not only the profession's acceptance or rejection of various forms of faith-based mental healthcare, but also the knowledge, beliefs and practice of RS professionals in relation to mental health. Finally, the psychiatrist or any other mental health clinician faces the challenge of deciding whether and how to give due regard to matters of RS whilst also practising the specialty professionally and ethically. Whilst acknowledging that these four areas overlap, the remainder of this thesis will focus on the associations between RS and mental health, addressing the other three areas where relevant.

5.4 Associations between religion and spirituality, and mental disorders (not depression)

Given the co-morbidity of mental disorders, such as substance misuse disorders, among prisoners, the literature on associations between RS and depression which will be reviewed in Section 5.6 would be incomplete without also considering relationships that may exist between RS and other mental disorders. However, there is a relatively small body of literature that examines associations between RS and mental disorders. Empirical studies have focussed on mental disorders such as depression, which affects a clinically significant proportion of prisoners, but have neglected the study of personality disorders, for example, which are highly prevalent in the prison population (Koenig et al., 2012b). The following overview is a synthesis of evidence from systematic reviews. Although not classified as a mental disorder, suicide and its RS literature is included because suicidal ideation is a symptom of depression and suicide prevention in prison is a priority for policy makers and prison mental health clinicians.

There is good evidence that increased religious involvement is associated with less abuse of substances such as: heroin, cannabis and cocaine (Bonelli and Koenig, 2013). Systematic reviews agree that increased religiosity (increased church attendance and religious upbringing) is associated with fewer suicide attempts (Lawrence et al., 2016, Bonelli and Koenig, 2013). An association was observed less

consistently between religious affiliation and the number and severity of suicide attempts, where the strength and direction of association was found to vary between cultures and religions and within religions. (Lawrence et al., 2016). The evidence for an association between RS and stress-related disorders (including anxiety) is inconsistent, while there is insufficient evidence to determine the relationship between RS and bipolar affective disorder and psychotic disorders and even less evidence for personality disorders (Bonelli and Koenig, 2013).

5.5 Association between religion and spirituality, and mental wellbeing

The MeSH terms ("mental OR wellbeing" AND "religio* OR spiritual* OR faith" AND systematic AND review") entered into the PsycINFO, PubMed and Web of Science databases and Google Scholar (first 10 pages) did not identify systematic reviews of the association between religion and spirituality and mental wellbeing, as measured by the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), or dimensions of mental wellbeing that approximate to individual WEMWBS items.

A non-systematic review published in 2016 (Spencer et al.) studied the association between religion and subjective wellbeing measures, some of which approximated to four WEMWBS items: optimism, feeling good about one's self, feeling close to other people and feeling cheerful. The authors found strong evidence of an association between mental wellbeing and religious participation. The strength of this association was increased by gender (white females > white males), ethnicity (African Americans > white Americans) and country (USA > Denmark and the Netherlands). The review concluded that religious affiliation is not associated with mental wellbeing. None of the studies included in the review focused on prisoners. However, in an individual study of depressed adults with a chronic physical illness who considered RS to be personally important, Koenig et al. (2014) found a highly significant association between increased frequency of daily spiritual experiences, measured using the Daily Spiritual Experiences Scale (DSES) and increased optimism (item 1 on the WEMWBS).

5.6 Systematic review of the association between RS and depression in prisoners

5.6.1 Background

Using MeSH terms “depression OR mental”, “religio* OR spiritual* OR faith”, “systematic” and “review”, in the three electronic databases and Google Scholar described in Section 5.5, identified four studies that have systematically reviewed the association between religion and spirituality (RS) and depression (Bonelli and Koenig, 2013, AbdAleati et al., 2016, Eytan, 2011, Snider and McPhedran, 2014). As shown in Table 5-5, none of these studies were assessed as high quality using the AMSTAR (Assessing the Methodological Quality of Systematic Reviews) tool (Shea et al., 2009). Only one study had reviewed the evidence in prisoners (Eytan, 2011).

Table 5-5: Quality assessment of systematic reviews of the association between religion and spirituality, and depression and mental wellbeing published between 2007 and 2017

Year		**2011**	**2013**	**2014**	**2016**
1st Author		**Eyton**	**Bonelli**	**Snider**	**AbdAleati**
Journal		**Psychiatric Quarterly**	**Journal of Religion and Health**	**Mental Health, Religion and Culture**	**Journal of Religion and Health**
AMSTAR (Shea et al., 2009)	**1. Protocol**	N	N	N	N
	2. Bias minimised	C	Y	C	C
	3. Comprehensive search	Y	N	N	Y
	4. Grey literature searched	N	N	N	N
	5. Excluded studies listed	N	Y	N	N
	6. Characteristics of included studies	Y	N	Y	N
	7. Quality assessment of included studies	N	Y	N	N
	8. Conclusions informed by quality assessment	N	Y	N	N
	9. Appropriate pooling of data	N/A	N/A	N/A	N/A
	10. Assessment of publication bias	N/A	N/A	N/A	N/A
	11. Declaration of interest of authors and included studies	N	N	N	N
	Total number of items with "Yes" quality assessment	2/11	4/11	1/11	1/11
AMSTAR Key	**Y = Yes; N = No; C = Cannot answer; N/A = Not applicable**				

According to the review by Bonelli and Koenig (2013), there is strong evidence of an association between religious involvement and depression, as this was reported by all 21 studies. Mostly, higher levels of religious involvement have a simple association with less depression. AbdAleati et al. (2016) added support to this finding, stating that RS (more frequent attendance at religious services) is associated with fewer depressive symptoms. Interestingly, there is some emerging evidence that this relationship is U-shaped where the lowest and highest levels of RS involvement (public or private) are associated with the highest levels of depression (Bonelli and Koenig, 2013). In contrast, there is some evidence from reviews with several quality limitations that there is no association between RS (including personal importance of RS and frequency of church attendance) and depression (Snider and McPhedran, 2014, AbdAleati et al., 2016). There is limited evidence that high rates of depressive disorder are associated with high negative religious coping but not high positive religious coping (Bonelli and Koenig, 2013).

In the prison population, the association between RS (eg, religious coping) and depression is inconclusive with studies providing evidence both supporting and refuting the association (Eytan, 2011). However, there is evidence that higher levels of RS (RS involvement and intrinsic religiosity) are associated with less severe and less frequent depressive episodes. The conclusions drawn from the systematic review are based on the combined data from four studies based on fewer than 700 prisoners in the USA.

From the perspective of the prison mental health, this literature review highlights the lack of evidence of the association between RS and depression in the prison population. Furthermore, the data available is restricted to one high income country. Given the limitations of existing systematic reviews, the paucity of studies identified in the review by Eytan (2011) and the likelihood that more studies had been published since 2011, I decided to conduct an up-to-date systematic review of studies measuring the association between religion and spirituality, and depression among prisoners worldwide.

5.6.2 Aim

The aim of the present systematic review is to conduct a systematic review of empirical research on the association between RS and depression in prisoners.

5.6.3 Methods

Search strategy and data management

In addition to PubMed, which was used in a recent systematic review of mental disorders and RS (Bonelli and Koenig, 2013), databases accessed included PsycINFO and Web of Science which were all used by Eytan (2011) as well as Medline, Global Health (EBSCO) and EMBASE and Google Scholar. The first 10 pages of both Google Scholar were searched for pragmatic reasons and relevance.

The data sources and databases were searched using search terms relevant to the systematic review objectives and the database or source. No restrictions were placed on language and publication year. The following keyword search terms were entered into PsycINFO and adapted for searches in other databases

1. religio* OR spiritual* OR faith
2. depress* OR mental OR psychiatr*
3. prison* OR offender* OR incarcerat* OR jail* OR detain* OR imprison* OR remand*
4. 1 AND 2 AND 3

Eligibility criteria

Studies identified through the search strategy were screened by one individual (AA) against pre-determined eligibility criteria, using the study title and, if necessary, by abstract. Table 5-6 lists the eligibility criteria that were applied to identify studies for inclusion in the systematic review. Studies that did not meet eligibility criteria and duplicate studies were excluded.

Table 5-6: Eligibility criteria for identifying and selecting studies for the systematic review

Criterion	Quantitative - depression
Study participants	Adult prisoners of any status
Outcome	Quantified association between depression and RS
Measurement of mental health	Any validated scale for diagnosis, screening or measurement of depressive symptoms
Measurement of RS	Any dimension of RS, using any instrument or question

Studies that were not excluded were retrieved in full text and read by the reviewer. Any study that failed to meet the same eligibility criteria was excluded. Reasons were exclusion were noted.

Data extraction and quality assessment

All full-text studies that met the eligibility criteria for the systematic review were then assessed for quality using the Appraisal tool for Cross-Sectional Studies (AXIS) (Downes et al., 2016) followed by a judgement of overall quality: high, moderate-high, moderate, low-moderate or low. Relevant data were extracted from studies.

5.6.4 Results

Search results

Figure 5-2 shows the flowchart of the systematic search for relevant studies. From over 879 studies identified using traditional electronic databases and other methods, ten studies were identified which met the criteria for inclusion in the final review.

Figure 5-2: Flow diagram of identification and selection of studies for including in the final review

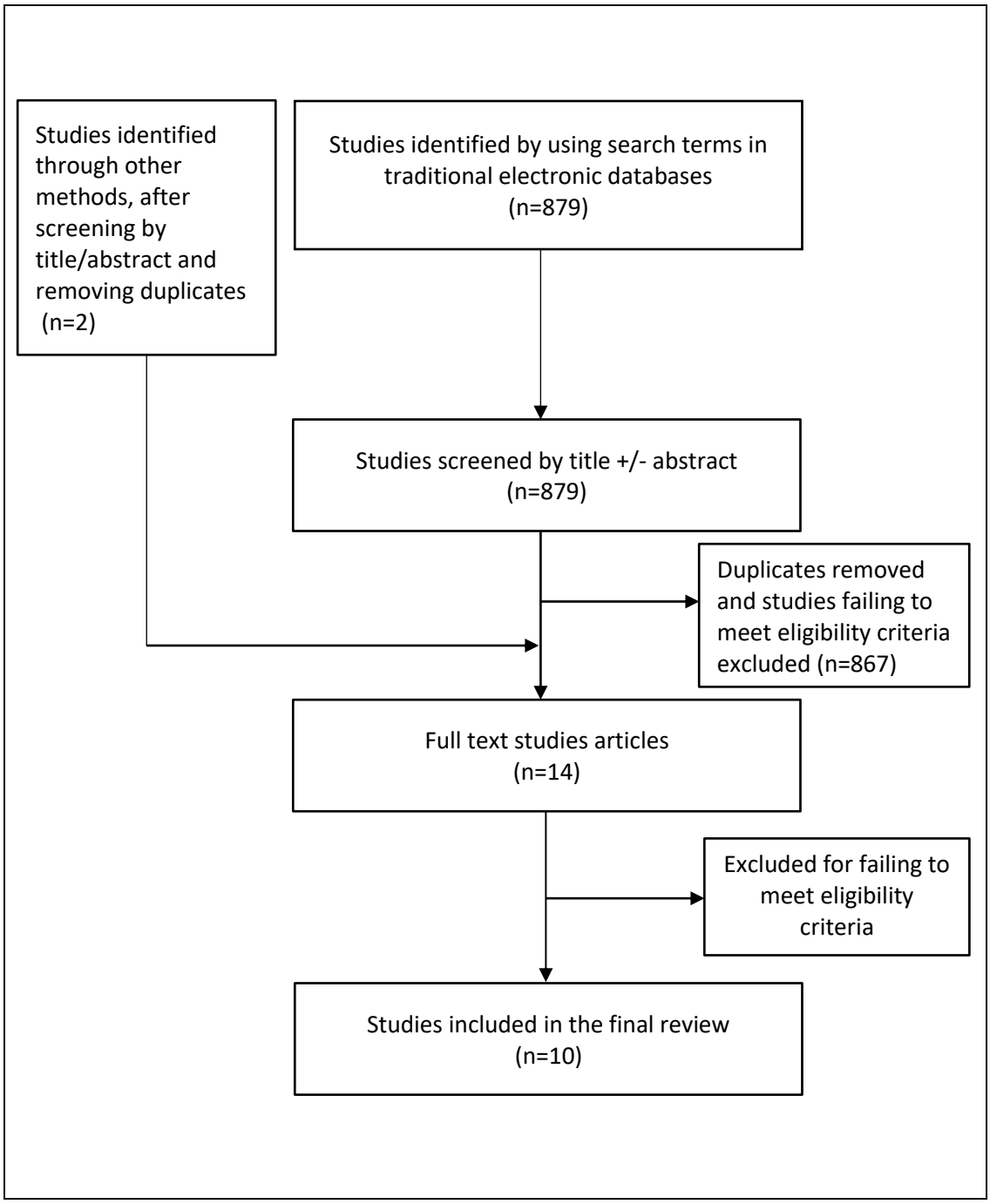


Table 5-7 shows the rationale for rejecting four of the fourteen full-text articles after screening against the eligibility criteria. One study was excluded because it was not available in full-text.

Table 5-7: Rationale for including or excluding studies after reading the full-text

Study no.	1st author	Year	Decision	Reason
1	Assis	2016	Accept	Eligibility criteria met
2	Domenico	2016	Reject	Full-text not available. Conference abstract only.
3	Allen	2013	Accept	Eligibility criteria met
4	Pinese	2010	Accept	Eligibility criteria met
5	Levitt	2009	Accept	Eligibility criteria met
6	Allen	2008	Accept	Eligibility criteria met
7	Koenig	1995	Accept	Eligibility criteria met
8	Bishop	2011	Reject	Did not test association between depression and RS
9	de Moraes	2006	Reject	Did not test association between depression and RS
10	Lonczak	2006	Accept	Eligibility criteria met
11	Cooper	2001	Accept	Eligibility criteria met
12	Fatoye	2006	Accept	Eligibility criteria met
13	Maschi	2014	Reject	Did not test association between depression and RS
14	Clear	2002	Accept	Eligibility criteria met

Included studies: data extraction and quality assessment

Table 5-8 shows the characteristics of the ten included studies and whether an association between depression and RS was reported. Most studies were conducted in high income countries: six in the USA (Allen et al., 2013, Allen et al., 2008, Lonczak et al., 2006, Levitt and Loper, 2009, Koenig, 1995, Clear and Sumter, 2002) and one in the UK (Cooper and Berwick, 2001). The remaining studies were undertaken in prisons in emerging countries, both of which were also middle-income: two studies in Latin America (Constantino et al., 2016, Pinese et al., 2010) and one in Africa (Fatoye et al., 2006). All studies screened for depression; none diagnosed depression according to an international classification system using validated instruments.

Table 5-8: Characteristics and main findings of studies included in the final review

1st author, year	Country of study	Sample	Depression measure	RS measure	Association
1. Constantino, 2016	Brazil	1573 mixed gender prisoners (only depression-RS results from an unstated number of males are reported) from prisons, of different levels of security, excluding open facilities	BDI (depression absent if BDI score ≥ 20/63	Practice of religion (yes/no) and frequency	Yes – Inverted U-shaped
2. Allen, 2013	USA	94 male prisoners aged over 45 years with chronic physical illness	CES-D	Positive religious coping and negative religious coping indices taken from Brief Multidimensional Measure of Religiousness and Spirituality (BMMRS)	Yes
3. Pinese, 2010 (September)	Brazil	100 female prisoners: 65% Caucasian, 35% Black	BDI categorised into levels of depression severity	Practice of religious practice (yes/no)	Mixed – Yes and No
4. Levitt, 2009	USA	213 female prisoners, most with possible Cluster B personality disorder traits	BDI	Level of support received from participation in prison spiritual activities (no participation, participation with low/moderate/high support)	Yes
5. Allen, 2008	USA	73 male prisoners aged over 50 without cognitive impairment; 69% murder/sexual crimes	Depression subscales of Brief Symptom Inventory	Selected subscales from the BMMRS	Mixed – Yes and No

6. Koenig, 1995	USA	96 male prisoners aged over 50 detained in conditions of high to low security, excluding specialist health facility	CES-D	Range of RS questions and scales on dimensions including: RS importance, frequency of RS involvement, RS coping, RS motivation	Mixed – Yes and No
7. Lonczak, 2006	USA	305 prisoners -245 males, 60 (20%) females in a low security prison for prisoners with mainly alcohol- and drug-related crimes	Brief Symptom Inventory	Questions on religious upbringing; adapted version of Religious Coping Activity Scale	Mixed – Yes and No
8. Cooper, 2001	UK	171 males – 52 aged 21-57 years in a medium security prison, 119 aged 16-20 years in Young Offenders' Institutions. Prisoners on remand, short sentences or life sentences.	BDI	Question: "Are you religious?" (yes/no)	Yes
9. Fatoye, 2006	Nigeria	303 prisoners – 292 males, 11 (3.6%) females in a medium secure prison	Depression subscale from HADS (Hamilton Anxiety and Depression Scale)	Religious affiliation	Yes
10. Clear, 2002	USA	769 male prisoners from prisons of different levels of security with active religious programmes	CES-D	A range of questions and adapted scales to measure a range of RS dimensions including: intrinsic/extrinsic RS orientation and RS beliefs and practices	Mixed – Yes and No

Table 5-9 shows the details of the quality assessment of studies. The final column presents a subjective assessment of overall quality.

Table 5-9: Results of quality assessment of included studies

1st author, Year	**Comments from AXIS quality assessment (Downes et al., 2016)**		**Overall assessment of quality**
	Strengths	**Weaknesses**	
1. Constantino, 2016	Ethics approval obtained; clear statement of how significance and precision were determined	Non-participation not categorised	Moderate - High
2. Allen, 2013	Basic data described adequate	Sample size not justified; response rate not mentioned	Moderate
3. Pinese, 2010	Ethics approval obtained; use of validated Portuguese version of BDI	Sample size not justified; non-participants not categorised	Moderate
4. Levitt, 2009	Clearly stated objective (hypothesis)	Sample size not justified; results of non-participants not described	Moderate
5. Allen, 2008	Study design suits aims; response rate does not raise concerns; limitations discussed; conclusions justified	Non-participants not categorised; ethics not mentioned; sample size not justified	Moderate-High
6. Koenig, 1995	Representative sample; results of non-participants described; limitations discussed	No mention of ethical approval	High
7. Lonczak, 2006	Clear aim/objectives; funding mentioned; study limitation discussed	Sample size not justified; non-participants not described	Moderate
8. Cooper, 2001	Representative sample; categorisation of non-participants	Sample size not justified; no mention of ethics approval	Moderate
9. Fatoye, 2006	Clear aim; basic data adequately described; response rate does not raise concerns	Study limitations not discussed; sample size not justified	Moderate
10. Clear, 2002	Limitations discussed; use of published depression instrument	Basic data not discussed; non-representative sample; no mention of ethics	Low-Moderate

Heterogeneity assessment

Potential sources of heterogeneity identified qualitatively between the studies included: age of participants (adults of working age v. older adults); instrument used to measure depression (BDI v. CES-D); co-morbidity (chronic physical conditions v. cluster B personality traits) and country (Nigeria v. UK). Gender is another important factor that distinguished the studies and is highly relevant to the thesis. Of the ten included studies: five involved all-male samples (Allen et al., 2013, Allen et al., 2008, Clear and Sumter, 2002, Cooper and Berwick, 2001, Koenig, 1995), two were all-female samples (Pinese et al., 2010, Levitt and Loper, 2009) and three were mixed-gender samples (Constantino et al., 2016, Fatoye et al., 2006, Lonczak et al., 2006). Constantino et al. (2016) presented the results on the association between depression and RS only for the male participants, while Fatoye et al. (2006) reported combined results for the mixed-gender sample. In contrast, the gender-sensitive study by Lonczak et al. (2006) presented and compared results between males and females.

Narrative account of systematic review results

The findings of the studies could be categorised under three distinct headings according to the presence and complexity of the association between depression and RS in the prison population: 1) There is no association between depression and RS, 2) There is a simple association between depression and RS and 3) There is a complex association between depression and RS

Four of the ten studies reported findings of no association between the depression and RS. Among 100 female prisoners in a Brazilian prison, a lack of practising religion was not associated with severe depression, measured using an upper cut-off for the BDI (Pinese et al., 2010). Investigating the private practice of religion, a study of 73 male prisoners in the USA aged over 50 years did not find a significant association between private RS practices and depressive symptoms (Allen et al., 2008). These findings are in agreement with those of an earlier, high quality study of older male prisoners in which depression was not found to be associated with: frequency of private religious activity, expression of belief in a personal God, or religious coping (Koenig, 1995).

In a mixed-gender sample of 305 prisoners aged between 20 and 61 years in the USA, significant associations were not found between depression and religious participation or RS coping (eg, being guided by God when dealing with a problem) (Lonczak et al., 2006). Depressive symptoms were not significantly associated with extrinsic RS orientation in a large study of 769 male prisoners in the USA (Clear and Sumter, 2002).

Where an association was reported between depression and RS, the association was usually simple, or linear. Among male prisoners in the UK, of whom just under half stated they were religious, being religious was associated with significantly more depressive symptoms (Cooper and Berwick, 2001). The only study to measure the association of depression with RS affiliation involved a mixed-gender sample of 303 prisoners in Nigeria and found significantly more depressive symptoms were associated with being affiliated with Islam or a traditional religion than with Christianity (Fatoye et al., 2006). Among a U.S. sample of 94 male prisoners aged over 45 years, high levels of positive religious coping were associated with significantly fewer symptoms of CES-D depression, while high levels of negative religious coping were associated with more depressive symptoms, (Allen et al., 2013). These results differed from the findings of an early study of 73 older male prisoners also from the USA in which, high levels of positive religious coping and feeling abandoned by God (negative religious coping) were both significantly associated with a greater number of depressive symptoms measured using the depression subscale of the BSI, while having more frequent daily spiritual experiences was associated with fewer symptoms of depression (Allen et al., 2008). Although the two studies used different instruments to measure depressive symptoms, they both measured positive religious coping using the brief version of the Multidimensional Measure of Religiousness/Spirituality (MMRS).

In a study of 213 female prisoners in the USA, many of whom had possible traits of Cluster B personality disorder, significantly more BDI depressive symptoms were found among prisoners who did not participate in RS activities than among those reported receiving a high level of support through their RS participation (Levitt and Loper, 2009). These findings are consistent with and build on those of an earlier

study of male prisoners in the USA aged over 50 years in which CES-D depression scores were significantly lower in participants with more frequent attendance (at least weekly) at organised RS activities and in those with higher levels of intrinsic religiosity and (Koenig, 1995). This trend was also reported in a larger study which used the same depression instrument, CES-D, with 769 males in US prisons and found fewer symptoms of depression among those who had higher intrinsic religiosity, although the authors state the relationship was significant only at the 0.10 level (Clear and Sumter, 2002).

Lonczak et al. (2006) reported a significant association between increased religious discontentment (eg, feeling angry with or distant from church members) and a higher number of depressive symptoms, that was more significant in female prisoners than their male counterparts. The authors also found that being raised with formal religion was significantly associated with fewer symptoms of depression, even after adjusting for stressful life events.

Two studies reported a complex association between depression and RS. In the study of female prisoners in Brazil, not practising religion was associated with a significant increase in the risk of moderate, but not severe, BDI depression (Pinese et al., 2010). A study of male prisoners in Brazil found a highly statistically significant association between depression measured using the BDI cut-off for moderate and severe depression and the frequency of practising religion. In a model that adjusted for factors such as family contact, prisoners who practised their religion sometimes were 2.3 times more likely to have depression than those who practiced frequently. However, not practising religion was not associated with an increased risk of depression compared to those who practised frequently. This suggests an inverted U-shaped association with lower odds of depression in prisoners who practice religion frequently or not at all, and higher odds of depression in those who practice religion sometimes (Constantino et al., 2016).

Table 5-10 shows a summary of the findings of the association between depression and dimensions of RS. Depression is associated with RS affiliation/identify and RS experiences/feelings but not RS beliefs. It is unclear whether an association exists between depression and other dimensions of RS.

Table 5-10: Summary of findings of the association between depression and RS as reported by all studies included in the systematic review

RS dimension		Number of studies reporting outcome			Overall association
		No association with depression	Simple association with depression	Complex association with depression, for example U-shaped	
RS affiliation/ Identity	Affiliation	0	1	0	Association
	Being raised with formal religion	0	1	0	
	Being religious	0	1	0	
RS involvement (practices/ participation/ attendance)	Practising/not practising religion	1	0	2	Unclear→ complex association
	RS participation	1	1	0	
	Frequency of attendance at RS activities	0	1	0	
	Frequency of private RS practices	1	0	0	
RS beliefs	Belief in a personal God	1	0	0	No association
RS orientation	Extrinsic RS orientation	1	0	0	Unclear→ simple association
	Intrinsic RS orientation	0	2	0	
RS coping	RS coping	2	0	0	Unclear→ simple association
	Positive RS coping	0	2	0	
	Negative RS coping	0	2	0	
RS experiences /feelings	Frequency of daily spiritual experiences	0	1	0	Association
	RS discontentment	0	1	0	

The three studies assessed to be of the highest quality involved only male prisoners (Allen et al., 2008, Constantino et al., 2016, Koenig, 1995). Table 5-11 shows the findings of these studies. Although depression was not found to be associated with religious coping as a broad RS dimension, it was associated with RS positive coping and RS negative coping. Depression was associated with the frequency of public, but not private, RS activity, as well as intrinsic RS and frequent daily spiritual experiences.

Table 5-11: Findings of the three highest quality studies in the systematic review

No association between depression and RS	**Association between depression and RS**	**U-shaped association between depression and RS**
Frequency of private religious activity Belief in a personal God Religious coping	Frequency of attendance at organised RS meetings Intrinsic RS Positive RS coping Negative RS coping Daily spiritual experiences	Practising religion

The four studies that reported association findings for females were all assessed to be of moderate quality (Pinese et al., 2010, Levitt and Loper, 2009, Lonczak et al., 2006, Fatoye et al., 2006). Table 5-12 presents the results from studies that measured the association between depression and RS.

Table 5-12: Findings of studies of the association between depression and RS in female prisoners

No association between depression and RS	**Association between depression and RS**	**U-shaped association between depression and RS**
Lack of practising religion (for severe depression only) RS participation RS coping	Lack of practising religion (for mild depression only) RS participation with support RS discontentment RS affiliation Being raised with formal religion	Not reported among female prisoners

5.6.5 Summary of main findings

The present review identified an additional five studies on the association between depression and RS to the five studies included in the systematic review by Eytan (2011). Studies published within the timeframe (before 1st August 2010) used by Eytan (2011) were identified in the present, but not previous, systematic review through the use of wider range of search terms (Cooper and Berwick, 2001) and databases (Fatoye et al., 2006). Three studies published since 1st August 2010 were identified (Pinese et al., 2010, Allen et al., 2008, Constantino et al., 2016). This review adds to existing literature by supporting the evidence of an association between depression and the frequency of RS involvement in prisoners and incorporating data from countries outside of the USA. The data from emerging countries provided by the present review suggests an association between depression and religious affiliation in Nigeria (Fatoye et al., 2006) and the frequency of practising religion in Brazil (Constantino et al., 2016), though in Brazil there may not be added benefits for prisoners who have severe depression (Pinese et al., 2010). These RS dimensions were not examined in other countries and therefore it is not certain whether the findings in the emerging economy countries are consistent with those from the most developed countries. However, the findings suggest that the association between depression and RS may differ between prisoners in emerging countries and prisoners in other parts of the world. Finally, this up-to-date systematic review highlights some gender differences in the association between depression and RS that were not reported in the earlier review.

Comparison of prison population with the general population

The finding in the present systematic review of an association between depression and the frequency of attending organised, public RS meetings and services among prisoners was consistent with findings among the general population (Bonelli and Koenig, 2013, King et al., 2007, Zou et al., 2014, Braam et al., 2010, Balbuena et al., 2013). However, whereas a large body of evidence supported an association between depression and RS involvement among the general population in the largest and highest quality systematic review identified (Bonelli and Koenig, 2013), the evidence for this association in prisoners was much weaker, arising from a small number of studies.

In contrast to the U-shaped association reported by King et al. (2007) in which the highest levels of depression were found among those with the lowest and highest frequency of RS attendance, an inverted U-shaped association was seen among prisoners in Brazil (Constantino et al., 2016).

One difference between the findings in prisoners and those from the general population concerns religious affiliation. In contrast to the finding of no association between major depression and RS affiliation in a large (n=12,000) study of the Canadian general population (Balbuena et al., 2013), the present review identified a small (n=303) study showing a significant association between depressive symptoms and RS affiliation among prisoners in Nigeria.

The differences reported between prisoner and non-prisoner populations is explained partly by the absence of studies among prisoners which used validated instruments to measure a DSM/ICD diagnosis of depression, rather than depressive symptoms. The sample size of studies of non-prisoners was generally larger than that of those conducted with prisoners and would have affected the results. The systematic review by Bonelli and Koenig (2013) included six studies each with over 1,000 participants, while the present review included only one study of this magnitude, with half of the studies each involving no more than 100 participants. Differences between prisoner and non-prisoner populations might include: prevalence of depression; baseline mental health status such as level of mental wellbeing; baseline religiosity and spirituality; non-RS associated factors for depression; and the presence of prison-related confounders.

5.7 Theories explaining associations between RS and depression and mental wellbeing

This chapter has revealed a lack of systematically reviewed evidence on the association between depression, and religion and spirituality in the prison population, as was found for the association with mental wellbeing in Section 5.5. There is strong evidence for an association between mental health (especially depression) and RS in the general population. However, while there is weak evidence for similar associations among prisoners, there is also evidence of different associations in

prisoners, and suggestion that gender and country income may be relevant factors to explain differences.

While a causal relationship between RS and the two mental health variables has not been established, in most studies RS is considered the independent variable which might influence or predict mental health. As a result, theories tend to focus on explaining the effects of RS on depression and mental wellbeing. Synthesis of the literature in the field suggests a relationship between RS and mental wellbeing that is multidimensional, multidirectional and complex. Table 5-13 illustrates the behavioural, biological, psychodynamic and transpersonal/transcendental theories have been offered to explain the relationship (Levin, 2010).

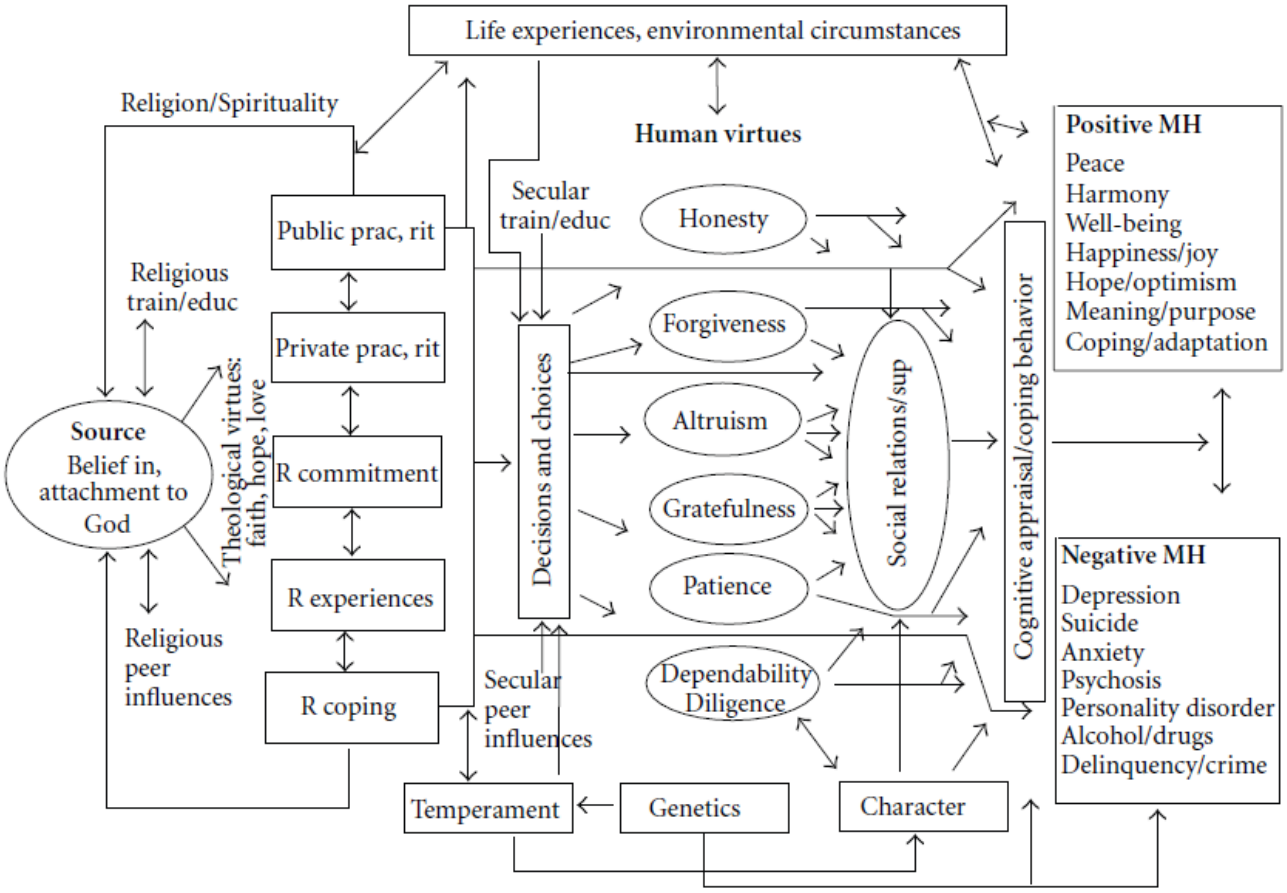
Table 5-13: Illustrations of the four theories proposed by Levin (2010) to explain associations between mental health and religion and spirituality

Theory	**Example of how theory explains association between RS and mental health**
Behavioural	A person who believes alcohol is sinful may choose abstinence, a behaviour conducive to better mental health.
Biological	Through his or her religiosity, a person with high religiosity may activate the neurophysiological pathways in the brain which affect mood.
Psychodynamic	A person with a passive personality style might readily accept theological beliefs of determinism and willingly absolve all responsibility for his or her health to God which may in the short-term reduce health-related anxieties, but in the long-term increase the risk of poor mental health through failure to take preventive action and delay or refusal to access mental healthcare services when experiencing symptoms of a mental disorder.
Transpersonal/ Transcendental	A person who seeks transcendental religious experiences may afterwards experience increase self-awareness and be more motivated to achieve his or her potential in life, thus improving mental wellbeing.

A model that accommodates the behavioural, biological, psychodynamic, and transcendental/transpersonal theories and highlights the complexity of the possible pathways between RS and mental health has been proposed by Koenig (2012) and is illustrated in Figure 5-3. In the diagram, Koenig (2012) considers two mental health

outcomes: negative mental health, which includes depression, and positive mental health, which includes some dimensions of mental wellbeing, as defined in this thesis based on the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), such as optimism.

Figure 5-3: Potential pathways between RS and mental health, taken with kind permission from Koenig (2012)



Four aspects of the model by Koenig (2012) require explanation. First, although some of the items listed under positive mental health approximate to dimensions of mental wellbeing, for example, optimism, other mental wellbeing items on the WEMWBS are not listed. While this suggests that the model may be limited in describing the possible pathways between RS and all dimensions of wellbeing, an alternative explanation is that the model includes an illustrative, rather than exhaustive, list of positive mental health and is therefore sufficient in fully representing the thesis definition of mental wellbeing

Second, it is surprising that in the model crime is categorised under negative mental health along with: suicide, anxiety, psychosis, personality disorder, alcohol and drugs. This approach acknowledges the undesirability of crime, which like suicide, is not a mental disorder, and perhaps even acknowledges the co-morbidity with mental disorders that is seen between, for example, substance abuse and depression. However, the model does not easily explain the possible pathways between RS and depression in people who have committed crimes, as it fails to also consider the complex relationships between both RS and crime; and crime and depression. Furthermore, the model does not link crime directly with environmental experiences, which for a prisoner would be the experiences of the prison environment.

Third, in the model gratitude is listed as a human virtue that may be a mediating factor between RS and depression and mental wellbeing. While Koenig considers gratitude to be distinct from RS, opponents of this conceptualisation have designed RS scales which measure gratitude (Underwood and Teresi, 2002).

Lastly, the model is careful not to portray a simplistic and causal relationship of RS leading to changes in mental health. Instead, the possible mechanisms by which depression and mental wellbeing (and crime) might influence RS are shown, as well as several predisposing, perpetuating and mediating biopsychosocial factors.

5.8 How the new study will fill gaps in the literature

There are currently too few studies to draw firm conclusions about the associations between depression and RS among prisoners and whether they differ from the established associations reported in the general population. Most of the evidence is drawn from prison populations in the USA and the UK, while prisoners in less developed regions are less studied. The remaining chapters of this thesis focus on a new study of the association between mental health and RS among prisoners in a Latin American country.

As a single variable, mental wellbeing has not been widely measured in prisoners using the WEMWBS outside of Europe, yet the tool has been translated into several languages and validated for use in Latin America. The study of mental wellbeing alongside depression is not only recommended when measuring any factor associated with depression, but is valuable when examining the potential pathways between RS and mental health, as proposed in the model by Koenig (2012). There is a paucity of empirical studies that have measured the association between mental wellbeing and RS in both the general and prison populations. The new study will therefore use the WEMWBS to estimate the mental wellbeing of a Latin American prison population and will measure the association between mental wellbeing and RS, as well as depression and RS.

Unlike the general population which has an even sex ratio worldwide, the prison population is heavily dominated by males in every country. Consequently, even though they experience gender-specific factors that place them at an increased risk of poor mental health in the prison setting, females are underrepresented in the prison mental health research. The association between depression and RS has been measured in only 384 female prisoners worldwide. By focussing on a sample of female prisoners, the new study will contribute to the small body of evidence that exists on the association between mental health and RS in this population.

Of relevance to the study of the association between mental health and RS are the relationships between: (i) mental health and crime/imprisonment and (ii) RS and crime/imprisonment. The capacity of the model of pathways between RS and mental

health proposed by Koenig (2012) to reflect these two additional relationships has been questioned. The impact of crime and imprisonment on the association between mental health and RS is yet to be fully understood. However, in addition to obtaining knowledge of the association in prisoners, the new study will generate understanding of factors which may explain the observed association.

Chapter 6 Methods of a cross-sectional survey and a qualitative study of mental health and spirituality in female prisoners

6.1 Aims and objectives

The aim of the quantitative study is to measure the association between mental wellbeing and depression, and RS in female prisoners. The null hypothesis of the study is that there is no association between RS and mental health (depression and mental wellbeing) among female prisoners. The aim of the qualitative study is to explain the relationship between mental health and RS of female prisoners.

The aims of the two studies are supported by the following objectives:

1. To measure mental wellbeing and depression in female prisoners
2. To measure religious and spiritual variables in female prisoners
3. To test for associations between RS and mental health (mental wellbeing and depression) in female prisoners
4. To identify factors that might influence or hide any associations observed between mental health and RS in this group of women

6.2 Choice of study design

6.2.1 Mixed methods design

Neither a quantitative approach nor a qualitative approach used alone was sufficient to meet the objectives of the research. Instead, a mixed methods approach involving both quantitative methods (cross-sectional survey) and qualitative methods (in-depth interviews and focus groups) was considered a feasible, appropriate and acceptable design for prison psychiatry research involving female prisoners in Latin America. Mixed methods study is a research approach in which quantitative and qualitative methods are rigorously applied and linked in order to answer a research question within a stated theoretical framework. Worldwide, the mixed methods approach has been used to study depression in India (Raguram et al., 1996), alcohol use in women in Mexico (Castro and Coe, 2007), mental disorders in women in Ethiopia (Hanlon et al., 2010) and mental wellbeing in the UK (Clarke et al., 2011). It has also been used

in forensic psychiatry research to study coercive practices in hospital (Haw et al., 2011), medication adherence of prisoners (Gray et al., 2008, Mills et al., 2011) and factors associated with suicidal acts in female prisoners (Marzano et al., 2011a).

Quantitative component

In a cross-sectional study design, a sample of participants that is representative of the female prisoner population of interest is randomly selected and RS and mental health variables are measured at one point in time (Bowling, 2009, 76). The design is useful for measuring the prevalence of RS and mental health variables and is an economical method of identifying associations the variables of interest (Bowling, 2009, 76). Statistical analyses indicate the magnitude, direction and significance of any associations between RS and mental health variables.

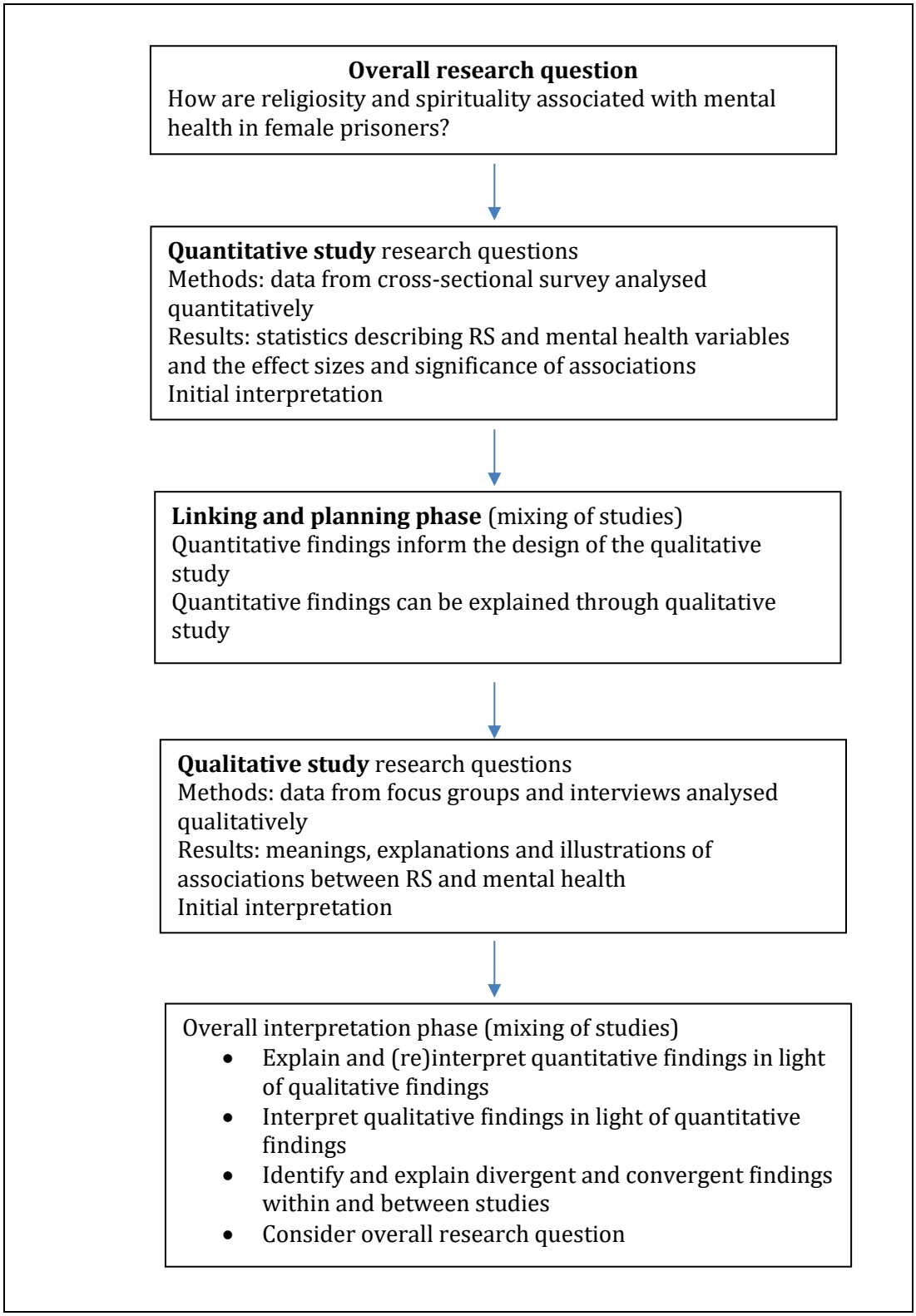
Qualitative component

A semi-structured interview design requires the selection of individuals who can communicate their knowledge and understanding of the association between RS and mental health in prisoners. A focus group is a facilitated semi-structured discussion with a group of participants who focus on the research topic. The interpersonal verbal and non-verbal interactions between participants allows additional information on agreement and disagreement on the subject matter to be obtained (Fern, 2001, 13). Focus groups have been used to understand the health perceptions and experiences of women in prison (Douglas et al., 2009) and the spiritual beliefs about health of women of Latin American (Jurkowski et al., 2010). The analysis of qualitative data requires non-statistical methods to generate themes, explanations and theories (Bradley et al., 2007) which can then be tested in a follow-up study using quantitative methods.

6.2.2 Explanatory sequential mixed methods design

Among the types of mixed methods designs that have been described by Creswell and Plano Clark (2011), a classical explanatory sequential design comprises two distinct data collection and analysis phases conducted in sequence, connected by an intermediate planning phase and concluded by an overall interpretation phase. Figure 6-1 shows the explanatory sequential mixed methods design adapted from Creswell and Plano Clark (2011) that was chosen as the basis for the study.

Figure 6-1: Flow diagram of the explanatory sequential mixed methods design, adapted from Cresswell and Plano Clark (2011)



The development of the design was both fixed in terms of structure and emergent in terms of content. The quantitative study results informed the development of the qualitative study; the qualitative study was designed to explain the results of the quantitative study.

6.3 Choice of country

6.3.1 Rationale for Chile

The final choice of country in which fieldwork would be taken was influenced by the following factors: accessibility, feasibility, global priority, local support and potential impact. It was feasible to conduct the research only in a country where Spanish was spoken (therefore, not Brazil) and a potential field supervisor was identified (Bolivia and Chile). Access to prisoners was deemed more likely in a country with a recent history of epidemiological research in prison mental health (Argentina, Brazil, Chile, Colombia, Costa Rica and Mexico). There was a high level of academic and political local support for the research in Chile. Furthermore, the interest shown by the Ministries of Justice and Health were instrumental in increasing the potential impact of the research at a national level. Therefore, Chile was chosen as the country of focus for the studies and was confirmed by its profile, described below.

6.3.2 Country profile of Chile

Geography of Chile

The Republic of Chile is a South Pacific coastal country on the continent of South America, shown in Figure 6-2. It shares a long eastern border which includes the Andes mountain range with Argentina and shorter borders with Bolivia to the northeast and Peru to the north. Due its varied geography, Chile has experienced a number of natural disasters, some of which coincided with the field visits, including: earthquakes, flooding, and volcanic eruptions (Ebert et al., 2010, Watt et al., 2009).

Figure 6-2: Map of South America used with permission (DMaps, 2017)

Economic status

Chile is a recent member of the Organisation for Economic Co-operation and Development (OECD) with a Gross Domestic Product (GDP) of US$240.2 billion, Gross National Income (GNI) per capita of US$14,060 and an annual growth in 2015

of 2.1% (WorldBank, 2016a). After several years as an upper middle income country, in July 2013 the World Bank classified Chile a high income country (WorldBank, 2014b). Chile is the most economically unequal of all member countries of the OECD (OECD, 2016), and one of the most unequal countries in Latin America (Tejada, 2016). Given that Chile has been classified as a high-income country for fewer than five years, it is reasonable to assume that expected changes related to healthcare associated with economic development would not necessarily occur immediately. Hence it would be unrealistic to expect that within this time period, prison psychiatry (including: mental health policies, service provision, research) in Chile would have developed sufficiently to resemble that of other high income countries.

Alternative economic models to that used by the World Bank have been used to classify countries. For example, within The Banco Bilbao Vizcaya Argentaria (BBVA) classification, Chile is listed as an emerging and growth leading economy, in contrast to countries with more developed economies such as the United Kingdom (BBVA, 2016). A recent epidemiological study of prison psychiatry describes Chile as an emerging country rather than a high income country (Mundt et al., 2016). The paper states the case for comparing prison psychiatry findings in Chile with those from other countries in the region and other emerging countries. Therefore, for the purpose of the studies undertaken in this thesis, Chile shall henceforth be described as an emerging country, rather than a high-income country (Appendix 2).

Country demographics

National independence from Spanish colonial rule was declared on 18 September 1810, a date celebrated with an annual national holiday in Chile. Although indigenous ethnic groups, such as Mapuche and Aymara, form 10% of the population and retain the use of native Chilean languages, Spanish, the official language, is spoken by 99.5% of the nation, English by 10% and native languages by 1% (CIA, 2013). There is an equal ratio of males to females (CIA, 2013). The majority (89.4%) of the total population of 17.62 million live in urban areas (UNdata, 2014, WorldBank, 2014a).

Political history of Chile: The impact of an authoritarian regime on health care

Under an authoritarian regime led by General Augusto Pinochet between 1973 and 1990 Chile underwent major health reforms which involved greater health privatisation. This led to a dual private-public system of healthcare that provided greater choice but less equity. The Pinochet regime also had a lasting impact on the justice system and human rights, as described in Appendix 2.

Religion in Chile

Religious freedom in Chile is embedded in the legislation and a wide range of religious and non-religious affiliations are represented in the census including several Christian denominations, Judaism, Islam, and atheism. Despite this religious pluralism, Catholicism has a distinct place in the population and is the sole curriculum used for religious teaching in 92% of public schools and 81% of private schools, although approved curricula for other denominations exist (USGovt, 2008). According to official statistics, the majority (83.1%) of Chileans identify with the Christian religion: Roman Catholic (66.7%) and Protestant (16.4%). Religious beliefs of the remaining 16.9% of the population include "other religions" and 10% who do not identify with any religion (CIA, 2013). 94% of indigenous people describe themselves as Catholic or evangelical (USGovt, 2008). The term "evangelical" for purposes of census includes all non-Catholic Christian denominations, excluding the Church of Jesus Christ of Latter-day Saints (Mormons), Seventh-day Adventists and Jehovah's Witnesses (USGovt, 2008).

Even though a high percentage of Chileans report a religious affiliation, few report that religion is of high personal importance. A survey in 2015 found that in response to the 4-point Likert scale question "How important is religion in your life?", 20% of Chileans stated it was not at all important and 27% very important, a striking change from 10% and 39% respectively in 2013 and 10% and 46% respectively in 2007 which suggests the personal importance of religion in Chile is falling (Pew, 2016).

Legislation changes in 1999 gave non-Catholic Christian denominations and non-Christian religions the right, previously held exclusively by the Catholic Church, to have chaplains in public hospitals and prisons. Concerning religious freedom in

Chile, the US Department of State (2008) reported:

> *"There were 35 Catholic chapels, 40 paid Catholic chaplains, 25 volunteer Catholic chaplains, and 1,200 religious or lay volunteers authorized to conduct Catholic religious activities in the prison system. There were approximately 9 paid evangelical Christian chaplain positions at the national level, 90 volunteer chaplains, and more than 1,200 evangelical Christian volunteers representing 82 evangelical denominations conducting religious activities in the prison system."*

The larger evangelical prison chaplaincy workforce compared to the Catholic workforce reflects the rise of evangelicalism in Chile, particularly among the Pentecostal denomination which is the largest of Protestant denominations (Gooren, 2015, Anderson, 2004).

Mental health care in Chile

Compared to other Latin American countries, Chile assigns a low percentage, 2%, of its total health budget to mental health (Calderon and Rojas, 2016). Mental health care is provided mainly through public and private insurance, and the Universal Access Plan guarantees the provision of state treatment for four mental disorders: depression, bipolar affective disorder, schizophrenia and drug/alcohol dependence (Calderon and Rojas, 2016). Although Chile does not yet have dedicated mental health legislation, some of the needs of people with mental disorders are addressed by general health and disability legislation (WHO, 2014a). A National Plan on Mental Health and Psychiatry introduced in 2000 promotes a preventive approach to mental health care and encourages multidisciplinary clinical work to respond appropriately to local need (Pemjean, 2003). More recently, the government has reviewed existing legislation and considered introducing new legislation which would specifically protect the human rights of people with mental disorders (WHO, 2014e).

Since the implementation of the National Plan, which is currently under revision (Calderon and Rojas, 2016), the number of long-stay psychiatric beds has decreased while new community mental health services have been developed and day hospitals and sheltered accommodation have opened (WHO, 2011). Furthermore, in keeping with the Penrose Hypothesis, proposed by Lionel Sharples Penrose, which states that an inverse association exists between the number of psychiatric hospital beds and the

prison population (Penrose, 1939), the number of prisoners increased with the closure of long-stay psychiatric hospitals (Mundt et al., 2015). For every 100,000 of the general population of Chile, there are 4.7 psychiatrists, 5.3 psychologists and 1.6 nurses working in mental health (WHO, 2014a). Specialist secondary and tertiary care mental health services are available for people with more severe and enduring mental disorders, whilst the majority of people with less severe mental disorders can receive attention in primary care (WHO, 2014a). However, most doctors and nurses working in primary care in Chile have not received up-to-date training in mental health (WHO, 2011).

Characteristics of prisons in Chile

There are over 43,000 people detained in 103 prisons and detention centres in Chile, including pre-trial detainees and remand prisoners who form one-third (33.8%) of the total Chilean prison population (ICPR, 2017). The prison population rate is 238 prisoners per 100,000 of the national population and has been falling in the last five years, along with the total prison population. 3,551 females form 8.1% of the total prison population, and foreigners, 3.4%. The occupancy rate of 110.9% gives an indication of overall overcrowding. Fewer than 0.5% of all prisoners in Chile are under the age of 18 years (ICPR, 2017).

Forensic psychiatry and prison mental healthcare in Chile

Forensic psychiatry is a young subspecialty in Chile and is currently undergoing review and development (Téllez et al., 2004). At present, there is no formal specialist training in forensic psychiatry in Chile for doctors who wish to specialise in the area. Inpatient forensic mental health services are found within general psychiatric hospitals and inside prisons. Psychiatrists working within the Medicolegal Service undertake psychiatric assessments on individuals referred from the courts by judges who, on the basis of the psychiatric report on diagnosis, treatment and criminal responsibility, make decisions on sentencing (Denis et al., 2012). A few prisons have a wing dedicated to the psychiatric assessment of remand prisoners, as ordered by the Courts. These specialist forensic psychiatry wings are staffed by prison officers and a mental health team comprising: psychiatrists, psychologists, nurses, social workers and occupational therapists. These teams can also provide limited mental health

service to prisoners detained on other (non-psychiatric) wings.

In prisons without a forensic psychiatry wing, mental health care is provided by non-specialist health professionals such as primary care doctors and nursing staff who offer consultations in the prison health centre. Prisoners whose mental health needs cannot be managed by the primary care team are taken to a penal hospital for review by a psychiatrist. In some prisons a visiting psychiatrist offers consultation, staff supervision and advice on a regular basis.

Marín (2016) attributes the longstanding challenge of undertaking valid scientific research in Chilean prisons to the economic and administrative deficiencies found in some Latin American public services characterised by a lack of professionalism, poor training and weak institutional structure. However, there is now a very small body of Chilean academics who are involved in prison mental health research (Mundt et al., 2013, Baier et al., 2016, Mundt et al., 2016, Mundt et al., 2015).

6.4 Choice of prison

6.4.1 Overview of study prison

The choice of prison in which to undertake the study was made on the recommendation of the Chilean field supervisor who could provide adequate research supervision only at one female prison in the country. Appendix 3 describes the prison history, structure and facilities in more detail.

The study prison comprised ten sections, or wings including a highest security closed section and a section in which prisoners could spend limited time outside of the prison, as well as two religious sections:

Comunidad Católica (Catholic Community) - a section led by a prison chaplain who is a Catholic nun belonging to the Sisters of the Good Shepherd religious order

APAC (Amar al Projimo, Amar al Cristo = To love one's neighbour, to love Christ) – an Evangelical section led by a prison chaplain from the Methodist Pentecostal Church.

The religious sections welcome prisoners of all faiths and no faith, but admitted prisoners are expected to adhere to the religious ethos and regime of the sections. The religious leaders of these two sections determine which prisoners will be admitted to their respective sections through an assessment process. Admission to other sections within the prison is determined by senior prison officers. Prisoners in both religious sections follow a structured day of activities which includes compulsory morning prayers, self-care, meals, religious instruction, education and psychosocial interventions. Religious wings are not uncommon in Chile.

6.4.2 Health care in study prison

There is a prison health centre which offers medical, nursing, dental, kinesthesiology, and obstetrics and gynaecology services. The team leader manages paramedics who provided 24-hour primary and emergency care, seven days a week. Some members of staff are involved in the assessment and management of prisoners with mental disorders. Although the prison employs psychologists who write forensic reports and provide offence-focused treatment, they work outside of the healthcare centre and its management structure. There is no visiting psychiatrist and no arrangements for staff to receive direct supervision from a psychiatrist. A prison officer is assigned to the prison health centre each day and has responsibility for providing security to staff and patients in the centre. Health professionals do not have access to security alarms. The health centre is not active in research or clinical audit.

6.4.3 Religious and spiritual services in study prison

The prison meets the spiritual needs of prisoners primarily through the services of chaplains from the two religious sections who visit women individually on non-religious sections and hold religious meetings such as Bible studies or Mass in the prison Catholic chapel, the large recreation hall or smaller non-religious meeting rooms. This chaplaincy service is available to all prisoners irrespective of religious affiliation. In addition, the prison authorises visits from external chaplains of other religious denominations and spiritual organisations including Jehovah’s Witnesses and Mormons. At least once a month religious services are held by chaplains specifically for staff working in the prison, including healthcare staff.

6.5 Ethics and permission

Ethical approval was sought from the respective research ethics committees within the University of Edinburgh and the University of Chile. Permission to enter the prison and conduct the research was obtained from the Ministry of Justice. I conformed to international guidance on conducting ethical research relevant to the study (RCPsych, 2000, WMA, 1964) .

During the research process, I also considered and addressed the following issues: participant involvement in research; capacity, consent, risk of coercion and the potential power imbalance during researcher-participant interactions; public accountability and cultural sensitivity in research. In addition, prior to overseas travel, an environmental, health and safety risk assessment was undertaken and a risk management plan compiled.

6.6 Issues of capacity and consent

Reasonable attempts were made to help all participants achieve the capacity necessary to decide whether to give their consent. All participants were informed of the nature of the research, the possible risks and potential benefits they might encounter through participating in the study (RCPsych, 2000, WMA, 1964). They were made aware that their consent was voluntary and that they retained the right to refuse to participate in the study and the right to withdraw consent at any stage of the study without adverse consequence (GMC, 2010, WMA, 1964). Participants were advised of the limits of confidentiality. Particular attention was given to ensuring that prisoner participants were aware that their decision to consent would influence neither the health care they are offered nor criminal justice system conditions to which they are subjected (GMC, 2010, RCPsych, 2000).

6.7 Issues of language and translation

Language training was undertaken in preparation for fieldwork (Appendix 4). Unless already available in a validated Spanish language format, all forms and instruments used were translated into Spanish and checked by Latin American colleagues. All

Spanish language documentation was sent to the field supervisor (R.A.)[2] and was also reviewed by the University of Chile ethics committee.

6.8 Methods for quantitative data collection

A two-phase pooled cross-sectional survey was undertaken of adult female sentenced prisoners detained in the women's prison in Chile as follows. The study involved the collection and pooling of data obtained from two study populations randomly sampled at two different time points during two field visits in 2014 and 2016. The first phase of data collection took place during a four-week period between August and September 2014; the second phase was completed over five weeks in March and April 2016. The second phase of quantitative data collection also formed part of the qualitative recruitment phase of the qualitative study in 2016.

6.8.1 Population

Study population

The target population was all women detained in Chilean prisons. However, the study population comprised all women detained in the study prison, excluding those who resided in high-risk areas of the prison due to the potential risks to the researcher which could not be adequately managed. Prisoners deemed to be at the highest risk of violence were also excluded from the largest cross-sectional prevalence study of psychiatric disorders in Chile (Mundt et al., 2013).

Sampling

The sample size was calculated based on the primary outcome variable to achieve the primary objective of estimating mental wellbeing using the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS). Prior to conducting the study, the WEMWBS was successfully adapted and validated for use in Chile in collaboration with a team from the University of Chile (Carvajal et al., 2015). To determine the minimum number of participants required, a power calculation was undertaken using the following formula:

$$[((Z_{1-\alpha})^2 (SD)^2)/d^2]$$

[2] Prof. Rubén Alvarado is a professor of psychiatry at the University of Chile.

(where ($Z_{1-\alpha}$) = the standard normal variate = 1.96; SD = the standard deviation for women obtained from the validation study = 9.4; d = the absolute error or precision chosen for the present study = 3.06, using √SD as a proxy for the precision).

Using the results of the power calculation to accurately estimate the mental wellbeing of the study population, and anticipating a non-participation rate of at least 60%, 120 prisoners from the list of the study population were randomly sampled. Of these, 68 were recruited to the study in 2014. A list of women detained in the prison in 2016 was obtained and a similar approach of random selection to that described above was taken. Through this process an additional 26 prisoners were recruited in 2016. Participants recruited and surveyed in 2014 are referred to as Group 1; those recruited in 2016 are referred to as Group 2.

6.8.2 Instruments

A paper survey questionnaire was designed to collect information about the demographics, background, mental health and religion and spirituality of Group 1 participants (Appendix 5). An abridged version was adapted for use with Group 2 participants (Appendix 6). Table 6-1 shows the content of the questionnaire data obtained from Groups 1 and 2.

Table 6-1: Survey data obtained from participants in Group 1 and Group 2

Questionnaire items	Group 1	Group 2
Demographics		
Age	✓	✓
Prison wing	✓	✓
Marital status	✓	✓
Children and their ages	✓	
Education level	✓	✓
Employment	✓	
Nationality	✓	
Criminological/prison factors		
No. of people in cell	✓	
Length of time in prison to date	✓	
Crime/reason for imprisonment	✓	✓
Health and lifestyle factors		
Pre-incarceration smoking	✓	
Current smoking	✓	
Alcohol use	✓	
Illicit drug use	✓	
Current physical disorder and medication		
Mental health		
Parental history of depression	✓	
Current mental disorder and medication	✓	
Previous diagnosis of depression (self-report)		✓
Current diagnosis of depression (self-report)	✓	✓
WEMWBS score	✓	✓
MINI diagnosis depression		✓
Religiosity and Spirituality		
Personal importance of RS	✓	✓
Previous frequency of RS attendance	✓	✓
Current frequency of RS attendance		✓
Religious affiliation	✓	✓
RS conceptualisation of health - core (1 items)	✓	✓
RS conceptualisation of health - broad (3 item)	✓	
Belief - RS locus of control and responsibility (1 item)	✓	
Belief in RS benefits (4 items)	✓	
Belief in importance of individual to God (1 item)	✓	
RS private practice (bible reading)	✓	
Frequency of daily spiritual experiences	✓	

Religiosity and spirituality

Using multiple sources, an instrument was developed to measure religious and spiritual dimensions. The primary RS dimensions were measured using three

questions which have been repeatedly used in studies (Miller et al., 2014, Reyes-Ortiz et al., 2007):

- Personal importance of RS
- Religious involvement – (public) frequency of attendance at religious services
- Religious affiliation

RS influences on conceptualisation of health and on locus of control and health responsibility were assessed through statements based on findings from previous studies (Jurkowski et al., 2010, Braam et al., 2010, Bonelli and Koenig, 2013) :

- Importance of faith in God for health
- Conceptualisation of health in terms of physical, mental and spiritual aspects
- God responsible for health v. personal responsibility

A statement measuring the strength of belief of the individual's importance to God ("I am very important to God") was included to represent the opposite end of the relational aspect of RS. In other words, not only can RS be important to the individual, but also the individual can believe that they are important to RS, or God, in the case of Christianity.

Other RS beliefs and practices were assessed using statements usually associated with organised religion such as Christianity, the most prevalent identified religion in Chile:

- Belief in benefits of reading about or praying to God, believing God's promises and having faith in God (found in most major religions)
- Bible reading – private religious involvement (almost exclusive to Christian religion)

The frequency of spiritual experiences were assessed using two statements taken with written permission from the Daily Spiritual Experience Scale (Underwood, 2006):

- Feeling awe
- Being thankful

Table 6-2 shows the sources of items included in the RS section of the survey, by group.

Table 6-2: Sources of items included in RS section of the survey

Item	Dimension	Source of item	Adaptation (other than language)	Group 1	Group 2
How important to you is religion or spirituality?	Personal importance of RS	Previous study in the field (Miller et al., 2012) (Koenig et al., 2014)	None	✓	✓
In the year before imprisonment, how often, if at all, did you attend church or other religious or spiritual services?	RS involvement – public - past frequency of attendance	Previous study in the field (Miller et al., 2012)	Added "in the year before imprisonment" and so changed tense from present to past; deleted "synagogue" as a stated option	✓	✓
How often, if at all, do you attend church or other religious or spiritual services?	RS involvement – public - current frequency of attendance	Previous study in the field (Miller et al., 2012)	Deleted "synagogue" as a stated option		✓
How would you describe your current religious beliefs? Is there a particular denomination or religious organisation that you are part of?	Religious affiliation – current religious denomination	Previous study in the field (Miller et al., 2012) (Reyes-Ortiz et al., 2007)	Reduced number of available responses from ten to seven (in Group 1) and then increased to eleven (in Group 2), retaining the option of specifying "other"	✓	✓
I believe there is a connection between my physical health and my mental health.	RS belief – conceptualisation of health	Previous study with Latina women (Jurkowski et al., 2010)	Findings phrased in appropriate format for Likert statement	✓	

I believe there is a connection between my mental health and my spirituality.	RS belief – conceptualisation of health	Previous study with Latina women (Jurkowski et al., 2010); related to main finding of systematic review (Bonelli and Koenig, 2013)	Findings phrased in appropriate format for Likert statement	✓	✓
I believe there is a connection between my spirituality and my physical health.	RS belief – conceptualisation of health	Previous study with Latina women (Jurkowski et al., 2010)	Findings phrased in appropriate format for Likert statement	✓	
Faith in God is important for my general health.	RS belief – conceptualisation of health	Previous study with Latina women (Jurkowski et al., 2010)	Findings phrased in appropriate format for Likert statement	✓	
I am important to God.	RS belief	New item	Not applicable	✓	
God is in control and so I do <u>not</u> have to take responsibility for my health.	RS belief/Religious coping style: Responsibility for health – God v. Personal	Previous study with Latina women (Jurkowski et al., 2010)	Findings phrased in appropriate format for Likert statement	✓	✓
Faith in God makes it easier to deal with hardship and my problems	Belief in RS benefits/Religious coping style	Previous study with Latina women (Jurkowski et al., 2010)	Findings phrased in appropriate format for Likert statement	✓	
Praying or talking to God helps me.	Belief in RS benefits	Previous study with Latina women (Jurkowski et al., 2010)	Findings phrased in appropriate format for Likert statement	✓	
Reading about God gives me hope.	Belief in RS benefits	Previous study with Latina women (Jurkowski et al., 2010)	Findings phrased in appropriate format for Likert statement	✓	

Believing the promises in the bible gives me hope.	Belief in RS benefits/Spiritual coping	Previous study with Latina women (Jurkowski et al., 2010)	Findings phrased in appropriate format for Likert statement	✓	
I read the bible every day.	RS practice - private	Previous study in the field (Koenig et al., 2014)	Alteration of Likert scale from a question about frequency of private activities such as Bible reading to a statement about frequent Bible reading with response options of level of agreement	✓	
I am spiritually touched by the beauty of creation.	Daily spiritual experience - awe	Item extracted with permission from the Daily Spiritual Experiences Scale (Underwood and Teresi, 2002)	None	✓	
I feel thankful for my blessings.	Daily spiritual experience - gratitude	Item extracted with permission from the Daily Spiritual Experiences Scale (Underwood and Teresi, 2002)	None	✓	

The Warwick-Edinburgh Mental Wellbeing Scale

Mental wellbeing was measured using the version of the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), originally developed by Tennant et al. (2007), that had been adapted and validated for use with a Chilean population (Carvajal et al., 2015). The Chilean WEMWBS has good test-retest reliability ($r = 0.556$, $p<0.001$) and high internal consistency (alpha Cronbach = 0.875) and correlates well with comparable instruments such as the GHQ-12 (Carvajal et al., 2015). It is a 14-item positively phrased scale to measure mental wellbeing (Appendix 7). For each statement, one of five responses ranging from "never" to "always" can be selected to reflect how the respondent has generally felt during the previous two weeks. A total WEMWBS score can be obtained from 14 representing the lowest mental wellbeing and 70 reflecting the highest mental wellbeing.

Depression - self-report

Group 1 participants were asked whether they had received a current diagnosis of a mental disorder from a health professional and, if so, what medication they were currently taking. Group 2 participants were asked two similar questions about a past diagnosis and a current diagnosis of depression specifically.

Depression - Mini International Neuropsychiatric Interview

Depression was further assessed in Group 2 participants using a section of the DSM-IV Spanish-language version of Mini International Neuropsychiatric Interview (MINI) (Appendix 8). It is a validated instrument with good inter-rater (kappa = 0.88) and test-retest (kappa = 0.83 for depression) reliability to be administered by non-clinicians to determine the presence of a current major depressive episode according to DSM diagnostic criteria (Lecrubier et al., 1997). The MINI was first administered to a prison population in the USA in 2001 (Black et al., 2004) and has since been used with forensic psychiatry research in other countries including Brazil (Ponde et al., 2011) and Chile (Baier et al., 2016).

Pilot

The survey questionnaire was piloted with a convenience sample of British adults and amended prior to Spanish translation.

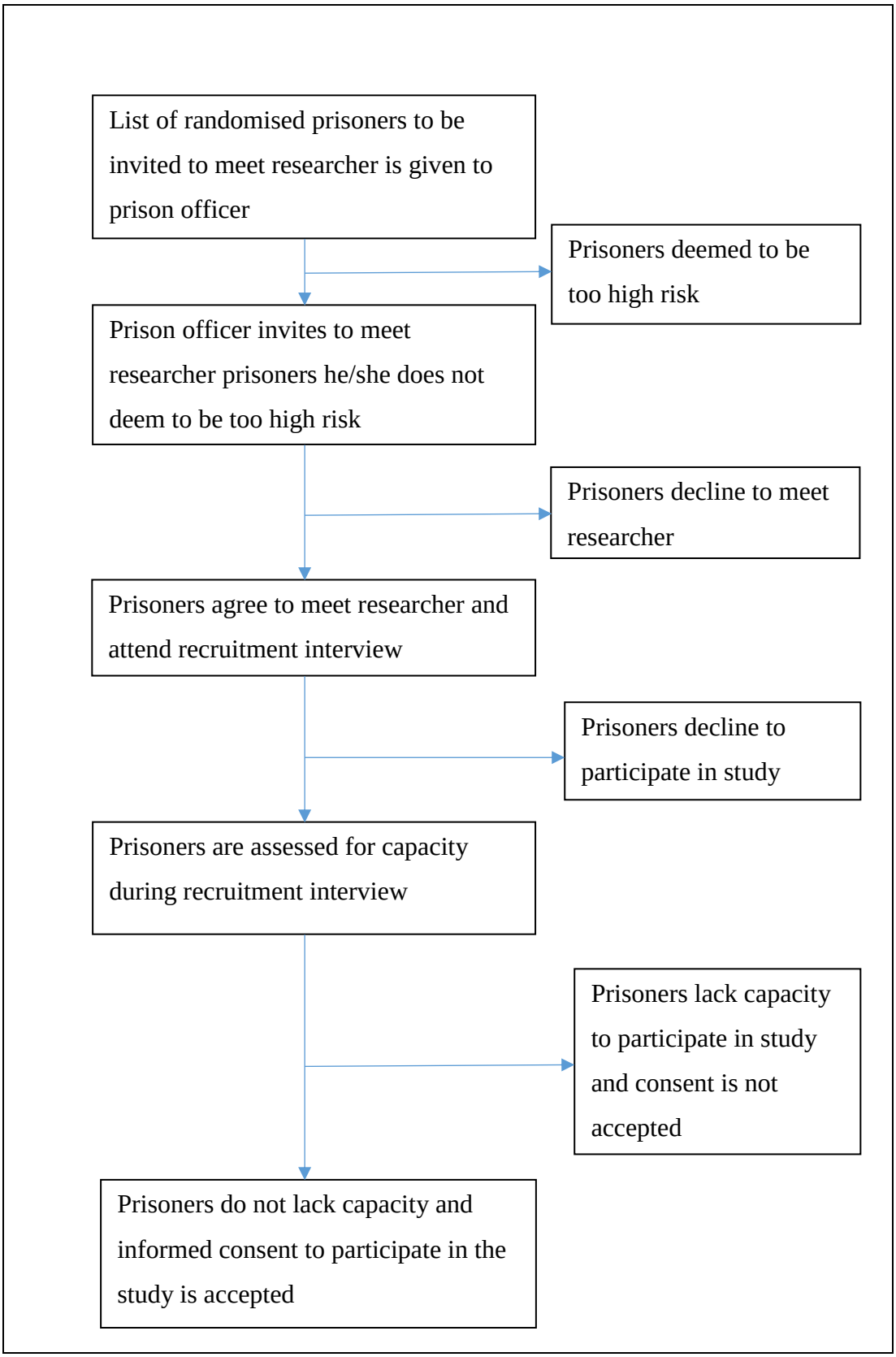
6.8.3 Recruitment and interviews

Recruitment of consenting participants

A prison officer who had been briefed about the study invited participants to attend a recruitment interview. Prisoners deemed by staff to pose too high a risk of violence in the research interview setting were excluded. Most recruitment interviews were held in a private room in the prison health centre; a few were held on the prison wings (sections).

Prior to entering the interview room, participants were given time to read the study participant information sheet (Appendix 9). Prison officers were not present during interviews which took place in Spanish. Reading assistance was offered as required. Each participant was then given the opportunity to ask further questions. Only participants who had capacity to give consent and who wished to do so were asked to confirm this decision by completing a consent form (Appendix 10). The recruitment of Group 2 participants to the cross-sectional study overlapped with the recruitment process to the qualitative study and so they were given an adapted study information sheets and were required to complete an adapted consent form (described below). They were given the opportunity to participate only in the cross-sectional survey or also in the qualitative study. This is discussed in more detail later. Figure 6-3 shows the pathway of participants from the point of randomisation.

Figure 6-3: Participant recruitment pathway for the quantitative study



Conducting interviews

Survey data collection took place immediately after written consent had been given by the participant unless an alternative time was rearranged at the request of the participant. Each interview, including the consent discussion, lasted up to 45 minutes. Most of the survey data sought on the paper questionnaire were obtained from the participants. Demographic and depression data were obtained by direct questioning by the interviewer. Unless assistance was required from the interviewer, RS and mental wellbeing data were completed by the participants. While conducting interviews, an ethnicity question was omitted after it became apparent that participants were not able to differentiate between nationality and ethnicity. The prison status question was considered redundant in a prison for sentenced prisoners only and so it was omitted. Table 6-3 shows the sources of data collected.

Table 6-3: Sources of data obtained for the cross-sectional survey

Survey section	**Source of information**	**Completed by**
Prison section	Prison records	Interviewer
Demographics (excluding prison section)	Participant	Interviewer
Religiosity and spirituality	Participant	Participant (+/- interviewer assistance)
Mental wellbeing – WEMWBS	Participant	Participant (+/- interviewer assistance)
Depression – self-report	Participant	Interviewer
Depression - MINI	Participant	Interviewer

6.9 Methods for quantitative data management and analysis

6.9.1 Data management

Creating a database

Questionnaire data were entered manually into a single database within a statistical software package (StataCorp, 2013). All entered data were checked against the completed questionnaires to identify any typographical errors made at the point of

data entry which could then be corrected. Each participant was identified using a numerical code. Variable names were created to distinguish between data arising from Groups 1 and 2. Table 6-4 illustrates the approach taken to creating the database.

Table 6-4: Illustration of database created for the quantitative study

Participant	group1	group2	totwemwbs	totwemwbs2
1	Yes	No	50	.
2	Yes	No	34	.
3	Yes	No	47	.
4	No	Yes	.	34
5	No	Yes	.	65

Organisation of data

The data were organised prior to analysis to streamline the data, maximise comparability of results with other studies and to use the data efficiently. Table 6-5 illustrates how a two-stage process was followed during which multiple categories of religious affiliation data collected were organised into fewer categories.

Table 6-5: Organisation of the religious affiliation variable

Religious affiliation categories in survey questionnaire		Data organisation of religious affiliation categories – Stage 1	Data organisation of religious affiliation categories – Stage 2
Group 1	**Group 2**		
Catholic	Catholic	Catholic	Christian
Protestant	Evangelical/ Protestant	Evangelical/Protestant	
Other	Orthodox	Other	
Other	Mormon	Other	Other
Other	Jehovah's Witness		
Jewish	Jewish		
Muslim	Muslim		
Agnostic	Agnostic		
Atheist	Atheist		
Other	Indigenous spirituality		
Other	None		
Other	Other		

To use data efficiently, data from four ordinal RS variables on a five-point Likert scale were combined to obtain a composite RS score of the reported benefits of RS beliefs. For every subcomponent of the composite RS score, each of the five possible responses was assigned a numerical value in descending order to indicate decreasing RS. The maximum RS composite score possible was 20 which reflected the strongest belief in the benefits of RS. Table 6-6 shows the how the composite RS score of belief in RS benefits was obtained from four RS subcomponents.

Table 6-6: Values assigned to responses for the four RS subcomponents which formed the composite RS score of belief in RS benefits

RS variable	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Minimum score for composite RS score of belief in RS benefits	Maximum score for composite RS score of belief in RS benefits
Faith in God makes it easier to deal with hardship and my problems	5	4	3	2	1	1	5
Praying or talking to God helps me	5	4	3	2	1	1	5
Reading about God gives me hope.	5	4	3	2	1	1	5
Believing the promises in the bible gives me hope.	5	4	3	2	1	1	5
RS composite score of beliefs in RS benefits	5-20	4-16	3-12	2-8	1-4	4	20

Missing values

Complete case analysis was the method of choice to deal with data assumed to be missing completely at random.

6.9.2 Data analysis

Principles of statistical analyses

Basic descriptive analyses using Stata Statistical Software (2013) were conducted for all variables and additional statistical analyses were undertaken on variables of interest. Binary, categorical data and ordinal data were analysed using non-parametric tests. The distribution of all continuous data was first tested for normality both visually using histograms and statistically using measures of skewness and the Shapiro-Wilk test for normality (Shapiro and Wilk, 1965). Non-normally distributed data were analysed using non-parametric tests. Table 6-7 shows the types of data collected and appropriate choices of statistical tests.

Table 6-7: Classification of data to determine choice of statistical test

	Data type				
	Nominal		**Ordinal**	**Interval**	**Ratio**
	Binary	**Categorical**			
Examples of variable	Depression (MINI)	Religious affiliation	Frequency of RS attendance	WEMWBS	Age
	Depression (Self-report)	Crime	Frequency of daily spiritual experience of gratitude	Composite RS score of belief in RS benefits	---
	Family history of depression	Marital status	Belief in a connection between mental health and RS	---	---
Statistical tests	Non-parametric	Non-parametric	Non-parametric	Non-parametric	Non-parametric

Combining data from Groups 1 and 2

To determine whether differences between the data obtained from the two random samples were statistically significant, appropriate statistical tests were applied to the key demographic, RS and mental health variables. Having demonstrated that there were no significant differences in primary outcomes between Groups 1 and 2, subsequent analyses were conducted using combined data from both groups, where these data were available. Fisher's exact test was used when the assumptions for the chi-squared test were not met. Table 6-8 shows the statistical tests for each key variable that were used to compare the two participant groups.

Table 6-8: Statistical tests used for comparing Group 1 and Group 2 by key variables

Variable compared	**Statistical tests**
Median age	Wilcoxon rank-sum
Median WEMWBS score	Wilcoxon rank-sum
Religion	Chi-squared test
Personal importance of RS	Chi-squared test
Frequency of attendance at RS services in the year prior to imprisonment	Chi-squared test
Self-reported current depression diagnosed by a professional	Chi-squared test

Statistical analyses to test the hypothesis

After describing the demographic, criminological, health and lifestyle profiles of the participants, tests for associations were carried out between the mental wellbeing and depression, and the three main RS outcomes and the composite RS score for belief in RS benefits, as shown in Table 6-9. Effect sizes, confidence intervals and significance levels were reported accordingly (Tomczak and Tomczak, 2014).

Table 6-9: Statistical tests for measuring associations between key RS and mental health variables

Main outcome variable	Total WEMWBS score	Self-reported current depression
Personal importance of RS	Kruskal-Wallis	Logistic regression
Frequency of RS attendance	Kruskal-Wallis	Logistic regression
Religious affiliation	Kruskal-Wallis	Logistic regression
Composite RS score for belief in RS benefits	Spearman's correlation	Logistic regression

6.10 Methods for linking the quantitative and qualitative studies

Linkage to qualitative study

The findings of the quantitative study were examined to identify key areas which could be explored further in the qualitative study, namely:

(i) Results that diverged from existing literature in the field

(ii) Results that appeared to conflict with each other

(iii) Results that required further explanation

In this way, the quantitative study results informed the development of the qualitative study.

6.11 Methods for qualitative data generation

The qualitative study generated data from female prisoners through focus groups. Data were also sought from prison chaplains and prison health care professionals who were likely to have views on the mental health and RS of the female prisoners based on professional experience of working in these areas in the prison. Recruitment and data collection took place in Spanish between October 2015 and May 2016. Handwritten field notes were kept during this period.

Individual interviews, rather than focus groups, were chosen for generating data from the health professionals. First, due to the shortage of healthcare staff in the prison, it would be difficult and possibly unethical to organise a focus group which would take

them away from their primary duties relating to patient care. Second, the paramedics followed a shift pattern of work and were not all available in the prison at the same time. Third, two general practitioners visited the prison on different days of the week and had medical responsibilities outside of the prison on the other days. Similarly work commitments prevented all chaplains being readily available to attend a focus group. For these reasons, focus groups were not used with the health professionals and chaplains but were used with prisoners.

6.11.1 Population and sampling

Prisoners

The study population was identical to that of the cross-sectional survey: all women detained in the study prison, excluding those in high-risk areas. All prisoners who had participated in the cross-sectional survey were eligible to participate. Guided by resources available to process the data and the anticipation of non-participation, the aim was initially to hold four focus groups, each comprising a maximum of eight prisoners, based on risk assessment and the focus group composition data in previous studies (Douglas et al., 2009). The final sample population comprised all consenting prisoners who attended and participated in a focus group.

Chaplains

The chaplains study population was defined as all individuals who were authorised to enter the prison with the primary intention of providing religious or spiritual input to the prisoners. Initial enquiry suggested that the number of individuals would not exceed 10. The aim was to sample all prison chaplains. The names of Catholic and Evangelical chaplains were obtained by contacting the respective religious prison sections. Non-Catholic and non-Evangelical chaplains were identified serendipitously. All chaplains identified were asked when approached if they knew of any other prison chaplains to use a supplementary snowballing method of sampling.

Health professionals

The health professionals study population comprised all health professionals providing mental health care as part of their role to prisoners in the prison health

centre, regardless of profession and work pattern. The prison health centre manager provided the names of eligible health professionals. The aim was to sample the full study population, thus reaching saturation of data from the study population.

6.11.2 Instruments

Background information

Background information on demographics, RS and mental health were obtained from prisoner participants using data collection form administered to Group 2 in the cross-sectional survey (Appendix 6), the WEMWBS (Appendix 7) and the MINI (Appendix 8).

Information on demographics, religion, prison experience and mental health training and experience was gathered from chaplain participants using a data collection from (Appendix 11). The form was adapted for use with health professional participants (Appendix 12).

Focus group and interview question guides

A topic guide was designed for use in the prisoner focus groups (Appendix 13). Similar topic guides were developed for the in-depth interviews with chaplains (Appendix 14) and health professionals (Appendix 15). Guides covered the following areas:

(i) beliefs about the causes of mental illness, specifically depression
(ii) factors which affect the mental health of female prisoners
(iii) understandings of "spirituality", a term which the thesis has already stated lacks definitional consensus in the existing literature
(iv) the connection, if any, between mental health and RS
(v) responses to preliminary findings from the cross-sectional survey

The guides were ordered intentionally to improve the participant experience of the interview or focus group and to create a logical flow of the interview conversation or focus group discussion. For example, non-threatening introductory questions were included to place participants at ease and to gently introduce the main themes, while concluding questions allowed participants to suggest ways in which they believed the

mental health of female prisoners might be improved and to share their final thoughts on the topic of RS and mental health. Logically, participants were first asked to define the main topics before being asked to discuss them further. The order of the guides was also strategically arranged to improve the quality of data generation. For example, chaplains were asked about their beliefs about associations between RS and mental health in female prisoners before the views of prisoners from the cross-sectional survey were disclosed.

Table 6-10 shows how the guides addressed pre-determined themes, whilst also allowing for new themes to arise from prisoners, chaplains and health professionals.

Table 6-10: Main topics of focus group and interview guides

Topic	**Prisoner**	**Chaplain**	**Health professional**
Job description/role	-	✓	✓
Understanding of RS	✓	✓	✓
Understanding of mental health	✓	✓	✓
RS services offered in prison	-	✓	-
RS services used in prison	✓	-	-
Mental health services offered in prison	-	-	✓
Mental health services used in prison	✓	-	-
Beliefs about causes of mental illness/depression	✓	✓	✓
Management of/response to depression	-	✓	✓
Associations between RS and mental health	-	✓	✓
Interpretation of results from systematic review and existing literature on depression in female prisoners	✓	✓	✓
Interpretations of preliminary RS and mental health results from the quantitative study	X	X	X
Responses to a RS and depression scenario	X	X	X
Ideas for improving prison mental health	X	X	X
Additional comments on RS/mental health	X	X	X

Several open-ended questions and prompts were included in the guides, to generate answers which provided detailed explanations, the rationale for beliefs and behaviour

and greater understanding of the participants' perspectives. In addition, the focus group questions and prompts were designed to stimulate discussion between focus group participants and elicit any divergent views that existed in the group.

Development of stimulus material

The focus group and interview topic guides included stimulus material in the form of a culturally appropriate vignette to stimulate discussion and to validate information obtained elsewhere. The vignette described a hypothetical female who develops features of depression including hopelessness, becomes less involved in RS activities and is living in the context of the study prison where several women sleep in the same room. To ensure the stimulus material was realistic and culturally appropriate and that participants could identify with the content, the vignette character was based on the common demographic (age, number of children), RS (religious affiliation, RS involvement) and mental health (depression) profiles of the prisoners in Group 1 of the cross-sectional survey.

The purpose of including stimulus material based on a typical scenario was to help participants identify with and position themselves in the scenario and then to respond accordingly with personal and specific, rather than general and vague, answers. The vignette was designed to determine the following:

- How do participants initially respond to the scenario?
- Do participants interpret the root problem of depression as: spiritual, mental health or other?
- Do participants recognise the features of depression?
- Are participants concerned about RS issues?
- Do participants believe RS and mental health are connected or unconnected, and if so, why, how and to what degree?
- Do participants believe RS influences mental health, and if so, how?
- Do participants believe mental health influences RS, and if so, how?
- What attitudes do participants hold towards psychotropic medication and are these influenced by RS?

A biblical parable was appended to the scenario in the topic guides for prisoners and chaplains. This additional stimulus material was chosen to observe how participants would engage with a religious story in the context of the depressive symptoms of the character in the vignette. Parables are stories about everyday life that have a deeper meaning or a lesson intended for the hearers or readers. The parable of the Lost Son (Luke 15:11-21) was used:

> *"And He said, "A man had two sons. "The younger of them said to his father, 'Father, give me the share of the estate that falls to me.' So, he divided his wealth between them. "And not many days later, the younger son gathered everything together and went on a journey into a distant country, and there he squandered his estate with loose living. "Now when he had spent everything, a severe famine occurred in that country, and he began to be impoverished. "So, he went and hired himself out to one of the citizens of that country, and he sent him into his fields to feed swine. "And he would have gladly filled his stomach with the pods that the swine were eating, and no one was giving anything to him. "But when he came to his senses, he said, 'How many of my father's hired men have more than enough bread, but I am dying here with hunger! 'I will get up and go to my father, and will say to him, "Father, I have sinned against heaven, and in your sight; I am no longer worthy to be called your son; make me as one of your hired men."' "So, he got up and came to his father. But while he was still a long way off, his father saw him and felt compassion for him, and ran and embraced him and kissed him. "And the son said to him, 'Father, I have sinned against heaven and in your sight; I am no longer worthy to be called your son.'"* (Luke 15:11-21, New International Version, Bible)

This parable was chosen for three reasons: 1) It is found in the Bible, the religious book to which the prisoners in Chile were most likely to be exposed in the prison setting, 2) It was likely to be well-known by chaplains of all faiths or none, 3) It contains themes to which the prisoners might relate: misery, poor choices, loss, guilt, forgiveness, and family.

Piloting instruments

The chaplain background information survey and interview question guide were piloted in English with non-prison chaplains from a range of religious faiths in Edinburgh. The equivalent survey and question guide for health professionals were not piloted because they were very similar to those developed for the chaplains.

The background information survey for prisoners was piloted in English with female medical students from the University of Edinburgh. The focus group question guide was first piloted in English with postgraduate students in the UK and then in Spanish with undergraduates in Chile.

Recording devices

Two audio recording devices were used during the interviews and focus groups. The main recording device was a Philips Voice Tracer digital recorder; the backup device was an Echo Livescribe digital pen which was synchronized to the digital writing paper used for making notes during interviews and focus groups. Recording devices were tested prior to each interview and focus group before participants entered the room.

6.11.3 Recruitment and focus groups with prisoners

Inviting participants

Participants who wished to participate in the focus groups were identified from two sources: (1) Group 1 prisoners who had participated in the cross-sectional survey in 2014 who were still detained in the prison in 2016 and (2) Group 2 prisoners who had participated in the cross-sectional survey in 2016.

The first group of prisoners were invited by a prison officer to attend a recruitment interview where they were given the opportunity to read a participant study information sheet (Appendix 16). Participants were given the opportunity to ask questions. The same procedure for assessing capacity and obtaining informed consent described in the cross-sectional study was followed. Attention was drawn to the limits of confidentiality in a focus group setting, anonymity, the duty of the researcher to disclose health concerns to the prison general practitioner and the management of recorded data. After obtaining written consent (Appendix 17), participants completed the survey of background information described above.

The second group of prisoners had already completed the same survey of background information as part of the cross-sectional study. Capacity and consent issues had

been addressed and these participants had indicated on the consent form that they wished to participate in the focus group as well as the cross-sectional study.

The recruitment interview of consent and administering the background survey lasted up to 40 minutes in total. Participants were given the opportunity to continue the recruitment interview at a later date if they needed more time to decide whether they wished to consent to participating in the study. After giving consent, each participant was advised that she would be contacted in the future to attend a focus group.

Focus group composition

The size and number of focus groups were revised after conducting the focus group pilot and obtaining the final list of the prisoners who had consented to participate in the focus group. The prison section of each participant was considered because, in keeping with prison regulations, prisoners from certain sections were prohibited from interacting with those from other sections. A non-probabilistic approach was used to allocate the final list of participants to the focus groups. To create a safe environment for participants to speak freely and honestly about a difficult health topic, Women diagnosed with depression using the MINI were placed in the same focus group to create a safe environment for then to discuss a potentially difficult health topic freely and honestly with others who were likely to understand the lived experience of depression and its associated stigma (Barbour, 2007, 59).

Conducting focus groups

The focus groups were moderated by two facilitators, A.A.[3] and M.M.H.[4] A maximum of one focus group was planned per day, and schedules did not permit more than two focus groups in a week. Focus groups were held in a large classroom located in the prison school. The co-facilitators were responsible for preparing the classroom for the focus group. Desks and chairs were arranged in a circle. An

[3] Anne Aboaja (AA) is the thesis author.
[4] Mónica Manriquez Hizaut (MMH), MPH, is a clinical academic at the University of Chile with a research interest in female prisoners.

additional desk was placed in the centre of the circle upon which the primary recording device and tissues were placed.

Half an hour before each focus group was due to commence, a prison officer was arranged for participants to be contacted and attend the prison school. Participants who were unavailable to attend at the agreed time were invited to attend on a different day. The names of participants who refused to attend, did not respond or who were unavailable on all the available dates were removed from the study sample list.

As participants arrived at the classroom, they were invited to take a seat of their preference and were asked to sign again and date the consent form they had completed to enter the qualitative study, to indicate they were still willing to participate in the recorded focus group. Each signature was countersigned and dated by both focus group co-facilitators.

When all consent forms had been signed by the participants who had arrived, the recording devices were switched on. At the start of each focus group participants were reminded of the confidentiality rules of content discussed inside the room and of the general focus group rules. An ice-breaker unrelated to the topic was used to check that each person could speak in a voice loud enough to be recorded and so that all group members could learn the names of those present and feel comfortable speaking in a group setting.

The co-facilitators used the focus group topic guide flexibly and aimed to maintain an open and non-directed approach, whilst also being aware of the study objectives. Closed questions were used to clarify responses and elicit detail. Participants were encouraged to interact with each other rather than responding only to the facilitators. A.A. was responsible for observing the discussion and the dynamics of the group, starting and ending the recording, contributing to the discussion with prompts and additional questions, and making handwritten notes. M.M.H. was responsible for introducing the topics for discussion, responding to comments made by the participants and facilitating the development of discussion using prompts. To ensure

that it was possible to distinguish between participants in focus groups, throughout the focus group, A.A. wrote down the first few words of comments made by each focus group member and noted the speaker. Emerging themes from data collected earlier through focus group or in-depth interview were also introduced and discussed.

A short break was taken during which the recording was paused and participants consumed the refreshments provided. The focus group lasted up to 90 minutes including the break. At the end of the focus group, the recording device was switched off and participants were advised of support available in the prison if they felt distressed or had questions of a medical or spiritual nature. Participants then returned to their respective prison sections. Time was spent immediately after the focus group to allow both facilitators to reflect on the focus group experience, share initial observations of dynamics and themes, and to discuss how the next focus group might be improved.

6.11.4 Recruitment and interviews with chaplains and health professionals

Recruitment and consent

Chaplains and health professionals were invited to a recruitment interview and given a profession-specific participant information sheet (Appendix 18 and Appendix 19). Participants who gave informed consent (Appendix 20 and Appendix 21) completed the background information sheets described above. The recruitment interview lasted up to 20 minutes for each participant. Recruitment ended once all eligible and available participants had been invited to participate in the study.

Conducting in-depth interviews

After giving consent, participants were given the option of completing the background survey and in-depth interview together or separately, and immediately or at a more convenient time. Each in-depth interview took place in a private clinic room in the prison health centre. Interviews were conducted in Spanish using the interview topic guides and were audio-recorded. The background survey data were completed in ten minutes. Light refreshments were provided for consumption throughout the in-depth interview which lasted approximately 60 minutes, depending

on the length of time the participant had available. An optional short break was offered to participants approximately half-way through the interview.

6.12 Data analysis methods for qualitative study

6.12.1 Data management

Data storage

Background survey data were added to a statistical database (StataCorp, 2013). Audio recordings were stored as audio files.

Transcription

All recorded data were fully transcribed by a native Chilean teacher, Paula Goldberg, who had agreed to the confidentiality, data protection and objectivity requirements of the study. Transcripts were anonymised in accordance within the limits of confidentiality of the study. The first draft of each Spanish transcript was then cross-checked against the original audio recording and handwritten notes made during the interview or focus group. Amendments were made accordingly and the transcript was sent to the transcriber with comments and questions to resolve disagreements and uncertainty. Where it was not possible to reach a consensus, the transcriber took the final decision only on grammatical and dialectal matters. An iterative revision process was followed to achieve a final version of each transcript.

Use of computer software in data management and analysis

As an alternative to the manual approach, computer aided qualitative data analysis software (CAQDAS) has been used in qualitative health research to support data management and thematic analysis (Murray et al., 2007). After considering the advantages and disadvantages of each approach, a decision was made to combine approaches and use a computer-assisted manual approach, as shown in Table 6-11.

Table 6-11: Manual and computer components of the computer-assisted manual approach to qualitative data management and analysis

Manual component of combined approach	**Computer component of combined approach**
Reading paper transcripts and annotating them with initial observations and codes	Microsoft Excel spreadsheet as a framework for data organisation and analysis
Choosing and entering codes and themes onto spreadsheet	Storage of selected data which can be easily moved, changed, and located via searches
	Availability of search function for identifying specific words or phrases in the electronic transcripts produced on Microsoft Word

6.12.2 Data analysis

Quantitative analyses

The background information obtained from the chaplains, health professionals and prisoners was entered manually into a database using a statistical software package (StataCorp, 2013). Descriptive statistical analyses were undertaken to describe the characteristics of participants.

Qualitative analyses

Although the process of analysing qualitative data began when data collection commenced and continued during the focus group discussions and transcribing, and indeed throughout the entire thesis, the formal phase of qualitative data analysis commenced once the final version of each transcript had been approved. Analysis was based on complete Spanish transcripts. Each transcript was read a minimum of three times in order to increase familiarisation with the material (Braun and Clarke, 2006). Handwritten notes were made in the margins.

Thematic framework analysis

The qualitative analysis followed the principles of a method of thematic analysis described by Rosalind Barbour (Barbour, 2007) which involves creating a provisional coding frame and then revising the coding frame before creating framework models.

A single workbook was created in Microsoft Excel for data generated from prisoners, chaplains and health professionals. A *priori* level 1 codes, determined by the study aims, existing literature, interview guides, the results of the cross-sectional study and, to a lesser degree, the results from the pilot studies, were inserted in separate worksheets. *A priori* level 1 codes were actively modified as data analysis continued (Saldaña, 2009) . Additional level 1 codes that emerged *de novo* from the data were added later as they were identified. Where appropriate, level 1 codes in each worksheet were cross-referenced with the equivalent level codes in other worksheets. Headings were added to each worksheet to create a framework with a maximum of four levels of coding (one general theme and three categories) and referenced verbatim quotations of text which supported the codes. The coding frameworks were developed through an iterative process of reviewing transcripts and codes, and revising the frameworks so that they represented both the data collected and the study objectives. Table 6-12 illustrates the framework used to build each worksheet during the thematic analysis.

Table 6-12: Illustration of thematic framework analysis worksheet

Worksheet 4 – Coding level 1(eg, depression)						
	Cross-reference	Coding level 2	Coding level 3	Coding level 3	Author of quotation	Quotation
4a	1b, 7d	Word or phrase derived from worksheet 4 coding level 1	Word or phrase derived from 4a coding level 2	Word or phrase derived from 4a coding level 3	Participant ID	"Quotation translated into English" (Transcript ID, Participant ID)
				Word or phrase derived from 4a coding level 3	Participant ID	"Quotation translated into English" (Transcript ID, Participant ID)
			Word or phrase derived from 4a coding level 2	No further coding	Participant ID	"Quotation translated into English" (Transcript ID, Participant ID)
4b	2a	Word or phrase derived from worksheet 4 coding level 1	Word or phrase derived from 4b coding level 2	Word or phrase derived from 4a coding level 3	Participant ID	"Quotation translated into English" (Transcript ID, Participant ID)

The final coding frameworks were further analysed to identify the main themes which were strongly supported by the data that had been analysed. These themes were then grouped into topics. Each topic was presented with its themes and any associated subthemes along with quotations.

The following principles guided the choice of quotations included in the final analysis:

- Recurring words, phrases or ideas throughout transcripts
- Convergent perspectives within or between populations groups
- Divergent perspectives within or between population groups
- Relationships between codes from different worksheets
- Possible explanations of the cross-sectional study results
- Relevance to the aims of the qualitative study, mixed methods study and overall thesis

Quotations used were translated into English. Dynamic equivalence to convey meaning was the overarching aim of translation, while retaining a high degree of fidelity to the Spanish language transcripts.

Chapter 6: Methods

Chapter 7 Results of quantitative study of depression and mental wellbeing, and religion and spirituality among female prisoners

7.1 Ethics and permission

Full ethics approval for the quantitative and qualitative components of the study was granted by the University of Edinburgh Research Ethics Committee and the University of Chile Medical School Ethics Committee. Table 7-1 lists examples of areas of ethical concern highlighted and resolved during the ethics review process in the University of Edinburgh.

Table 7-1: Ethical issues identified and resolved through the ethics review process of the University of Edinburgh

Ethics concern identified during ethics approval application	**Ethics concern raised by the ethics committee at the University of Edinburgh**	**Summary of response to the ethics concern**
Direct contact with participants	Interview guides had not been piloted	Interview guides will be piloted and amended before use with participants
Inclusion of participants considered to be vulnerable	Inclusion of prisoners, a vulnerable study population	Informed consent will be taken carefully and researcher will be mindful of researcher-prisoner/clinician-prisoner power imbalance
Foreseeable potential harm or stress for participants	Questions will be asked about current mental health which may trigger painful memories and difficult emotions	Participants will be given the opportunity not to answer questions. Interviewer will signpost participants to relevant prison services for post-research support.
Foreseeable risk to the researcher	Risk of physical harm from physically aggressive participants	The interviewer undertook training in breakaway techniques and in the prevention and management of violence and aggression. A prison officer will be positioned to respond to verbal calls for assistance during interviews and focus groups.
Issues of data protection	Researcher unable to guarantee confidentiality to focus groups participants	Participants will be advised of this issue prior to giving informed consent and all consenting participants will be asked at the start of each focus group to respect confidentiality

The University of Edinburgh gave permission for overseas travel to undertake fieldwork and provided travel insurance. The Operational Sub-director of the Gendarmería (National Prison Service) within the Ministry of Justice in Chile and the Governor of the study prison issued written authorisation for entry into the prison for the two parts of the study respectively.

7.2 Sampling and sample population

The results of the power calculation indicated that a minimum of 37 participants were required to accurately estimate the mental wellbeing of the study population. In 2014, 68 of 120 randomly selected prisoners consented to join the study (Group 1); in 2016, 26 new prisoners were recruited to the study (Group 2). An additional five prisoners were recruited in 2016 who had been surveyed in 2014. These participants were excluded from all Group 2 analyses except for those regarding the current frequency of religion and spirituality (RS) involvement in the prison and MINI depression diagnosis because these variables were unique to the survey data obtained in 2016. Figure 7-1 and Figure 7-2 show details of the outcome of the recruitment process followed to identify participants for Group 1 and Group 2 respectively.

Figure 7-1: Participant recruitment flowchart for Group 1(2014)

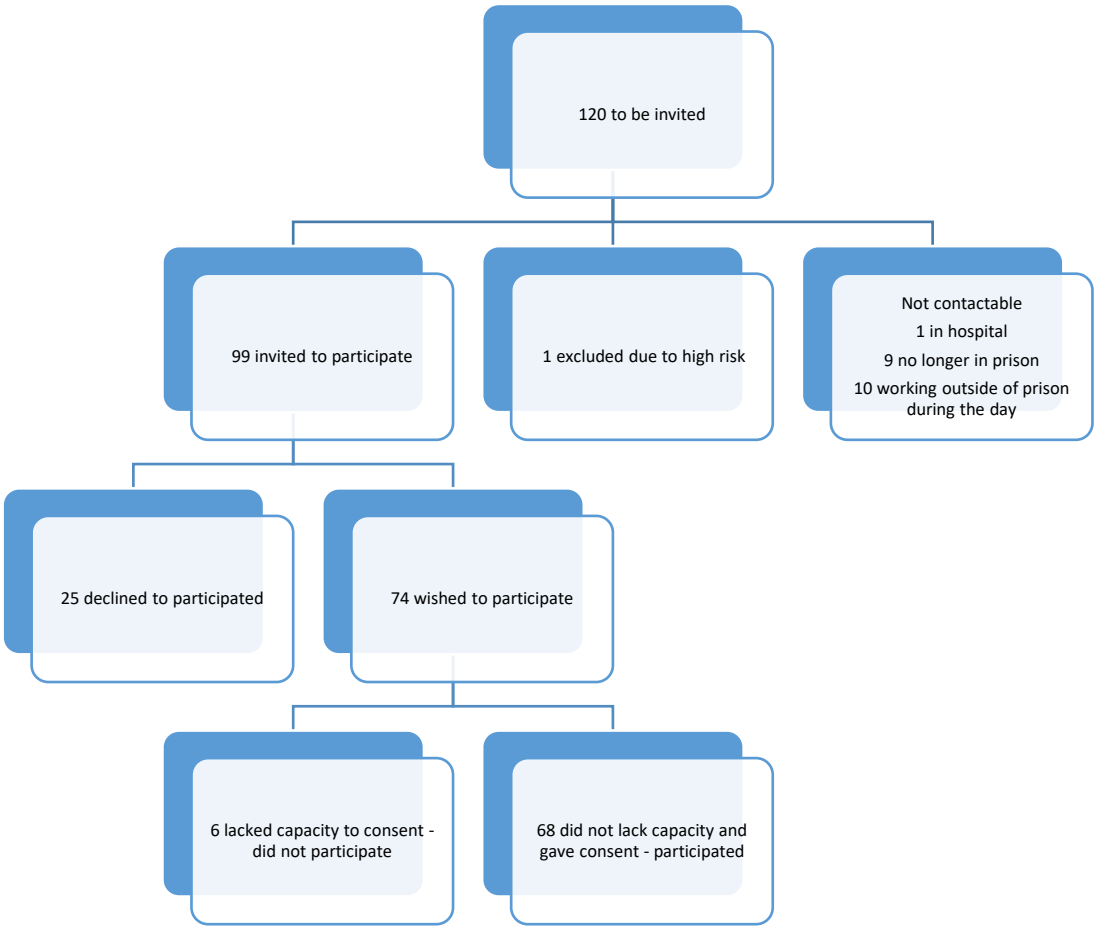
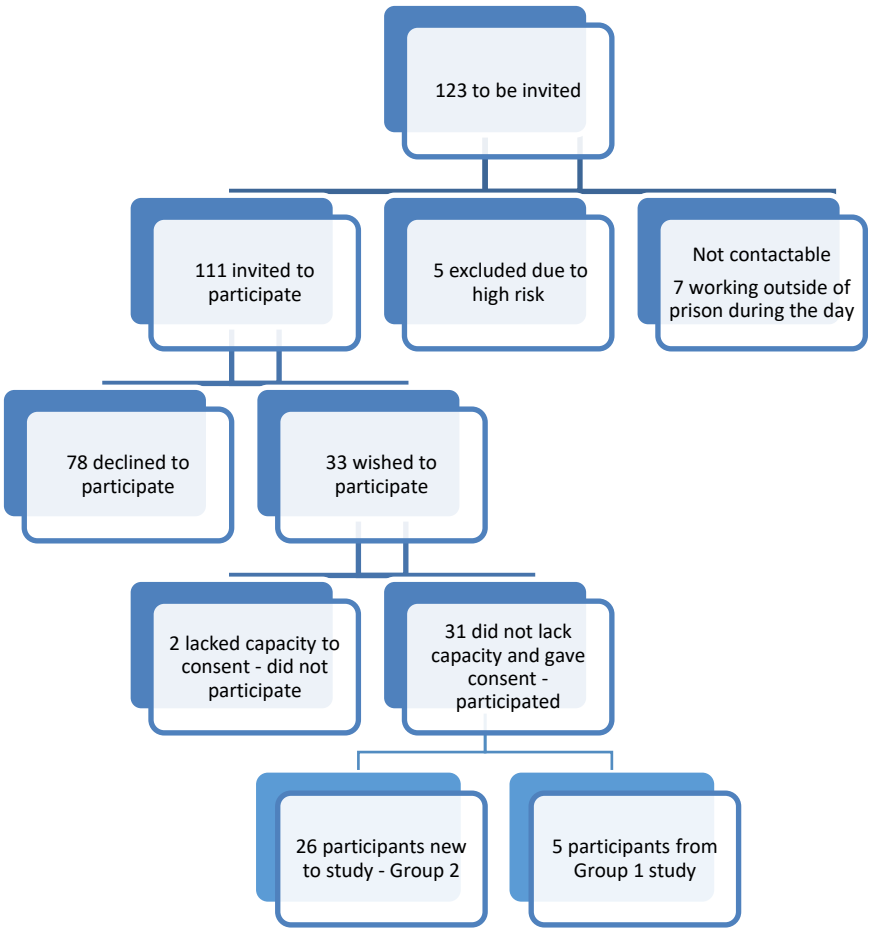


Figure 7-2: Participant recruitment flowchart for Group 2 (2016)



Although potential participants who declined to join the study were not asked to explain this decision, some voluntarily provided reasons as stated in Figure 7-3, such as having insufficient time or having believed the purpose of the meeting would be an opportunity for professional psychiatric consultation.

Figure 7-3: Reasons given for not participating in the study

Prisoners who wished to participate but lacked capacity to give consent included: an older woman who was unable to retain key study information given several times due to her deteriorating memory, and a younger woman who displayed poor attention in the context of distracting inappropriate behaviour and failed to recall key aspects of the study that had been explained to her.

7.3 Results of normality testing

Based on the results of normality testing of continuous variables shown in Table 7-2 , non-parametric tests were used for subsequent statistical analyses involving age, total WEMWBS score and the composite RS score. Non-normal distributions were identified for age and total WEMWBS score on both separate and combined Group 1 and Group 2 samples. Parametric tests undertaken for these three variables did not yield important differences in the results from those of non-parametric tests. In other words, whether an effect size was found to be significant, did not depend on whether non-parametric or parametric tests were used. These findings were consistent when testing Groups 1 and 2 separately and combined.

Table 7-2: Results of normality testing of continuous variables

Variable	Skewness	Kurtosis	Normal distribution?	Choice of statistical tests
Age (Groups 1 and 2)	-0.5	2.3	No	Non-parametric
Total WEMWBS score (Groups 1 and 2)	0.5	2.2	No	Non-parametric
Composite RS score (Group 1)	-1.7	5.7	No	Non-parametric

7.4 Combining Groups 1 and 2

7.4.1 Comparative description of the two samples

Nine participants from Group 1 and two participants from Group 2 did not complete the WEMWBS fully and were omitted from all analyses involving the total WEMWBS score. Table 7-3 shows that there were no significance differences between Group 1 and Group 2 when compared by age and mean WEMWBS score. Table 7-4 presents similar findings for: self-report depression, religious affiliation, personal importance of RS, and frequency of attendance at RS services in the year prior to imprisonment. Therefore, subsequent analyses were conducted on data from the combined groups, where such data were collected.

Table 7-3: Comparison of Group 1 and Group 2 by median age and median total WEMWBS score

Variable	Group 1			Group 2			Two-sample Wilcoxon rank-sum test	
	N	Median	IQR	N	Median	IQR	Z	P
Age in years	68	37.5	30.0-45.0	26	30.5	25.0-48.0	1.4	0.2
WEMWBS score	59	56.0	43.0-63.0	24	51.0	39.5-59.5	1.5	0.1

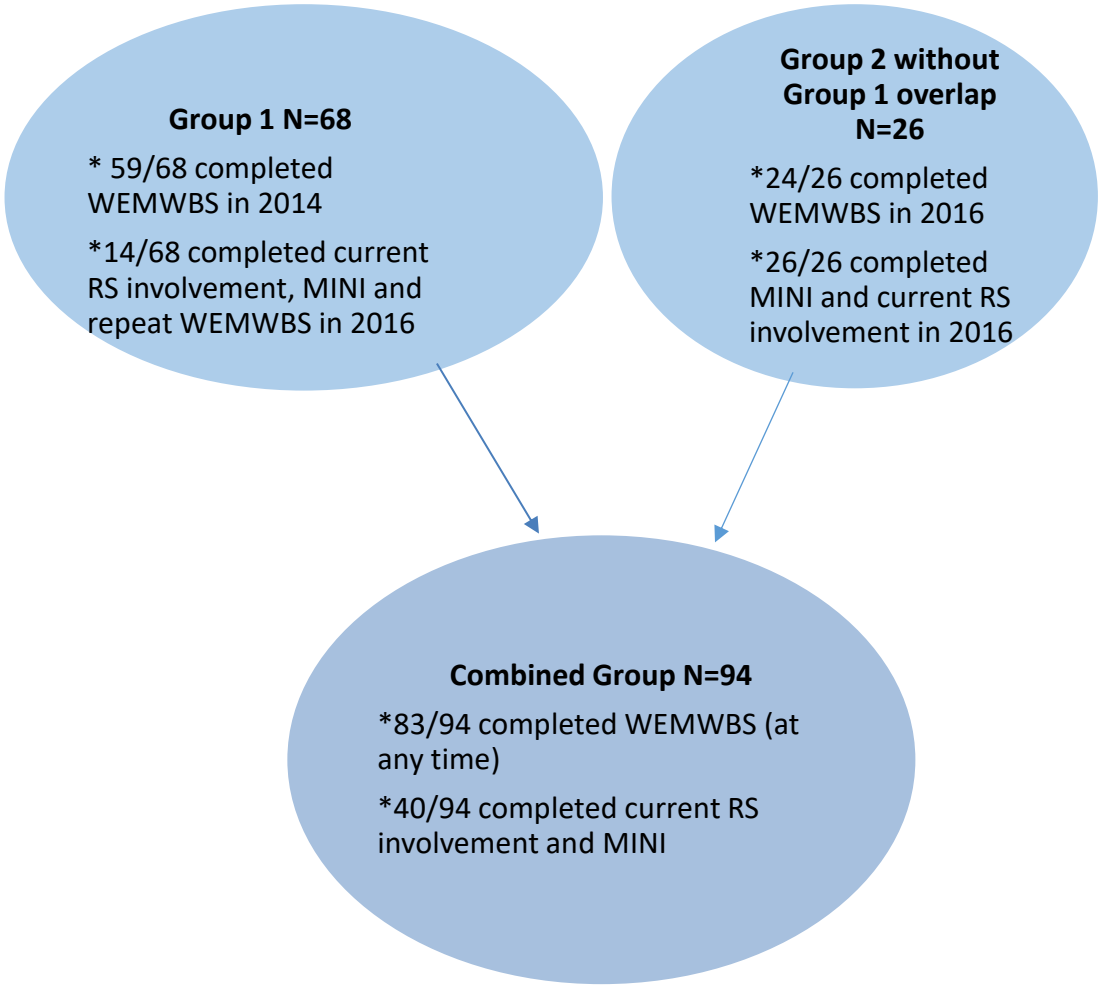
Table 7-4: Comparison of Group 1 and Group 2 by self-report depression, RS affiliation, RS personal importance and frequency of RS involvement

Variable		Group 1 (%) N=68	Group 2 (%) N=26	Test statistic	Significance
Self-report of depression diagnosed by professional	**Yes**	7 (10.3%)	4 (15.4%)	Pearson $\chi^2 = 0.5$	P=0.49
	No	61 (89.7%)	22 (84.6%)		
Religious affiliation	**Catholic**	28 (41.2%)	12 (46.2%)	Pearson $\chi^2 = 1.4$	P=0.50
	Evangelical/ Protestant	32 (47.1%	13 (50.0%)		
	Other	8 (11.8%)	1 (3.9%)		
Personal importance of RS	**1 (not important at all)**	1 (1.5%)	0 (0.0%)	(Fisher's exact)	P = 0.08
	2	10 (14.7%)	1 (3.9%)		
	3	12 (17.7%)	1 (3.9%)		
	4 (very important)	45 (66.2%)	24 (92.3%)		
Frequency of RS attendance before imprisonment	**Never**	13 (19.1%)	11 (42.3%)	Pearson $\chi^2 = 6.9$	P = 0.08
	Less than once a month	18 (26.5%)	5 (19.2%)		
	At least once a month	20 (29.4%)	3 (11.5%)		
	Once a week or more	17 (25.0%)	7 (26.9%)		

7.4.2 Composition of the combined sample

The combined sample comprised 94 female prisoners, of which 68 belonged to Group 1 and 26 belonged to Group 2, after 5 cases overlapping with Group 1 had been removed from Group 2. Figure 7-4 describes the numbers of participants included in subsequent statistical analyses.

Figure 7-4: Description of participant numbers used in combined group analyses



7.5 Background profiles of participants

7.5.1 Demographics of combined group

The combined group comprised 94 female prisoners with a median age of 37.5 years (IQR 29-46). The youngest woman was 20 years old; the oldest 64. 20% (n=17) of the prisoners were married and approximately 60% (n=57) had not completed secondary education. The work wing was the most highly represented (n=42;

44.7%), whilst 10.6% (n=10) of prisoners were from the Evangelical wing and 5.3% (n=5) from the Catholic wing. Two participants resided on the wing for mothers detained with their children; no expectant mothers among the partcipants were identified on visual inspection during the interviews. Over half (n=54; 57.5%) of the prisoners were imprisoned at the time of the study for a primary drug-related offence. Table 7-5 shows the demographic characteristics of the combined sample of participants from Group 1 and Group 2.

Table 7-5: Demographic characteristics of the combined group

Variable		**N = 94**	**%**
Age (years)	18-24	11	11.7
	25-34	35	37.2
	35-44	22	23.4
	45-54	17	18.1
	55-64	9	9.6
Marital status	Single	57	60.6
	Married	17	18.1
	Separated	10	10.6
	Divorced	3	3.2
	Widowed	4	4.3
	Serious relationship	3	3.2
Education level	Primary	57	60.6
	Secondary	34	36.2
	Technical college	3	3.2
Prison wing	Evangelical	10	10.6
	Therapeutic Community	3	3.2
	COD	7	7.5
	Catholic	5	5.3
	Work	42	44.7
	Minju	3	3.2
	Other (Mother and Baby; Menores)	2	2.1
	Wing 1	12	12.8
	Wing 2	3	3.2
	Half-free	7	7.5
Primary index offence	Violent/sexual	13	13.8
	Acquisitive	23	24.5
	Drug-related	54	57.5
	Other	4	4.3

7.5.2 Additional background results from Group 1 only

The sample was highly homogenous in terms of nationality. Except for one woman from a Spanish-speaking Latin American country outside of Chile, all participants described themselves as Chilean. Over two-thirds (n=48) had children under the age of 18. Approximately half (n=35) were unemployed prior to imprisonment. 80% (n=55) of the prisoners resided in cells or rooms with a total of ten or more prisoners, and the majority (n=64; 94.1%) of the group had been in prison for longer than one year.

There was no difference (n=48) in the number of prisoners who smoked prior to imprisonment and in prison. The overall difference in the number of cigarettes smoked daily before and during incarceration was not statistically significant (Wilcoxon signed-rank test Z=1.1; p=0.30). Regarding substance use, 46 (67.7%) prisoners reported using alcohol but not in prison and 3 (4.4%) stated they continued to use alcohol in prison. In contrast, 17 (25.0%) prisoners did not continue to use illicit drugs in prison, while 29 (42.7%) admitted to using drugs in prison. Table 7-6 displays additional demographic, criminological and lifestyle characteristics of Group 1 participants.

Table 7-6: Additional demographic, criminological and lifestyle characteristics of Group 1 only

Variable		N = 68	%
Children under the age of 18 years	0	20	29.4
	1-3	39	57.4
	4-6	8	11.8
	7-9	1	1..5
Nationality	Chilean	67	98.5
	Other	1	1.5
Employment status prior to imprisonment	Employed	12	17.7
	Unemployed	35	51.5
	Self-employed	20	29.4
	Not known	1	1.5
Total number of prisoners in cell/room	0-4	1	1.5
	5-9	12	17.7
	10 or more	55	80.9
Length of time in prison, in years	1 year or less	3	4.4
	>1	65	95.6
Smoking status prior to imprisonment, daily cigarettes	0	20	29.4
	1-10	37	54.4
	11-20	11	16.2
Smoking status in prison, daily cigarettes	0	20	29.4
	1-10	30	44.1
	11-20	16	23.5
	21-30	1	1.5
	31-40	1	1.5
Alcohol usage	Never	19	27.9
	Yes, but not in prison	46	67.7
	Yes, in prison	3	4.4
Illicit drug usage	Never	22	32.4
	Yes, but not in prison	17	25.0
	Yes, in prison	29	42.7

7.5.3 Background health status for Group 1 only

Almost half (n=33, 48.5%) women reported that they had been diagnosed by a doctor or nurse with a current physical illness. Physical illnesses reported included hypertension (n=10), diabetes (n=5) and obesity/overweight (n=3). About one-third (n=24, 35.29%) of women interviewed reported taking medication for a physical disorder.

Of the 68 prisoners in Group 1, 30 (44.1%) reported having had a parent with a history of depression. Almost 1 in 5 (n=13; 19.12%) women stated that they had

been given a diagnosis of a mental disorder by a health professional. Nine (13.2%) women reported taking medication for a mental disorder. The reported mental disorder diagnoses included: depression (n=7; 10.2%); substance abuse (n=2), bipolar affective disorder (n=1), anxiety (n=1), personality disorder (n=1), and other (n=2): emotional/mood problem and trauma-related. Table 7-7 shows the general health characteristics of Group 1 participants.

Table 7-7: General health status for Group 1 only

Variable		N = 68	%
Received professional diagnosis of physical illness	Yes	33	48.5
	No	35	51.5
Number of physical illness diagnoses	0	35	51.5
	1-2	25	36.8
	3-4	6	8.8
	5-6	2	2.9
Total medication for physical illness	0	44	64.7
	1 -3	18	26.5
	4-6	6	8.8
Parental history of depression	Yes	30	44.1
	No	38	55.9
Received professional diagnosis of mental disorder	Yes	13	19.1
	No	55	80.9
Number of mental illness diagnoses	0	55	80.9
	1	12	17.7
	2	1	1.5
Total medication for mental illness	0	59	86.8
	1	8	11.8
	2	0	0.0
	3	1	1.5

7.6 Mental health profile of participants

7.6.1 Depression

Table 7-8 shows that in the combined sample of 94 women, 11 (11.7%; 95% CI:6.5-20.1) women reported a current diagnosis of depression given by a health professional.

Table 7-8: Prevalence of depression according to participant self-report

Self-reported current diagnosis of depression by a professional	Number of participants	%
No	83	88.3
Yes	11	11.7
Total	94	100.0

Among Group 1 participants, having a parent with history of depression did not change the odds of a prisoner reporting a diagnosis of depression (OR 0.9; 95% CI: 0.2-4.6). Table 7-9 shows that a DSM-IV diagnosis of major depression was confirmed in 13 (32.5%; 95% CI:19.4-49.0) of the 40 women to whom the MINI diagnostic tool was administered. Compared to the gold standard of the DSM MINI, asking participants if they had been diagnosed with depression by a health professional was a test with low sensitivity (38.5%) but high specificity (96.3%). In other words, the self-report measure of depression in the study underestimated the number of cases of depression. Five (38.5%) of the 13 participants with a MINI-confirmed diagnosis of depression reported receiving the same diagnosis from a health professional; while the remaining 8 (61.5%) prisoners participated in the study with undiagnosed depression. Five (83.3%) of the six participants who reported self-reported depression were also diagnosed with depression using the MINI. In other words, it appears that when prison health professionals made a diagnosis of depression, the diagnosis was correct.

Table 7-9: Comparison of self-report cases of depression v. MINI confirmed cases of depression

Self-reported current diagnosis of depression by a professional	MINI diagnosis of current major depressive episode		
	No	**Yes**	**Total**
No	26	8	34
Yes	1	5	6
Total	27 67.5%	13 32.5%	40 100%
	Fisher exact p = 0.01		

7.6.2 WEMWBS

The median total WEMWBS scores of the 83 women who provided full data was 55 (IQR 43-61). The lowest and highest WEMWBS total scores measured were 24 and 70 respectively. Table 7-10 displays the results for each of the 14 items of the WEMWBS and shows that for at least some of the time in the preceding fortnight, 86 (92.5%) participants had felt interested in new things and 81 (87.1%) felt interested in other people, while 60 (64.5%) participants had felt relaxed and 65 (69.9%) had felt close to other people.

Table 7-10: Mental wellbeing (WEMWBS) of female prisoners

WEMWBS item	Dimension of mental wellbeing experience during the previous two weeks	None of the time/ Rarely		Some of the time/Often/All the time		Total
		n	%	n	%	N
1	**Feeling optimistic about the future**	21	22.6	72	77.4	93
2	**Feeling useful**	12	12.9	81	87.1	93
3	**Feeling relaxed**	33	35.5	60	64.5	93
4	**Feeling interested in other people**	12	13.9	81	87.1	93
5	**Had energy to spare**	29	30.9	65	69.1	94
6	**Dealing with problems well**	12	12.9	81	87.1	93
7	**Thinking clearly**	14	15.2	78	84.8	92
8	**Feeling good about myself**	17	18.1	77	81.9	94
9	**Feeling close to other people**	28	30.1	65	69.9	93
10	**Feeling confident**	22	23.9	70	76.1	92
11	**Able to make up my own mind about things**	11	11.7	83	88.3	94
12	**Feeling loved**	15	16.0	79	84.0	94
13	**Interested in new things**	7	7.5	86	92.5	93
14	**Feeling cheerful**	22	23.4	72	76.6	94

Table 7-11 describes the mental wellbeing of the prisoner population according to self-reported depression status. Prisoners who reported having been professionally diagnosed with depression had significantly lower WEMWBS scores compared to prisoners who did not report depression (Wilcoxon rank-sum z=2.1 p=0.04).

Table 7-11: Description of WEMWBS scores in prisoners according to self-reported depression status

Depression	Number of prisoners	WEMWBS score				Wilcoxon rank-sum test for difference between medians	
		Median	IQR	Min	Max	Z	p
No	73	56	44-61	24	70	2.1	0.04
Yes	10	39	30-60	24	64		

7.7 Religion and spirituality profile of participants

7.7.1 Primary RS measures

Primary RS measure 1: Religious affiliation

Table 7-12 shows that the majority (n=86, 91.5%) of women were affiliated with mainstream Christianity and that, among these, there were more Evangelicals/Protestants (n=45) than Catholics (n=40).

Table 7-12: Description of religious affiliation of study population by religion and denomination

RS variable		N = 94	%
Religious affiliation by religion	**Mainstream Christian**	86	91.5
	Other	8	8.5
Religious affiliation by denomination	**Roman Catholic**	40	42.6
	Evangelical/Protestant	45	47.9
	Other	9	9.6

Table 7-13 shows the differences in religious affiliation between the study population (observed values) and the general population (expected values). Based on official statistics, there were significantly more Christians in the prison sample than in the general population in Chile (p <0.01). Furthermore, among Christians there was a

highly significant over-representation of Evangelical/Protestants and under-representation of Catholics in the prison sample compared to the general population.

Table 7-13: Comparison of expected and observed religious affiliation of study participant by religion and denomination

RS variable		Expected number	Observed number	$\Sigma[(O-E)^2/E]$ (χ^2)	p
Religious affiliation by religion	Christian	78	86	4.8	0.03
	Other	16	8		
Religious affiliation by denomination	Catholic	63	40	71.5	0.01
	Evangelical	15	45		
	Other	16	9		

Table 7-14 shows the religious affiliations of participants who did not identify exclusively with either Evangelicalism/Protestantism or Catholic denominations. Responses reflected a majority identification with theistic religious beliefs including non-mainstream Christian denominations such as the Church of Jesus Christ of Latter Day Saints (Mormonism) and Jehovah's Witness. No prisoner identified with Orthodox Christianity, Islam, Judaism, Indigenous Spirituality, Atheism or Agnosticism.

Table 7-14: Description of religious affiliation responses of participants not exclusively either Catholic or Evangelical/Protestant

Category of "Other"	Number of respondents
Jehovah's Witness	1
Mormon	1
Catholic/Evangelical	1
"I believe [only] in God" (or equivalent response)	5
"I believe in the energy of the universe, in reincarnation and the power of the mind"	1

Primary RS measure 2: Personal religious/spiritual importance

Table 7-15 describes the personal importance placed on RS by study participants. Almost three-quarters of the women (n=69, 73.4%) reported that religion/spirituality

was highly important to them, compared to one (1.1%) woman who reported that religion/spirituality was not at all important to her.

Table 7-15: Description of personal religious/spiritual importance of study population

RS variable		**N = 94**	**%**
Personal importance of RS	1 (not important at all)	1	1.1
	2	11	11.7
	3	13	13.8
	4 (very important)	69	73.4

Primary RS measure 3: Religious/spiritual involvement

Table 7-16 shows the religious involvement of study participants during the year before they entered prison. Religious involvement was evenly distributed between the four frequency categories. Half (n=47) of all participants were low frequency attenders in the year prior to imprisonment, attending never or less frequently than once a month, while 24.5% (n=24) of participants at least weekly.

Table 7-16: Religious involvement of study sample prior to incarceration

Variable			**N=94**	**%**	**N=94**	**%**
Frequency of attending RS services in year before imprisonment	Low	Never	24	25.5	47	50.0
		Less than once a month	23	24.5		
	High	At least once a month	23	24.5	47	50.0
		Once a week or more	24	25.5		

Table 7-17 shows changes in RS involvement of the 40 women who were also asked about their current frequency of attending RS services in prison. Within this sample, 13 (32.5%) women did not attend services in the year before imprisonment, compared to 3 (7.5%) women during imprisonment. Furthermore, 11(27.5%) women attended services at least weekly prior to imprisonment, while 24 (60%) women reported the same frequency in prison. The overall frequency of attendance at RS services during imprisonment was significantly higher than that during the year prior to incarceration (Wilcoxon Sign Ranks Test $Z=3.127$, $p<0.002$).

Table 7-17: Frequency of RS involvement before and during imprisonment of study participants (n=40)

Frequency of RS attendance		**During year prior to imprisonment**				
		Never	**Less than monthly**	**At least monthly**	**At least weekly**	**Total**
Currently in prison	**Never**	1	0	2	0	3 (7.5%)
	Less than monthly	3	1	0	2	6 (15.0%)
	At least monthly	1	2	1	3	7 (17.5%)
	At least weekly	8	5	5	6	24 (60.0%)
	Total	13 (32.5%)	8 (20.0%)	8 (20.0%)	11 (27.5%)	40 (100.0%)

7.7.2 Secondary RS measure: Belief in RS benefits

Table 7-18 shows the results of data from 68 participants (Group 1) about four RS subcomponents which reflect having a belief in RS benefits. For each of these four subcomponents, over 75% of respondents expressed either agreement or strong agreement that RS is beneficial.

Table 7-18: Responses to the four subcomponents of the RS benefits composite score (n=68)

RS benefits sub-component	Response N (%)					Cumulative total
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	
Faith in God makes it easier to deal with hardship and problems	39 (57.4)	14 (20.6)	8 (11.8)	3 (4.4)	4 (5.9)	68 (100.0)
Praying or talking to God helps me	48 (70.6)	12 (17.7)	3 (4.4)	2 (2.3)	3 (4.4)	68 (100.0)
Reading about God gives me hope	43 (63.2)	16 (23.5)	5 (7.4)	2 (2.3)	2 (2.3)	68 (100.0)
Believing the promises in the Bible gives me hope	33 (48.5)	21 (30.9)	7 (10.3)	4 (5.9)	3 (4.4)	68 (100.0)

The responses for each of the four RS benefits subcomponents were scored between 1 (strongly disagree) and 5 (strongly agree). For each participant, the four scores were combined to give a composite RS benefits score which had a minimum possible score of 4 and a maximum possible score of 20. Table 7-19 presents details of the composite RS benefits score for the 68 women. The median composite RS benefits score of 18.5 revealed high levels of reported agreement of benefits of RS among the participants.

Table 7-19: Description of composite RS belief in benefits score

Secondary RS measure	Median	IQR	Lowest score of sample	Highest score of sample
Composite RS score of belief in RS benefits	18.5	16-20	4	20

Post hoc analyses using Fisher's exact test found significant associations between personal importance of RS and each of the four variables: faith in God makes it easier to deal with hardship and problems ($p=0.001$); praying to God helps me ($p<0.001$); reading about God gives me hope ($p=0.016$); believing in bible promises gives me hope ($p=0.031$). No significant associations were found between any of these four variables and either religious affiliation or frequency of RS involvement.

7.7.3 Tertiary RS measures

Tertiary RS measure 1: RS in the conceptualisation of health

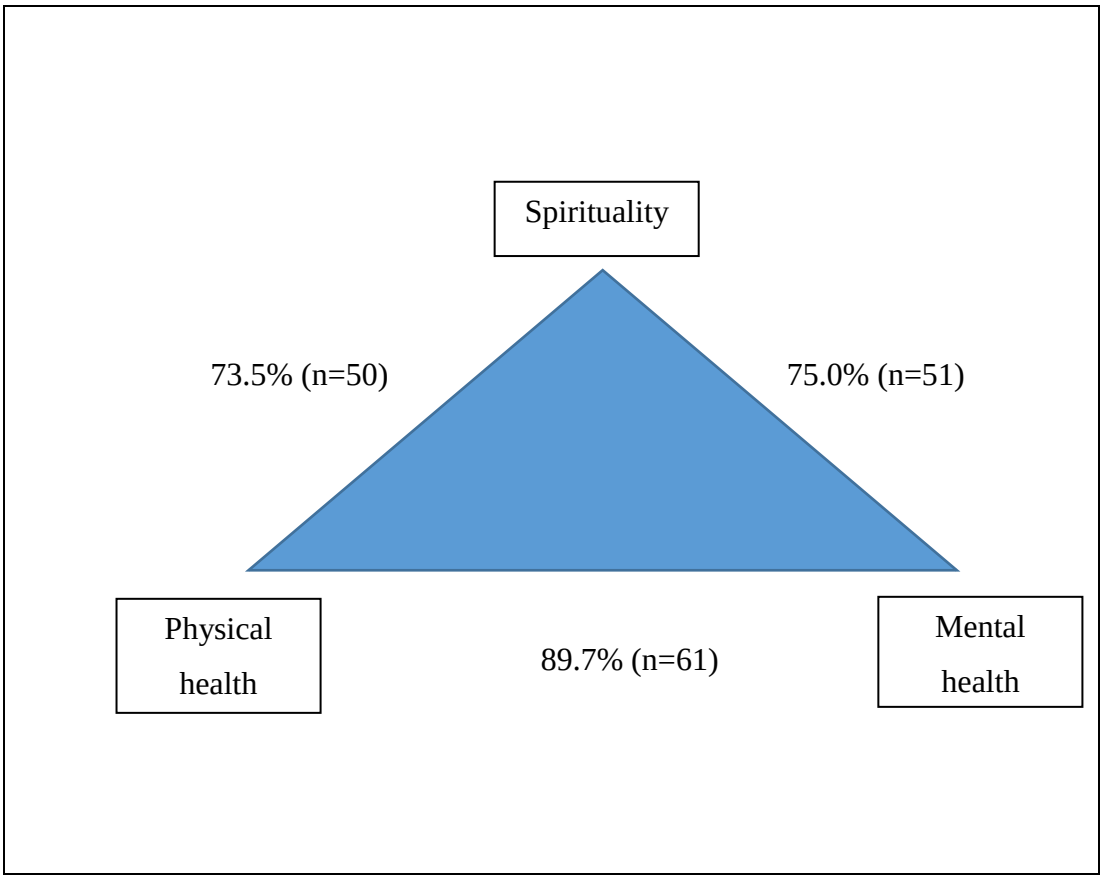
Table 7-20 shows that most 55 (80.9%) prisoners considered faith in God to be important for general health, while seven women held opposing views. The table also shows that the sample had a holistic conceptualisation of health, identifying multiple connections between the physical, mental and spiritual components. No prisoner strongly disagreed that there was a connection between physical health, mental health and spiritual health.

Table 7-20: RS in the conceptualisation of health - responses of prisoners

RS conceptualisation of health	Response N=68 (%)					Overall total
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	
Faith in God is important for my general health	45 (66.2)	10 (14.7)	6 (8.8)	4 (5.9)	3 (4.4)	68 (100)
I believe there is a connection between my physical health and my mental health	31 (45.6)	30 (44.1)	6 (8.8)	1 (1.5)	0 (0.0)	68 (100)
I believe there is a connection between my mental health and spirituality	25 (36.8)	26 (38.2)	15 (22.1)	2 (2.9)	0 (0.0)	68 (100)
I believe there is a connection between my spirituality and my physical health	26 (38.2)	24 (35.3)	13 (19.1)	5 (7.4)	0 (0.0)	68 (100)

Figure 7-5 shows that 61 (89.7%) of women believed there was a connection between physical health and mental health (as shown through agreement or strong agreement with the statement); 51 (75.0%) a connection between mental health and spirituality; and 50 (73.5%) a connection between physical health and spirituality.

Figure 7-5: Prisoners' holistic conceptualisation of health



Tertiary RS measure 2: RS locus of control and health responsibility

Table 7-21 shows the wide range of views prisoners held regarding individual health responsibility given their RS beliefs. 38 (55.9%) prisoners believed that God is in control and so they do not have to take responsibility for their health. In contrast, 17 (25%) prisoners did not have a RS locus of control which results in their absolution of health responsibility, while almost one-fifth (n=13; 19.1%) neither agreed nor disagreed.

Table 7-21: Prisoners' beliefs about RS locus of control and health responsibility

RS locus of control and health responsibility	Response N=68 (%)					Cumulative total
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	
God is in control and so I do <u>not</u> have to take responsibility for my health	24 (35.3)	14 (20.6)	13 (19.1)	11 (16.2)	6 (8.8)	68 (100)
	38 (55.9)		13 (19.1)	17 (25.0)		68 (100)

Tertiary RS measure 3: Additional RS belief and practice

Table 7-22 shows that over three-quarters (n=53; 77.9%) of prisoners strongly agreed they were important to God, while four (5.9%) expressed a degree of clear disagreement. Daily bible reading was reported by 35 (51.6%) of the women survey.

Table 7-22: Additional RS belief and practice of prisoners

Additional RS belief and practice	Response N=68 (%)					Cumulative total
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	
I am important to God	53 (77.9)	9 (13.2)	2 (2.9)	1 (1.5)	3 (4.4)	68 (100)
I read the Bible every day	18 (26.5)	17 (25.0)	12 (17.7)	15 (22.1)	6 (8.8)	68 (100)

Tertiary RS measure 4: Daily spiritual experiences

Table 7-23 shows that the frequency with which participants had spiritual experiences. Thirty-eight (55.9%) women reported being spiritually touched by the beauty of creation (awe) either every day or many times a day, compared to 17 (25.0%) having the experience no more than occasionally. Half (n=34, 50%) of the prisoners had felt thankful for their blessings (gratitude) many times a day.

Table 7-23: Frequency of prisoners' daily spiritual experiences

Spiritual experience	Frequency of daily spiritual experience N (%)						Total
	Many times each day	Every day	Many days	Some days	Occasionally	Never or almost never	
Awe	13 (19.1)	25 (36.8)	6 (8.8)	7 (10.3)	13 (19.1)	4 (5.9)	68 (100.0)
Gratitude	34 (50.0)	22 (32.4)	4 (5.9)	3 (4.4)	5 (7.4)	0 (0.0)	68 (100.0)

7.8 Associations between RS and mental health

7.8.1 Depression and RS

Depression and RS affiliation/importance/involvement

Table 7-24 shows that the odds of depression are raised if prisoners are not affiliated to a mainstream Christian denomination (OR=1.1, 95% CI 0.1-9.8) and consider RS to be of high personal importance (OR=1.5; 95% CI 0.2-13.1), but are reduced by 20% (OR=0.8; 95% CI 0.2-2.9) if prisoners have a high frequency of RS involvement. The confidence intervals associated with these effect sizes suggest a high degree of uncertainty that the estimates show a true association between RS and depression in the sample of 94 prisoners.

Table 7-24: Associations between depression and RS affiliation/personal importance/involvement

Primary RS measure	Prisoners N=94			Tests for association	
	Number in variable sample	Number in variable sample with depression	Percent	OR*	95% CI
Religious affiliation (1)					
Mainstream Christian	86	10	11.6	(ref)	
Other	8	1	12.5	1.1	(0.1-9.8)
Religious affiliation (2)					
Catholic	40	6	15.0	(ref)	---
Protestant/Evangelical	45	4	8.9	0.6	(0.1-2.1)
Other	9	1	11.1	0.7	(0.1-6.7)
RS personal importance					
Low	12	1	8.3	(ref)	---
High	82	10	12.2	1.5	(0.2-13.1)
Previous RS involvement					
Never	24	3	12.5	(ref)	---
Less than monthly	23	3	13.0	1.1	(0.2-5.8)
At least monthly	23	1	4.4	0.3	(0.1-3.3)
At least weekly	24	4	16.7	1.4	(0.3-7.1)
Previous RS involvement					
Low	47	6	12.8	(ref)	---
High	47	5	10.6	0.8	(0.2-2.9)

Depression and belief in RS benefits

Table 7-25 shows that among a sample of 59 female prisoners, there is no significant association between mental wellbeing and the composite RS score of belief in RS benefits.

Table 7-25: Association between depression and overall belief in RS benefits

Secondary RS measure	Number in sample	OR for depression	95% CI
Composite RS score of belief in RS benefits	68	1.0	(0.8-1.3)

7.8.2 Mental wellbeing and RS

Mental wellbeing (WEMWBS) and RS affiliation/importance/involvement

Table 7-26 shows that while the mental wellbeing was higher among prisoners who: were Christian rather than non-Christian; considered RS to be of low rather than high importance; and had a high rather than low frequency of RS involvement. However, these differences were not statistically significant in the sample of 83 prisoners who provided WEMWBS data.

Table 7-26: Association between WEWMBS and RS affiliation/personal important/involvement of prisoners

Primary RS measure	Sample size (N=83)	Median WEMWBS score (IQR)	Kruskal-Wallis (*H*)	p
Religious affiliation (1)			3.16	0.08
Main. Christian	76	56.0 (43.0-61.0)		
Other	7	39.5 (35.0-53.0)		
Religious affiliation (2)			6.37	0.04
Catholic	39	57.0 (49.0-61.0)		
Protestant/Evangelical	36	53.5 (43.0-62.5)		
Other	8	40.5 (36.5-47.5)		
RS personal importance			0.73	0.39
Low	10	57.0 (53.0-64.0)		
High	73	54.0 (43.0-61.0)		
RS personal importance			3.07	0.38
1 = Not at all	1	65.0 (65.0-65.0)		
2	9	56.0 (53.0-62.0)		
3	13	57.0 (44.0-62.0)		
4 = Very much	60	53.0 (43.0-60.0)		
Previous RS involvement			2.42	0.49
Never	24	50.5 (42.0-59.5)		
Less than monthly	19	57.0 (41.0-62.0)		
At least monthly	18	56.0 (43.0-58.0)		
At least weekly	22	58.5 (43.0-64.0)		
Previous RS involvement			1.15	0.28
Low	43	52.0 (41.0-61.0)		
High	40	56.5 (43.0-62.5)		
Current RS involvement (N=24)			0.25	0.62
Low	5	46 (46.0-51.0)		
High	19	52 (38.0-60.0)		

Mental wellbeing (WEMWBS) and belief in RS benefits

Table 7-27 shows that RS beliefs are weakly and positively correlated (Spearman *Rho* = 0.2) with mental wellbeing, but this relationship was not statistically significant (p=0.22) in a sample of 50 female prisoners.

Table 7-27: Association between WEMWBS and overall belief in RS benefits

Secondary RS measure	Number in sample	Spearman (*Rho*)	p
Composite RS score of belief in RS benefits	59	0.2	0.22

Table 7-28 shows that there is also no significant association between mental wellbeing and the individual subcomponents of the RS composite score of belief in RS benefits.

Table 7-28: Associations between WEMWBS and belief in RS benefits

Secondary RS measure – subcomponents of composite RS score of belief in RS benefits	Number in sample (N=59)	Percent	Median WEMWBS score (IQR)	Kruskal-Wallis (*H*)	p
Faith in God makes it easier to deal with hardship and my problems				3.4	0.49
Strongly agree	32	54.2	57.5 (49.0-63.5)		
Agree	13	22.0	54.0 (42.0-61.0)		
Neither agree nor disagree	7	11.9	53.0 (38.0-57.0)		
Disagree	3	5.1	58.0 (46.0-61.0)		
Strongly disagree	4	6.8	54.0 (42.0-67.0)		
Praying or talking to God helps me				1.0	0.91
Strongly agree	40	67.8	57.5 (43.0-63.5)		
Agree	11	18.6	56.0 (42.0-57.0)		
Neither agree nor disagree	3	5.1	57.0 (41.0-64.0)		
Disagree	2	3.4	55.0 (46.0-64.0)		
Strongly disagree	3	5.1	44.0 (40.0-70.0)		
Reading about God gives me hope				1.0	0.90
Strongly agree	36	61.0	57.5 (43.0-63.0)		
Agree	14	23.7	54.0 (52.0-57.0)		
Neither agree nor disagree	5	8.5	56.0 (46.0-64.0)		
Disagree	2	3.4	59.0 (54.0-64.0)		
Strongly disagree	2	3.4	57.0 (44.0-70.0)		
Believing the promises in the Bible gives me hope				2.2	0.70
Strongly agree	28	47.5	58.5 (43.0-64.5)		
Agree	17	28.8	54.0 (53.0-59.0)		
Neither agree nor disagree	7	11.9	46.0 (41.0-57.0)		
Disagree	4	6.8	59.0 (48.0-63.0)		
Strongly disagree	3	5.1	44.0 (35.0-70.0)		

7.8.3 sults of *post hoc* analyses for mental health and RS

Results of *post hoc* analyses for depression

Table 7-29 shows that prisoners who believe there is a connection between their mental health and spirituality are as likely to have depression as are those who do not agree that such a connection exists.

Table 7-29: Association between depression and belief in connection between mental health and RS

RS measure	Number in sample (N=94)	Number with depression (%)	OR for depression	95% CI
Belief in connection between mental health and spirituality				
Agreed	69	8 (11.6)	(ref)	---
Did not agree	25	3 (12.0)	1.0	(0.3-4.3)

Table 7-30 shows that depression is not associated with the religious status of the prison section in which prisoners are located.

Table 7-30: Association between depression and religious status of prison section

	Number in sample	Number is sample with depression	Percent	P value from Fisher's exact test
Prison section				0.20
Non-religious	79	11	13.9	
Religious	15	0	0.0	

The results of additional tests of the association between depression and RS conducted using data from Group 1 (N=68) are displayed in Table 7-31. It is clinically significant that prisoners who do not have a deferring RS coping style (ie, those who do not agree with the statement "I believe God is in control and so I do not have to take responsibility for my health") are 80% less likely to have depression. Of similar clinical importance is the findings that prisoners with a low frequency of gratitude are more than twice as likely (OR=2.65; 95% CI: 0.4-16.0). However, the scope of the confidence intervals around these effect sizes creates uncertainty regarding the accuracy of the estimates in the sample of 68 prisoners.

Table 7-31: Results of additional tests of the association between depression and RS

RS measure	Prisoners, N=68			Test for association	
	Number in variable sample	Number in variable sample with depression	%	OR*	95% CI
I believe God is in control and so I do <u>not</u> have to take responsibility for my health					
In agreement	39	6	15.4	(ref)	---
Not in agreement	29	1	3.5	0.20	(0.1-1.7)
I read the Bible every day					
In agreement	35	4	11.4	(ref)	---
Not in agreement	33	3	9.1	0.78	(0.2-3.8)
I am important to God					
In agreement	62	6	9.7	(ref)	---
Not in agreement	6	1	16.7	1.87	(0.2-18.7)
Frequency of daily experience of awe					
High	42	5	11.9	(ref)	---
Low	26	2	7.7	0.61	(0.1-2.7)
Frequency of daily experience of gratitude					
High	58	5	8.6	(ref)	---
Low	10	2	20.0	2.65	(0.4-16.0)

Results of *post hoc* analyses for mental wellbeing

Table 7-32 shows that although prisoners who believe a connection exists between mental health and spirituality have better mental wellbeing (median WEMWBS score=56.5) compared to prisoners who do not share this belief (median WEMWBS score=46.0), the difference in mental wellbeing between the two groups is not statistically significant (p=011). having a belief in a connection between mental health and spirituality is not associated with mental wellbeing.

Table 7-32: Association between WEMWBS and belief in connection between mental health and RS

	Number in sample (N=83)	Median WEMWBS score (IQR)	Kruskal-Wallis (*H*)	p

Belief in connection between mental health and spirituality			2.6	0.11
Agreed	60	56.5 (45.0-62.5)		
Did not agree	23	46.0 (41.0-60.0)		

Table 7-33 shows that, based on the responses from 83 female prisoners who fully completed the WEMWBS, mental wellbeing is not associated with the religious status of the prison section in which prisoners are located. Prisoners residing in a religious prison section have no better or worse mental wellbeing than do prisoners in non-religious sections.

Table 7-33: Association between WEMWBS and religious status of prison section

	Number in sample (N=83)	**Median WEMWBS score (IQR)**	**Kruskal-Wallis (*H*)**	**p**
Prison section			0.3	0.58
Non-religious	69	55.0 (42.0-61.0)		
Religious	14	55.0 (49.0-60.0)		

Table 7-34 shows that mental wellbeing is significantly associated with the frequency of experiencing gratitude but not: RS coping style/RS health responsibility, Bible reading, or experiencing awe. Prisoners who believe they are important to God have better mental wellbeing (median WEMWBS score=57.0) compared to those who do not share this belief (median WEMWBS score=50.0), but this result was not statistically significant (p=0.82) in the sample of 59 women. A high frequency of experiencing daily gratitude is significantly associated with better mental wellbeing as shown by an increase in the median WEMWBS score of 14.5 points (p=0.02).

Table 7-34: Results of additional tests of the association between mental wellbeing and RS

RS item	Number	WEWMBS median (N=59)	Kruskal-Wallis (*H*)	p
I believe God is in control and so I do <u>not</u> have to take responsibility for my health			0.23	0.63
In agreement	32	57.0 (44.5-63.5)		
Not in agreement	27	56.0 (42.0-63.0)		
I read the Bible every day			0.78	0.38
		58.0 (43.0-64.5)		
In agreement	28	54.0 (43.0-62.0)		
Not in agreement	31			
I am important to God			0.05	0.82
In agreement	53	57.0 (43.0-62.0)		
Not in agreement	6	50.0 (42.0-64.0)		
Frequency of daily experience of awe			1.69	0.64
		57.0 (44.0-64.0)		
High	33	54.0 (43.0-62.0)		
Low	26			
Frequency of daily experience of gratitude			5.50	0.02
High	49	57.0 (49.0-63.0)		
Low	10	42.5 (38.0-56.0)		

7.8.4 Summary of results of the association between mental health and RS

Although clinically significant associations were found between RS and mental health, no statistically significant associations were found between depression and RS affiliation, RS personal important, RS involvement or any of the other RS dimensions measured. A significant association was found between mental wellbeing and gratitude but not with other dimensions of RS.

Chapter 8 Results of the qualitative study of mental health and spirituality in female prisoners

8.1 Linkage of the quantitative and qualitative studies

The quantitative study in Chapter 7 identified three questions which were incorporated into the design of the qualitative study:

1. What do prisoners understand by the terms “mental health” and “spirituality”?
2. How do prisoners conceptualise the “connection” many prisoners report between RS and mental health that statistical analysis did not reveal?
3. Are there ways in which RS influences prisoners’ help-seeking behaviour and involvement in mental healthcare?

The results of the quantitative study were used to develop a vignette in the focus groups with prisoners and interviews with chaplains and health professionals. Figure 8-1 shows how the quantitative study results were used to create a credible character in the vignette which was used as stimulus material.

Figure 8-1: Sources of content stimulus material developed for interviews and focus groups

Vignette used in interview and focus group question guides
A 30-year old woman called "Lachica" has been in prison for over a year for drug-related crime. She is single with two children aged 5 and 8 years, being cared for by relatives. Prior to coming to prison she attended religious services less than once a month. ***Until recently she would attend religious meetings in prison twice a week.*** However, she has not been for some time. In the **last four weeks**, she has felt **low and has been tearful**. In the **last three weeks,** she **has not had the energy or motivation** to do her usual activities in the prison. She **no longer enjoys chatting and laughing with other women in her section** and **has stopped looking forward to visits from her children.** Her friend (another prisoner) talked to her yesterday and asked her why **she has hardly been eating over the last couple of weeks.** She told her that she was not hungry. **Last night you were woken up by her sobbing**. You heard her saying, ***"God, there is no point going on. No one cares about me, not even you.*** **I am the worst person here.** ***What I did was unforgivable***."
Key
Underline indicates demographic information derived from cross-sectional study results **Bold** indicates features suggestive of depression *Italics* indicated features suggestive of a religious/spiritual problem

The Group 1 cross-sectional results revealed an overwhelmingly Christian female prison population and found that 17 in every 20 female prisoners received hope from reading about God. Therefore, a Bible extract of the parable of the Lost Son was appended to the vignette to stimulate further discussion with prisoners and chaplains.

8.2 Population and sampling

8.2.1 Prisoners

Of the 94 prisoners who had participated in the pooled cross-sectional survey, 47 were no longer in prison at the time of the focus groups. Figure 8-2 shows that among the 47 prisoners who remained in prison, 30 consented to participate in the qualitative study and of these, six (20%) proceeded to participate in a focus group. Of the six focus group participants, one had been recruited from Group 1 in the quantitative study.

Figure 8-2: Flowchart of recruitment to prisoner focus groups

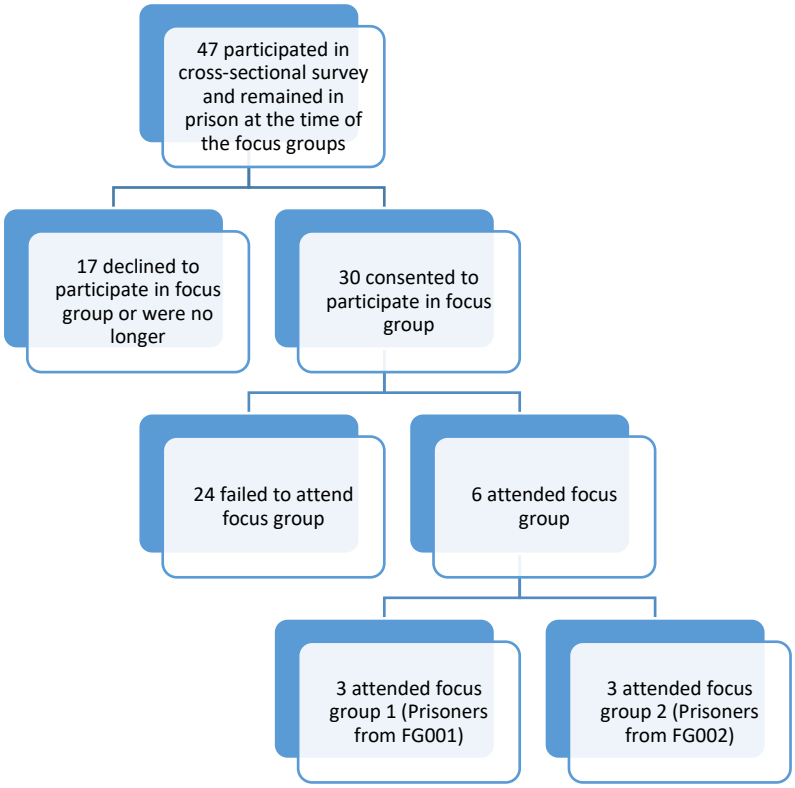


Figure 8-3 lists reasons given by prisoners for non-participation in a focus group. In addition, assisting prison officers reported that one prisoner was unwell and some prisoners had not responded when called by prison officers on the wing.

Figure 8-3: Reasons given by prisoners for focus group non-participation

Table 8-1 shows how the six prisoners who participated in focus groups were allocated to one of two groups based on assigned mental health status.

Table 8-1: Compilation of focus groups by mental health status

Focus group	**Focus group 1**	**Focus group 2**
Number of participants	3	3
Mental disorder status	MINI diagnosis of major depression - present	MINI diagnosis of major depression - absent
Mental wellbeing status	WEMWBS score within lower 25th centile, i.e., ≤ 43	WEMWBS score above 25th centile and below 75th centile, i.e., 44-60
Overall mental health status	Lower/worse	Higher/better

Table 8-2 shows the demographic and criminogenic profile of the six prisoners who participated in focus groups. Participants were of working age and resided on religious and non-religious wings.

Table 8-2: Demographic and criminogenic profile of focus group participants

Demographic or criminogenic measure		**Number of focus group participants (N=6)**
Age (years)	**18-24**	2
	25-34	1
	35-44	0
	45-54	1
	55-64	2
Marital status	**Single**	3
	Married	2
	Separated	1
Highest level of education completed	**Primary**	4
	Secondary	2
Prison wing	**Work**	3
	Half-free	1
	Religious – Catholic	1
	Religious - Evangelical	1
Primary index offence	**Violent**	1
	Acquisitive	2
	Drugs	3

Table 8-3 shows the RS and mental health profiles of focus group participants. The prisoners had high personal experience of both RS and mental disorder (depression). All prisoners stated that RS was of high personal important and most reported that they had been previously diagnosed with depression. In the year prior to imprisonment, half of the prisoners did not attend RS services; however, at the time of interview, felt that RS was of very high personal importance and attended services at least once a month. All but one prisoner believed there is a connection between mental health and spirituality.

Table 8-3: RS and mental health profiles of focus group participants

Religious/spiritual (RS) or mental health measure		**Focus group 1 N=3**	**Focus group 2 N=3**	**Both focus groups N=6 (%)**
Religious affiliation by denomination	**Roman Catholic**	1	1	2 (33)
	Evangelical/Protestant	2	1	3 (50)
	Other "I just believe in God"	0	1	1(17)
Religious affiliation by religion	**Mainstream Christian**	3	2	5 (83)
	Other	0	1	1 (17)
Personal importance of RS	**1 (not important)**	0	0	0 (0)
	2	0	0	0 (0)
	3	0	0	0 (0)
	4 (very important)	3	3	6 (100)
Frequency of attending RS services in year before imprisonment	**Never**	1	2	3 (50)
	Less than once a month	1	1	2 (33)
	At least once a month	0	0	0 (0)
	Once a week or more	1	0	1 (17)
Frequency of attending RS services at present during imprisonment	**Never**	0	0	0 (0)
	Less than once a month	1	0	1 (17)
	At least once a month	2	0	2 (33)
	Once a week or more	0	3	3 (50)
I believe there is a connection between mental health and spirituality	**Agree**	3	2	5 (83)
	Neither agree nor disagree	0	1	1 (17)
	Disagree	0	0	0 (0)
Previous diagnosis of depression received from health professional	**Yes**	3	2	5 (83)
	No	0	1	1 (17)
Current diagnosis of depression received from health professional	**Yes**	2	0	2 (33)
	No	1	3	4 (67)
MINI diagnosis of depression	**Yes**	3	0	3 (50)
	No	0	3	3 (50)
WEMWBS score	**21-30**	3	0	3 (50)
	31-40	0	0	0 (0)
	41-50	0	0	0 (0)
	51-60	0	3	3 (50)

8.2.2 Chaplains

Five chaplains were identified and approached. Of these, one evangelical chaplain gave consent to participate in the study but was unavailable for interview during the four months of fieldwork allocated to chaplain interviews. One person self-identified as a chaplain but did not have a formal or approved role of providing religious or spiritual input in the prison. Furthermore, this individual worked exclusively in the high secure area of the prison with prisoners who had been excluded from the quantitative study due to risks. Therefore, this individual did not fulfil the criteria for the qualitative study and data provided were not included in the analysis.

The mixed-gender sample of three chaplains included in the study were all Christian. They had all completed either secondary or tertiary (university) education and worked in the prison full-time. One had not received mental health training. able 8-4 and Table 8-5 show the profiles of participating and non-participating chaplains, respectively.

able 8-4: Profile of chaplain participants

Chaplain participant	Age	Religion	Years prison experience	Hours spent in prison weekly	Previous training in mental health	Personal experience of mental disorder (friend or relative)	Personal experience of depression (friend or relative)
CAP001	55+	Christian	>10	40+	Yes	No	No
CAP002	55+	Christian	>10	40+	No	Yes	Yes
CAP003	55+	Christian	2-10	40+	Yes	Yes	Yes

Table 8-5: Profile of chaplain non-participants

Chaplain non-participant	Age	Religion	Years prison experience	Hours spent in prison weekly	Previous training in mental health	Personal experience of mental disorder (friend or relative)	Personal experience of depression (friend or relative)
CAP004	<55	Other "I believe in everything"	<10	<20	Yes	Yes	Yes
CAP005	55+	Christian	>10	40+	No	No	No

8.2.3 Health professionals

Seven medical and non-medical health professionals who provided mental healthcare in the prison health centre were identified. This was the maximum number eligible to participate in the study. Two of the seven health professionals participated in interviews. Table 8-6 shows for non-participation of health professionals

Table 8-6: Reasons health professionals did not participate in the study

Health professional non-participant	**Reason for not participating**
SAL003	Sick leave
SAL004	Lack of time/not keen to be recorded
SAL005	Lack of time/not interested
SAL006	Sick leave
SAL007	Lack of time/aware that participation is not obligatory

Table 8-7 shows the profile of the two participants in the final sample of health professionals who participated in the in-depth interviews.

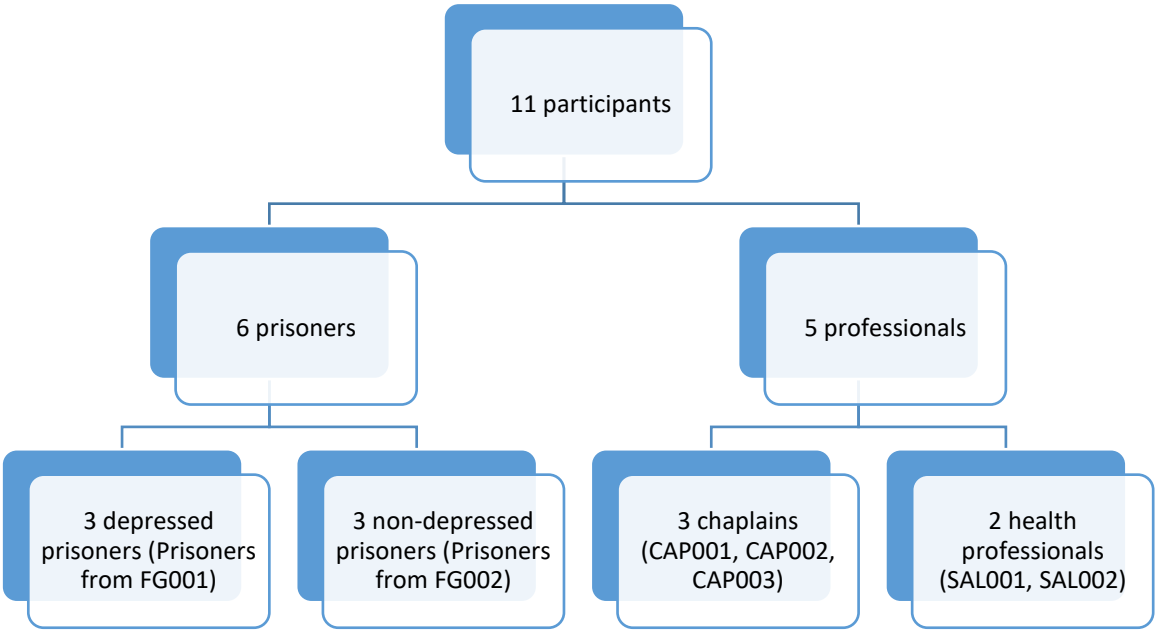
Table 8-7: Profile of participating health professionals

Health professional participant	**Age**	**Religion**	**Years of prison experience**	**Hours spent in prison weekly**	**Previous mental health training**	**Training in spirituality in the context of mental health**
SAL001	>45	Christian	>5	>10	Yes	Yes
SAL002	>45	Christian	>5	>10	Yes	No

8.2.4 Combined qualitative sample

Figure 8-4 shows that the overall sample of participants from whom qualitative data were generated comprised: six prisoners, three chaplains and two health professionals. Except for one non-depressed prisoner, all participants were affiliated with either Catholic or Evangelical Christian denominations.

Figure 8-4: Summary of prisoner and non-prisoner participants in qualitative study



8.2.5 Impact of population and sampling on qualitative analysis

The size of the final sample of prisoner and non-prisoner participants in the qualitative study led to a cautious and modest approach to analysing the text and identifying themes. A high volume of data was generated for analysis from the two focus groups and five in-depth interviews which yielded 257 pages of transcripts. Despite the small number of participants, the data presented is considered rich in content and useful, given the lack of published RS and mental health research in the studied population. Furthermore, the challenge of undertaking cross-cultural qualitative mental health research in a prison population in a less developed country is acknowledged as a mitigating factor. The high non-participation rate of prisoners suggests that, even with more time, financial and human resources, it might still prove difficult to obtain a high number of prison participants. Therefore, the perspectives of the six female prisoners that were shared in the study are highly regarded. High value is also placed on the data contributed by the three chaplains and two health professionals, knowing that it provides further insight into the RS and mental health influences that prisoners might experience in the prison. The benefits of undertaking qualitative analysis of the data from 11 participants in a hard-to-reach

prison setting far outweigh the limitation of adopting a moderate degree of caution in interpreting findings and drawing conclusions.

8.3 Topic 1: Mental health

8.3.1 Overview of topic 1

This topic includes three themes about mental health. The first theme explores the understanding participants have of the mental health terminology and concepts used in the mixed methods study. The second theme considers the ways in which prison affects mental health. This theme illuminates the contextual backdrop against which RS topics can be interpreted. The third theme is particularly important to this all-female study and provides insights into the effects of gender on the mental health of prisoners.

8.3.2 General understandings of mental health

Conceptual challenges of prison mental health research

The range of definitions of mental health provided by participants reflected the difficulties reported in a survey of international researchers who were unable to agree on a preferred definition and conceptual model of mental health (Manwell et al., 2015). Prisoners described mental health negatively in terms of the presence of mental disorders or "sicknesses" and poor mental wellbeing (WEMWBS 6), as illustrated in the quotes below:

> *"Mental health is to have a limit of doing things well or perhaps you lose control" (Prisoner in FG002)*

> *"It is when one is suffering some type of depression, bipolar, schizophrenia, the sicknesses of your mind." (Prisoner in FG001)*

In contrast, health professionals held a more positive view of mental health which incorporated aspects of good mental wellbeing such as relationships with others (WEMWBS items 4 and 9).

> *"To do with [the] psychic, physical, dynamic of the individual and her relationship with her peers or with society where she works" (SAL002)*

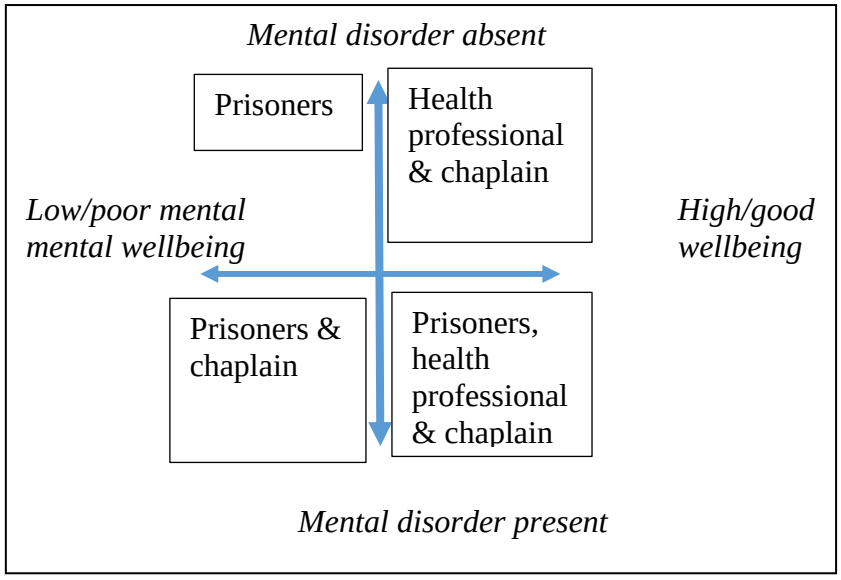
Chaplains, however, were divided between these two perspectives of mental health:

> *"It is how to have mental balance, it is what allows you to do a project, to have a future" (CAP002)*

> *"It is, as the word [Bible] says, a 'sickness of the mind'" (CAP001)*

Figure 8-5 presents the mental health understandings of prisoners, chaplains and health professionals using the two-continuum model and shows that within and between the three participant groups there are differences in how mental health is understood. The understandings of prisoners differed from that of health professionals who defined mental health in terms of the presence or absence of mental disorder.

Figure 8-5: Application of the mental health two-continuum model to the study sample (adapted from Keyes, 2002)



Although no individual participant defined mental health in terms of both mental disorder and mental wellbeing, the collective responses of participants can be represented within all four quadrants of the thesis model of mental health. While this might suggest that the mental health two-continuum model was appropriate for the study sample, the lack of consensus within the sample highlights the challenge in analysing both quantitative and qualitative data. For example, in the cross-sectional

survey, prisoners were asked their agreement with the statement "I believe there is a connection between my mental health and my spirituality". Given the diversity of mental health definitions from prisoners, one prisoner might have understood the statement to refer to "mental disorder and spirituality", while another prisoner might have based her response on "mental wellbeing and spirituality".

Mental wellbeing: a poorly understood concept?

Unlike the terms "mental disorder" and "mental health", "mental wellbeing" was not used spontaneously by any participants, although two professionals used the term "wellbeing" in a general sense that did not suggest a predominantly mental, emotional or psychological component. This suggests that the phrase "mental wellbeing" was either not part of the vernacular of or not understood by those detained or working in the prison.

The literature reveals several definitions of mental wellbeing (Kamman and Flett, 1983, Tennant et al., 2007). In the same way, health professionals and chaplains offered definitions that ranged from being "mental healthy [or sound]" (CAP001) and having "peace of mind" (SAL001) to the absence of "mental or psychiatric pathology (CAP002)". The hedonic ("feeling good") and eudaimonic ("functioning well") (Orpana et al., 2016, Deci and Ryan, 2008) components of the thesis definition of mental wellbeing (Stewart-Brown and Janmohamed, 2008) were reflected and are underlined in the following definition of mental wellbeing given by a prison health professional:

> *"It is a balance, to be mentally well means that I can work well, that I can give my best to my patients and to do things in good spirits" (SAL002)*

When asked about the relationship between RS and mental health all three groups responded with references to several WEMWBS items encompassing the hedonic or eudaimonic components of mental wellbeing, as shown in Table 8-8:

Table 8-8: Content analysis of mental wellbeing understanding among participant groups

Mental wellbeing component	WEMWBS domain	Evidence of implicit understanding of mental wellbeing			
		Depressed prisoners	Non-depressed prisoners	Chaplains	Health professionals
Hedonic (feeling good)	1,2,3,4,8 12,14	✓	✓	✓	✓
Eudaimonic (functioning well)	4,6,7,9,10 11,13		✓	✓	✓

Mental disorders beyond DSM and ICD

It was not surprising that health professionals were aware of a greater range of mental disorders than were chaplains who had not all received training in mental health. Table 8-9 shows that most participants named mental disorders that are found in the two main international classification systems (WHO, 1992, APA, 2013) such as: depression, schizophrenia, bipolar affective disorder and anxiety.

Table 8-9: Awareness of mental disorders by chaplains and health professionals

Classification of Mental Disorders	**Named by Chaplains**	**Named by Health Professionals**
Affective disorders (any)	✓	✓
Affective disorders (depression)	✓	✓
Neurotic disorders	**X**	✓
Personality disorders	**X**	✓
Schizophrenia and psychotic disorders	✓	✓
Substance use disorders	✓	✓
Unclassified (not in DSM or ICD)	✓	**X**

One chaplain who had undertaken previous mental health training, listed "prostitution" and "homosexuality" as mental disorders. This was highly surprising as neither is currently recognised as such by the medical profession, although homosexuality was a psychiatric diagnosis before its removal from DSM in 1973 and

ICD in 1990 (Drescher, 2015). The following two quotations from the same chaplain raises the question of the extent to which RS beliefs inform the understanding of what constitutes a mental disorder.

> *"They are curses. The disorders come from childhood…they ill-treat them…they rape them, they throw them out on the streets, they leave them alone, that girl grows up with a disorder, generally those girls are prisoners. Why? Because her mind became so unbalanced because she could not understand at her age of 4 or 5 years why they did that to her. She is a prostitute or a drug addict or an alcoholic or a lesbian. All these [are] disorders and the disorders come from childhood." (CAP001)*

> *"[Schizophrenia is caused by a spirit] of madness…I have seen girls here who have entered [the prison] well, totally normal and started to get involved in things that do not correspond to God and the madness comes…I have seen women with husbands and children get involved in lesbian themes…and so then comes the madness, because if a person is normal and starts to get mixed up in things, if a person is moral and realises that what she is doing is immoral, she becomes unstable." (CAP001)*

There are many causes of mental disorder

The combined responses of participants regarding the causes of mental disorders, particularly depression, reflected the holistic biological-psychological-social-spiritual model of psychiatry (Cox and Verhagen, 2011). The multifactorial aetiology of many mental disorders was acknowledged by all participants. Genetics was the principle biological explanation for mental disorders given by non-prisoner participants. Although a prisoner suggested that mental disorder could be caused by *"problems that the mother had during pregnancy" (Prisoner from FG002),* she did not refer directly to genetics. However, early childhood experiences were clearly recognised by all participant groups as contributing to the development of mental disorders in adults, as illustrated in the following quotation by a chaplain:

"There are strong childhood experiences that produce a mental disorder, for example, a rape, abuse, loss of a loved one during infancy, seeing or hearing violent situations" (CAP002)

An extensive list of psychological and social (or psychosocial) causes were offered by all participants. Table 8-10 shows that while prisoners focussed on psychosocial factors at the micro-level, non-prisoners included macro-level factors such as politics and poverty.

Table 8-10: Participants' beliefs about the psychosocial causes of mental disorders

Psychosocial level	**Responses to the question, "What causes mental disorders?"**	**Psychosocial factor**
Macro  **Micro**	*"Dictatorial government made in the people many conditions of losses, many themes of separation from the family…are now associated with anxiety states (SAL002)*	Country-level politics
	"I would say the root of the disorders begins from the cradle because our inmates generally come from very poor populations." (CAP003)	Population-level poverty
	"Above all to be imprisoned, the enclosure, to go out every day doing the same thing, the same routine, that sometimes your family leave you alone in those places. (prisoner from FG001)"	Local prison
	"It can be many things…also the same imprisonment that the inmates suffer" (SAL001)	Local prison
	"Big problems that bring you into depression" (prisoner from FG002)	Personal problems
	"The death of a relative" (prisoner from FG002)	Personal bereavement
	"Rejection produces emotional disorders" (CAP001)	Personal rejection

Whereas participants unanimously held the view that biological and psychosocial factors played an important role in the development of mental disorders, strong dissenting voices were heard in response to the suggestion made by a chaplain that RS was a causative factor in the aetiology of mental disorders. The chaplain attributed mental disorders primarily to RS factors such as the absence of a

connection with the sacred. The following quote includes a Bible reference which highlights the role of RS in influencing mental health beliefs:

> *"Humanity without God is sick and mental health is what the word [Bible] says is a sickness of the mind. Look, I agree with what God says in his word [the Bible] that 'the mind of those have been captured by Satan the devil' " (CAP001).*

The specific beliefs held by participants about the cause of depression are discussed under Topic 4.

8.3.3 Prison as a determinant of mental health

All participants in the qualitative study shared the view that prison was itself a risk factor for mental health. On the one hand, prison was generally described as a difficult and generally stressful environment in which prisoners are exposed to ill-treatment, loneliness, and unsatisfactory living conditions. These adverse experiences were, amongst others, believed to contribute to a worsening of mental wellbeing and to be involved in the development of mental disorders such as depression, anxiety and substance abuse. On the other hand, there was some recognition of the potential for the prison to provide an environment that offered an opportunity for better mental health in terms of mental wellbeing and recovery from some mental disorders, which might not have been easily available or readily accessed outside of prison.

One depressed prisoner reported that prison made her *"nervous" (Prisoner from FG001),* while another felt that the prison itself *"stresses" (Prisoner from FG001)* them which could leave prisoners feeling tense (WEMWBS item 3). These reports of prisoners were validated by a chaplain who stated: *"Stress is the number one cause of depression" (CAP002),* echoing the experiences of British female prisoners who reported increased levels of depression as a result of the psychological stress of being in prison (Douglas et al., 2009). The physical environment, the regime and some interpersonal factors are three aspects of incarceration participants believed affected the mental health of prisoners.

Environment

Although the adverse mental health effects of both extremes of social density within prisons has been reported in the literature (Walker et al., 2014), no participants mentioned solitary confinement. Only one participant, a health professional, mentioned prison as *"a place where there is much overcrowding" (SAL002)* that was having a negative impact on the mental health of prisoners. The quantitative study found that over 80% (55/68) of prisoners reported they were living in a cell or dormitory that housed at least ten prisoners and a previous study identified a lack of privacy as a factor contributing to poor mental health (Durcan, 2008). However, there was insufficient qualitative and quantitative data to determine whether overcrowding was the experience of the prisoners.

Prison Regime

Consistent with the findings that female prisoners report increased anxiety and stress as a result of losing their autonomy (Douglas et al., 2009), the focus group participants described the stress they experienced living under a regime that reduced their autonomy and made excessive demands of them through work and rules. Furthermore, more than one prisoner residing on the work wing described the pressure she felt from officers to meet her work targets rather than attend the focus group. In the following two quotations, a chaplain and a prisoner describe how the prison regime promotes loss of autonomy which then increases stress and affects the ability to make decisions (WEMWBS item 11) and makes it difficult to feel relaxed (WEMWBS item 3) and good about oneself (WEMWBS item 8)

> *"Imprisonment turns you back to being a girl because when you are on the street you make your decisions, you go to the centre, you go shopping, you go out, you leave your children at school and here in the prison the woman or a person returns to asking authorization for everything: 'Can I go to the health centre? Can I go to speak to a social worker? Can I go to Mass?' They don't have freedom of movement and that, at the end, produces an emotional drain that doesn't allow growth." (CAP002)*

> *"One feel[s] so very small, one is not free here to go to bed in the daytime, the bedrooms are closed…Here you cannot make your own decision about*

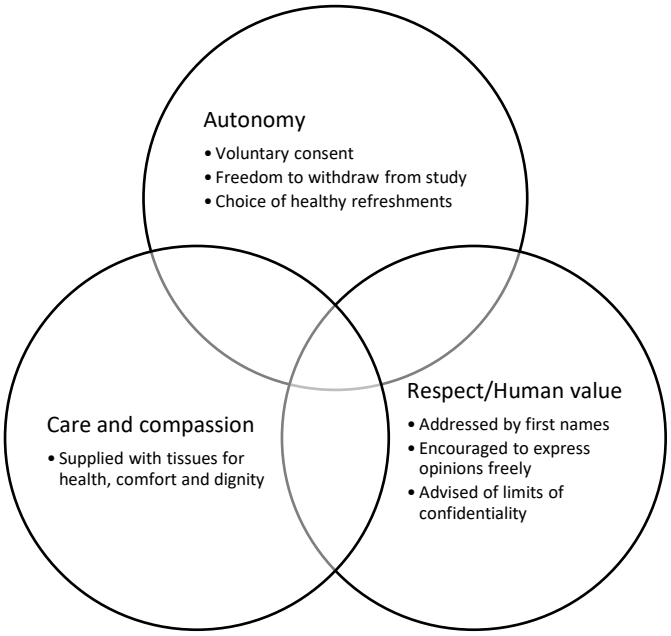
something, about going to eat in peace because the prison officer arrives and tells us 'Stand up!'. We are stressed through work, that they require so much of us. (Prisoner from FG001)

In addition to the loss of autonomy encountered within the prison regime, a loss of identity was reported. When this source of frustration was raised by a depressed prisoner, the other focus group members expressed their agreement and solidarity by showing the group facilitators their identity tokens which displayed a number. One participant stated, *"To the prison officers, we are a number" (Prisoner from FG001).* There was a sense that in the prison system prisoners might experience a degree of dehumanisation which could leave them feeling not very good about themselves (WEMWBS 8) and unable to speak freely.

The quotation below shows the contrast between the negative experience of prisoners in the prison regime and the positive aspects of the focus group as shown in Figure 8-6.

"What annoys me most in here is that we are prisoners and because we are prisoners it is like we were sentenced not to speak...we pass as being one animal more, because here [in the focus group] we are in confidence, but outside we can't do it" (FG001-2)

Figure 8-6: Positive aspects of the focus group experience



There was further report of the role prison officers play within the regime which affects mental health. A prisoner reported that within the regime *"sometimes the [prison] officer can be a good person" (Prisoner from FG001)* but that there were other *"prison officers who humiliate you and ill-treat you" (Prisoner from FG001).* Excessive ill-treatment and bullying leaves prisoners not feeling good about themselves (WEMWBS 8) and at risk of developing mental disorders (Nurse et al., 2003). Whilst prisoner-on-prisoner bullying was not mentioned directly, one prisoner strongly opposed the attempts of another prisoner to lead other inmates which could increase the risk of an indirect form of bullying. Her quotation below raises the question of whether such domination is related to the would-be leader's preference for wearing men's clothing, a trend other participants agreed occurred more frequently inside the prison than in the community:

> *"We see it every day and every moment…there is a person in my religion where I am…she dresses like a man but it is not a problem that she has a myth of being a man, but of being the leader…she wants to be the leader and I don't like that leadership. I don't support it because I believe that here there are no leaders, here we are all in the same conditions, in the same*

equality...different crimes, it is true...but to be the leader does no good, on the contrary, it does harm to our same society that we are living inside here because those people sometimes manage to separate people because they are bad inside." (Prisoner from FG001)

The perceived failure of the prison system to meet the identified needs of prisoners which has been linked to increased depressive symptoms (Walker et al., 2014), was described by a depressed prisoner:

"The other thing is that…here…you don't have toilet roll, you don't have your basic necessities…for your personal hygiene, forget that your 'friends' are going to give it to you…shampoo, soap, detergent, sugar" (Prisoner from FG001)

A mixture of dissatisfaction and gratitude was expressed by depressed prisoners about the food provided by the prison.

Prisoner 2 from FG001: *"The blessing from God, be what it may be, we have bread every day*

Prisoner 1 from FG001: *"That thing about the food that I don't…" [sentence unfinished due to interruption by Prisoner 2 from FG001]*

Prisoner 2 from FG001: *We have food, that is a great blessing…when outside there are people who are dying of hunger, there are whole countries that are dying of hunger… "*

Prisoner 1 from FG001: *"It is that the food here is bad "*

Prisoner 2 from FG001: *"Well, yes, but it is a blessing to have it; it would be worse not to have it"*

Prisoner 3 from FG001: *"Rarely it is good."*

Facilitator: *Rarely it is good?*

Prisoner 3 from FG001: *Sometimes it is good"*

The literature shows that a perceived lack of provision of satisfactory food can adversely affect the mental health of prisoners (Walker et al., 2014). However, recalling the finding of a significant association between mental wellbeing and gratitude in the quantitative study, the above focus group dialogue indicates that the negative impact on mental health of receiving food considered to be less than satisfactory can be reduced when prisoners find a reason to be thankful for the provision of food.

Surprisingly, in their accounts of the prison regime, no prisoner reported boredom, inactivity or a lack of mental stimulation which contributed to increased stress and new-onset substance misuse in British prisoners (Nurse et al., 2003). However, it cannot be assumed that boredom does not affect other prisoners in the study population experiences boredom who, unlike those in the focus groups, may not have resided on work or religious wings that provide structured activities throughout the day.

Interpersonal factors

"No friends"

The lack of a confidante was reported by prisoners in the focus groups and has previously been identified as a factor contributing to poor mental health in UK prisoners (Durcan, 2008). All focus group participants acknowledged that friendships were difficult, and even dangerous, to establish among fellow inmates, and that when they were formed, they were rarely genuine and trustworthy. In the following quotations, prisoners from both focus groups describe the lack of trustworthy friends and the risk of forming prisoner friendships and confiding in other prisoners which could worsen mental wellbeing and contribute to depression.

"Here in the prison, there are no friends" (Prisoner from FG002)

"No, here there is much jealousy…they can be with you for money or for the things that they [your family?] bring you" (Prisoner from FG002)

"Here it is just as complicated imprisoned to have depression because there are no friends here to start with. There are acquaintances and you can't tell your things to another person because that person is going to talk to another person and in the end, everyone knows and it is not something you want them to know because they are personal things and sometimes you need to let off steam with someone but you can't for the same reasons" (Prisoner from FG001)

"The rule…is that here…one cannot (this also gives you depression) express oneself with anyone, tell them…things, because in whatever moment, whatever fight, they will shout it…in front of others, and that makes you feel bad, worse" (Prisoner from FG002)

Overall, loneliness was a strong emerging theme linked to not feeling close to other people (WEMWBS item 9) in the prison setting.

"I haven't seen my children"

Where it is difficult to form friendships with those sharing the daily living environment in prison, prisoners might have the benefit of maintaining the positive familial relationships that existed prior to incarceration. This can help prisoners manage feelings of loneliness. However, prisoner participants reported varying difficulty of arranging prison visits with their children, consistent with a historical report that some female prisoners (between 44.2% and 56.8% of mothers in prisons in the USA) never receive personal visits from their children (Mumola, 2000). The lack of family visits is believed to negatively impact mental health (Corston, 2007) and can contribute to feeling unloved (WEMWBS 12). Prisoners in the present study not only reported this effect, but also provided rich data explaining how mental health is affected by inadequate contact with children. In contrast to the Corston report (2007) which attributed the reduced child contact to the increased geographical distance between the prison and the children, a depressed woman in the study offered an alternative explanation, implicating an uncooperative adult relative:

"I haven't seen my children for 8 months or my mother or anyone from my family because I have no visits because if one sometimes commits many errors but the family always reminds you of it. My mother reminds me of it always. She won't let me see my children. She doesn't bring them to me and that's why I am ill [cries uncontrollably]" (Prisoner from FG001)

Other prisoners respond to the loneliness arising from the absence of family visits by using illicit substances. A prisoner reported: *"There are girls who get into drugs because they are alone, or they are left alone, and they [the family] don't come to see them" (Prisoner from FG002).* While the use of illicit drugs can lead to the development of a diagnosable substance use disorder, it is also associated with increased anxiety and depression (Andersen, 2004).

Of those women who do have contact with their families either through visits of telephone contact, some experience the additional stress when made aware of familial problems that, due to incarceration, they cannot resolve (WEMWBS 6). This is illustrated in the following quotation of a prisoner explaining how she attempted to manage this stress by using medication and an illicit substance:

"One calls and the only thing they tell you about the outside are pure problems, pure problems, pure problems, because you cannot do anything and they fill you with problems, being that here, one's hands are tied…me, in the patios, I had problems at home, I was going and taking tablets, taking tablets and smoking marijuana. Why? In order to sleep and forget everything…if they don't answer you at home, you check elsewhere. In the end, you end up the same knowing what happened and that makes you go crazy, 'paranoid'. (Prisoner from FG002)

Although prisoners reported that family problems and a lack of family visits lead to poor mental health, the absence of such difficulties does not guarantee better mental health, as suggested by this comment from a prisoner with poor mental health (diagnosed with depression on the MINI and classified as having poor mental wellbeing due to her low WEMWBS score):

"Thank God that I don't have problems with my family…I have my family who come to see me: my children, my siblings, my husband comes to see me at least once a month" (Prisoner from FG001-2)

Forced separation from partner: "We are so lacking in affection"

Douglas (2009) described the stress and loneliness of forced separation experienced by women who enter prison, leaving behind partners who were sources of affection and companionship in the community. The following quote suggests that the lack of affection that may follow incarceration can be so overwhelming for some prisoners that, in the absence of support in the prison, some prisoners seek refuge in substance misuse:

"We are so lacking in affection…support…help. However, the wings (patios) are rubbish…they [are] drugging themselves and so those people, do you believe they are going to leave rehabilitated?" (Prisoner from FG001-2)

An alternative coping strategy had been observed by depressed prisoners who raised the subject of same-sex relationships developing in the prison among heterosexual women as a means of managing loneliness and the feelings of depression and being unloved (WEMWBS item 12) that prisoners experience when their husbands do not visit them. The lack of reservation and discomfort with which the participants discussed the subject was surprising and in stark contrast to the reticence and uneasiness observed in a qualitative study of sexuality among male prisoners in the USA (Sit and Ricciardelli, 2013). The women debated whether women who fell into this category should correctly be considered "lesbians". There was a view that these prison same-sex relationships should be considered either a reflection of a "sickness" such as depression or evidence of desperation when a prisoner can no longer cope with the lack of affection and loneliness of their circumstances, the latter being supported by the theory that behaviour in prison reflects a "deprivation of need" (Hensley, 2000). The following quotations describe the views held by prisoners:

The women that…are with another woman, more than anything, it is loneliness because many women, on the outside their husbands were loving them and everything and one arrives here and the husbands forget them, leave them, they start being unfaithful to her and the woman feels disillusioned, alone and , on top of being a prisoner, it gives her a depression...she needs to find affection in whatever place and here we are pure women and so she seeks affection in another woman...they seek that support in women, as they feel the same, they will hurt in the same...they seek that love, on my part, I've not reached that part yet...." (Prisoner FG001)

"Inside here there is lesbianism because it is different but there are other things that are through lack of love, of affection…that they partner up, it is not 100% lesbianism…There are many women who kiss and caress each other not because they are lesbians, it is like a need for affection so great and afterwards they go out to kiss their husband, and so, I don't find it to be lesbianism, it is a sickness inside here" (Prisoner from FG001)

"[Lesbianism] is a sickness…it is a depression of the moment" (Prisoner from FG001)"

The quality of non-platonic relationships formed either prior to incarceration or in prison can affect the mental health of a prisoner. The impact of pre-incarceration exposure to domestic violence was described as follows by a prisoner:

"I felt being hit by my partner three years ago…that takes you more to a depression…that damages you and contributes a whole lot to being depressed" (Prisoner FG001)

This supports evidence that some of the depression prevalent in female prisoners is attributable to pre-incarceration factors such as domestic violence in the community. At the same time, it has been reported that women in abusive relationships prior to incarceration may, when imprisoned, obtain respite from community-based domestic violence leading to a relative improvement in mental health (Douglas et al., 2009).

Considering the above findings alongside studies from non-prisoner populations, it is plausible that within the context of newly formed same-sex relationships, women are therefore at risk of domestic violence in prison, and therefore also at risk of associated emotional distress, suicidality (Ellsberg et al., 2008) and other depressive symptoms (Coker et al., 2002). The impact of same-sex domestic violence within the studied population was described spontaneously by a health professional based on clinical experience in the prison:

> *"When they say that something has happened to their children, they cry for their children, it is a lie, because I have found with many of them that [it] is because of lesbianism, that when they fight with their [lesbian] partner, here they say no, that they are sad because of their children and later one knows that they had a fight with the partner...there is intrafamilial violence that is to say, between partners" (SAL001 p6)*

8.3.4 Gender: an important determinant of prisoner mental health

Focus group participants held strong views on the differences between male and female prisoners concerning the risk, expression and management of negative emotions and depressive symptoms. They described gender-based differences in terms of: personal attributes, social roles and responsibilities, and social expectations.

Personal attributes: "The woman is weaker"

Female prisoners perceived themselves as weaker and more gentle than their male counterparts, whom they felt were less sensitive to emotional pain. They felt this difference made them more susceptible to the negative mental health impact of adversity. This theme of women as the *"weaker" (Prisoner from FG002)* sex, which was not reported in a health study of female prisoners in the UK (Douglas et al., 2009), emerged from both focus groups in the present study:

> *"The man is stronger" (Prisoner from FG002)*

> *"For a woman, it is complicated, because the men are a little rougher, they are stronger, but for us, the women, we are more sensitive. Everything hurts*

us, whatever thing and so for me, that also contributes to the depression" (Prisoner from FG001)

Social roles and responsibilities: “We still have to worry about the family”

A perceived increase in domestic responsibilities of women compared to men was presented by both focus groups as an explanation of any gender-based increase in depression among female prisoners. The role assumed by men as financial providers was considered by the participants to be less substantial than that of women as homemakers concerned about the general wellbeing of the nuclear and extended family. There was a sense that even during incarceration, women felt a responsibility to continue fulfilling their social roles as far as possible.

"The woman does more than the man. The man brings in money, that's all" (Prisoner from FG002)

"That bond, as the woman, the woman that is at home, with her children, is worried about her dad, her mum…her nieces and nephews, her grandchildren. Do you understand me?" (Prisoner from FG002)

Social expectations: Men use aggression to disguise negative emotions

Differences in social expectations of behaviour for men and women were proposed by focus group participants to explain differences in the prison prevalence of depression between the genders. First, women felt male prisoners disguised depressed feelings with acts of violence which appeared more socially acceptable for males than crying:

"With all their aggression, they cover everything…what they feel" (Prisoner from FG002)

"Perhaps [Fighting] is their [male prisoners'] way of hiding [or covering] their pain because for them that a man is crying is like ‘Ahh!’ [inconceivable, too much!]" (Prisoner from FG002)

Crying was reported by both health and RS professionals interviewed, as evidence supporting the presence of depression which was visible to workers in the health centre and chaplaincy:

> *"They don't hide what they are feeling; if they have to cry, they cry and you don't feel they are pretending." (SAL001 p12)*

> *"They cry and they don't know why they are crying. They don't want to have a bath, they don't want to eat, they don't want to do anything, absolutely nothing, they want to die." CAP001 p9*

Crying is not a diagnostic criterion for depression but is more likely to lead to an assessment by a caring prison professional such as a chaplain or health worker, than are acts of aggression which can trigger a referral to those responsible for disciplinary procedures. Similarly, women who do not hide their feelings may more readily accurately report symptoms of depression when formally assessed for mental disorders than men who may be less willing to disclose their symptoms.

In addition to disguising his depressive symptoms with aggression, it was also suggested that a male prisoner might try to manage his symptoms and negative emotions through violence. The female prisoners did not feel this option was readily available to them due to the perceived social expectations that a female prisoner would not engage in fighting or violent behaviour in prison:

> *"Men begin fights, fights, fights…perhaps they vent with this, fighting" (Prisoner from FG002)*

> *"Men can be angry, he can have depression and go over and fight another man. They are like that. The women, no, because the women here, we are for the most part doing behaviour " (Prisoner FG002)*

Given the absence of male prisoners in the qualitative study, it is not possible to draw firm conclusions as there are no male perspectives to compare with those of the female prisoners regarding personal attributes, the expression and management of emotion and their perceived gender-based societal expectations.

8.4 Topic 2: Religiosity and spirituality

8.4.1 Overview of topic 2

The first theme in this topic reveals what prisoners, chaplains and health professionals understand by the term "spirituality" and to what degree understandings are aligned to the thesis definition. Within the second theme consideration is given to RS variables that appeared important to prisoners but were not measured in this study. The third theme draws on the RS experiences of prisoners to reveal how RS opportunities in the prison might address some of the prison determinants of mental health and offers a cautionary note to the interpretation of findings of RS and mental health research among prisoners.

8.4.2 Understandings of RS

Table 8-11 shows that, in contrast to RS health literature, there was a relatively narrow range of responses from participants who mostly gave definitions of spirituality which reflected aspects of the definition proposed by Koenig (2012a) which was adopted by this thesis. Prisoners, chaplains and health professionals alike defined spirituality in terms of the sacred. This is not surprising, given the high percentage of Christian affiliation in Chile among the general population and prisoners in the quantitative study. However, the prisoners differed from prison professionals in offering a definition broader than that of Koenig (2012a) which included mental health and humanistic virtues such as wisdom. This tautological conceptualisation of spirituality partly explains the high number of prisoners who reported in the cross-sectional survey a strong belief in the connection between RS and mental health.

Table 8-11: Participants' definitions of spirituality

Dimensions of spirituality (Koenig, 2012a)	**Participant responses to the question, 'What does spirituality mean to you?'**	
	Views supporting thesis definition by Koenig (2012a)	**Views opposing thesis definition by Koenig (2012a)**
Not humanism, values, morals or mental health	No quote available	*"Wisdom" (Prisoner from FG002)* *"It has to do with mental health" (Prisoner from FG001)* *"Peace…trustworthiness, to have confidence in other people" (Prisoner from FG001)*
Sacred/ transcendent	*"Everything spiritual comes from God" (Prisoner from FG002)* *"The belief in something higher than oneself, like having the faculty to believe in God." (SAL001)* *"God is everywhere. Jesus, we have everything. Buddha. All are good religious beliefs" (SAL001)* *"For me it is to believe in God" (Prisoner from FG002)* *" Spiritually, I am very closed, you'll see a religious part of me…suddenly I want to say, 'The man above [God] does not exist' but I know he exists and so that gives me strength" (Prisoner from FG001)*	No quote available
Connection to sacred/ transcendent	*"[Spirituality] is the relationship with God" (CAP03)* *"It is to live in the spirit of Jesus" (CAP002)*	No quote available

8.4.3 What is faith?

Faith was not a term measured as a distinct concept in the cross-sectional study though a belief in the benefits of 'faith in God' was measured through two survey items. It was a term used by participants in different contexts. Its usage was present

throughout the transcripts, even before the term was briefly introduced by the facilitators in relation to the vignette towards the end of interviews and focus groups. Content and contextual analysis revealed that the term, used 26 times by prisoners, had different meanings depending on the context in which it was used. There was an uncontested view from prisoners that God was both the source and object of faith.

> *"The faith from God, Miss" (Prisoner from FG001)*

> *"More than anything it is the faith in him [God]" (Prisoner from FG001)*

Prisoners described faith as something that was quantifiable on a scale. There was a shared understanding that faith could be grown and lost.

> *"And so, for me, my faith would have been at the point of zero but no, I kept growing" (Prisoner from FG001)*

> *"Now I have much faith in him" (Prisoner from FG002)*

> *"…and so, one already with that [violation of a child] goes losing the faith" (Prisoner from FG001)*

During the vignette discussion, some prisoners considered the character's decision to use her faith instead of taking antidepressant medication as a positive step.

> *"It is good because she is going to use her faith" (Prisoner from FG001)*

Some prisoners believed high levels of faith were necessary for healing from mental disorders and receiving affirmative answers to prayers. In response to the suggestion from another focus group member that extreme levels of faith might be harmful, one prisoner shared her how her elevated level of faith had helped secure her mother's early release from prison.

> *"If you have much faith, much faith, much faith, the Lord is going to do the thing you want" (Prisoner from FG002)*

"But I, it was so much my faith, that [I prayed] please take my mother out of here, that that same night they released my mother. My mother was sentenced for 3 years and she left after 11 months" (Prisoner from FG002)

Not all prisoners reported such high levels of faith or attributed positive outcomes to faith. The first two quotations below illustrate the belief that lack of faith leads to ongoing imprisonment and the need to attend the health centre for illnesses. In the third quotation, a depressed prisoner explains that despite believing that faith can bring healing for her mental illness, faith healing had not been her experience. However, this did not appear to reduce her faith.

…but we lack faith. Because if we had all the faith that we could have, we wouldn't be here [in the prison]" (Prisoner from FG002)

"[God] can heal you but you have to have faith and that is what we lack, it is faith" (Prisoner from FG002)

"I know that faith moves mountains, I know it well, but with me it has not been able to do that…continue in the faith because you are a brave woman" (Prisoner from FG001)

The presence and quantity of faith was important to prisoners. There is little doubt from the data that prisoners used the term "faith" as more than a synonym for a religious affiliation. Faith, as understood by prisoners, was not measured and tested against mental health in the cross-sectional survey.

8.4.4 Prisoner experiences of RS

Non-RS benefits of RS activities

Prisoners and chaplains listed a wide range of RS activities and services provided by different religious denominations. Table 8-12 shows that some of the potential benefits of these RS services are not religious or spiritual. For example, a prisoner who feels tense (WEMWBS item 3) and pessimistic about the future (WEMWBS item 1) might engage with chaplaincy services, not primarily to meet a felt RS need, but to participate in yoga for relaxation and to receive assistance with post-release housing. Similarly, a prisoner who feels unloved (WEMWB item 12) because her

children do not visit her and feels useless (WEMWB 2) might, through engagement with chaplaincy services, begin to have regular visits from her children and discover that she is skilled in crafts.

Table 8-12:Potential benefits of RS involvement

Benefit from RS engagement	**Illustrative quotation**
Facilitation of visits from children	*"Where I am, the female pastor also helps us with the children, about everything, she counsels us how to treat children, she brings them once a month so that we can be with our children" (Prisoner from FG002)*
Motivational talks from ex-prisoners	*"Sisters from the street come that are Christians and they come to give their testimonies of some people that have been prisoners" (Prisoners from FG001)*
Public practice of RS including rituals	*"In the Catholic part, people from outside come to mission and also we have Mass on Sundays" (Prisoners from FG001)*
Personal RS devotions	*"A person who was Jehovah's Witness came to see me and I was learning the bible with her" (Prisoner from FG002)*
Relaxation	*"In that sense yoga is Hindu meditation or Christian meditation, the truth is that to me it doesn't matter much, the most important thing is that yoga allows the woman to have an encounter with her body…allows her to relax a little." (CAP002)*
Post-release support to improve social circumstances and reduce recidivism	*"I am applying for sheltered housing….to go with [Catholic chaplain] and in reality, to be honest, I am not catholic…I am not any religion…I believe in God, that's all but for me, the house will help me much…because I need, from all the years I have lived here, counselling to help me cope with the outside world...because I have nothing...if I go to my parents' house I will go back, I will go back to offending, I will go back to stealing...I want to make my life, I want to be independent, I want to apply for my house, I want to get my son back." (FG002)*
Acquisition of practical skills with potential for future income-generation	*"We have workshops of human and spiritual development…we have ….an embroidery workshop" (CAP002)*

It is possible that the prisoner who has a non-RS motivation for participating in RS activities may become more involved with RS through an enhanced sense of affiliation or may even request transfer to a religious wing where she would live in

an RS-centred milieu. Some prisoners prefer to reside on a religious wing for the non-RS benefits they hope to gain:

> *"The truth is I am on the catholic wing because I wanted to be well…they had given me the opportunity to stay here" (Prisoner from FG002)*

These findings offer two explanations for the absence of an association between RS involvement mental wellbeing and depression in the cross-sectional study, in contrast to several studies in the literature (Bonelli and Koenig, 2013). First, mental wellbeing benefits were obtained through high RS involvement comprising attendance at RS meetings such as meditation and motivational talks which may not have been fully captured by the survey item on RS involvement. Second, the association between RS involvement and depression was masked by those prisoners who may have attended RS services only because they lived on a religious wing where RS services were regularly held and attendance was expected. In other words, it is possible that underlying the association between RS and depression and mental wellbeing is a factor not measured in the survey but expressed by participants: the personal desire for RS involvement, or motivation for RS.

Openness to other religious denominations

Although all the prisoners were clear about their individual religious affiliation, in practice some demonstrated a degree of denominational plurality through their readiness to access RS support outside of their usual religious denomination. This is an opportunity for prisoners to exercise autonomy within the prison setting that restricts much personal choice. The choice of RS denomination with which a prisoner engages in prison depends not only on previous RS affiliation but also on the benefits she believes she will gain, as suggested by the non-Catholic prisoner who engaged with Catholic prison services in order to secure accommodation following her release. The following quotation illustrates prisoner denominational plurality and a prisoner's decision to overlook differences in RS practices with a chaplain who had given her much support in the past. It also suggests that some chaplains might be more aware and less tolerant than prisoners of opposing RS beliefs and practices.

"I've always participated in both [evangelical and Catholic]… I am here and there, no, I was with the Jehovah's witnesses also…and so, on all sides. God is only one, in reality. You know what? I'm going to tell you the truth. I've read the Bible of the Jehovah's Witnesses... (my Dad was a Jehovah's Witness)…a person came to see me who was Jehovah's Witness and I was learning the Bible well with her. The Bible! That I don't understand. I arrived at APAC with the Bible and the pastor threw the Bible away. But, why? She told me, 'Because they don't believe in the Holy Spirit'...'No, it is that she is confusing you'...I have nothing to speak ill of her [the pastor] because she helped me lots during my pregnancy but from here, I stay on the fence because religions just hurt [expletive used] *each other " (Prisoner from FG002)*

The same openness to different denominations was shared by a prisoner affiliated to evangelicalism:

"She is catholic and I am evangelical…going to a little [evangelical] service does good to be well psychologically and spiritually because when you are like this they talk to you about God, how to have a peace so lovely in your heart. It is good! The same when you go to the Catholic church. I have also been. I don't discriminate against any religion (Prisoner from FG001)

Whereas the prisoners were all open to different denominations within the Christian religion, the chaplains expressed views that ranged from a Catholic chaplain asserting the positive RS value of non-Christian religions to an Evangelical chaplain discouraging the access of material from other religious denominations.

Prisoners were divided on whether imprisonment affected their current religious affiliation as illustrated by the following two quotations:

"I have always been a catholic since I was outside, it's not that I became a catholic here" (Prisoner from FG002 who identified with Catholicism)

"There is only one God. I've been Catholic…when I was on the patios I used to go to the catholic and afterwards when I entered this wing, I started to go

to the evangelical." (Prisoner from FG002 who identified with Evangelicalism)

While some prisoners described a static religious affiliation, others reported a dynamic aspect to religious affiliation. This means that of all the prisoners in the quantitative study who identified with as Evangelical, some may have recently changed affiliation from Catholicism or be preparing to start an affiliation with the Catholic denomination. This RS heterogeneity within each RS denomination would affect the validity of the measurement of RS affiliation and consequently the measurement of an association between RS affiliation and mental wellbeing and depression. Therefore, any differences between denominations should be interpreted cautiously. For example, the association of borderline significance found between religious affiliation and mental wellbeing in the cross-sectional study

8.4.5 The use and interpretation of biblical material

When presented with the parable as part of the vignette, prisoners stated that the text would not be harmful, but would help the vignette character to reflect, draw on her resilience and make positive changes.

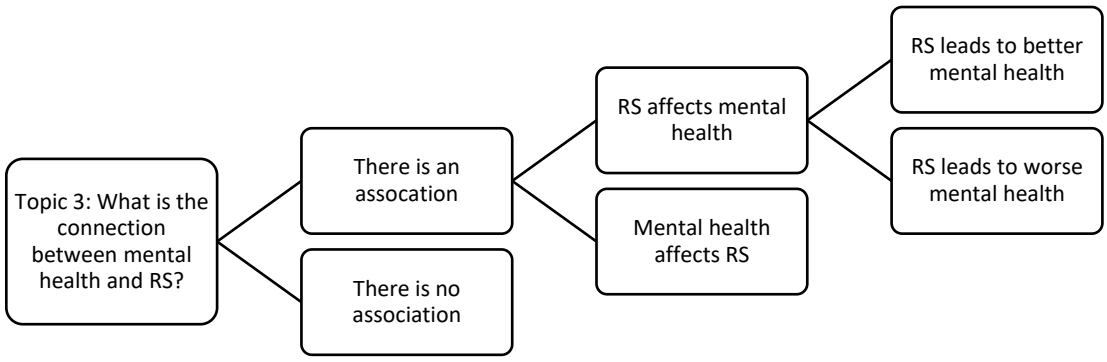
"She will realise lots of things…he [the Lost Son] lost everything and I believe that in the same way she will realise how she is going to react" (Prisoner from FG002)

8.5 Topic 3: What is the connection between mental health and RS?

8.5.1 Overview of topic 3

This topic includes data provided by prisoners, chaplains and health professionals that showed both agreement and disagreement with the main cross-sectional study findings that there is no significant association between RS (RS affiliation, RS personal importance, RS involvement) and mental wellbeing and depression. Participants explicitly and implicitly provided explanations for the absence of an association in the cross-sectional study. They also described other ways in which RS and mental health are associated in the study population. Figure 8-7 shows how the themes within this topic have been organised.

Figure 8-7: Organisation of themes within the topic of connections between mental health and RS



8.5.2 No association between mental health and RS

A belief in the lack of an association between RS and mental health, or specifically depression, was expressed by a non-depressed prisoner and a health professional who professed to have a lapsed religious faith:

> *"I find there is no connection because mental health, it is what one has, what one projects; spirituality is what goes through the inside" (Prisoner from FG002)*

> *"I see little connection between spirituality and mental health" (SAL002)*

It was difficult to determine whether the views expressed represents agreement with the null hypothesis of the quantitative study that RS and mental health are not associated with each other. Alternatively, the comment could simply reflect an understanding that RS and mental health are conceptually unconnected in terms of definition and origin, as suggested by the following quotation:

> *"The spiritual part is from God…it has nothing to do with mental health. Mental health …if I want to move the finger, I move the finger." (Prisoner from FG002)*

High RS involvement alone is not associated with better mental well-being or less depression

A health professional described a type of prisoner who, despite appearing to have high RS involvement through residing on a religious wing, does not *"really believe in God"* and makes little *"personal spiritual contribution"*. Therefore, when faced with problems this prisoner, whose RS involvement appears to be neither RS-motivated nor accompanied by cognitive or behavioural changes, may continue to struggle to deal well with the problems (WEMWBS item 6) and may not have reason to be optimistic about the future (WEMWBS item 1).

> *"Here there are people who have never had the childhood roots of good and bad or a healthy spirit….All this affects them and when they enter a religious section here, for example, in a religious wing, they go with a degree of manipulation to take advantage or to benefit but not in terms of a personal spiritual contribution and when they have many problems and feel bad they are close to death and it is like they have to choose "Either I really believe in God or I continue as bad as before". I have had many people who have been close to death that over there recognised the spiritual side that they need it, that they need to be with God" (SAL001 p20)*

A depressed prisoner told of her encounter with a fellow prisoner who had high RS with no clear cognitive-behavioural change:

> *"You are inconsistent with God because you go to the service and you are hypocritical and you are terribly rude…I don't believe you." (Prisoner from FG001)*

A similar sentiment was shared by a depressed prisoner who felt that, rather than merely having high RS involvement through frequent attendance at services, it was having "faith in [God]" and being "really connected to him", that would resolve a depressive episode:

> *"More than anything it is faith, to have faith in him, because if one goes…I can go every day to the service, all of them, supposing, because that is a lie. Let's suppose that I go all the time to the service and I don't have that faith.*

What happens? That I am not really connected to him [God] (Prisoner from FG001)

The above quotations suggest that high religiosity (RS involvement) is associated with mental health only in the presence of high spirituality (connection with the divine) and "faith". That the cross-section study measured RS involvement but did not attempt to quantify the strength of any relationship with or faith in God could explain the finding of no association between RS involvement and depression and mental wellbeing in the quantitative study.

High RS involvement improves spiritual wellbeing rather than mental wellbeing

The following quotation illustrates the peace experienced from attending services:

"Going to a little service sometimes does good to be well psychologically and spiritually because when you are like that, they speak to you about God, how you can have such a peace so lovely in your heart. That is good!....it is a peace you feel in your heart, a comfort in spite of being prisoners" (Prisoner from FG001)

It is doubtful that this *"peace you feel in your heart"* is equivalent to feeling relaxed (WEMWBS item 3) because the concept 'peace' is not represented in the WEMWBS (Stewart-Brown, 2013). Moreover, "I feel peaceful' is a statement within the existential component of the Spiritual Well-Being Scale (Peterman et al., 2002). In other words, the psychological benefit of RS reported falls outside of the study definition of mental wellbeing and is better described as an RS benefit. Therefore, despite the assertions of the prisoner, the quotation does not describe an association between RS and mental wellbeing as measured using the WEMWBS. Rather, it explains why, despite 75.0% (n=51) of prisoners in the quantitative study agreeing there is a connection between their spirituality and mental health, no statistically significant association was found between the RS involvement and mental wellbeing.

High RS coping does not affect mental wellbeing

The following quotation from a non-depressed prisoner describes a scenario of using spiritual coping methods such as praying in response to having problems:

"If I have problems…if you are going to pray…you go to a sister, who really is a sister, and you speak to her and everything, you are going to forget, obviously, one or to go in faith or you increase the faith" (Prisoner from FG002)

However, the reported effect of praying in this illustration is forgetting the problems, rather than helping the prisoner deal any better or worse with the problems (WEMWBS item 6).

8.5.3 Association between mental health and RS - High RS improves mental health

High RS in general improves mental wellbeing

There was a prevailing view that RS in a general sense helps people to feel better about themselves (WEMWBS 8):

"[Spirituality, religion] is good for self-esteem" (Prisoner from FG001)

Several perspectives were offered based on prisoners' RS experiences in which reference was made to the role God played in their lives. The quotation below illustrates how RS helped a prisoner become more interested in things (WEMWBS item 13) and have greater life satisfaction.

"Before, I didn't care about anything. God has helped me lots. He's helped me change, to have feelings because I was a woman who used to have lots of hatred because of what I had lived through…I had lots of hatred in my heart. I was an empty person." (Prisoner from FG002)

It was unclear from the data whether these reported changes should be attributed to God having helped her or her belief that God had helped her, though the former would be impossible to test using empirical methods.

High RS involvement increases mental wellbeing and reduces depression by reducing loneliness

The following comment provides insight into a pathway through which increased RS involvement might improve mental health. First, a prisoner who engages with RS activities in the prison more frequently may be less likely to feel lonely because she

knows the chaplains are present. With less loneliness, the prisoner may be less likely to experience depression.

> *"Not alone in that sense because we know that they [the chaplains] are here…she doesn't see any distinction of class; she draws the whole world to her and they speak with her" (Prisoner from FG001)*

Prisoners believed that, beyond RS involvement and the company of chaplains, a belief in the omnipresence of God not only helps in the management of distress, but also protects against loneliness.

> *"In my opinion…yes, it is good…the gospel, let's go to the spirituality of the gospel, well, to be in something that helps you because God helps. God, you speak to him and he listens. When you have pain, when you are tired, when you are distressed, he hears you. He never leaves you alone...one wants to get alongside him, him, no, on the contrary, he is always here with us"(Prisoner from FG001)*

High RS belief leads to better mental wellbeing - optimism

A health professional was of the view that holding religious beliefs helps prisoners feel optimistic about the future (WEMWBS item 1)

> *"[Religious beliefs] mean that we cannot be imprisoned alone but we have to look on the positive side." (SAL001)*

A chaplain echoed a similar view in a reference to increased *"hope"* (WEMWBS 1) during a depressive episode stemming from *"a deep spirituality"*:

> *"When a person falls into depression it is because she sees everything black, because she can't see a way out of her situation or out of her problem and I believe that a person who has a deep spirituality, who believes that there is something more beyond themselves, that allows them balance, to have a hope, to have a light that guides them, that illuminates them..." (CAP002)*

High RS beliefs reduces depression through an increase in resilience

High levels of resilience are associated with fewer depressive symptoms (Spies and Seedat, 2014) and RS can contribute to a strong moral compass which helps to build resilience (Wu et al., 2013). The link between RS and resilience is reflected in the following quotation by a depressed prisoner:

> *"I know that he [God] exists and so that gives me strength to go on fighting, believing in myself. I committed an error...and because I committed that error I am not condemned by Him. For me, it is everything in life" (Prisoner from FG001)*

8.5.4 Associations between mental health and RS - Low RS worsens mental health

Low RS (lack of RS belief) decreases mental wellbeing and increase the risk of depression

There were few comments about the relationship between low RS and better mental health. A health professional held the view that prisoners who do not have RS beliefs, primarily in God, will not feel cheerful (WEMWBS item 14) or close to other people (WEMWBS item 9). Instead, they might experience the loneliness that some participants believed was linked to an increase in depression and have no reason for living which is related to the depression criterion of suicidality.

> *"I think believing in God would do all the prisoners well because they would be able to leave the situations that plague them. Being empty, not believing in anything, is sad for them, apart from making matters worse for them because the result is that they will always be alone" (SAL001)*

> *"If you don't have spirituality, it affects your mental health because you don't believe in anything. You are empty. You don't have any reason for going on" (SAL001)*

8.5.5 Associations between mental health and RS - High RS worsens mental health

RS affiliation reduces mental wellbeing

The negative impact of RS affiliation on mental wellbeing was described by both health professionals. There was concern that certain religious denominations were less open to new ideas and that a prisoner affiliated to these denominations would be less interested in new things (WEMWBS item 13).

> *"They are very oppressed, very closed, regarding viewing other possibilities, other opportunities" (SAL002)*

High RS involvement and high extrinsic RS coping reduce mental wellbeing and increase depression

The possibility that very high RS involvement may reduce the ability of a prisoner to freely think for herself and make her own decisions (WEMWBS item 11).

> *"....in other religions, what I have noted is that they absorb them too much and that there is a type of brainwashing." (SAL002)*

In contrast to the transpersonal/transcendental theory explaining the mental health benefits of RS, concerns were raised that a prisoner who engages in private RS practices excessively is at risk of attaining an altered state of reality which affects other areas of her life. Her excessive RS engagement may be at the expense of addressing difficulties in her life. This form of extrinsic religious coping has been associated with increased depression (Smith et al., 2003).

> *"I could be a man who lives on his knees all day long with hands together to the Lord, I am referring to the girls, but perhaps I am very altered, too altered, and I lose control over my children, my partner, my internal order...or perhaps as an instinct of freeing myself from leaving from here, perhaps I would be fine but the reality is another thing" (CAP003)*

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High RS problem-solving increase depression

Some prisoners and a chaplain expressed the view that RS could solve every single problem a person might encounter in life: *"You can have problems and you cannot solve it. He [God] is going to fix it. Rapidly, he is going to solve it." (Prisoner from FG002).* However, the following comment by a health profession shows a concern that prisoners who have a deferring approach to their problems, believing God to be responsible for providing a resolution, are more likely to develop depression.

> *"There are limits...Mental disorders develop very easily in people who suffer from a spirituality that solves everything, that is what I have seen" (SAL002)*

High RS belief in a demonic cause of psychosis reduces mental wellbeing in prisoners with psychosis

A health professional explained that some prisoners believe that people with schizophrenia are possessed by the devil. Holding these beliefs leads other prisoners to intentionally distance themselves from the person with schizophrenia, who in turn is socially isolated by peers (WEMWBS item 9).

> *"I have seen here inmates who when they had schizophrenia thought that they had the devil inside…I've assessed people with schizophrenia who believe they are possessed but do not accept that they are not, that what they have is a pathology…. The other inmates that are around [the people with schizophrenia] leave them alone, thinking they are possessed by the devil…and so instead of helping, they are zero support." (SAL001)*

High RS experiences of demonic forces increase depression

Prisoners who believe in "negative spirits" and demonic forces and proceed to have supernatural visitations can experience elevated levels of fear and depression, as described in this eye-witness account by a chaplain:

> *"In a way, because I have known cases that attribute them to certain .... but then one discovers that they are influenced by specific comments, visions ... for example, I had to go with one of the priests to one of the dormitories to bless that bedroom because they said that there were negative spirits, that the prince [the devil or something relating to the demonic] was dominating*

everything, then, they begin to elaborate a whole situation of depression, of fear. And we had to go and make them aware that no one is superior to God. Therefore, he had to pray, really had to line up with the Lord and that we would calm down. They understood and fixed that but several girls here talk about that suddenly they saw crossing, they feel dominated, that, things like that. So, that can also affect in mental health, this 'spirituality' in quotes that goes on the other side. Not on our side, right? (CAP003)

8.5.6 Associations between mental health and RS - U-shaped relationship between RS and mental health

It was suggested that the positive relationship between increased RS and better mental wellbeing and less depression ceases to exist when RS levels are too high. Caution against excessive RS was expressed in the quotation below by a health professional who acknowledged the mental health benefits of RS but felt that, in excess, RS could have an adverse effect on volition. Prisoners who feel they have lost autonomy experience increased levels of stress and depression (Douglas et al., 2009). This view is consistent with the finding of a U-shaped association between RS and depression (King et al., 2007).

"I believe it [religion] is positive in many aspects, with a limit, in that the human being does not lose his or her will" (SAL002)

8.5.7 Association between mental health and RS – Poor mental health lowers RS

Poor mental health (depression and other mental disorders) reduces capacity for RS belief and experience

There was a view, expressed only by chaplains, that poor mental health has a negative impact on a prisoner's RS. The following two quotations illustrate the belief that mental illness, particularly if untreated, impairs an individual's ability to understand religious teaching and to know God.

"A person who is ill, who has an untreated depression, that is bipolar, that is psychiatric, that is schizophrenic, it is very difficult to discover if she has a healthy spirituality. I cannot talk with a woman about the love that God has

for her if she does not have the capacity to discover with her ill brain who God is" (CAP002)

"...a mentally healthy person can have a God, recognize a God who loves it deeply [but] ...a sick person cannot discover this in his life" (CAP002)

Chaplains felt that mental disorder could also have a negative impact on the quality of a prisoner's RS. Even if a woman attends RS services, her mental disorder may restrict her engagement.

"If you are mentally ill, you are going to have an emotional faith and faith is not an emotion." (CAP001)

"I see a woman who is psychiatrically sick, who has bipolar, who goes to Mass, for example, on Sundays she is not completely at Mass. She enters, she leaves. She is not connected with what is going on because she can't connect, because she is ill." (CAP002)

8.6 Topic 4: RS and mental healthcare

8.6.1 Overview of topic 4

This topic examines the influence of chaplains on the help-seeking behaviour of prisoners with depression and the extent to which health professionals acknowledge RS in clinical care. Factors that influence whether, when, what and from where prisoners seek and accept help for emerging depressive symptoms are discussed.

8.6.2 Identification of depressive symptoms

The early identification of depressive symptoms is the first step to receiving an early diagnosis and avoiding a delay in commencing treatment. Prisoners, chaplains and health professionals all demonstrated at least a very basic understanding of the nature of depression by spontaneously naming at least two of the following DSM/ICD criteria of depression: feeling depressed/low in mood, loss of interest/anhedonia, change in appetite, sleep changes, psychomotor changes, loss of energy, poor concentration/indecision, thoughts of self-harm or suicide, loss of confidence and excessive guilt. Participants also referred to hopelessness, tearfulness, negative

cognitions and social isolation, all of which are considered in the clinical judgment of depression. In addition to using criteria found in international classification systems for depression, one prisoner in response to case study material presented decided that the character had "*a big depression [because] she no longer believes in God" (Prisoner from FG002).*

Discussion around the vignette revealed the ease at which many participants recognised depressive symptoms. Most participants did not require prompting and immediately recognised that the female character in the vignette was depressed, though it was surprising that a health professional appeared hesitant in making a diagnosis of depression, preferring to comment first on RS needs and RS management strategies.

8.6.3 The influence of chaplains on prisoners' understanding of depression

There was a minority view among the chaplains that seemed to suggest that depression should be classified as a spiritual, rather than mental, disorder.

> *"Depression is something that is strong in a human being but yes they are healed, and again I insist, with the treatment that God does in the soul of man. And there is the problem, in the soul" (CAP001)*

The comment seemed to contradict the view of the same participant expressed earlier in which depression was named as a mental disorder. However, the apparent contradiction might represent a belief that, although depression is classified as a mental disorder, it has a spiritual origin. In other words, from this perspective, depression is understood to arise primarily from a spiritual source, a view shared by a non-depressed prisoner who, offering an RS explanation of the origin in depression, repeatedly asserted that the aetiology of depression lay with an evil spiritual force:

> *"Depression is not from God…. God only wants to give you happiness…Depression is from the devil…because depression makes you take tablets to kill yourself" (Prisoner from FG002)*

Supporting evidence from the same prisoner suggests that prison chaplains can influence the beliefs prisoners hold about the depression.

> *"Here on the wing where I am, APAC, of the evangelicals, the female pastor has taught us much about depression because depression, let's see, depression is not from God… " (Prisoner from FG002)*

8.6.4 RS and depression discourses

Regardless of religious affiliation or experience of mental health, all participant groups frequently named psychological and social factors that contribute to depression. While participants were united in the belief that RS was not the sole factor in precipitating and perpetuating depressive symptoms, they were strongly divided over whether they believed RS was always linked to the onset and progression of depression, leading to the emergence of two distinct discourses:

1. *Lack of RS as the root cause of depression where high RS and depression are mutually exclusive*
2. *RS as a factor in depression where high RS and depression are not mutually exclusive*

Data analysis revealed a range of positions within and between these two discourses held by participants from the three groups. At one end of the spectrum of views on this subject was a firm expression of belief suggesting that atheism caused depression.

> *"Not believing in God, that there is a supreme being that has power and governs everything, [if one doesn't believe] there is depression" (CAP001)*

> *"It is that she [the prisoner with depression] is far from God. Look, where I am there are various girls that …. they've been ill [depressed] … I believe, perhaps, because, perhaps, they were far from the house of God." (Prisoner from FG002)*

While the minority view that depression arises from a lack of a relationship with God might suggest that individuals with a close relationship with God would not be

depressed, strongly dissenting views were held by other participants who believed a high level of RS can exist alongside depression:

> *"I do not agree with any of that [that depression is caused by people not having a relationship with God]" (SAL002)*

> *"How mean is the person who said that it was lack of God! It is not true. I have depression and I've never abandoned my church or my religion. Never! On the contrary, I've held onto it very much because if it wasn't for him [God], I wouldn't be alive." (Prisoner from FG001)*

> *"I know religious people, I know priests who one would think would have sufficiently balanced spirituality or some evangelical pastor, still they fall into depression and I believe that it is not because they are not living as they ought to live out the spirituality.... [it's not because of lack of faith] ...no, " (CAP003)*

This view of the co-existence of high RS and depression is consistent with the cross-sectional study findings of depression reported in 10% of prisoners who had high RS involvement. There is insufficient evidence in the finding that 12% of prisoners with low RS involvement were depressed to support the minority view that low RS leads to depression.

8.6.5 RS and depression discourses influence management of depression

Where RS was believed to be the primary cause of depression, it was considered by prisoner and chaplain participants to be an essential component in the management of depression which they believed could be healed by the *"treatment that God does in the soul" (CAP001).*

> *"[I use prayer with a person with depression] because God is powerful to change people when one wants and when one believes. When one believes, everything is possible." (CAP001)*

"[A person with depression needs] deliverances. Deliverances are when the pastor prays for you and takes out all of that" (Prisoner from FG001)

Some chaplains use an RS-informed psychosocial approach for the management of depression which can be described as a psych-social-spiritual model in the absence of a biological component.

"A spiritual intervention, prayers, explain to them that it is depression, because biblically also we have women who had depression but they went forward, and so we speak to them, explain to them, encourage them, tell them to tidy themselves, to put on make-up, to wash themselves…and that they are capable of doing things" (CAP001 9)

"I tell them: 'You are lovely, you're are intelligent' to raise their self-esteem, 'You are beautiful, you are God's creation and we're going up. We're going to study' and there they advance and truly I am surprised because some of them have never worked in their lives, studies or had manual abilities." (CAP001)

Where RS was not believed to be the root cause of depression, there were some views that RS may still have a role in the management of depression. In the case study discussion, one chaplain stated prayer would not be offered but *"a book of spiritual self-help" (CAP002)* would be given to the prisoner who would be strongly encouraged to take medication and participate in psychosocial interventions.

The majority view expressed by all groups was that RS was not the root cause of depression. The data did not reveal whether participants held this belief for every single case of depression or even for every mental disorder. Some prisoners seek and receive RS-informed interventions for depression from chaplains, though it is less clear whether this option would be chosen at the exclusion of seeking care from health professionals at the prison health centre whose views about the aetiology of depression differed from that of some prisoners. The view from a health professionals was that prisoners' beliefs about RS and depression did not prevent prisoners from accessing prison health services for depressive symptoms, stating: *"in any case they seek help" (SAL001).*

8.6.6 RS and the health professional

Neither of the health professionals provided evidence that they believed RS was a primary and central factor in the development or treatment of depression. The health professional who opposed the view that a lack of a RS caused depression, had initiated RS discussions in consultations and referred and signposted prisoners to the chaplains:

> *"I, personally, ask [prisoners]: 'Well, do you believe in God? Do you believe in this?', and they say to me: 'How can I believe in God with everything that has happened to me?'. But God suffered too. God, in fact, Jesus suffered the most terrible thing that could have happened and he became man and I tell them: 'Human beings have more fear of the justice of man than of the justice of God, because God always forgives you but man doesn't and so don't confuse things', I tell them. (SAL001)*

> *"Having a [RS] belief, albeit not very active, I have recommended people to approach these people [chaplains] through the good results I have known they have had with them" (SAL001)*

The incorporation of RS in the clinical practice of this health professional might be considered consistent with the current international guidance in psychiatry to acknowledge the RS of individuals who present for mental health assessment and care (Abdul-Hamid, 2011, Peteet et al., 2011). However, it could be argued that in the illustrations above the health professional gave too much consideration to RS and may possibly have crossed professional boundaries. In contrast, the other health professional did not consider RS issues during any medical consultations. The following quotation represents the alternative and older view that RS may not be an important or relevant factor to consider in the assessment or treatment of depression:

> *"I've never thought about it in that respect; I have not recommended it either. I have left it as a matter quite personal" (SAL002)*

The mixed views health professionals held regarding the relevance of RS in mental health care may result in a service that inconsistently acknowledges the relevance of

RS for prisoners who attend the prison health centre and may therefore fail to offer an optimal standard of mental health assessment and management.

8.6.7 RS and medication

If depressive symptoms are identified and the prisoner decides independently or through a third party such as a peer or chaplain that the symptoms require medical assessment, the prisoner will attend the prison health centre. Here her RS needs may or may not be considered during the assessment by health professionals. Following a formal diagnosis of at least moderate depression, the prisoner is likely to be prescribed antidepressant medication. Themes about the impact of RS on the attitudes of prisoners towards psychotropic mediation such as antidepressants emerged *de novo* as well as during the planned vignette discussion.

Medication: of God or not of God?

Depressed prisoners strongly expressed their opposing views about the origin of medication in the first focus group:

> *"God placed the medication for something" (Prisoner from FG001)*

> *"I believe God did not place the medication…I believe mankind is the one that invented medication" (Prisoner from FG001)*

The third member of the focus group agreed that medication was not from God. The prisoner holding the minority view in the group went on to explain that she believed God gave humans the means to make medication and in this way offered an explanation that provided an RS-sanctioning of medication. It is interesting that the only view that psychotropic medication was from God was expressed by a prisoner who did not believe that high RS and depression were mutually exclusive and implied that her RS gave her resilience:

> "*I've held onto it [religion and spirituality] very much because if it wasn't for him [God], I wouldn't be alive." (Prisoner from FG001).*

The comment reflects a conceptualisation of mental disorder in which RS is not attributed to the development of the disorder but is considered to have an indirect management role through medication and resilience.

When discussing the vignette, prisoners had mixed responses to the vignette character's reluctance to accept the prescribed antidepressant and whether they would advise her to take the medication.

> *"[Tell her] that it will help her…taking her treatment she will feel better, with better mood" (Prisoner from FG001)*

> *"I would tell her not to take it because, tablets for what? Straightaway they give you tablets for your mood and they don't do anything" (Prisoner from FG002)*

Medication advice to prisoners from chaplains

All three chaplains interviewed demonstrated an awareness that the discontinuation of psychotropic medication could have adverse consequences for the health of a prisoners.

> *"On the Catholic wing, I have a woman who has a mental disorder and it seems that if she stops taking her medication she becomes absolutely unbalanced" (CAP002)*

All three chaplains stated they would not advise a prisoner to discontinue her medication against medical advice and did not believe mental health care through medication was incompatible with the RS care they could provide.

> *"I say to them 'Take your medication...and we'll be working on the spiritual part' (CAP001)*

> *"If the doctor told her she has to take it, it is because she has depression and the tablet" (CAP002)*

> *"The chaplain would have the obligation to say to her, 'Listen, they gave it to you and so have it" (CAP003)*

Differences in opinion between chaplains were observed in their beliefs about the overall effectiveness of antidepressant medication and its relationship to RS interventions. One chaplain expressed the belief that an antidepressant was an effective long-term treatment.

> *"The medication, is going to help her be a bit better and this will take a while but afterwards she will feel her old self again, without the medication" (CAP002)*

Another chaplain who felt "the problem was the soul" and that medication was, unlike God, incapable of "reaching the soul" *(CAP001),* viewed medication, at best, as a short-term option until the prisoner had sufficient RS to no longer require medication, where RS could be *"faith in Christ" (CAP001)*

> *"afterwards I am not going to need them [tablets] because I am going to be cured in my soul, in my heart." (CAP001)*

There was a sense among some participants that RS and psychotropic medication worked together, though it was not possible to determine whether it was believed that one worked as a catalyst for the other; both worked synergistically or neither could work without the other. A chaplain made the following comment about the association between RS and the management of depression:

> *"I tell her that faith has to be helped by the medication." (CAP002).*

A view that recognises the value and limitations of both medication and RS interventions in the treatment of depression might be acceptable to all prison chaplains and prisoners regardless of their understandings of mental health and RS. This middle ground position was adopted by a depressed prisoner who from personal experience felt that both RS and non-RS approaches were important in the treatment of depression:

> *"I am sick inside and for that between the two, medicine and God or God and medicine, they [both] have to be with me because if not, I can't, because God moves mountains but also I need help" (Prisoner from FG001)*

In contrast to the depressed prisoners, when discussing the vignette the non-depressed prisoners were unanimous in their preference to exercise faith rather than take medication for depression.

> *"[Use faith,] it's okay, all the time" (Prisoner from FG002)*

Interestingly, the chaplain who also expressed a preference for RS over medication and a belief that God would heal everything explained that her views on medication were limited to mental disorders and did not extend to physical disorders.

> *"In almost all I agree but, for example, I have an illness and so I take medication. I know that God heals that God does all that but I, for example, have [a chronic physical illness] and I have to take my medication for [the chronic physical illness] and it keeps me well. But the psychiatric side is another theme. But mine is an illness, it is an organ in my body, the illness of the soul is worse than cancer " (CAP001)*

The comment points to a belief in a fundamental distinction between mental and physical disorders that determines a biological intervention is necessary for the treatment of physical disorder, whilst an RS intervention is necessary for the treatment of mental disorders. This perspective potentially reduces the role of health professionals in the management of depression to providers of an optional, partially-effective short-term service, particularly for those with low RS.

Chapter 9 Discussion

9.1 Summary of thesis aims

The thesis studied the mental health and religion and spirituality (RS) in prisoners through literature review followed by a mixed methods study that focused on female prisoners in Chile. The explanatory sequential mixed methods study was designed with the following objectives:

1. To measure mental wellbeing and depression of female prisoners
2. To measure religious and spiritual variables in female prisoners
3. To test for associations between mental health (mental wellbeing and depression) and RS in female prisoners
4. To identify factors that might influence or hide any associations observed between mental health and RS in this group of women

9.2 Main findings of thesis

9.2.1 Findings from the literature review

Existing literature provided the rationale for studying the association between mental health and RS in a female prison population outside of North America, Europe and Australasia. The systematic review and meta-analysis estimated that in the Latin American prison population, depression is significantly more prevalent among females (15.2%) than males (6.7%), but there is a limited amount of high-quality data on the prevalence of depression among prisoners in Latin America. A second systematic review of the association between depression and RS among prisoners revealed mixed results from a small number of heterogeneous studies.

9.2.2 Findings from the mixed methods study

The findings of the mixed methods study are discussed under four areas: mental health, religion and spirituality, the association between mental health and RS, and RS and mental healthcare.

Mental health

The cross-sectional survey found a high level of depression among the female prisoners. At least 11% (95% CI: 6.5-20.1) of women reported depression, although

the prevalence of major depression could be as high as 33%. Genetic predisposition to depression was high among female prisoners, with 44% reporting a parental history of depression. One in five women reported having received a current diagnosis of at least one mental disorder from a health professional. The mental wellbeing of the female prison population, estimated using the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), was slightly lower than that of the general population in Chile. The median total WEMWBS score among the female prisoners was 55 where the maximum score of 70 represents the highest level of mental wellbeing. In general, women reporting depression had lower mental wellbeing scores. In the conceptualisation of health, most prisoners surveyed believed that spirituality was linked to both physical and mental health. No prisoners strongly disagreed that a connection exists between mental health and spirituality.

The qualitative study revealed that prisoners, chaplains and health professionals did not have a consensus understanding of mental health. Although the term "mental wellbeing" was not used by participants, it was a concept widely understood. There was evidence of a holistic biopsychosocial understanding of depression by prisoners and non-prisoners. RS informed minority views about the nature and aetiology of depression and other mental disorders which diverged from views expressed by health professionals. Female gender, the prison regime and prison-related interpersonal issues were reported as factors contributing to depression and poor mental wellbeing among prisoners.

Religion and spirituality

Female prisoners were highly religious compared to the non-prisoner population. The overwhelming majority (91.5%) were affiliated with mainstream Christianity. Unlike the general population in Chile, there were more Evangelicals and Protestants (47.9%) than Catholics (42.6%). RS was very important to almost 70% of the prisoners. There was evidence that women had significantly higher RS involvement (frequency of attending RS services) in prison than during the year prior to incarceration. Most women believed in the personal benefits of RS, though holding these beliefs was not associated with RS affiliation or frequency of attending

services. One in six participating prisoners (16%) resided in a religious section of the prison.

The qualitative study showed that, although some prisoners had a broad understanding of spirituality which included components outwith the thesis definition such as "wisdom", prisoners, chaplains and health professionals shared a predominantly monotheistic definition of spirituality. Prisoners valued highly RS variables that had not been measured in the survey such as "faith" which they considered to be important for good mental health. RS connectedness and RS motivation were variables that prisoners believe can influence the outcome of RS involvement. Within the prison setting, prisoners have access to a wide range of RS activities and services which may have direct RS benefits and both direct and indirect benefits for mental health. RS affiliation was a dynamic variable for some prisoners who had experienced both Catholicism and Evangelicalism, consistent with the flexible and open attitude towards difference denominations expressed by prisoners but not all chaplains.

Association between mental health and RS

The study did not aim to establish a causal association between mental health and RS. Participants from the prisoner, chaplain and health professional groups in the qualitative study agreed that RS was linked to the mental health of prisoners. In the survey, 75% of women believed there was a connection between their mental health and spirituality. Most clinically significant correlations identified between RS and mental health were accompanied by statistical uncertainty. No statistically significant associations were found between depression and the other religious variables measured. However, mental wellbeing was significantly associated only with gratitude.

Most participants in the qualitative study believed mental health and RS were connected in one of three ways which suggested a temporal relationship: (i) RS leads to better mental health, (ii) RS leads to worse mental health, and (iii) mental disorder including depression leads to lower RS. All three participant groups described a U-shaped relationship characterised by better mental health when RS levels were moderate or high, and worse mental health when RS levels were non-existent, very

low or excessively high. The view expressed by one chaplain that depression is a spiritual, rather than mental health, problem, adds complexity to the relationship between mental health and RS. Chaplains have influence over prisoners' understandings of mental health. Table 9-1 shows the linkage of findings from the quantitative and qualitative components of the explanatory sequential mixed methods study.

Table 9-1: Matrix of linkage of findings from quantitative and qualitative studies

Quantitative finding	Qualitative finding	Function of qualitative finding relative to quantitative finding
Prisoners have poor mental health	• Identification of mental health risk factors in prison: female gender, prison regime, interpersonal factors	Explanatory
High levels of religiosity among prisoners	• High RS exposure in prison through RS activities and services.	Explanatory
Prisoners believe there is an association between mental health and RS	• High RS is associated with better mental wellbeing and less depression • Low RS is associated with lower mental wellbeing and more depression • High RS is associated with lower mental wellbeing and more depression • U-shaped association between mental health and RS • Mental disorders, including untreated depression, are associated with less RS • Prisoners exposed to RS-informed mental health teaching from chaplains	Explanatory and confirmatory
No significant association between mental health (depression and mental wellbeing) and RS (as measured)	• Depression is not associated with RS involvement (frequent attendance) in the absence of faith and RS connectedness • Depression is spiritual problem, not a mental health problem	Explanatory and confirmatory
	• Depression and mental wellbeing are associated with RS	Refuting
Divergent findings about association between mental health and RS	• "Faith", RS connectedness and RS motivation are RS variables which may be relevant in the association between mental health and RS but were not measured in the survey • Survey definitions of "mental health" and "spirituality" differed from the understanding of prisoners who completed the survey	Explanatory and resolving

RS and mental healthcare

The quantitative study pointed to a high proportion of undiagnosed depression among the women. Most prisoners formally diagnosed as part of the survey with current major depression reported that they had not already received the diagnosis

from a health professional. 13% of female prisoners took medication for a mental disorder.

The qualitative study showed that among female prisoners, RS has an influence on the recognition of depression as a mental disorder, aetiological assumptions and the preferred management approach. Individuals who believe RS is the primary cause of depression are likely to consider RS as an essential component in the management of depression; those who do not share this view may value the role of RS as a non-essential part of depression management. Attitudes towards psychotropic medication among prisoners were sometimes informed by RS beliefs and mirrored views expressed by chaplains. Chaplains did not discourage prisoners from taking medication but recommended that they follow medical advice. However, while some promoted medication as an agent that could help faith in the road to recovery, one chaplain stated that medication was of limited value and less potent than an RS cure. There was marked variation in the attention given to RS by health professionals who provide prison mental health care. This ranged from direct RS enquiry and open discussion about RS beliefs with prisoners to the routine absence of RS thought during consultations. Thus, both chaplains and health professionals have opportunities to shape prisoners' beliefs about mental health and RS.

A notable finding was that all eleven participants in the qualitative survey had experienced the connection between mental health and RS in the daily lives of female prisoners. Health professionals and chaplains agreed that RS played an important role in how prisoners understand mental health and how they choose to manage their mental health, including decisions to seek medical attention and to take psychotropic medication. All prisoners in the focus groups had observed either in their own lives or the lives of other inmates the interplay between mental health and RS. Regarding the decision to opt for the "faith system" or the mental health system in the management of depression, some prisoners believed one was superior to the other, while others believed they were of equal value. The use of the vignette in focus groups revealed mixed views among prisoners about whether to adhere to medical advice to take antidepressants, with at least half of the prisoners stating that it was better to use faith than to take medication. Prisoners responded positively to

the parable as a means of helping a depressed person to identify with themes of loss, resilience and reconciliation in the story. Religion and spirituality influenced the help-seeking behaviour of prisoners and their engagement, if at all, with prison mental healthcare services.

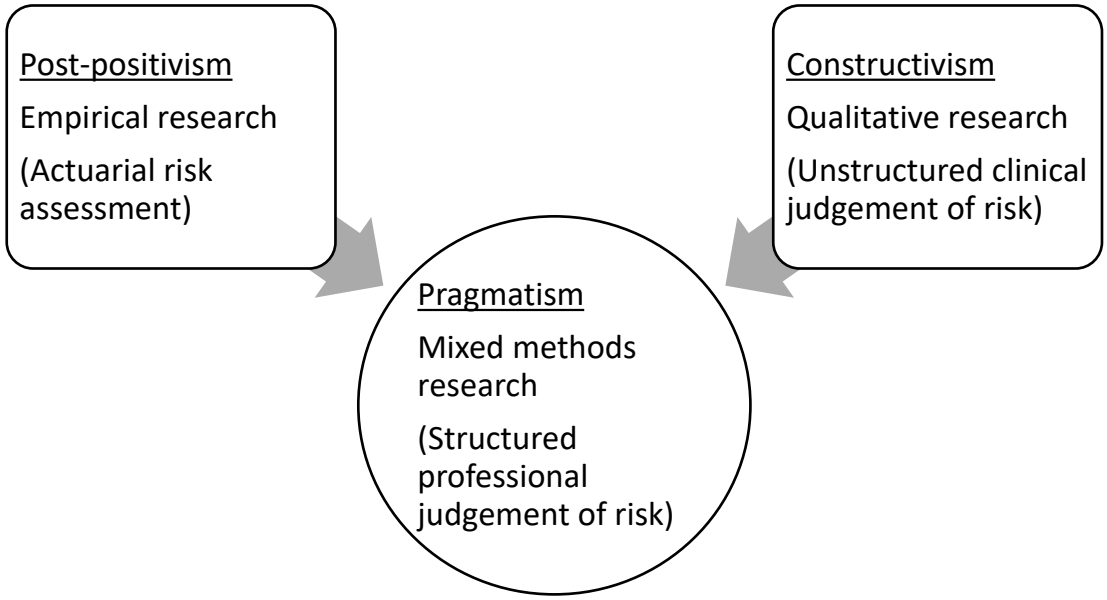
9.3 Critical review of thesis

9.3.1 Overcoming the epistemological challenge of mixed methods research

The mixed methods design began in the quantitative survey with a post-positivist assumption that knowledge of the "truth" can be obtained through empirical observation and hypothesis-testing (Creswell and Plano Clark, 2011). In the qualitative study, the assumption shifted towards a constructivist worldview that a broad, subjective understanding of reality or "truth", often from multiple perspectives, can be constructed and used to generate theory (Creswell and Plano Clark, 2011). To reconcile these two opposing assumptions, the mixed methods research was framed within a pragmatic worldview that acknowledges the existence of multiple: ontologies (types of reality); epistemologies (approaches to answering the research question); methodologies; and research languages (Creswell and Plano Clark, 2011, 41). In this way, the pragmatist worldview accepts the diversity added by the quantitative and qualitative strands within a mixed methods design, recognises the synergistic value of combining the two designs, and accommodates two worldviews which might otherwise be considered incompatible.

The pragmatic approach taken to overcome the epistemological challenge of research is similar to the pragmatic approach used by forensic psychiatrists to assess the risk of violence in patients (Roychowdhury and Adshead, 2014), as shown in Figure 9-1.

Figure 9-1: Combining epistemologies in research and forensic psychiatry risk assessment



9.3.2 Quantitative study

Study design and population

A limitation inherent to the cross-sectional design is the inability to assess causality of any observed relationship. A prospective study could identify a temporal relationship which would be present if a causal relationship exists.

The two-stage design of data collection in two different years resulted in a cross-sectional study of data that did not represent a prison population at a single point in time. Between 2014 and 2016 there was a reduction in the prison population which may have had an impact on factors associated with poor mental health. For example, overcrowding and increased transfer to psychiatric facilities (Walker et al., 2014) and difficulty in accessing healthcare facilities (Durcan, 2008). Attempts were made to overcome this limitation during the data analysis phase of the study by establishing that there was no significant difference in depression and mental wellbeing between the two groups and therefore that statistical pooling of data was appropriate.

Random sampling of prisoners was undertaken to reduce sampling bias and to increase the representativeness of the studied population. The high non-participation rate of the pooled sample may have introduced non-response bias due to differences in the characteristics between participants and non-participants that could reduce the

precision of estimates of mental health and RS, and the association between mental health and RS. The relevant data were not available at the time of data analysis. Therefore, it was not possible to measure non-response bias by statistically comparing demographic data such as prison section (religious v. non-religious) between participants and non-participants.

Instruments and interviews

A strength of the study was the use of a version of the WEMWBS that had been validated for use in a Chilean population (Carvajal et al., 2015). The method of measuring depression by asking prisoners if they had received a current diagnosis from a health professional may have led to misclassification errors. However, statistical testing against the gold standard of the validated MINI showed that the prisoner self-report measure of depression, due to its low sensitivity and high specificity, was likely to underestimate rather than overestimate the number of cases of depression. Interviewer bias in the application of the MINI may have risen through an increased likelihood of the interviewer finding a positive MINI diagnosis of major depression in those prisoners who had already reported a diagnosis of depression. This could have been minimized by using an independent interviewer to administer to the MINI who would be blind to the self-report depression status of participants.

The primary RS items measured (affiliation, personal importance and frequency of attendance) had been used several times in previous studies and as such might be considered gold standard questions. However, the subcomponents of the composite RS score of belief in RS benefits and other newly developed RS items were not tested for construct validity or test-retest reliability, although they were assumed to have face validity. Internal consistency of the composite RS score was demonstrated through results that showed all four subcomponents of the score were significantly associated with RS personal importance but not RS affiliation or RS frequency. The set of RS items developed for the study were positively phrased and may have resulted in biased responses that were more likely to show agreement, than disagreement, with each statement.

Data management and analysis

The strategy of pooling cross-sectional data collected two years apart has been used in medical research (Scholes et al., 2014). In the present study, pooling of data was a strategy to obtain a more precise estimate of mental wellbeing and other measured variables.

9.3.3 Qualitative study

Study design and population

Attempts were made to invite to the focus groups all prisoners who had been randomly sampled for the quantitative study who were available at the time. This approach added strength to the study by increasing the representativeness of the final sample of focus group participants who were drawn from an eligible sample of over 200 prisoners, at least one-quarter of the total prison population. Focus groups have previously been used with female prisoners to study their mental health (Douglas et al., 2009) and with Latin American women who discussed their spiritual beliefs about health (Jurkowski et al., 2010). The use of focus groups in the studied population was therefore culturally appropriate and a suitable method for addressing the research question, adding validity to the study.

A strength of the study design was the recruitment of prison chaplains and health professionals who provided triangulating data that also explained some of the contributions of prisoners. The use of multiple groups of informants to understand the mental health and spirituality of female prisoners increased the trustworthiness of the findings.

Instruments, focus groups and interviews

Due to time pressures, the topic guide was developed after a preliminary analysis of Group 1 quantitative data. As a result, some of the topic guide content used did not reflect the final quantitative analysis of the combined Group 1 and Group 2 data. Despite challenges encountered in the recruitment process, six prisoners attended the focus groups. However, this reflected a small proportion of women who had participated in the quantitative study and means that data saturation may not have been reached. With greater time resources and amendments to the study design, this

limitation might have been overcome by recruiting prisoners who had not participated in the cross-sectional survey.

Data analysis

Whilst the decision to delegate the task of transcribing the audio recordings to a native Chilean who was not involved in data analysis was deemed the only realistic and time-effective option of managing the data, the transcriber still encountered difficulties in transcribing phrases that appeared unique to the Chilean prison population. An important limitation of using a transcriber is the distance it creates between the qualitative analyst and the data which can lead to superficial analysis. To increase familiarity with the data, the transcript was read several times and was cross-checked while listening to the audio recordings in full. This thorough approach was a strength of the study. One of the main limitations of the data analysis was the lack of reliability which could have been increased by the presence of a second analyst with bilingual skills to cross-check the codes and themes against the original Spanish transcripts. Further accuracy could have been achieved by employing the services of a professional to undertake backward translation of the quotations that had been translated into English.

9.4 Reflexivity

Although reflexivity is a concept that is traditionally used in qualitative research, in this section it is applied to both phases of the mixed methods study. Reflexivity considers the impact of the position of the researcher in the research. It is an ongoing process that began before the study was designed. Three aspects of reflexivity that I found particularly pertinent to conducting cross-cultural prison mental health research among a female population relate to my various roles. In the prison, roles were distinct and visible: prison officers wore uniform; female prison staff wore their hair short or secured back; visitors wore identification on a lanyard; non-medical health professionals wore uniform; some chaplains wore a clerical habit.

First, the most visible role related to that of my appearance which allowed participants to draw conclusions about my gender. It is possible that female prisoners may have identified more easily with me as a female and spoken more freely,

revealing private thoughts and personal experiences during focus groups, assuming me to be empathic and trustworthy because our shared gender. Focus group participants may have been more reluctant to disclose to a male researcher their opinions about the differences between male and female prisoners in responding to depression. This was evident when prisoners unapologetically made critical remarks about men during the focus group.

Second, the role of which I was most frequently aware during fieldwork was that of a foreigner. Most prisoners in the study had not completed secondary school and spoke colloquial Spanish. In Chile, my non-native spoken Spanish did not reflect that of someone highly educated. Prisoners who perceived this shared social disadvantage may have found it easier to establish rapport with me and consequently more likely to participate in the study. Alternatively, prisoners who were wary of foreigners may have disclosed less information to me.

The third, and perhaps most ethically sensitive, role is that of a forensic psychiatrist. Although attempts were made to minimize the power imbalance and maximize prisoner autonomy, my role as a doctor is likely to have had an impact at many stages of research process. Prisoners who struggleg with the loss of autonomy in prison may have chosen to exercise control by refusing to participate in the study or saying “no” to the doctor. Some participants may have felt it preferable to give responses that they believed would be more acceptable to me as a doctor and psychiatrist. This may have led to under-reporting of smoking activity, alcohol use and drug use. Conducting the research as a forensic psychiatrist meant that I was vigilant, confident and not easily alarmed in the prison environment. This may have reassured prisoners and helped them feel relaxed enough to speak freely. It is highly likely that my professional role gave me greater credibility among all participants and this may have helped in the recruitment of health professionals and chaplains.

During the planning phase of the research I recognised that my personal religious and spiritual beliefs might influence the collection, analysis and interpretation of data. I therefore decided not to disclose my religious and spiritual profile and beliefs to prisoner and non-prisoner participants. In addition, I undertook a two-year course on

Christianity in Edinburgh which gave me a broader understanding of religion and equipped me to undertake data analysis and interpretation with greater objectivity.

The positionality of individuals who assisted with the research process may also have had in impact on the data collected. Regular supervision was undertaken with the focus group co-facilitator and the transcriber to minimize the potential risk of their religious views influencing their contributions to the research.

9.5 Interpretation of findings in the context of previous research

9.5.1 The importance of mental health in the female prison population

When compared to existing literature, the thesis findings confirm the raised level of poor mental health in prisoners, especially females.

Mental health

The qualitative study findings support the thesis two-continuum model of mental health that was adapted from Keyes and Simoes (2012) to incorporate mental disorder and mental wellbeing. Findings also demonstrate that the model can be applied in the prison context in Chile and validate the advice that both depression and mental wellbeing should be studied together (Routledge et al., 2016b).

The present thesis identified several prison factors which might explain the poor mental health of female prisons. In agreement with previous studies, the findings identified that prison determinants of mental health including: loss of autonomy, simply being in prison, forced separation from partners (Douglas et al., 2009), loneliness, lack of a confidante (Durcan, 2008), and loss of contact with children and other family members (Corston, 2007). However, bullying which occurs in up to 50% of female prisoners and has been linked to poor mental health (Leddy and O'Connell, 2002) was not named by prisoners as a factor in the present qualitative study. This might be explained by the reluctance of prisoner participants to disclose a highly sensitive issue or by better relations among inmates and between staff and inmates in Chile.

Explanations for poorer mental health in female prisoners compared to male prisoners emerged that have not been previously reported in the prison mental health literature. Women felt that the female gender predisposed them to a greater risk of depression and poor mental wellbeing through psychological fragility, domestic responsibilities and societal expectations.

Mental wellbeing

Little has been published on the WEMWBS-measured mental wellbeing of prisoners around the world. Table 9-2 shows little difference in the WEMWBS score between the female prisoners in the present cross-sectional survey and the general population of Chile in which the scale was validated (Carvajal et al., 2015). However, in the UK the proportion of individuals experiencing each of the 14 mental wellbeing items at least "some of the time" in the preceding two weeks, i.e., having better mental wellbeing, was much lower among female prisoners than in the mixed-gender general population (Tennant et al., 2007, SPS, 2015b).

Table 9-2: Comparison of WEMWBS scores between female prisoners and the general population in Chile

WEMWBS score (min=14, max=70)	Mixed-gender general population in Chile (n=220; females=51.4%)	Female prisoners in Chile present study (n=83)
Median	57	55
IQR	51-62	43-61

Table 9-3 compares the mental wellbeing of female prisoners in the UK using data from the Scottish Prisoner Survey (SPS, 2015b) and in Chile using results from the present study. On all 14 items of the WEMWBS female prisoners in Chile have better mental wellbeing than their counterparts in Scotland, the only country with published data on the WEMWBS mental wellbeing of prisoners.

Table 9-3: Comparison of WEMWBS mental wellbeing of female prisoners in Chile and the UK

Dimension of mental wellbeing experience during the previous two weeks	Some of the time/Often/All the time (%)	
	Female prisoners in Chile	Female prisoners in the UK (Scotland)
Feeling optimistic about the future	77	71
Feeling useful	87	64
Feeling relaxed	65	59
Feeling interested in other people	87	65
Had energy to spare	69	61
Dealing with problems well	87	62
Thinking clearly	85	72
Feeling good about myself	82	53
Feeling close to other people	70	61
Feeling confident	76	61
Able to make up my own mind about things	88	82
Feeling loved	84	62
Interested in new things	93	69
Feeling cheerful	77	63

Initially, the stark difference in mental wellbeing appears surprising for two reasons, yet there are mitigating factors which explain this difference. First, the global estimate of depression among prisoners detained in the most developed countries including the UK is 10.0% (95% CI: 8.7-11.2) (Fazel and Seewald, 2012) which is lower than the prevalence among females prisoners in the present study. In view of the genetic and environmental constructional overlap of mental wellbeing and depression (Routledge et al., 2016b) it is reasonable to expect prisoners with high levels of depression to have poor mental wellbeing. Yet, in keeping with the two-continuum model of mental health (Westerhof and Keyes, 2010) and the findings from genetic studies that individuals with a high risk of depression can still have good mental wellbeing (Kendler et al., 2011), the present study showed it is possible for female prisoners with an elevated prevalence of depression to attain a higher than expected level of mental wellbeing as was shown in Table 9-3. Second, the prison environment has been reported to affect the mental health of prisoners. Walker et al. (2014) described a link between prison overcrowding, especially when prisoners live in dormitories, and psychiatric morbidity. The prison occupancy level is 110.9% in

Chile and 96.6% in Scotland (WPB, 2017). Among British prisoners, a lack of privacy contributes to poor mental health (Durcan, 2008). Unlike in the UK where most prisoners live in single or two-person cells, in the present quantitative study 80.9% of the women lived in shared living space with at least nine other inmates. Comparing data from Chile and Scotland, it cannot be assumed that prisoners residing in dormitories will have poorer mental wellbeing or that those in low occupancy level prisoners will have better mental wellbeing.

The findings described in Table 9-3 could be explained by the presence of factors in Chilean prisons that are associated with better mental wellbeing in female prisoners but are absent in UK prisons. Compared to the mental wellbeing in their respective general population (Tennant et al., 2007, Carvajal et al., 2015), female prisoners in the UK (SPS, 2015b) have a disproportionately lower mental wellbeing than female prisoners in Chile in the present study. This inequality in mental wellbeing could also be explained by factors that protect female prisoners in Chile from the deterioration in mental wellbeing experienced by their British counterparts.

Depression

Consistent with international systematic reviews, the female prisoners in the present cross-sectional study had a higher prevalence of depression than females in the general population. Fazel and Seewald (2012) estimated a six-month global prevalence among female prisoners of 14.1% (95% CI: 10.2-18.1) while Ferrari et al. (2013) reported a 12-month estimate of 7.2% (95% CI: 6.0-8.9) for females in the general population worldwide.

The present study estimated a point prevalence of depression among female prisoners in Chile that was at least 11.7% according to self-report, but could be as high as 32.5% (95% CI: 19.4-49.0) when diagnosed formally using the MINI. Mundt et al. (2013) reported a 12-month prevalence of 11.1% (95% CI:6.6-17.2) in female prisoners in Chile. Given that the present study measured point prevalence rather than six- or twelve-month prevalence, the findings suggest a prevalence of depression that is higher than previously reported in Chile and more consistent with the prevalence of 18.8% (95% CI: 17.3-20.4) reported in Brazil, another emerging Latin American country (Andreoli et al., 2014).

The findings in the thesis systematic review of a prevalence of depression among Latin American prisoners that is significantly higher in females than males is consistent with findings in the general population worldwide (Ferrari et al., 2013) but is at odds with the findings of no gender differences among prisoners worldwide (Fazel and Seewald, 2012). Given the additional risk factors for depression that female prisoners experience, it is expected that the increased risk of depression in females compared to men in the general population would also be present in the prison population.

9.5.2 Association between mental health and spirituality

A main finding of the study was that all of the three groups of key stakeholders (prisoners, chaplains, mental health professionals) described a link between mental health and RS that was consistent with the findings of Bonelli and Koenig (2013) in the general population, showing a U-shaped association between mental health and RS involvement. The cross-sectional study did not identify significant associations between depression and mental wellbeing and RS affiliation, personal importance and involvement. This is in accordance with a large mixed-gender longitudinal study of the general population by Balbuena et al. (2013) which found no association between religious affiliation and personal importance, and studies of prisoners in the USA (Koenig, 1995, Lonczak et al., 2006) which found no association between depression and religious involvement.

It is likely that the present study was limited by a small sample size in identifying an association. This conclusion is supported by the finding of effect sizes of a magnitude to suggest clinical importance accompanied by high p values or confidence intervals revealing a high degree of uncertainty of the accuracy of the estimate. A study of higher power achieved through a larger sample size might show a greater number statistically significant associations between RS and mental health. Furthermore, increasing the power of the present study would not only increase the likelihood of detecting a true association between RS and mental health, but also increase the chance that any statistically significant association identified would reflect a true effect (Button et al., 2013). It is also possible that the instruments used did not measure the dimensions of RS that prisoners in the qualitative study

described when discussing religion and spirituality. Dimensions of RS that emerged *in vivo* from the prisoners who believed they were important and linked to depression and mental wellbeing were: (i) the presence and level of an individual's "faith", (ii) one's relational proximity to God, and (iii) one's connectedness to God.

The proportion with Christian affiliation was higher in female prisoners than in the general population. Table 9-4 shows that Christianity is more prevalent in Chile than in the UK, and that, compared to the respective general population, prisoners in Chile have higher Christian affiliation, while prisoners in the UK have lower Christian affiliation.

Table 9-4: Comparison of Christian affiliation between prison and general populations in Chile and the UK

Country	% Christian affiliation	
	Chile	United Kingdom
Prison population	91.5	49.1
General population	83.0	59.3

The high level of both RS and poor mental health, including depression, identified among the female prisoners, together with strong evidence in the literature for an association between depression and RS in the general population (Bonelli and Koenig, 2013), confirm the importance of researching the relationship between mental health and RS in this population. However, the findings suggest that imprisonment may have an impact on the relationship between mental health and RS which creates a more complex picture than that proposed in the model by Koenig (2012), displayed in Chapter 5.

The higher than expected level of religiosity, particularly of Evangelical Christianity, among prisoners is understandable given the investment of religious personnel in Chilean prisons in the last two decades (USGovt, 2008), the multiple non-RS benefits may experience through engaging with prison chaplaincy, and the respite RS provides from the "stresses of prison" experienced by the women (Levitt and Loper, 2009). However, the high religiosity of prisoners may have obscured any association that might otherwise have been found in the cross-sectional survey. It would not be expected that a statistically significant association between smoking and lung cancer

would be found among a sample of heavy smokers. Likewise, it is not surprising that a link between RS involvement and depression was not identified in the present sample of prisoners who had unexpectedly high levels of RS involvement. High intrinsic religiosity is associated with less depression in the student population (Maltby and Day, 2000) and prisoners (Koenig, 1995). It may be that depression and mental wellbeing are associated with distinguishing features of RS involvement such as religious orientation (intrinsic v. extrinsic) rather than mere RS involvement, especially in a prison where RS involvement is widespread among all and mandatory for those residing on religious wings. In other words, among the prisoners it may be insufficient to simply attend religious meetings frequently unless RS involvement is also accompanied by a high level of "faith", a close relationship to God and high connectedness to God, all of which may reflect an intrinsic religious orientation.

9.5.3 Religion and spirituality in mental healthcare

RS and the health professional

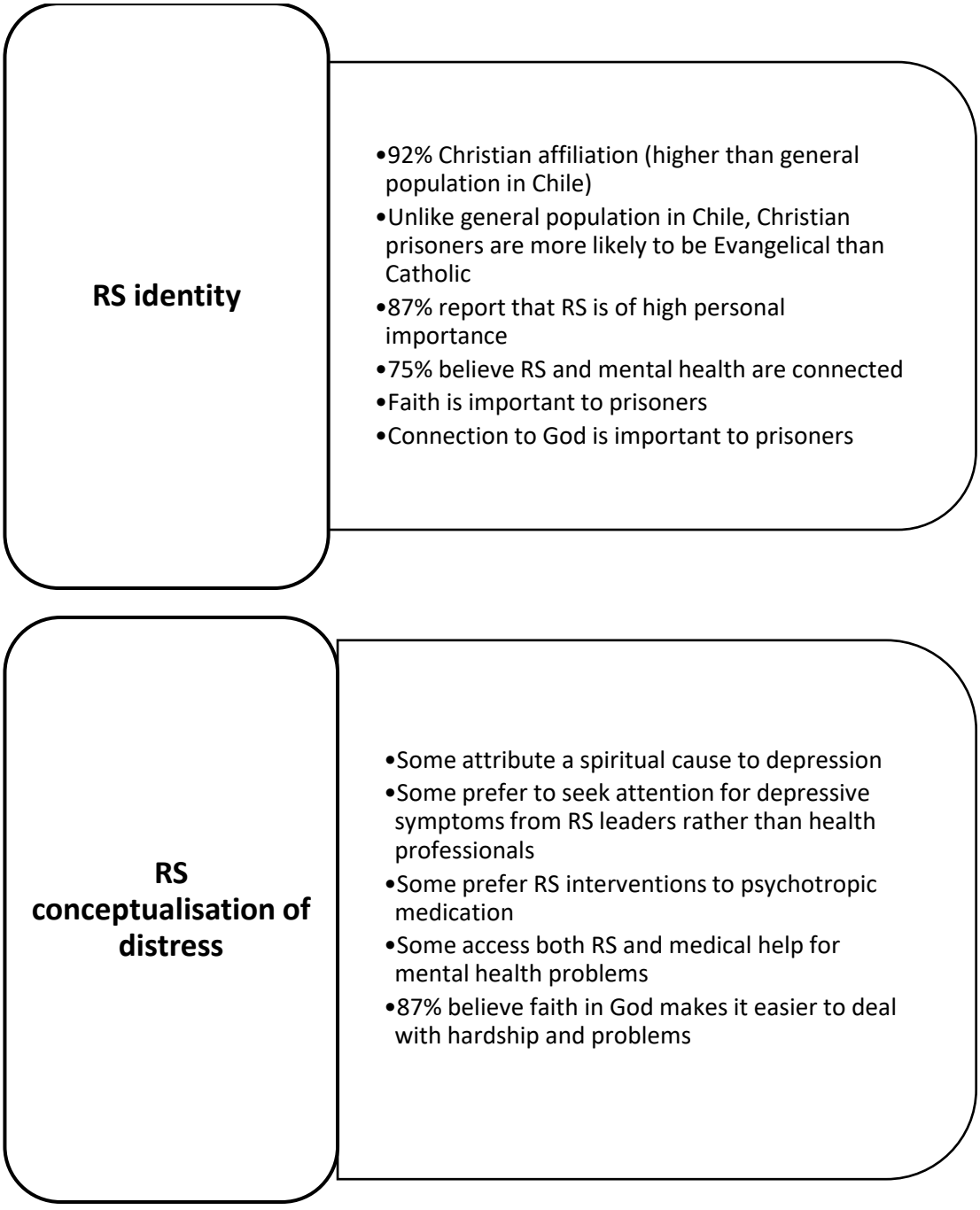
Not all health professionals addressed RS issues during mental health assessments or had ever considered RS themes to be of relevance in the prison health settings. This suggests that some prison health professionals may not be aware of the high levels of RS among the prison population (Lonczak et al., 2006), some of which may be used by females to cope with the stress of interpersonal difficulties in prison and to maintain hope (Aday et al., 2014). The importance of understanding the impact of RS on a prisoner seeking help for symptoms of a mental disorder, accepting a psychiatric diagnosis, coping with a mental disorder, adhering to treatment, experiencing stigma from other prisoners and establishing a trusting rapport with a clinician, has been emphasised by international professional bodies of psychiatry (APA, 2013, Cox and Verhagen, 2011). However, the findings reveal some lack of awareness among prison health professionals of a complete biopsychosocial-spiritual approach to mental healthcare.

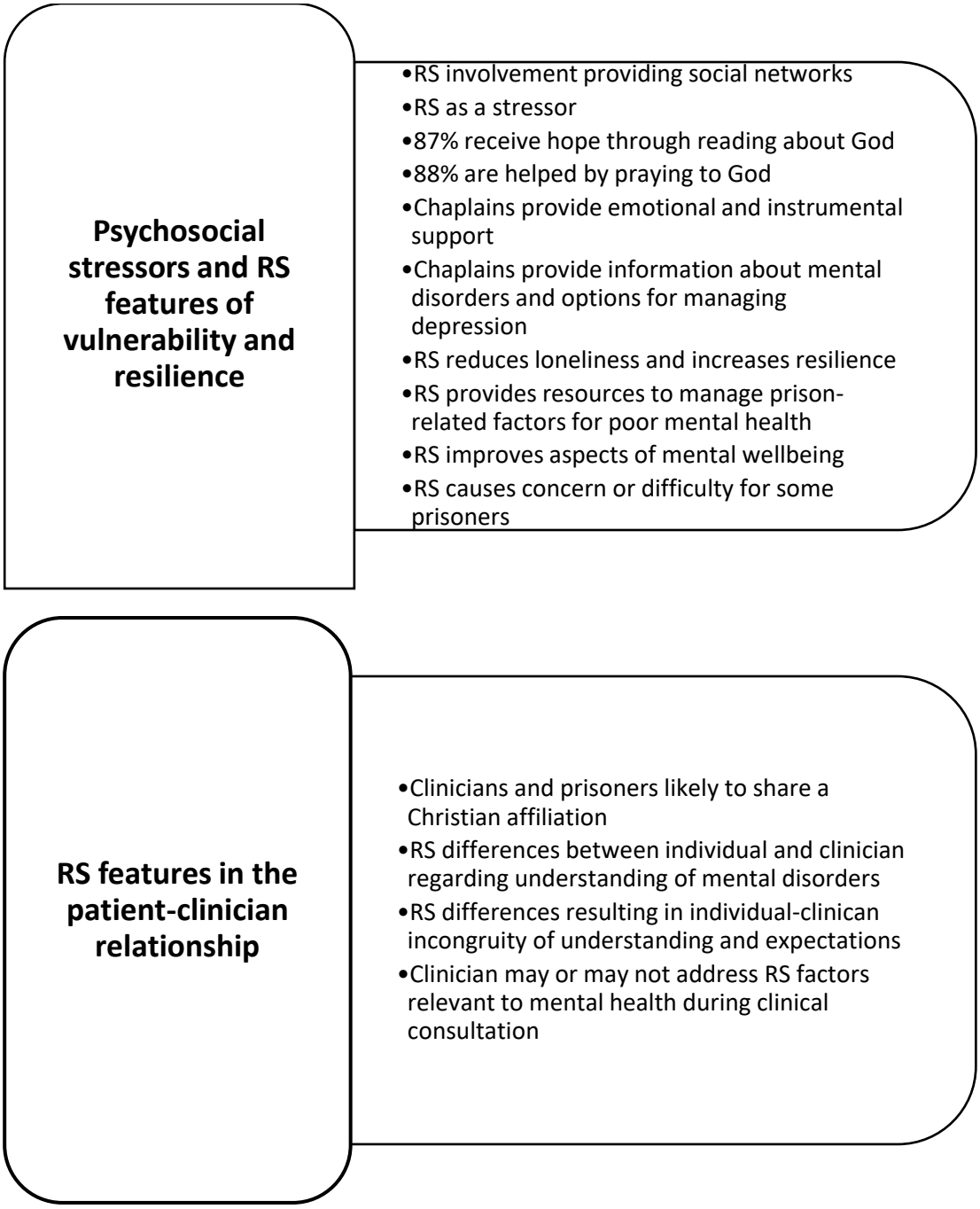
Incorporating RS in prison mental health care

The findings of the mixed methods study strongly supports the cultural-psychiatric formulation proposed in DSM-5 (APA, 2013). Figure 9-2 illustrates how, by applying the findings of the present study to the four categories of the DSM-5, RS

can be formulated within the clinical practice of health professionals providing mental healthcare in the women's prison in Chile (APA, 2013).

Figure 9-2: Formulation of religion and spirituality in prison mental health practice in the women's prison in Chile. Adapted from the DSM-5 Cultural Formulation Interview (APA, 2013)





The quantitative study supports the theory proposed in a qualitative study by Jurkowski et al. (2010) that women of Latin American origin conceptualise health in terms of physical, mental and spiritual aspects and consider RS to be an important aspect of health. Consistent with the shift in recent decades of psychiatrists towards

the topic of RS which was previously considered taboo (Cox, 2011), the female prisoners in the study used religious language fluently and comfortably.

The contribution of chaplains to mental healthcare

The role of the prison chaplain as a contributor to mental health care was observed in the qualitative study. There was evidence that prisoners seek help from chaplains for mental health problems, sometimes before consulting a health professional. The utilisation of chaplaincy services for mental health support is consistent with a study involving 177 male prisoners by Mitchell and Latchford (2010) in which 11.3% reported they would seek help from a chaplain if feeling depressed compared to 39% who would contact a doctor, and 11.9% would seek a chaplain if experiencing suicidal thoughts while 24.9% would seek help from a doctor. This highlights the important role of chaplains in the mental health pathway of prisoners. Findings of the present study showed that all interviewed prison chaplains encounter and manage mental health problems including depression in female prisoners and are generally supportive of a holistic biopsychosocial approach that incorporates an RS understanding with RS interventions such as prayer and religious readings. Chaplains did not oppose the use of psychotropic medication but there was some evidence suggestive of understandings about mental health among chaplains that were contrary to the current medical understanding. Although such chaplaincy views were not widespread, they might have wider influence in the prisoner population.

9.6 Challenges of undertaking prison research in a different context

Several challenges were encountered throughout the research process which highlight the difficulties of conducting research in prisons, especially as a cross-cultural researcher. Before collecting data, the greatest hurdle was completing the ethics process. Concurrently satisfying the requirements of two ethics committees in Edinburgh and in Chile in both English and Spanish was not easy. For example, each committee had different expectations of the format and content of the research proposal and consent form. There was encouragement from the ethics committee to lengthen the submitted patient information sheet which had been shortened to

accommodate the reading level and attention span of the prison population. This was resolved through compromise.

Establishing good relationships with prison personnel and gaining an understanding of the policies, procedures, politics and cultural nuances of the study prison system greatly facilitated the process of successfully entering the prison and undertaking the research. Recruitment of participants was markedly more difficult in 2016 than in 2014. This highlighted the importance of connecting with key prison staff who could influence the success of the study from prison entry through to recruitment of participants. The experience also revealed the value of identifying and building a trusting relationship with a named member of the prison staff to assist in approaching and escorting participants. Where such a person was identified, the attendance rate at the initial recruitment interview was much higher. In the absence of a named person, participants were notified of the study via the prison wing officer who was contacted by either a duty member of staff working in the health centre or school who knew little about the study. Where a lack of resources could not support the allocation of a named prison officer to the study, this lengthy, alternative and unsatisfactory extended chain of communication was used to recruit participants which resulted in a lower participation rate, particularly in Group 2 of the quantitative study and the qualitative study.

Another source of low participation was the less structured regime of certain prison sections. By their security-focused and procedure-driven nature, prisons respond to risk-related events in a way that slows the progress of research. While prison researchers must adapt to this aspect of prisons, disruptions caused by lock-downs, prison-wide searches and national celebrations which affect staffing numbers, can hinder data collection. The unexpected setbacks encountered during the research resulted in significant time and financial costs to the research project. In addition, multiple journeys by air between the UK and Chile contributed to a negative impact on global environmental health. The sustainability of travel plans was reviewed throughout the data collection period. Although air travel was necessary for long-haul journeys, it was avoided for domestic travel within Chile and the UK.

This study confirms that although difficulty in accessing prisoners and other challenges of prison research can impact on the research, useful data can still be obtained. In this way, the present study can serve as a guide for future prison research conducted in any country.

9.7 Generalisability of findings

The quantitative findings of the study which are based on randomly sampled prisoners who are representative of the whole prison, except for the high-risk area, can be confidently generalised to the whole of the study prison excluding the high-risk area. The findings are likely to be relevant also to sentenced females detained in similar prisons in Chile. Beyond Chile, it is less certain how generalisable the findings will be, though they are likely to be of greater value in countries where female prisoners have a similar religious profile and in which criminal justice and prison mental health systems are similar to those in Chile. At a global level, the findings can contribute to the meta-analysis of studies of the association between mental health and RS, providing data currently underrepresented in the literature from: prisoners, particularly female prisoners, and less developed countries. The study is unique and is the first to empirically measure the association between WEMWBS mental wellbeing and RS. The systematic review identified only four studies worldwide that had reported results on the association between depression and RS in female prisoners, and of these studies, two had a sample size of females (n=213 and n=100) (Levitt and Loper, 2009, Pinese et al., 2010) larger than that of the present study (n=94).

Unlike quantitative research, qualitative methods do not seek to yield widely generalisable findings, as data are highly specific to the participating individuals and are likely to be relevant only to the unit of study which, in the present study is the women's prison, though may be useful in other prisons for women in Chile. Undertaking an explanatory sequential mixed methods study in a prison setting is complex. Few studies have elicited the perspectives on mental health of female prisoners. The design of the present study to address the research question uniquely incorporates the perspectives of prison chaplains and health professionals, as well as prisoners. Whilst many findings from the qualitative study will be specific to the

Chilean female prison context, some themes will have value for the mental healthcare of prisoners globally.

9.8 Implications of findings in the context of existing guidance

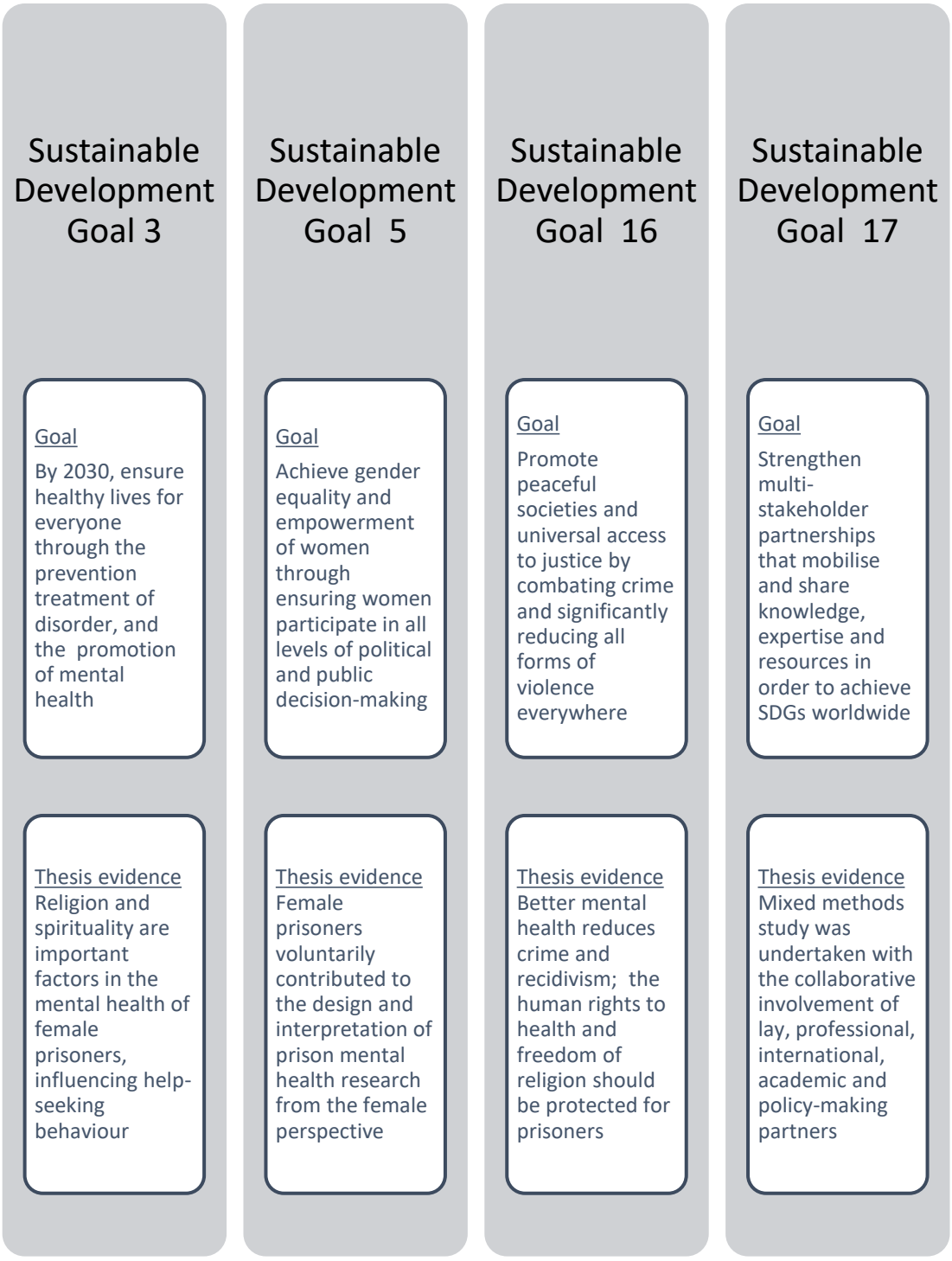
The findings of this research extend beyond clinical academia, having implications for policymakers, health professionals, prison chaplains and prisoners. These implications are supported by international and regional guidance which range from the human rights of prisoners to best practice for clinicians.

The finding that in Latin American prisons depression may be more prevalent among women than men requires further research through studies which seek to identify and address modifiable risk factors for depression in female prisoners which may have been reported in other regions or might be unique to Latin America. Both single-gender (gender-specific) and mixed-gender (gender-sensitive) research can contribute to providing greater understanding in this area. In addition to calling for epidemiological research into the prevalence of depression and other mental disorders in more Latin American countries and the study of risk factors for depression in prisoners, especially females, the findings of the thesis urge Ministries of Health and Justice in the region to improve the mental health of prisoners in accordance with the Sustainable Development Goals (SDGs) (UN, 2015b).

Figure 9-3 shows how the process of conducting the research and the implications of thesis findings contribute to achieving four of the seventeen SDGs. The methods employed in the study yielded rich data which, amplifying the voices of a marginalised female population with multiple health inequalities (SDG 5), provided a deeper understanding of not only the complex interactions between religion and spirituality (RS) and mental health, but also the prison and RS-related barriers to the timely and effective access of mental healthcare by prisoners. RS is an important factor in the improvement of mental health (SDG 3) of female prisoners in the studied population. Interventions that improve the mental health of prisoners are likely to improve effective engagement with prison rehabilitation and reduce recidivism rates, thereby promoting societal peace and justice (SDG16). The

partnerships between prisoners, health, justice, academia and faith services that contributed to the successful implementation of the mixed methods study (SDG 17) could make valuable contributions to improving the mental health and wellbeing of prisoners (SDG 3).

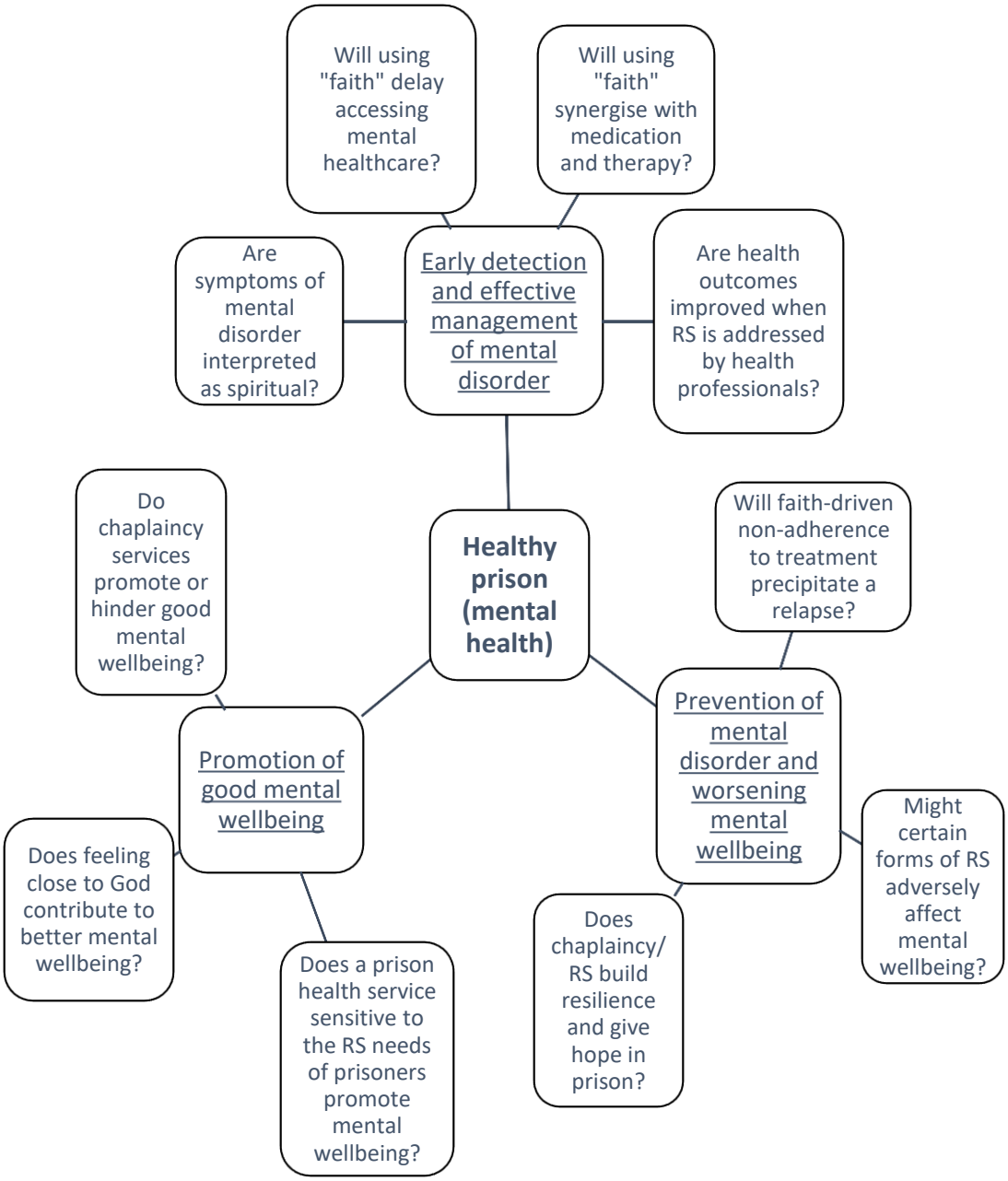
Figure 9-3: Research implications and the Sustainable Development Goals



In addition to the SDGs, the findings of the thesis are aligned to the regional strategic lines of action recommended in a plan by the Pan-American Health Organisation (PAHO) for the promotion of mental wellbeing and the prevention of mental disorders between 2015 and 2020 (PAHO, 2014). This Plan of Action on Mental Health encourages mental health services to be responsive to the needs of prisoners and other named vulnerable groups, and to reduce the treatment gap (PAHO, 2014). The present study identified the mental health needs of female prisoners in the region. It revealed RS factors that influence help-seeking among the study population and therefore contribute to the treatment gap.

The study has implications for the healthy prison model and healthy prison strategies for prison mental health (WHO, 2014c). The finding that, in addition to health professionals, chaplains also make a valuable contribution to prison mental healthcare supports a non-traditional whole-prison approach to mental healthcare. Figure 9-4 illustrates through questions the relevance of considering RS at all stages of the mental healthcare pathway within a healthy prison model that acknowledges the roles of health professionals and chaplains. The best practice guidance for incorporating RS into clinical practice within the DSM-5 framework for clinicians was presented earlier in Figure 9-2.

Figure 9-4: Examples of the relevance of religion and spirituality in a healthy prison model for mental health



For the prisoner, the research reaffirms their human rights. The prisoners in the study enjoyed their right to religion in accordance with Article 1 of the Universal Declaration of Human Rights (UDHR) (UN, 1948) and were free to choose and change their own denomination and to access the services of denominations other than their own.

Article 25 of the UDHR, the right to health, is at the heart of this study (UN, 1948) and is supported by Prison Rule 25 of the Standard Minimum Rules for the Treatment of Prisoners, also known as 'Mandela Rules' (UN, 2015a) which states prison healthcare services should evaluate and improve prisoner mental health. This study is the first to use the WEMWBS in a prison population in Latin America and provides evidence that the adapted and validated tool can be used to monitor the mental wellbeing of prisoners in Chile, which would also be aligned to the PAHO Plan of Action on Mental Health for 2015-2020 which recommends that health information systems collect data regularly on mental health (PAHO, 2014). Article 2 of the UDHR, which states all humans are entitled to human rights (UN, 1948), can be protected in the prison population through a mental health system that actively acknowledges and responds to the religious beliefs of prisoners, enabling all prisoners, regardless of religious belief, to have equal and timely access to effectively engage with mental healthcare services and treatment. This is also supported by Prison Rule 5 which places a responsibility on the prison to consider the individual needs, religious or otherwise, of prisoners and ensure prisoners do not experience any form of discrimination at an institutional or individual level (UN, 2015a).

9.9 Unanswered questions

In seeking answers to the research questions, this mixed methods study revealed further questions, some of which point to research areas which have not yet been explored. An obvious question is whether a larger sample size would yield results of an association between RS and mental health, particularly between RS involvement and depression or whether, as suggested by the qualitative study, an RS instrument which measures "faith", distance from God, and divine connectedness might reveal significant associations with depression and mental wellbeing. The design of future

studies would determine the extent to which a causal relationship between mental health and RS, in addition to any association, might be proved.

Comparing the findings of the study with existing literature, female prisoners in Chile have higher levels of mental wellbeing and higher levels of religiosity, whilst those in the UK where the WEMWBS has been used have lower levels of mental wellbeing and lower levels of religiosity. The degree to which differences in RS or other factors such as the prison environment, regime, chaplaincy services, presence of religious sections, mental health strategies, and culture might account for this difference in mental wellbeing is unknown.

The women reported gender-related risk factors for poor mental health but it is not known whether male patients would concur with these findings. Moreover, without a comparison group of male prisoners, it is not possible to confirm whether gender differences occur in levels of mental wellbeing, associations between mental health and RS, and levels of religiosity in Chilean prisons.

Health professionals and chaplains shared the view that RS is an important factor in the mental health of prisoners. Female prisoners held beliefs about mental health that were influenced by RS. International professional bodies recommend that mental health professionals incorporate RS into the mental healthcare (APA, 2013, Cox and Verhagen, 2011). Considering these three perspectives raises the question of how the female prison in Chile might include RS to improve the mental health of prisoners as part of a health prison strategy.

9.10 Future directions

Considering this present study as a pilot, the learning on how to overcome the challenges of prison research can be used to design a larger cross-sectional study to confirm the associations between depression and mental wellbeing and the RS variables tested in the present study, as well as the additional RS variables that emerged from the qualitative study such as faith and connectedness to God.

Given that the study suggests significant differences in the mental wellbeing of female prisoners in Chile and the UK, there would be value in a comparison study to

understand whether there is also a difference in the prevalence of depression and whether there are religious or non-religious factors associated with these mental health differences.

A similar study undertaken with male prisoners would broaden the understanding of the impact of gender on the relationship between mental health and RS. Ideally, the cross-sectional survey sample would be mixed-gender; pragmatically, the focus groups would be single-gender.

There would be enormous value in prison health professionals having an awareness of how RS can be incorporated into mental healthcare, and presented a model, shown in Figure 9-2 and based on DSM-5 recommendations, which could be used in training and implemented in clinical practice using a holistic biopsychosocial-spiritual approach. There is also value in encouraging opportunities for knowledge about mental health to be shared with prison chaplains. This increased awareness will equip chaplains as they continue to offer valuable support to prisoners with signs of mental distress or symptoms suggestive of mental disorder. Furthermore, the exchange of knowledge would give clinicians greater insight into the RS beliefs that shape the mental health perceptions of prisoners.

A response to the need identified in this thesis is an intervention for mental health that recognises the high level of religiosity of the prisoners and acknowledges the potential mental health benefits and harms of religion and spirituality. At present in Chile there are no evidence-based systematic interventions that use the recommended biopsychosocial-spiritual approach (Cox and Verhagen, 2011, Patel, 2014) to improve mental wellbeing and reduce depression among female prisoners. Worldwide, in the general population there is strong evidence that cognitive-behavioural therapy is an effective treatment for depression and while it may be as effective as other psychotherapies or medication, it is most effective when used in combination with medication (Cuijpers et al., 2013). There is inconsistent evidence for the long-term effectiveness of non-pharmacological interventions for the management of mental disorders in prisons and high-quality studies in the field involving female prisoners are particularly scarce (Fazel et al., 2016).

The findings of this thesis provide evidence to inform the development of a culturally-sensitive intervention for mental health which is targeted at female prisoners in Chile and aims to promote mental wellbeing, prevent depression and improve the early identification and treatment of depression. This could be achieved through a collaborative approach involving the prison health policy team, health professionals and chaplains working alongside representatives from the prisoner community with academic support to collectively develop an evidence-based intervention. This approach would ensure full stakeholder input and effective use of resources, reflecting the partnership goal within the SDGs (UN, 2015b). Furthermore, such collaboration between health, justice, faith, prisoner and academic communities will ensure the present research has the greatest, most-sustainable and most far-reaching impact on prisoner mental health. Using the highest quality evidence for mental health interventions available, such an intervention would acknowledge the high level of religiosity among the prisoners and the religious lens through which many prisoners view mental health. This approach ensures the principles of care traditionally offered by the chaplains to those reporting or exhibiting features of depression are incorporated into clinical care (Bracken et al., 2016). Primary desirable outcomes of the intervention which would be evaluated either at an individual or population level include an increase in WEMWBS mental wellbeing and a reduction in the prevalence of depression. Secondary outcomes focusing on risk and the a broader conceptualization of health might include: a reduction in time from onset of depression to first presentation to prison health services; an increase in resilience; a reduction in loneliness; a reduction in mental health stigma among prisoners; a reduction in self-harm and suicide attempts; fewer infractions; increased participation in rehabilitation activities; improved mental health following prison release; low recidivism; markers of improved physical health.

Stakeholder involvement would inform whether the intervention would be universal and aimed at all female prisoners promoting mental wellbeing and preventing depression, or targeted at those identified to be at the greatest risk of depression and poor mental wellbeing. Compared with countries in more developed regions, Latin American countries such as Chile have a smaller mental health workforce and fewer

resources for prison mental healthcare service development. Therefore, it is important that proposed strategies to improve the mental health of prisoners are implemented through interventions that are financially feasible and contribute to the sustainable development of mental healthcare.

9.11 Conclusion to thesis

This thesis has highlighted religion and spirituality (RS) as a relevant and understudied factor in the mental health of prisoners. It has demonstrated that the association between mental health and RS that is established in the general population is less clear and more complex in the female prison setting in Chile. The mixed methods approach amplified the voices of women who report experiencing poor mental health through being females detained in prison and often conceptualise and manage their mental health needs using religious and spiritual strategies. While RS has the potential to promote resilience, reduce depression and improve mental wellbeing in this marginalized population, certain forms of RS may be harmful to health. Among a highly religious prison population, religion and spirituality influence the help-seeking behaviour of female prisoners and their timely and effective engagement with prison mental health services.

Supporting the sustainable development goal of improving mental health, the healthy prison promotes good mental wellbeing, provides early detection and treatment of mental disorder, and prevents mental disorder and the worsening of mental wellbeing. To achieve these ideals, a whole-prison approach is necessary in which the contributions made to mental healthcare by non-clinical personnel, such as chaplains, are recognised, valued and supported, in addition to those made by health professionals. The thesis found that the DSM-5 recommendations for incorporating RS into mental healthcare have value and relevance in the prison mental health context. Health professionals who provide mental healthcare to prisoners can provide enhanced patient care when they consider the role of culture, including religion and spirituality, for each patient assessed within the biopsychosocial-spiritual model.

Whilst there is value in conducting global and regional systematic reviews to understand the prevalence of, associated risk factors for and the most effective

management of mental disorders, it is important that a local approach is taken towards understanding the presentation of mental health in a given population that will have its unique constellation of health determinants such as criminal justice system, healthcare service, religious influences and application of human rights. An intervention aiming to reduce depression and improve mental wellbeing among prisoners is likely to be most acceptable and effective if it takes into account the religious and spiritual beliefs of the population.

Appendix 1: Data extraction form for the systematic review of the prevalence of depression among prisoners in Latin America

Study no.	**Title:**				
Full citation:					
Authors:			Year of publication:		
Country:	Country income level:		Funding source:		
			Publication type:		
Inclusion criteria met?	**Yes**	**No**	**Unclear**	**Description**	
Country					
Study design					
Participant type					
Outcome measure					
Total sample size	**Males**	**Females**	**Depression prevalence in total sample. (N), (%), (95% CI)**	**Depression prevalence in males. (N), (%), (95% CI)**	**Depression prevalence in females. (N) (%), (95% CI)**
Recruitment (eg, sample selection, power calculation)					
Participant characteristics (eg, age, prisoner status, demographics)					
Outcome definition of depression (eg, classification, instrument and interviewer)					
Additional relevant results presented					
Additional information (eg, date of data collection)					

Appendix 2: Extended country profile of Chile

Economic status

Chile is listed as a high income country (WorldBank, 2014b). This classification is based on the Gross National Income per capita (GNI), an index that considers the mean income in a country. The GNI correlates with life expectancy and infant mortality rates. However, it fails to reflect inequalities in income distribution within a country and to this extent does not adequately describe a country's level of development (WorldBank, 2016b). The Banco Bilbao Vizcaya Argentaria (BBVA) uses an alternative classification model to describe the economic development of a country in which Chile is classified as an emerging and growth leading economy, in contrast to more developed countries such as the United Kingdom. The BBVA system measures the economic development in a country using a dynamic calculation of the incremental GDP obtained from the International Monetary Fund (IMF), and growth forecasts over a decade (BBVA, 2016). The BBVA system is therefore limited to IMF members and classifies countries according to the predicted, rather than the current, level of development. Economic development is a complex concept which can be influenced by health burden and can influence health and the funding of global health research and development.

The impact of an authoritarian regime on health care and justice in Chile

The period of leadership by General Augusto Pinochet, described by some as a dictatorship, which lasted from the *coup d'état* in 1973 until 1990, has had a lasting impact on the infrastructure of health and justice. Under the authoritarian regime, major reforms increased the privatisation of health, creating a dual health system of private and public health insurance which increased choice but resulted in inequitable health care access, utilization and quality (Atun et al., 2015). An attempt to address this issue was made in 2005 through the introduction of the Health Guarantees Law (or the Universal Access Plan), an essential list of diseases for which access to health services would be guaranteed (Atun et al., 2015). This legislation provided all citizens with legally enforceable rights to affordable and timely health care for a list of "priority health conditions" (Frenz et al., 2014). The era of the authoritarian

regime led to a loss of knowledge, skills and expertise through the exodus of professionals from Chile to other parts of the world. Significant advantage was seen when these professionals returned to Chile after 1990 with greater knowledge of other systems and practices and new international contacts which would aid the future development and collaboration. An example is Dr Alberto Minoletti, an academic psychiatrist at the University of Chile, who returned from Canada and filled the position of the Head of the Mental Health Unit within the Ministry of Health in Chile.

Under Pinochet's leadership, the legal profession ironically sought an apolitical judiciary system; in practice, there was a reluctance of courts to make rulings that favoured the individual citizen over the state and many civil and political rights were not protected. Following this era, Chile slowly began to rebuild a culture of human rights throughout the judiciary system (Hilbink, 2007). The justice system continues to develop under the principle of human rights for all with increased efficiency of criminal proceedings and penal reform including changes in the treatment of individuals in the criminal justice system with mental disorders (Téllez et al., 2004).

Appendix 3: Extended description of study prison

Prison history and status

The prison in which the research was conducted was run by Catholic nuns until it became a state prison. The prison is designed for the detention of sentenced adult female prisoners, most whom live within a closed subsystem which does not allow them completely free movement around the prison site but subjects them to a semi-open regime in which they can move freely within their own locked sections (wings) and, with permission, walk at certain times between certain areas outside their own sections. For example, a female prisoner may be given a pass to travel without an escort from her section to the prison health centre or to the prison school. High risk prisoners have heavily restricted movement and live within a closed regime. A few prisoners live within a semi-open subsystem and can spend some time during the day outside of prison.

Structure of prison

Between the external perimeter of the prison and the security reception for staff and professional visitors are buildings for prisoners who spend periods of each day outside of the perimeter. The opportunity to live in this section (called “Sección Medio Libre” or “Half-free section”) is afforded to women who have made good progress in the main prison area and are close to completing their sentence. These women are often involved in community-based work placements which form part of their prison rehabilitation and prepare them for employment following release. They are free to leave the prison under one of three conditions:

- Leave on Sundays only
- Leave from Friday to Sunday only
- Daily leave returning to prison each night

Beyond the security reception are nine more sections including:

- SEAS (Sección Especial de Alta Seguridad) (Special Section of High Security)- a section for prisoners with very grave offences and who pose an alarm to the public (closed subsection and regime)
- CUNA - a section exclusively for women who are pregnant or detained with children

under the age of two year

- CTA (Centro de Tratamiento y Adicciones) (Centre for Treatment and Addictions) – a section for prisoners serving sentences shorter than one year who wish to engage in address substance abuse and engage in treatment programmes
- Patio 1 - a section for prolific offenders who have been imprisoned on more than three occasions
- Patio 2 – a section for prisoners detained for the first time
- COD (Centro de Orientación y Diagnóstico) – a section for reoffending prisoners with very grave offences (not permitted to mix with prisoners from other sections)
- Laboral (Work) - a section for prisoners who are involved in paid work programmes inside the prison
- An additional two sections are managed by religious organisations:
    - Comunidad Católica (Catholic Community)
    - APAC (Amar al Projimo, Amar al Cristo = To love one's neighbour, to love Christ) – an Evangelical section

Additional activities

In addition to health and spiritual care, the prison and non-government organisations provide a range of rehabilitation and resettlement services including: family work, education within the prison school, work inside the prison and in the community, social work, skills training, substance misuse, physical exercise, sports, recreation, relaxation, social activities, personal development and community engagement. Family visits take place within designated areas of the prison. Prisoners can purchase food and personal items from prison shops.

Prison entry and exit for professional visitors

Unless authorisation has been granted by the prison authorities to possess a mobile telephone and contraband devices on the site, every person who wishes to enter the prison is required to leave items such as phones, cameras and recording devices at the prison perimeter gate. On arrival at the security reception, each person passes through a security frame and is subjected to a wand search by a prison security officer. At the same time, a second officer is responsible for searching the bags of each person entering the prison.

Entry beyond the security gate is granted only to members of staff and professional visitors who have been authorised to enter the prison for a specified purpose. A signed copy of this

authorisation is kept at the security reception at all times. In addition to confirming this authorisation, the security officer issues each person with an identification tile in exchange for photographic identification such as a copy of a passport. After completing this process, passage into the main prison area is allowed. To leave the prison, the identification tile is returned to the security reception in exchange for the photographic identification.

Appendix 4: Specific training for research

Language skills

Prior to commencing the study I had previously studied Spanish to GCSE level (A* grade) and spent a total of 4.5 months in Spanish-speaking Latin American countries since 2004, in addition to attending weekly Spanish language meetings with native Spanish-speakers for four years. I completed the following Spanish language modules at the University of Edinburgh in order to ensure a suitable level of competence was attained before undertake the quantitative fieldwork:

- Intermediate Spanish Language (2013 – Semester 1) – Equivalent Year 1 undergraduate – 20 credits - non-assessed
- Foundation Spanish Language 3 (2014 – Semester 2) – Equivalent Year 2 undergraduate – 20 credits - 81% - class medal awarded

Before undertaking qualitative fieldwork, I attended a language school in Chile in 2015.

Focus group training

Between April 2015 and March 2016, I met on several occasions with a Chilean public health researcher (M.M.) for training and planning supervision to ensure that there was shared understanding about the purpose and methodology of the study, to agree how we would work together to conduct the focus groups safely, and to address issues relating to ethics, security and confidentiality.

Appendix 5: Cross-sectional study data collection form (Group 1)

Section 1: Background

"Thank you for agreeing to take part in this study. I am going to begin by asking you some questions about your background."

This section is completed by the researcher. (Answers to items with an asterisk are to be obtained from prison records, if permission is granted)

A. Age: .....

B. Age group: **18-24** **25-34** **35-44** **45-54** **55-64** **65+years**

C. Marital status: Single Married Separated Divorced Widowed
In a serious relationship but not married

D. Children: 0 1 2 3 4 5 6 7 8 9

E. Children <18: 0 1 2 3 4 5 6 7 8 9

F. Child<18 in prison 0 1 2 3 4 5 6 7 8 9

G. Nationality: **Chilean** **Latin American (not Chilean)** **Other**.....

H. **Ethnicity:** **Caucasian** **Mapuche** **Aymara** **Yaghan** **Alcalufe (Kawesqar)**
Quechua **Atacameño** **Colla** **African** **Other**.....

I. Educational: Primary school Secondary school College University

J. Employment: Unemployed Self-employed Employed Student

K. No. in cell **1** **2** **3** **4** **5** **6** **7** **8** **9** **>9**

L. Legal status: **Pre-trial/under trial** **Convicted**

M. Detention length to date: **≤12 months** **>12 months**

N. (*Reason for detention: **Violence** **Acquisitve** **Sexual** **Drugs** **Other**.....)

O. Cigarettes/day at time of detention: 0 1-5 6-10 11-20 21-30 31-40 40+

P. Cigarettes/day at present: 0 1-5 6-10 11-20 21-30 31-40 40+

Q. Use of alcohol: Never Prior to detention In prison

R. Recommended quantity of alcohol per week (include details to enable calculation of units)
.....

(Post-survey calculation) **Don't know** None **1-7u** 8-14u **15-21u** 22-28u **29-35u** >36u

S. Use of illicit drugs: Never Prior to detention In prison

T. Parental history of depression: **No** **Yes**

U. Doctor or nurse diagnosed a current physical health problem No Yes

V. Diagnosis/es .....

W. Current medication.....

X. Doctor or nurse diagnosed a current mental health problem **No** **Yes**

Y. Diagnosis/es .....

Section 2: Spirituality "Thank you. Now I am going to ask you more questions about your religious and spiritual beliefs." This section is completed by the researcher.						
	Question					
1.	**How important to you is religion or spirituality?** (where 1 is not important at all and 4 is highly important)	1	2	3	4	
2.	How often, if at all, did you attend church or other religious or spiritual services in the year before you came to prison?	Never	Less than once a month	At least once a month	Once a week or more	
3.	How would you describe your current religious beliefs? Is there a particular denomination or religious organisation that you are a part of?	Catholic (Christian)	Protestant (Christian)	Muslim	Other (please specify)	
		Agnostic	Atheist	Jewish		
	Statement *"Please say whether you strongly agree, agree, disagree or strongly disagree with these statements"*	**Strongly agree**	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**
4.	I believe there is a connection between my physical health and my mental health					
5.	I believe there is a connection between my mental health and my spirituality					
6.	I believe there is a connection between my spirituality and my physical health					
7.	Faith in God is an important factor for my general health					
8.	I am very important to God					
9.	God is in control and so I do not have to take responsibility for my health					
10.	Faith in God makes it easier for me to deal with hardship and my problems					
11.	Praying or talking to God helps me					
12.	Reading about God gives me hope					
13.	Believing promises in the bible gives me hope					
14.	I read the bible every day					

Section 2: Spirituality (continued)

"I would now like you to consider two statements. If you are able to do so, please read and answer the statements for yourself. If you need help with reading, I can read it to you and you can tell me the answers you would like me to record for you." (*The researcher offers help as necessary.)*

This section is completed by the participant.

"The list that follows includes items you may or may not experience. Please consider how often you have this experience, and try to disregard whether you feel you should or should not have these experiences."

	Statement	**Many times a day**	**Every day**	**Most days**	**Some days**	**Once in a while**	**Never or almost never**
14	I am spiritually touched by the beauty of creation						
15	I feel thankful for my blessings						

Section 3: Mental wellbeing

"Thank you. Now, I would like to know about your general wellbeing in the last 2 weeks. If you are able to do so, please read and answer the questionnaire for yourself. If you need help with reading, I can read the questionnaire to you and you can tell me the answers you would like me to record for you."

(The researcher proceeds according to the participant's need. The WEMWBS (overleaf) is completed.)

Section 4: Checking and closure

"Thank you. Lastly, I would like to check that all questions you were happy responding to have been answered and recorded clearly." *(The researcher checks the rows and columns corresponding to different questions and seeks clarification, if necessary. The researcher checks the consent form.)*

"We have come to the end of the interview. Thank you for participating in the study and giving of your time."

Appendix 6: Cross-sectional study data collection form (Group 2)

Participant ID .....

Mental Health and Spirituality of Female Prisoners (women)

Section 1: Background

A. **Age:** .....

B. Age group: 18-24 25-34 35-44 45-54 55-64 65+years

C. **Marital status:** **Single** **Married** **Separated** **Divorced** **Widowed**
In a serious relationship but not married

D. Level of education complete: Not completed primary Primary Secondary
Technical college University

E. **Prison wing** .....

F. Crime: .....

Violent (incl sexual) Acquisitive Drugs Other.....

	Question				
G.	**How important to you is religion or spirituality? (where 1 is not important at all and 4 is highly important)**	1	2	3	4
H.	How often, if at all, did you attend church or other religious or spiritual services in the year before you came to prison?	Never	Less than once a month	At least once a month	Once a week or more
I.	**How often do you attend church or other religious or spiritual services in prison?**	**Never**	**Less than once a month**	**At least once a month**	**Once a week or more**
J.	How would you describe your current religious beliefs? Is there a particular denomination or religious organisation that you are a part of?	Catholic	Protestant/ Evangelical	Orthodox	Other (please specify)
		Jehovah's Witness	Mormon	Jewish	
		Muslim	Agnostic	Atheist	
		Indigenous spirituality			

K. **Have you ever received a diagnosis of depression by a doctor or nurse?** **No** **Yes**

L. **Have you received a current diagnosis of depression from a doctor or nurse?** **No** **Yes**

M. **I believe there is a connection between my spirituality and my physical health** **Agree** **Neither** **Disagree**

Appendix 7: Warwick-Edinburgh Mental Wellbeing Scale

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts.

Please tick the box that best describes your experience of each over the last 2 weeks

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)

Appendix 8: Cross-sectional study Mini International Psychiatric Interview for Current Major Depression

→ MEANS : GO TO THE DIAGNOSTIC BOX(ES) OF THIS MODULE, **CIRCLE NO** IN ALL OF THEM AND **MOVE** TO THE NEXT MODULE

A. MAJOR DEPRESSIVE EPISODE

A1	Have you been consistently depressed or down, most of the day, nearly every day, for the past two weeks ?	NO	YES	1
A2	In the past two weeks, have you been less interested in most things or less able to enjoy the things you used to enjoy most of the time ?	NO	YES	2
		→		
	IS **A1** OR **A2** CODED **YES** ?	NO	YES	
A3	**Over the past two weeks, when you felt depressed and/or uninterested :**			
a	Was your appetite decreased or increased nearly every day or did your weight decrease or increase without trying intentionally ? (i.e., ± 5 % of body weight or ± 3,5 kg or ± 8 lbs., for a 70 kg / 120 lbs. person in a month) IF **YES** TO EITHER, CODE **YES**	NO	YES	3
b	Did you have trouble sleeping nearly every night (difficulty falling asleep, waking up in the middle of the night, early morning wakening, or sleeping excessively) ?	NO	YES	4
c	Did you talk or move more slowly than normal or were you fidgety, restless or having trouble sitting still, almost every day?	NO	YES	5
d	Did you feel tired or without energy, almost every day?	NO	YES	6
e	Did you feel worthless or guilty, almost every day?	NO	YES	7
f	Did you have difficulty concentrating or making decisions, almost every day?	NO	YES	8
g	Did you repeatedly consider hurting yourself, feel suicidal, or wish that you were dead ?	NO	YES	9

A4 ARE **3** OR MORE **A3** ANSWERS CODED **YES** ?
(OR **4 A3** ANSWERS IF **A1** OR **A2** ARE CODED **NO**)

NO **YES**
MAJOR DEPRESSIVE EPISODE CURRENT

M.I.N.I. 5.0.0 English version / DSM-IV / current (August 1998)

Appendix 9: Cross-sectional study participant information sheet (Group 1)

Understanding Mental Wellbeing in Chile Study – information sheet

Dear Madam,

You are invited to take part in a study which aims to measure and understand the mental wellbeing of people in Chile. This information sheet answers questions you may have about the study. If you have any additional questions, please feel free to ask me.

1. **What is the study about?**
   Your health is important. Health includes physical, mental, and spiritual wellbeing. This study forms part of my PhD research project. It has been approved by the University of Edinburgh in the United Kingdom. Researchers from the University of Chile are also involved in this study. The study is concerned with the health of people in Chile and will focus on the mental and spiritual wellbeing of prisoners.

2. **Why am I being invited to take part in the study?**
   You are being invited to take part in the study because your beliefs and experiences may increase our understanding of the mental wellbeing of prisoners in Chile.

3. **How do I take part in the study?**
   Before deciding whether or not you wish to take part in the study, you are advised to read through this information sheet very carefully. You can ask me any questions you might have about the study. I will then check that you understand enough about the study in order to make a decision about whether you wish to participate. If you understand the study and wish to take part, I will then ask you to complete and sign a written consent form.

4. **What does taking part in the study involve?**
   If you decide to take part in the study and sign a consent form, I will then ask you to answer some questions about your background, health and spiritual beliefs. We can do this today. This should take about 30 minutes. If necessary, I can read the questions out to you and you can say out loud which answers you want me to write down. You are free to skip any question that you do not wish to answer.

5. **What are the advantages and risks of taking part in the study?**

There is a risk that you might feel uncomfortable with a question and if this is the case you do not have to answer that question. If after taking part in the study you have any questions about your health, you are advised to ask to speak to a health professional in the prison.

6. **Will I be paid for participating in the study?**
   No. There is no payment or other incentive offered for taking part in the study. This means that choosing to participate in the study will not give you additional legal or healthcare rights. There may not be any direct benefit for you but taking part in the study is likely to help us have a better understanding of the mental wellbeing of prisoners in Chile.

7. **Do I have to take part in the study?**
   No. It is entirely up to you whether or not you take part in the study. It is okay if you decide not to take part in the study. If you choose not to take part, change your mind or withdraw from the study at any time, your legal and healthcare rights will not be affected. Remember, taking part in the study is entirely voluntary. Please tell me if you do not wish to take part in the study or if you wish to withdraw from the study after signing the consent form. My contact details are at the end of this information sheet.

8. **What will happen to the information I provide during the study?**
   If you participate in the study today two pieces of information will be collected: the consent form which includes your name and the questionnaire which does not include your name. Once I return to the university, these two pieces of information will be stored separately and securely. The information will be transferred to an electronic database where it will be stored securely. At all times your confidentiality will be respected.

   Only those who are directly involved with study will have access to your full questionnaire information. I will collate and analyse the information provided by you and other participants. The findings will be published in academic journals, presented at conferences and shared with people interested in mental health and spirituality in Chile, the UK and abroad. No one will be able to identify from you from any report about the study because your name and personal, identifiable details will be removed. Sharing the findings in this way can help other researchers in Chile and around the world to think of ways of improving the mental wellbeing of prisoners. The anonymised data you provide may be used for future research. Your data will not be stored for longer than is necessary.

9. **I would like to participate in the study. What do I do?**
   If you want to take part in the study, let me know and we can complete the consent process today. I value your time and willingness to consider taking part in this study. If you wish to know the general findings of the study, please contact me by email by the end of December 2014. My contact details are below.

Thank you for taking the time to read this information sheet and reach a decision. If you have any further questions, please ask me.

Yours faithfully,

Anne Aboaja
PhD Researcher, Centre for Population Health Sciences, University of Edinburgh, Old Medical School, Teviot Place, Edinburgh EH8 9AG. Email: anne.aboaja@ ed.ac.uk
Telephone: +44 (0) 131 651 7112

Supervised by Dr Liz Grant and Prof Douglas Blackwood

Appendix 10: Cross-sectional study consent form (Group 1)

Understanding Mental Wellbeing in Chile – study consent form

Participant ID …… [*researcher to complete*]

Thank you for reading the information sheet about the study. Please *INITIAL* each box if you agree with the statement. If you do not agree with a statement, please leave the box blank.

1. I have received a copy of and understood the participant information sheet [ ]
2. I have had the opportunity to ask question as about the study and understand what is involved. [ ]
3. I understand that taking part is entirely up to me and that I can choose to withdraw from the study at any time, without giving a reason, and without my medical or legal rights being affected. [ ]
4. I understand that information I provide will be stored securely and confidentially, and may be shared anonymously in the UK and around the world. [ ]
5. I understand that there are no rewards for taking part in the study and that there may be no benefits for me. [ ]
6. I give permission for you to access my prison records and I am happy to be contacted again for research follow-up. [ ]
7. I am willing for my anonymised data to be archived and made available for future research. [ ]
8. If I withdraw from the study I agree you can use the data collected so far. [ ]
9. I am 18 years or older and I voluntarily agree to take part in the above study. [ ]

If you agree with all the statements above and want to take part, please fill in the details below:

----------	----------	----------
Name of participant	Signature	Date
----------	----------	----------
Name of researcher taking consent	Signature	Date

Appendix 11: Qualitative study background data collection form for chaplains

Participant ID .....

Mental Health and Spirituality of Female Prisoners (chaplains)

A. **Age:** .....

B. Age group: 18-24 25-34 35-44 45-54 55-64 65+years

C. **Sex:** **Female** **Male**

D. Level of education complete: Not completed primary Primary Secondary
Technical college University

E. **Religion:** .....

F. Denomination: .....

G. **Years visiting this (study) prison (to nearest whole year):** .....

H. Hours per week in prison: .....

I. **Have you ever received mental health training?** **No** **Yes**

   a. **If so, how many years ago?**

   b. **If so, how long was the training?**

   c. **What training?**

J. Has a close friend or relative of yours ever had a mental illness? No Yes

K. **Has a close friend or relative of yours ever had depression?** **No** **Yes**

Appendix 12: Qualitative study background data collection form for health professionals

Participant ID .....

Mental Health and Spirituality of Female Prisoners (health professionals)

A. Job title: .....

B. Age: .....

C. Age group: 18-24 25-34 35-44 45-54 55-64 65+years

D. Sex: **Female** **Male**

E. Level of education complete: Not completed primary Primary Secondary
Technical college University

F. Religion: .....

G. Denomination: .....

H. **Years visiting this (study) prison (to nearest whole year):** .....

I. Hours per week in prison: .....

J. Have you ever received training about mental health? **No** **Yes**

a. If so, how many years ago?

b. If so, how long was the training?

c. If so, what training?

K. Have you ever received training about mental health and spirituality? No Yes

Appendix 13: Qualitative study topic guide for focus groups with prisoners

Prisoner Focus Group Topic Guide

The following represents a guide of the questions for the prisoner participants. Prompts will be used in order to obtain the most useful information. Also the questions will be determined by the responses of the participants.

Rapport-building section (approx. 10 mins)

- Introductions. Housekeeping and group rules of confidentiality (no names to be mentioned, respect)
- What does "spirituality" mean to you?
- What does "mental health" mean to you? "Depression"?

Main section 1: General (approx. 40 mins)

- What do you think causes depression?
- Women in prison are more likely to have depression than women outside of prison. Why do you think this might be?
- Women in prison are more likely to have depression than men in prison. Why do you think this might be?
- What mental health support have you ever used in prison?
- What religious/spiritual support have you ever used in prison?
- I have some results of an earlier study about the mental health and spirituality of women in this prison. What do you think about these results?
    - Most women believed there was a connection between their mental health and spirituality. (Examples of prompts: How true or untrue is this for you? How are they connected? Why do you feel they are not connected? Personal beliefs/practices? Prison chaplaincy? Helpful? Unhelpful? Examples? Influence decision to seek/follow medical advice?)
    - 67 women were asked if they agreed with the following statement:
        - "God is in control and so I do not have to take responsibility for my health"
        - Over half of the women (37, 55%) agreed with this statement
    - 68 women were asked if they agreed with following statement:
        - "Reading about God gives me hope"
        - Most women (59, 87%) agreed with this statement
    - The study also found that women who frequently felt thankful for their blessings had better mental wellbeing (Examples of prompts: Do you agree with this? Why? What things have made you feel thankful in prison?)

BREAK: (10 mins)

Main section 2: Stories (approx. 20 mins)

- Read hypothetical scenario.

  "A 30-year old woman called "Lachica" has been in prison for over a year for drug-related crime. Lachica is single with two children aged 5 and 8 years, being cared for by relatives. Before coming to prison she attended religious services less than once a month. Until recently she would attend religious meetings in prison twice a week. However, she has now stopped attending. In the last four weeks she has felt low and has been tearful. In the last three weeks she has not had the energy or motivation to do her usual activities in the prison. She no longer enjoys chatting and laughing with other women in her section and has stopped looking forward to visits from her children. You talked to Lachica yesterday and asked her why she has hardly been eating over the last couple of weeks. She told you that she was not hungry. Last night you heard Lachica crying. You heard her saying to God, "God, there is no point going on. No one cares about me, not even you, God. I am the worst person here. What I did was unforgivable."

  - What do you think about this?
  - A week later Lachica comes across this story and reads it. (*Read the parable of the Lost Son to the participants)* (Luke 15:11-21).

  "And He said, "A man had two sons. "The younger of them said to his father, 'Father, give me the share of the estate that falls to me.' So, he divided his wealth between them. "And not many days later, the younger son gathered everything together and went on a journey into a distant country, and there he squandered his estate with loose living. "Now when he had spent everything, a severe famine occurred in that country, and he began to be impoverished. "So, he went and hired himself out to one of the citizens of that country, and he sent him into his fields to feed swine. "And he would have gladly filled his stomach with the pods that the swine were eating, and no one was giving anything to him. "But when he came to his senses, he said, 'How many of my father's hired men have more than enough bread, but I am dying here with hunger! 'I will get up and go to my father, and will say to him, "Father, I have sinned against heaven, and in your sight; I am no longer worthy to be called your son; make me as one of your hired men."' "So, he got up and came to his father. But while he was still a long way off, his father saw him and felt compassion for him, and ran and embraced him and kissed him. "And the son said to him, 'Father, I have sinned against heaven and in your sight; I am no longer worthy to be called your son.'" (Luke 15:11-21, NIV)

    What comes to mind when you hear this story?

  - Three weeks later Lachica tells you that she went to the prison health centre. She tells you that the doctor wants her to take medication for depression. She tells you she is not sure about taking the medication. What do you think?

Closing section (10 mins)

- Is there anything else you would like to tell me about the mental health and spirituality of female prisoners?
- How are you feeling at the end of this discussion?

Appendix 14: Qualitative study topic guide for interviews with chaplains

Chaplain Interview Topic Guide

The following represents a guide of the questions for the prisoner participants. Prompts will be used in order to obtain the most useful information. Also the questions will be determined by the responses of the participants.

Rapport-building section (approx. 10 mins)

- Can you tell me what a typical day involves when you visit the prison? (Examples of prompts: For prisoners from other denominations/religions or with no religion? Any exclusions?)
- What does "spirituality" mean to you?

Main section 1: General (20 mins)

- What does "mental health" mean to you?
- What do you think causes mental illness? Specifically, depression?
- Have you come across female prisoners with depression? (Examples of prompts: How did they come to your attention? Did you offer support? What support was offered? Why/why not?)
- To what extent do you feel that the spirituality affects the mental health of the prisoners here? Vice-versa?
- I have some results of an earlier study about the mental health and spirituality of women in this prison. What do you think about these results?
    - Most women believed there was a connection between their mental health and spirituality. (Examples of prompts: How true have you found this result to be in your work with female prisoners? What are your personal beliefs about this connection? Do these beliefs influence how you offer support to women here? Helpful? Unhelpful? Examples? Influence decision to seek/follow medical advice?)
    - 67 women were asked if they agreed with the following statement:
        - "God is in control and so I do not have to take responsibility for my health"
        - Over half of the women (37, 55%) agreed with this statement
    - 68 women were asked if they agreed with following statement:
        - "Reading about God gives me hope"
        - Most women (59, 87%) agreed with this statement
    - The study also found that women who frequently felt thankful for their blessings had better mental wellbeing (Examples of prompts: For what things do you think female prisoners can feel thankful?)

Main section 2: Stories (approx. 20 mins)

- Read hypothetical scenario.

  "A 30-year old woman called "Lachica" has been in prison for over a year for drug-related crime. She is single with two children aged 5 and 8 years, being cared for by relatives. Prior to coming to prison she attended religious services less than once a month. Until recently she would attend religious meetings in prison twice a week. However, she has not been for some time. In the last four weeks she has felt low and has been tearful. In the last three weeks she has not had the energy or motivation to do her usual activities in the prison. She no longer enjoys chatting and laughing with other women in her section and has stopped looking forward to visits from her children. Her friend (another prisoner) talked to her yesterday and ask her why she has hardly been eating over the last couple of weeks. She told her that she was not hungry. Last night you were woken up by her sobbing. You hear her saying, "God, there is no point going on. No one cares about me, not even you. I am the worst person here. What I did was unforgivable."

  - What do you think about this? (Prompts: Why do you think Lachica feels this way? Do you feel there is a role for your spiritual input? Why? Influenced by your spiritual beliefs? Any spiritual practices you would offer or suggest to help Lachica right now? Why? Are there any other forms of support you feel she might need in the prison?)

  - A week later Lachica comes across this story and reads it. *Read the parable of the Lost Son to the participant* (Luke 15:11-21).

  "And He said, "A man had two sons. "The younger of them said to his father, 'Father, give me the share of the estate that falls to me.' So, he divided his wealth between them. "And not many days later, the younger son gathered everything together and went on a journey into a distant country, and there he squandered his estate with loose living. "Now when he had spent everything, a severe famine occurred in that country, and he began to be impoverished. "So, he went and hired himself out to one of the citizens of that country, and he sent him into his fields to feed swine. "And he would have gladly filled his stomach with the pods that the swine were eating, and no one was giving anything to him. "But when he came to his senses, he said, 'How many of my father's hired men have more than enough bread, but I am dying here with hunger! 'I will get up and go to my father, and will say to him, "Father, I have sinned against heaven, and in your sight; I am no longer worthy to be called your son; make me as one of your hired men."' "So, he got up and came to his father. But while he was still a long way off, his father saw him and felt compassion for him, and ran and embraced him and kissed him. "And the son said to him, 'Father, I have sinned against heaven and in your sight; I am no longer worthy to be called your son.'" (Luke 15:11-21, NIV)

  She asks you to explain the story to her. What do you say?

- Three weeks later Lachica tells you that she went to the prison health centre. She tells you that the doctor wants her to take medication for depression. She tells you she is not sure about taking the medication. What do you think? (Examples of prompts: Why? Influenced by your personal spiritual beliefs?)

Closing section (10 mins)

- Is there anything else you would like to tell me about the mental health and spirituality of female prisoners?
- How do you feel at the end of this interview?
- How was your experience of the interview?

Appendix 15: Qualitative study topic guide for interviews with health professionals

Health Professional Interview Topic Guide

The following represents a guide of the questions for the prisoner participants. Prompts will be used in order to obtain the most useful information. Also the questions will be determined by the responses of the participants.

Rapport-building section (approx. 10 mins)

- What does "spirituality" mean to you?
- Can you tell me what mental health problems you typically deal with in your job here?

Main section 1: General (25 mins)

- What mental health care is available for female prisoners?
- What do you think causes mental illness? Specifically, depression?
- Have you come across female prisoners with depression? (Examples of prompts: How did they come to your attention? Did you offer support? What support was offered? Why/why not?)
- Have you ever come across a prisoner here whose spirituality appeared to be affecting her mental health in any way? (Examples of prompts: How did you discover this? Access to mental health care? Response to mental health care? Helpful? Unhelpful? How did you respond?)
- It has been suggested that health professionals should consider the spirituality of people with mental health problems. Do you agree with this or not? (Examples of prompts: Is this something you do? Routinely? How? Why?)
- I have some results of an earlier study about the mental health and spirituality of women in this prison. What do you think about these results?
    - Most women believed there was a connection between their mental health and spirituality. (Examples of prompts: How true have you found this result to be in your work with female prisoners? What are your personal beliefs about this connection? Do these beliefs influence how you offer support to women here? Helpful? Unhelpful? Examples? Influence decision to seek/follow medical advice?)
    - 67 women were asked if they agreed with the following statement:
        - "God is in control and so I do not have to take responsibility for my health"
        - Over half of the women (37, 55%) agreed with this statement
    - 68 women were asked if they agreed with following statement:
        - "Reading about God gives me hope"
        - Most women (59, 87%) agreed with this statement
    - The study also found that women who frequently felt thankful for their blessings had better mental wellbeing (Examples of prompts: For what things do you think female prisoners can feel thankful?)

Main section 2: Stories (approx. 15 mins)

- Read hypothetical scenario.

  "A 30-year old woman called "Lachica", has been in prison for over a year for drug-related crime. She is single with two children aged 5 and 8 years, being cared for by relatives. Prior to coming to prison she attended religious services less than once a month. Until recently she would attend religious meetings in prison twice a week. However, she has not been for some time. In the last four weeks she has felt low and has been tearful. In the last three weeks she has not had the energy or motivation to do her usual activities in the prison. She no longer enjoys chatting and laughing with other women in her section and has stopped looking forward to visits from her children. Her friend (another prisoner) talked to her yesterday and ask her why she has hardly been eating over the last couple of weeks. She told her that she was not hungry. Last night you were woken up by her sobbing. You hear her saying, "God, there is no point going on. No one cares about me, not even you. I am the worst person here. What I did was unforgivable."

  - What do you think about this? (Prompts: Why do you think Lachica feels this way? What do you think she should do? How would you help her if she came to see you? Are there any other forms of support you feel she might need in the prison? Do you feel there is a role for spiritual input? Why? Influenced by your spiritual beliefs? Would you suggest this to her?)

  - Three weeks later Lachica goes to see you in the prison health centre. She has already been advised to take medication for depression but has not done so. She tells you she is not sure about taking the medication. What do you think? (Examples of prompts: What do you do? Why? Why might she not want to take the medication? If her reasons are spiritual, how do you respond?)

Closing section (10 mins)

- Is there anything else you would like to tell me about the mental health and spirituality of female prisoners?
- How do you feel at the end of this interview?
- How was your experience of the interview?

Appendix 16: Qualitative study participant information sheet for prisoners

MENTAL HEALTH AND SPIRITUALITY OF FEMALE PRISONERS STUDY

Information Sheet (women)

Invitation: We invite you to participate in the study "Mental Health and Spirituality of Female Prisoners" by the University of Edinburgh and the University of Chile.

Aim: We're doing this study in order to understand more about the mental health and spirituality of women in prisons. We hope this study will lead to better mental health of female prisoners in Chile. The study is in two parts. The first part is an individual interview and the second part a group discussion.

Procedures: You can ask questions about the study today and then go away and think about whether or not you want to take part in the study. If after thinking about it you have any questions you about the study, you will have the opportunity to ask them. If at that point you decide that you want to take part in the study, you will then be asked to sign a consent form. You will then be asked some questions on your own in an interview with me. These will include questions about spirituality, being in prison, depression and your mental well-being. You will also be asked questions specifically to find out whether you might have depression. This will all take about 40 minutes. You will then be given a date to join a discussion group about mental health and spirituality with up to 7 other women from this prison, me and one of my colleagues. The discussion group will last one-and-a-half hours. The group discussion will be recorded.

Risks: You might feel uncomfortable with some questions and if that is the case you don't have to answer those questions. If you have any questions or concerns about your health after taking part in the study, you should speak with a health professional in the prison.

Benefits: If you decide to take part in the study you will be helping us to understanding more about the mental health and spirituality of women in prison.

Alternatives: If you decide not to take part in the study, your legal and health rights will not be affected at all. Remember, taking part is completely voluntary.

Compensation: You won't receive any payment for taking part in the study.

Confidentiality: The things you tell us during this study will be kept in the strictest confidence by the research team. We will only speak to prison staff if you state clear plans of harm to yourself or to others. We will write reports and make official

presentations of the research but we will never include your name. The discussion group will only include those female prisoners who have given their written agreement to respect the confidentiality of all other women in the discussion group. However, we cannot guarantee the confidentiality of group members.

Additional information: We will let you know if we think you might have a health condition that you your doctor should know about. If necessary, we will suggest you speak to your doctor or we might talk to your doctor about our concerns.

Voluntary participation: Taking part in the study is completely voluntary. It is entirely up to you and you can pull out of the study at any time, without giving a reason. Just let me know. It won't affect your legal or medical rights in any way. In the same way, the researcher can decide that it might be in your interest to withdraw from the study.

Rights of participants: You can keep this information sheet. If you decide to take part in the study you will also receive a copy of your signed consent form. If you have questions or doubts about the study. [*Insert name here*] is the prison officer you can contact in the first instance. However, you can ask me any questions you might have right now or when we next meet

Main researcher: Dr Anne Aboaja
Supervised by: Dr Liz Grant and Prof. Douglas Blackwood, University of Edinburgh, United Kingdom, and by Dr Rubén Alvarado Muñoz, Escuela de Salud Pública, Facultad de Medicina, Universidad de Chile, Av. Independencia 939, Santiago, Chile. Tel: (56-2) 978 6146

Other rights of participants: In the event that you have doubts about your rights, you ought to contact the president of the ethics committee in Chile: el Presidente del "Comité de Ética de Investigación en Seres Humanos", Dr. Manuel Oyarzún G., Telephone: (56-2) 978.9536, Email: comiteceish@med.uchile.cl, whose office is located at the side of the Central Library, Faculty of Medicine, Universidad de Chile, Av. Independencia 1027, Comuna de Independencia.

Appendix 17: Qualitative study consent form for prisoners

Study ID number:

Informed Consent (women)

MENTAL HEALTH AND SPIRITUALITY OF FEMALE PRISONERS STUDY

I initial each statement below that I agree with.

1. I have been given enough time and information to decide whether or not I want to take part in this study which involves an individual interview and a recorded group discussion ( )
2. I understand that taking part in the study is completely voluntary. ( )
3. I understand that the information I give will be stored in a secure in a confidential manner without my name. ( )
4. I understand that the things I say may be used in reports, articles and presentations without my name. ( )
5. I understand that the prison officers will not listen to my conversations and that they will not be told what I say unless I speak about clear plans of harm to myself or others. . ( )
6. I will respect the confidentiality of all women in the discussion group by not sharing publicly or privately anything that has been said in the group. ( )
7. I understand that you can cannot guarantee complete confidentiality of things I say during the discussion group ( )
8. I understand that the information I give you might be used for future research without my name. ( )
9. I understand that the audio recording of what I say will be destroyed when it is no longer necessary to keep it. ( )
10. I understand that I am free to withdraw from this study at any point without giving a reason and that withdrawing will not affect my care, welfare or legal rights. ( )

I have received and understood the study information sheet for prisoner participants. My questions about the study have been answered satisfactorily. I agree with all of the ten statements above and everything in the study information sheet. I now give my informed consent to participate in the study "Mental Health and Spirituality of Female Prisoners" by signing below.

Name of participant	Signature	Date
National ID:		

Name of investigator	Signature	Date

Appendix 18: Qualitative study participant information sheet for chaplains

MENTAL HEALTH AND SPIRITUALITY OF FEMALE PRISONERS STUDY

Information Sheet (chaplains)

Invitation: We invite you to participate in the study "Mental Health and Spirituality of Female Prisoners" by the Universities of Edinburgh and Chile. We are interested in your opinions, beliefs, practices and experiences.

Aim: This study aims to understand more about the mental Health and spirituality of women in prisons. We hope the study will lead to better mental health of female prisoners.

Procedures: You will be given sufficient time after reading this information sheet to ask questions about the study and to think about whether or not you want to take part in the study. If you decide to participate the researcher will first ask you a few questions about your background, religion, your spiritual work and your experience of mental health. This part will take no more than 10 minutes. Then you will be asked to take part in an interview with me about mental health and spirituality. This interview will take place at a time convenient for you and will be recorded. This part will take no more than 1 hour.

Risks: You might feel uncomfortable with some questions and if that is the case you do not have to answer those questions. If you have any questions or concerns about your chaplaincy after taking part in the study, you are advised to speak with a professional from your line of spiritual work.

Benefits: Your participation in the study will help us have a better understanding of the mental health and spirituality of women in prison.

Alternatives: If you decide not to participate in the study, your rights will not be affected. Remember, your participation is completely voluntary.

Compensation: You will not receive any payment for taking part in the study.

Confidentiality: Everything you tell us during this study will be kept in the strictest confidence by the research team. Publications and presentations of the study results will not include your name.

Additional information: There is another part to the study in which I will speak to female prisoners and to health professionals.

Voluntary participation: Your participation in the study is completely voluntary and you can withdraw from the study at any moment, without giving a reason, by telling the researcher. In the same way, the researcher can decide that it might be in your interest to withdraw from the study.

Rights of participants: You can keep this information sheet. If you decide to participate in the study you will also receive a copy of your signed consent form. If you have questions or doubts about the study, [*Insert name here*] is the prison officer you can contact in the first instance. However, you can ask me any questions you might have right now.

Main researcher: Dr Anne Aboaja
Supervised by: Dr Liz Grant and Prof. Douglas Blackwood, University of Edinburgh, United Kingdom, and by Dr Rubén Alvarado Muñoz, Escuela de Salud Pública, Facultad de Medicina, Universidad de Chile, Av. Independencia 939, Santiago, Chile. Tel: (56-2) 978 6146

Other rights of participants: In the event that you have doubts about your rights you ought to contact the president of the ethics committee in Chile: el Presidente del "Comité de Ética de Investigación en Seres Humanos", Dr. Manuel Oyarzún G., Telephone: (56-2) 978.9536, Email: comiteceish@med.uchile.cl, whose office is located at the side of the Central Library, Faculty of Medicine, Universidad de Chile, Av. Independencia 1027, Comuna de Independencia.

Appendix 19: Qualitative study participant information sheet for health professionals

MENTAL HEALTH AND SPIRITUALITY OF FEMALE PRISONERS STUDY

Information Sheet (health professionals)

Invitation: We invite you to participate in the study "Mental Health and Spirituality of Female Prisoners" by the Universities of Edinburgh and Chile. We are interested in your opinions, beliefs, practices and experiences.

Aim: This study seeks to understand more about the mental Health and spirituality of women in prisons. We hope the study leads to better mental health of female prisoners.

Procedures: You will be given enough time after reading this information sheet to ask questions about the study and to think about whether or not you want to take part in the study. If you decide to participate the researcher will first ask you a few questions about your background, religion, your mental health work and your experience of mental health. This part will take no more than 10 minutes. Then you will be asked to complete an interview with me about mental health and spirituality. This interview will take place at a time convenient for you and will be recorded. This part will take no more than 1 hour.

Risks: You might feel uncomfortable with some questions and if that is the case you do not have to answer those questions. If you have any questions or concerns about your health work after taking part in the study, you are advised to speak with a professional from your line of health work.

Benefits: Your participation in the study will help us have a better understanding of the mental health and spirituality of women in prison.

Alternatives: If you decide not to participate in the study, your rights will not be affected. Remember, your participation is completely voluntary.

Compensation: You will not receive any payment for taking part in the study.

Confidentiality: Everything you tell us during this study will be kept in the strictest confidence by the research team. Publications and presentations of the study results will not include your name.

Additional information: There is another part to the study in which I will speak to female prisoners and to prison chaplains.

Voluntary participation: Your participation in the study is completely voluntary and you can withdraw from the study at any moment, without giving a reason, by telling

the researcher. In the same way, the researcher can decide that it might be in your interest to withdraw from the study.

Rights of participants: You can keep this information sheet. If you decide to participate in the study you will also receive a copy of your signed consent form. If you have questions or doubts about the study, [*Insert name here*] is the prison officer you can contact in the first instance. However, you can ask me any questions you might have right now.

Main researcher: Dr Anne Aboaja
Supervised by: Dr Liz Grant and Prof. Douglas Blackwood, University of Edinburgh, United Kingdom, and by Dr Rubén Alvarado Muñoz, Escuela de Salud Pública, Facultad de Medicina, Universidad de Chile, Av. Independencia 939, Santiago, Chile. Tel: (56-2) 978 6146

Other rights of participants: In the event that you have doubts about your rights you ought to contact the president of the ethics committee in Chile: el Presidente del "Comité de Ética de Investigación en Seres Humanos", Dr. Manuel Oyarzún G., Telephone: (56-2) 978.9536, Email: comiteceish@med.uchile.cl, whose office is located at the side of the Central Library, Faculty of Medicine, Universidad de Chile, Av. Independencia 1027, Comuna de Independencia.

Appendix 20: Qualitative study consent form for chaplains

Study ID number:

Informed Consent (chaplains)

MENTAL HEALTH AND SPIRITUALITY OF FEMALE PRISONERS STUDY

I initial each statement below that I agree with.

1. I have been given sufficient time and information to decide whether or not I wish to take part in this study which involves background questions and a recorded interview. ( )
2. I understand that the information I give will be stored in a secure and confidential manner without my name. ( )
3. I understand that the things I say may be used in reports, articles and presentations without my name. ( )
4. I understand that the information I give you will be made available, without my name, for use in future research. ( )
5. I understand that the audio recording of what I say will be destroyed when it is no longer necessary to keep it. ( )
6. I understand that I am free to withdraw from this study at any point without giving a reason and that withdrawing will not affect my rights. ( )

I have received and understood the information in the information sheet. My questions about the study have been answered satisfactorily. I agree with all of the six statements above. I now give my informed consent to participate in the study "Mental Health and Spirituality of Female Prisoners" by signing below.

_____	_____	_____
Name of participant National ID:	Signature	Date
_____	_____	_____
Name of investigator	Signature	Date

Appendix 21: Qualitative study consent form for health professionals

Study ID number:

Informed Consent (health professionals)

MENTAL HEALTH AND SPIRITUALITY OF FEMALE PRISONERS STUDY

I initial each statement below that I agree with.

1. I have been given sufficient time and information to decide whether or not I wish to take part in this study which involves background questions and a recorded interview. [ ]
2. I understand that the information I give will be stored in a secure and confidential manner without my name. [ ]
3. I understand that the things I say may be used in reports, articles and presentations without my name. [ ]
4. I understand that the information I give you will be made available, without my name, for use in future research. [ ]
5. I understand that the audio recording of what I say will be destroyed when it is no longer necessary to keep it. [ ]
6. I understand that I am free to withdraw from this study at any point without giving a reason and that withdrawing will not affect my rights. [ ]

I have read and understood the information in the information sheet. My questions about the study have been answered satisfactorily. I agree with all of the six statements above. I now give my informed consent to participate in the study "Mental Health and Spirituality of Female Prisoners" by signing below.

Name of participant National ID:	Signature	Date
Name of investigator	Signature	Date

Glossary

Dysphoria: an affective state of generalised uneasiness and dissatisfaction

Eudaimonia: the subjective feeling of a sense of purpose in life that relates to living harmoniously within one's environment, autonomy, self-acceptance and fulfilling one's potential

Euphoria: an affective state of intense happiness with feelings of pleasure or excitement

Euthymia: a normal mood that is neither depressed nor elated

Hedonia: the subjective feeling of a sense of pleasure in life that relates to the presence of positive affect and the absence of negative affect

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