

**Title:** The individual experience of ageing prisoners: Systematic review and meta-synthesis through a Good Lives Model framework

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1 **Title: The individual experience of ageing prisoners: systematic**  
2 **review and meta-synthesis through a Good Lives Model framework**  
3  
4

5 **Running head:** Systematic review on ageing prisoners.  
6

7 **Keywords:** Prison, ageing prisoners, mental health, physical health, systematic review, meta-  
8 synthesis.

9  
10 **Main points**

- 11 • The experience of imprisonment from the perspective of ageing prisoners has received  
12 little attention in research.
- 13 • We adopted a prisoner-centred approach grounded in the Good Lives Model, to explore  
14 the experience of ageing prisoners, the elements of life in prison impacting on their  
15 wellbeing and the current service provision.
- 16 • We reviewed 25 international studies and developed through meta-synthesis three themes:  
17 The hardship of imprisonment, addressing health and social care needs and the route out  
18 of prison.
- 19 • We found that, despite initiatives to address their needs, the experience of incarceration  
20 for ageing prisoners is quite poor, which reflects the inconsistent support that they are  
21 usually offered.

22  
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## 52 Abstract

53

54 **Objective.** The existing literature on ageing prisoners tends to focus on such aspects as  
55 diagnosis and physical ill-health. In contrast, the experience of imprisonment from the  
56 perspective of ageing prisoners has received less attention. Grounded in a Good Lives Model  
57 theoretical framework, we reviewed and meta-synthesised literature around their experience  
58 of life in prison, its impact on their wellbeing and how prison services are currently  
59 addressing their complex needs. We further identify potential areas of improvement.

60

61 **Methods.** 1. Systematic search on Assia, PsycInfo, MedLine, Embase, Web of Science,  
62 Google and Gov.uk. 2. Extraction and categorisation of data on NVivo. 3. Development of  
63 themes through thematic analysis and meta-synthesis. 4. Identification of potential areas of  
64 improvement.

65

66 **Results.** We selected 25 studies for our review, of which thirteen were from the USA, seven  
67 from the UK, two from Australia and one each from Ireland, Switzerland and Israel. We  
68 identified three themes: The hardship of imprisonment, addressing health and social care  
69 needs, and the route out of prison.

70

71 **Conclusions.** Ageing prisoners have unique and complex health and social care needs which,  
72 to varying degree across different countries, are mostly unmet. Promising initiatives to  
73 address their needs are emerging but, at present time, the overall experience of incarceration  
74 for the ageing prisoner is quite poor, given the inconsistent physical, emotional and social  
75 care support offered from prison intake to release and beyond.

76

## 77 Introduction

78 The number of ageing prisoners is growing in many countries. In the United Kingdom, the  
79 population of prisoners over 60 years old has increased eight times since 1990 (Senior et al.,  
80 2013). In the United States of America, Ireland and Australia, ageing prisoners have been  
81 identified as the fastest growing group (Joyce & Maschi, 2016; Davoren et al, 2015; Cornish  
82 et al., 2016).

83

84 This increase has been determined by demographic factors such as the ageing of the  
85 population (Senior et al., 2013) and cultural factors, including less lenient treatment of ageing  
86 offenders (Yorston, 2015). This has been accompanied, in the UK context, by tougher  
87 sentencing policies, causing an increase in longer, life and indeterminate sentences (Moll,  
88 2013), historical and “other offences” (+95% between 1995 and 2005) (RECOOP, 2015).

89

90 Ageing prisoners have been identified as a special need population in relation to physical,  
91 mental and social health care (Atabay, 2009). Regarding their physical health, in addition to  
92 common ailments, whose incidence increases with age (e.g., arthritis, Parkinson’s disease,  
93 dementia, diabetes) (Baidawi, 2015), they experience poorer health status compared to people  
94 in the community, owing to their common histories of substance abuse and poor health  
95 management (Cooney & Braggins, 2010). Deteriorating physical health impacts on the  
96 mobility and independence of ageing prisoners, who may require consistent social care.

97

98 In relation to mental health, a recent meta-analysis found that 38% of ageing prisoners suffer  
99 from ‘any psychiatric disorder’, with more than double the prevalence reported in community  
100 studies (15%) (Di Lorito, Völlm, & Denning, 2017). The authors also found higher prevalence  
101 for depression, schizophrenia/psychoses and anxiety disorders.

102 Several policies aim to address the complex health care needs of ageing prisoners, including  
103 the European Convention of Human Rights (ECHR) against inhuman treatment and the 8<sup>th</sup>  
104 amendment to the US constitution (Williams et al., 2012; Wahidin, 2011). In the UK, ageing  
105 prisoners are granted equal care as people living in the community through the National  
106 Institute for Health and Care Excellence (NICE) guidelines on mental wellbeing and  
107 independence in ageing people (NICE, 2015) and the Care Act 2015, which gives local  
108 authorities legal responsibility for the social care and support needs of prisoners.

109  
110 Consideration of individual needs is also a key principle of strength-based models for the  
111 rehabilitation of offenders, which, in contrast with risk need responsivity (RNR) (Andrews &  
112 Bonta, 2010) focusing on risk reduction, resort to personal strengths to promote rehabilitation  
113 (Robertson et al., 2011). Among the strength-based approaches, the Good Lives Model  
114 (GLM) is gaining a central role in forensic policy and practice (Robertson et al., 2011),  
115 following several international studies which yielded promising results in rehabilitation  
116 outcomes (Barnao, Ward, & Casey, 2016; Barnao, Ward, & Robertson, 2016; Ward & Willis,  
117 2016; Chu & Ward, 2015; Fortune et al., 2015; Lord, 2014).

118  
119 The GLM is grounded in principles of human dignity and postulates that rehabilitation to  
120 socially integrated lifestyles is attained when the prison system provides the  
121 resources/support for the person to meet individual needs or “Primary goods” (Table 1)  
122 (Laws & Ward, 2011; Ward & Maruna, 2007; Ward & Stewart, 2003), by applying three  
123 principles:

- 124  
125 1. Person-centredness, which considers the person’s preferences, aspirations and  
126 individual needs.

127 2. Human agency, which acknowledges the individual's ability to identify individual  
128 needs and act through socially integrated lifestyles to meet them.

129 3. Human rights, which gives back dignity to offenders, by recognising their own  
130 individuality and the need for prison services to implement tailored pathways of  
131 rehabilitation.

132

133 [Insert Table 1 near here]

134

135 These principles put the prisoner at the centre and therefore their subjective experience is  
136 crucial. Although a robust body of international literature exists around ageing prisoners,  
137 most studies rely on data collected through the input of stakeholders' groups other than  
138 prisoners (e.g. custodial staff), neglecting their subjectivity. Grounded on a GLM theoretical  
139 framework, this review provides a meta-synthesis of the literature around the experience of  
140 imprisonment through the perspective of the ageing prisoners and is guided by three research  
141 questions:

142

143 (i). What is the subjective experience of imprisonment for the ageing prisoner?

144 (ii). What are the variables that most affect this experience?

145 (iii). How are prison services addressing the individual needs of ageing prisoners?

## 146 **Methods**

### 147 **Selection strategy and search criteria**

148 This review complies with the Preferred Reporting Items for Systematic Reviews and Meta-  
149 Analyses (PRISMA) (Moher et al., 2009).

150

151 Inclusion criteria:

152

- 153 • Study is on ageing prisoners. We systematically searched for terms related to the age  
154 domain, but we avoided a strict age inclusion criterion because:

155

156 (i). There is little consensus as to the age range of ‘older’ prisoners (Williams et  
157 al., 2012). Some contend that given that age 60 is the cut-off in community  
158 studies, 50 years old would apply to prisoners, who usually experience premature  
159 ageing, given their poor health habits and histories of substance abuse (Cooney &  
160 Braggins, 2010). Others object that prisoners experience similar health problems  
161 as people in the community (Fazel et al., 2004). Given the absence of a resolution  
162 in the current debate and in order not to discard relevant sources a priori, we  
163 refrained from adopting a pre-determined age cut-off.

164

165 (ii). Prisoners feel that ageing is a highly subjective experience:

166

167 *“There was an unusual reaction to the question “How old does a prisoner have to be*  
168 *before people treat him as an older prisoner?” Fourteen men suggested that this*  
169 *“depends on the man's physical and mental condition”, Reed (1980).*

170

- 171 • The primary interest of the study is the experience of imprisonment for the ageing  
172 prisoner including aspects that impact on this experience.
- 173 • Either sex.
- 174 • Any language and year of publication.

175

176 Exclusion criteria:

177

- 178 • Studies on ex-prisoners or patients in forensic psychiatric settings, as they do not have  
179 current lived experience of imprisonment.
- 180 • Remand prisoners, as the experience of being temporarily detained in prison may  
181 greatly differ from that of sentenced prisoners.
- 182 • Studies which do not reflect the views of prisoners.

183

184 We ran our search in December 2015 and again in December 2016 to retrieve the most  
185 updated literature. We searched on 5 databases: Assia, PsycInfo, Embase, Medline and Web  
186 of Science and combined terms from three domains:

187

188 (i). The age domain, including: Age\*, old\*, aging, elderly, mature.

189 (ii). The prison domain, including: Prison\*, imprison\*, inmate\*, incarcerat\*, detain\*,  
190 detention\*.

191 (iii). The health domain, including: Care, mental\*, emotion\*, physical\*, health\*, service,  
192 healthcare, psychotic, psychos\*, psychiatr\*, psycholog\*, mental\*, wellbeing.

193

194 The same strategy was used to identify further relevant literature through the first 100 hits on  
195 Google and Gov.uk and by screening the reference pages of the studies we retrieved.

196

### 197 [Quality screening of the studies](#)

198 We undertook a quality screening of our sources using the Mixed Methods Appraisal Tool

199 (MMAT) – Version 2011 (Pluye et al., 2011), a validated screening tool for complex

200 systematic literature reviews that include qualitative, quantitative and mixed methods studies.

## 201 Data extraction and analysis

202 Data were extracted onto NVivo 11 (QSR International Pty Ltd., 2012). We adopted a  
203 deductive approach to Thematic Analysis (Braun & Clarke, 2006) and extracted data which  
204 were relevant to our research questions, but refrained from generating themes at the initial  
205 stage. Only after extraction, based on the emerging topics, we developed tentative umbrella  
206 themes and sub-themes. The task was undertaken by the main author, who proposed an initial  
207 number of seven tentative themes to the research team.

208

209 Each team member studied the dataset, assessed the appropriateness of the tentative themes  
210 individually and fed back to the group during successive team meetings. The process of meta-  
211 synthesis of themes was iterative. A final number of three themes and titles reflecting their  
212 content was agreed by all research team members.

## 213 Results

214 We retrieved 3,222 records; 3,199 were identified through the databases and 23 through  
215 Google and Gov.uk. Following title or abstract screening, 3,120 were dismissed. The  
216 remaining 102 were screened for duplicates and assessed for eligibility against the inclusion  
217 criteria. Twenty-five studies were included in this review (Figure 1). [Insert Figure 1 near  
218 here]

219

## 220 Quality screening of the studies

221 Twenty studies were screened for quality, all of which passed the preliminary screening;  
222 therefore, none was excluded for poor quality. Five were not screened for quality as they  
223 were not empirical (Baldwin & Leete, 2012; Booth, 1989; Chaiklin, 1998; Hodel & Sanchez,  
224 2012; Moll, 2013).

225 The scores ranged from 50 to 100. Five articles totalled the maximum score (Allen et al.,  
226 2008; Doron, 2007; Fazel et al., 2004; Leigey, 2008; Reed, 1980). The qualitative studies (or  
227 qualitative element of the studies) obtained mostly positive scoring in items 1.1 (data  
228 sources), 1.2 (data analysis), and 1.3 (discussion of how findings relate to the context). In  
229 relation to discussion around the researchers' influence in the interview process (item 1.4),  
230 negative scoring was attributed in all but three cases (Doron, 2007; Leigey, 2008; Reed,  
231 1980).

232

233 For the quantitative studies (or quantitative element of the studies), mostly positive scoring  
234 was attributed for items 2.1 (sampling strategy) and 2.3 (tools for data collection).

235 Information on response rates was instead poorly reported in most studies (item 2.4). The  
236 quality screening is reported fully in table 2. [Insert Table 2 near here]

237

### 238 [Study characteristics](#)

239 Sixteen studies were qualitative, nine were quantitative and three adopted mixed  
240 methodologies. The publication year ranged from 1979 to 2016; most of the articles were  
241 published from the mid 2000's onwards, following an increase in the prevalence of ageing  
242 prisoners. Thirteen studies were from the USA, seven from the UK, two from Australia and  
243 one each from Ireland, Switzerland and Israel. In contrast to other countries, the US studies  
244 covered all years of publication, reflecting a longer tradition of prison literature in the USA.

245

246 Seven studies focused on the general experience of imprisonment; the remainder addressed  
247 dementia (n=4); death/suicide (n=3); release from prison (n=3); physical and/or mental health  
248 and related needs, including social care (n=3); religion (n=2); treatment for physical and  
249 mental health (n=2); and forgiveness (n=1). The studies from the USA and the UK covered

250 the whole range of topics. Most studies concerning dementia were published since 2010,  
251 which reflects the increased prevalence and increasing research interest in the condition.

252

253 Most studies were peer-reviewed. We also included two unpublished theses (Leigey, 2008;  
254 Reid, 1980), which we believe reduces potential publication bias. The study designs included  
255 both empirical and non-empirical methodologies. Study samples ranged from two to 263  
256 prisoners. The age cut-off for inclusion in the studies ranged from 45 to 69 years old. Ten  
257 studies were conducted on just one prison and 12 studies looked at multiple sites (Table 3).

258 [Insert Table 3 near here]

259

## 260 Themes

261 We derived three themes:

- 262 1. The hardship of imprisonment
- 263 2. Addressing health and social care needs
- 264 3. The route out of prison

265

### 266 The hardship of imprisonment

267 The first theme was the hardship of imprisonment experienced by ageing prisoners due to  
268 “Institutional thoughtlessness”, the systematic neglect of age-related needs through a one-  
269 size-fits-all regime (Crawley, 2005). This was reflected in the access issues for inmates who  
270 have limited mobility, as reported by an ageing prisoner in the Irish prison system:

271

272 *“Walking up and down the stairs is hard, the breathing’s not the best...you can imagine*  
273 *going to the top, it’s five floors up” (Joyce & Maschi, 2016).*

274

275 In the UK context, many prisons dating back to the 19<sup>th</sup> century do not fully comply with the  
276 Disability Discrimination Act 2005, presenting narrow cell doors and inaccessible bathrooms  
277 (Senior et al., 2013; Crawley, 2005). In addition, facilities are often located on upper floors  
278 (Joyce & Maschi, 2016). Limited accessibility, through a GLM perspective, leads to neglect  
279 of the primary human need for healthy living and functioning (see Table 1), since the ageing  
280 prisoners may be unable to use essential services for rehabilitation and wellbeing.

281

282 Another example of institutional thoughtlessness relates to dementia. Only few institutions  
283 have actively worked to become dementia-friendly (i.e. promoting the inclusion of people  
284 with dementia) (Fazel et al., 2002), mostly in the United States (Moll, 2013; Hodel &  
285 Sanchez, 2012) and in the UK, where HMP Norwich offers units for serious conditions,  
286 including dementia, and HMP Exeter is developing a specialist service for dementia (Moll,  
287 2013).

288

289 These units offer specialised group activities such as walking, reminiscing and training in  
290 personal hygiene; modifications to the prison, including visual aids for easier navigation and  
291 quieter dining tables/zones (Hodel & Sanchez, 2012); and specialist programmes, such as the  
292 “Gold Coats”, an Alzheimer’s Association sponsored buddy scheme in 11 California prisons,  
293 in which people with dementia are assisted by younger inmates in managing finances, food,  
294 medications and cleaning (Baldwin & Leete, 2010; Moll, 2013). Exceptions aside, however,  
295 the overall picture appears less encouraging, as summarised by the CEO of Age Action,  
296 Eamon Timmins:

297

298 *“There’s nothing to suggest in our experience of prison life that it is dementia friendly or that*  
299 *there is dementia awareness within the prison system” (Joyce & Maschi, 2016).*

300 Institutional thoughtlessness was also reflected in activity programmes. Only 55% of prisons  
301 in England and Wales offer age-friendly activities and in 67% these are not suitable for  
302 inmates with mobility difficulties, who may become reluctant to venture out of their cell  
303 (Crawley, 2005), remain active and engage in hobbies and recreational pursuits (see Table 1).

304

305 Social disengagement and loneliness is often exacerbated by loss of contact with family and  
306 friends (Leigey, 2008) and age-related life events, such as the death of a spouse or friends  
307 (Booth, 1989) and may lead to alienation from life (Moll, 2013; Crawley, 2005), or in GLM  
308 terms, a loss of pleasure in the here and now (See Table 1). This was well summed up by an  
309 ageing prisoner:

310

311 *“Unfortunately, there’s guys whether it be old age or just that killer thing of ‘I don’t care, I’ll*  
312 *just lie down in bed and I’ll go asleep’ ...A lot of them here have given up” (Joyce & Maschi,*  
313 *2016)*

314

315 In response to the hardship of imprisonment, ageing prisoners adopt various coping  
316 mechanisms, such as religion and spirituality (Leigey, 2008). In contrast with younger  
317 prisoners, who tend to hide their religious belief from their peers, ageing prisoners often pride  
318 themselves over a rich spiritual life (Reed, 1980), which alleviates feelings of depression,  
319 anxiety and fear (Bishop et al., 2014, Allen et al., 2013; Allen et al., 2008), thus promoting  
320 “inner peace” (see Table 1). Attending religious ceremonies also represents an opportunity  
321 for social life and connectedness (Reed, 1980).

322

323 Another important response to the hardship of imprisonment is the potential for reconciliation  
324 and restitution. With the passage of time, prisoners may come to accept responsibility for

325 their offence and their sentence. This may bring a change in attitude towards the victim(s) of  
326 their crime and the judicial authority, as well as emerging personal forgiveness for their  
327 wrongdoing (Bishop et al., 2014). Ageing prisoners also resort to reminiscing, the recalling of  
328 happy memories and/or challenging past events successfully dealt with, to find the strength to  
329 face the present (Crawley, 2005; Leigey, 2008). Instead, counselling, psychotherapy and  
330 pastoral care were not reported as coping mechanisms. This may denote poor service  
331 provision in the prison system, which, as highlighted by Chaiklin (1998), is nonetheless  
332 crucial:

333

334 *“One should distinguish between humanitarian care, therapeutic care, and custodial care.*  
335 *All are needed. There is also a need for crisis intervention...”.*

336

### 337 Addressing health and social care needs

338 The second theme was care provision in the prison system. Our findings indicated that the  
339 complex physical, mental and social care health needs of ageing prisoners remain largely  
340 unmet, neglecting the primary good of healthy living and functioning (see Table 1).

341

342 This may occur because of the highly specialised care required, which may exert strain on the  
343 resources of the prison system (Booth, 1989). In the current economic climate, where  
344 optimisation of costs is often the priority, cuts in funding may result in poor service provision  
345 (Crawley, 2005).

346

347 In relation to physical and social health care needs, one barrier is represented by the emphasis  
348 on punishment over care, which makes custodial staff reluctant to respond to the ageing  
349 prisoners’ needs (Crawley, 2005) and by a “macho” culture, which considers attending to

350 prisoners' needs as feminine (Moll, 2013). The negative impact of the prison culture is  
351 reinforced by ageing prisoners being poorer self-advocates than the younger inmates (Doron,  
352 2007). In an ageing prisoner's words:

353

354 *"With the younger ones, they know they have to keep them healthy anyway because they'd be*  
355 *complaining and they'd be writing to the papers"* (Joyce & Maschi, 2016).

356

357 Physical health issues and social care needs may also pass unidentified, especially if  
358 untrained prison staff are unable to recognise symptoms or emerging social care needs  
359 (Baidawi, 2015). The overall discontentment around physical and social health led a prisoner  
360 to conclude that only by becoming persistent self-advocates, can ageing prisoners have their  
361 health and social care needs met (Loeb et al., 2007).

362

363 A similar neglect extends to mental health needs (Fazel et al., 2004), given the reticence of  
364 ageing prisoners to voice their needs, because of the stigma attached to psychiatric illness  
365 (Leigey, 2008) and the fear of being ridiculed by prison officers or fellow inmates (Baidawi,  
366 2015). This concern is well supported by evidence, as Joyce and Maschi (2016) report that  
367 ageing prisoners are more frequently the victims of bullying compared to younger prisoners  
368 (38% against 12%).

369

370 A potential vehicle to address the complex physical, mental and social health care needs of  
371 ageing inmates is networking with charities/organisations specialised in old age, such as  
372 AgeUK or the Alzheimer's Society, which could offer professional advice (Baidawi, 2015).  
373 In England and Wales, however, only a third of prisons co-operate with external agencies  
374 (Senior et al., 2013).

375 Given the neglect of basic needs, ageing prisoners report poor emotional wellbeing and  
376 frequently engage in negative thinking. Some ageing prisoners may come to see death as  
377 liberation from misery (Crawley & Sparks, 2006; Aday, 2005). Handtke and Wangmo (2014)  
378 report that 50% of ageing prisoners have suicidal thoughts, which are often undisclosed, as  
379 being on suicide watch is stigmatising. In addition, suicide assessment is not carried out  
380 regularly, making it more difficult to identify at-risk subjects (Barry et al., 2015).

381

382 Despite the overall poor service provision, our review also found some examples of good  
383 practice, which are unevenly spread across countries and mostly depend on whether a  
384 national policy on ageing prisoners exists. They nonetheless reflect a growing interest among  
385 policy makers, the justice system and prison staff, in caring for the needs and wellbeing of  
386 ageing prisoners.

387

388 In the UK, HMP Wymott offers weekly visits from healthcare assistants, who provide  
389 support for bathing to prisoners with mobility issues; a programme of psychological  
390 interventions; self-help books or referrals to chaplaincy in the occurrence of mental health  
391 crises; and the delivery of age-friendly activities such as arts, yoga or cooking classes  
392 (Crawley, 2005; Crawley & Sparks, 2006).

393

394 In the Irish context, where prisons are not able to offer support services, social care has been  
395 delegated to community-based organisations such as the Red Cross and the ageing prisoners  
396 have welcomed the initiative:

397

398 *“When they discovered that I had rheumatoid arthritis, they asked the Red Cross to arrange*  
399 *to bring my meals...They’re very well organised” (Joyce & Maschi, 2016)*

400 *The route out of prison*

401 As per the GLM principles, to sustain the process of rehabilitation, prisoners must fulfill their  
402 need for connection with the wider community (see Table 1), once they are released from  
403 prison. However, the evidence suggests that around 50% of ageing prisoners experience  
404 homelessness and/or destitution upon release (Senior et al., 2013; Joyce & Maschi, 2013).  
405 This is likely to result from limited information around resettlement arrangements (Senior et  
406 al., 2013) and poor liaison strategies between prisons, probation services and offenders'  
407 managers.

408

409 Pre-release courses are offered in a minority of prisons, but these rarely cater for individual  
410 needs (Senior et al., 2013). Therefore, the soon-to-be-released prisoners tend to rely on the  
411 information of other inmates, which is often inaccurate and generates high levels of anxiety  
412 (Senior et al., 2013). Most ageing prisoners fear being relocated with younger ex-offenders  
413 (Crawley & Sparks, 2006) and becoming the victims of physical and verbal intimidation  
414 (Forsyth et al., 2015) and have concerns around economic uncertainty upon resettlement,  
415 which may impact on their health (Crawley & Sparks, 2006; Loeb et al., 2007).

416

417 Given these uncertainties, prison may be seen as a protective environment (Doron, 2007,  
418 Aday & Webster, 1979). For example, healthcare provision, though far from being ideal,  
419 grants a level of security that could be lacking in the community (Handtke & Wangmo,  
420 2014). This applies especially to the US health care system and to prisoners living in geriatric  
421 hospital wings which provide highly specialised treatments (Doron, 2007). As one ageing  
422 prisoner stated:

423

424

425 *“Not long ago I sat down and analysed my situation. Heck, I couldn’t work outside...I’m*  
426 *better off here than I would be anywhere...I have friends in here...My medications and*  
427 *everything are there when I need them” (Aday, 1994)*

## 428 Discussion

429 This systematic review adds to the current field of knowledge around ageing prisoners for  
430 several reasons:

- 431 1. It is the first review grounded upon the evidence-based and increasingly applied  
432 rehabilitation framework of the GLM), through which we interpreted the literature  
433 and investigated our research questions.
- 434 2. It is the only existing review with an international focus and based on updated  
435 sources. This is quite crucial, given the recent policy developments in several  
436 countries (e.g. the Care Act 2015 in the UK), novel initiatives (e.g. Red Cross  
437 programme in Ireland) and the growing numbers of ageing prisoners in most  
438 developed countries.
- 439 3. It focuses on the experience of prisoners, as opposed to accounts from other  
440 stakeholders. We deem this work timely, given the increasing recognition of the  
441 individual dimension of the prisoner’s experience.

442

443 Our review confirmed that ageing prisoners have unique health and social care needs, which  
444 at present are only partially met. This has implications for research and practice. Given their  
445 direct daily contact with the inmates, prison staff are crucial in identifying and referring  
446 prisoners with emerging health issues to health care professionals. Therefore, basic awareness  
447 training for prison staff and a change of culture to view prisoners as patients, are required  
448 (Crawley, 2005). In the United States, the Community Aging Health Project has extended

449 geriatric training to all professionals working in the justice system (Ahalt & Williams, 2015).

450 Similar initiatives do not seem to exist in other countries.

451

452 Given that the remit of custodial staff does not extend to health and social care, effective  
453 work of a multi-disciplinary team, which includes health and social care professionals, is  
454 essential. These professionals should be capable to work at three levels:

455 (i). Prevention, by developing and implementing programmes that promote physical and  
456 mental health.

457 (ii). Identification of emerging needs, through team work with custodial staff;

458 (iii). Intervention, which requires expertise around age-associated conditions and the  
459 difficulties that these entail.

460

461 Improvement in health and social care also depends on the regular administration of health  
462 screenings, which, at present, are systematically carried out at intake but not afterwards.

463 These would further facilitate the identification of social care needs and the allocation of  
464 support.

465

466 Adequate policy development and implementation is also required. In the UK, the Care Act  
467 2015 may represent a turning point in the social care of ageing prisoners, who constitute 42%  
468 of all prisoner referrals for assessment of social care and support (Anderson, 2015). A report  
469 of the ADASS (Association of Directors of Adult Social Services) following the introduction  
470 of the new legislation, however, has denounced that so far a very limited number of referrals  
471 for social care has been made to local councils and concluded that integration between health  
472 and social care still needs to be achieved in the prison system (Anderson, 2015).

473

474 In this sense, local authorities should promote cooperation between support providers (e.g.  
475 NHS), prison staff, health commissioners and the National Offender Management Service  
476 (NOMS) to ensure good practice. Interdisciplinary work between different agencies is also  
477 fundamental to support the 95% of ageing prisoners who are eventually reintegrated in the  
478 community, many of whom need long-term social care (Williams et al., 2012).

479

480 In relation to the health and social care needs of terminally-ill ageing prisoners, different  
481 countries have implemented different strategies, including pre-term compassionate release,  
482 specialised units for ageing prisoners, hospice and palliative care and assisted suicide. Pre-  
483 term compassionate release (i.e. reintegration of a terminally-ill prisoner in the community  
484 when it offers more suitable treatment than the prison) is common in France (Steiner, 2003),  
485 but it can be controversial with sexual offenders. Thus, in the US and the UK, requirements  
486 are often strict and few prisoners benefit from compassionate release (Williams et al., 2012).

487

488 A compromise between security and treatment is offered by specialised geriatric prison units,  
489 which are the subject of a heated debate. Some argue that they require large financial  
490 investments, promote age segregation, lack stimulation, and discourage family visits, if  
491 located further than general prisons (Howse, 2003). They also contend that ageing inmates  
492 exert a calming effect on the younger prisoners in a mixed environment (Howse, 2003).

493 Others object that these units offer humane and specialist care in a safer environment (Fazel  
494 et al., 2004).

495

496 Undoubtedly, dedicated units for the ageing patients could provide opportunities for  
497 improving end of life care. In Switzerland, assisted suicide is legal practice for terminally-ill  
498 prisoners (Handtke & Wangmo, 2014). The prison hospice care movement in the United

499 States has led to the wide implementation of in-prison palliative and hospice care, which  
500 ensures emotional and physical support for dying prisoners, while preserving their human  
501 rights. In other countries, such as the United Kingdom, this is still less common (Docherty,  
502 2009).

503

#### 504 **Limitations**

505

506 This review has some limitations. Most of the studies were carried out in the UK and the  
507 USA; our findings may therefore be less generalisable to other countries. Nonetheless, the  
508 phenomenon of an ageing prison population is also seen in countries with different traditions  
509 of legal justice, such as Japan (Williams et al., 2012). Therefore, we feel that our findings are  
510 relevant to inform good practice in a variety of contexts.

511

512 Further limitations derive from the quality of the studies included. Five studies used non-  
513 empirical methodologies, which reduces confidence in their findings. In addition, we could  
514 only retrieve one study reporting on ageing female prisoners (Joyce & Maschi, 2016), thus  
515 potentially incurring a gender selection bias. Selection bias may have also been caused by the  
516 fact that almost a third of the studies (n=10) were single-site.

517

518 Finally, four studies were carried out more than 20 years ago, thus providing data that do not  
519 necessarily reflect the current situation. Nonetheless, we observe that their results are  
520 consistent with those reported in more recent literature. This suggests that their findings are  
521 still valid, and/or that there have been no substantial advances over the years in addressing  
522 ageing prisoners' needs.

## 523 Conclusion

524 Our review found that ageing prisoners have unique and complex health and social care needs  
525 which are mostly unmet. There is an interest in this population, which is reflected in  
526 initiatives aimed at their wellbeing. However, at present time, the overall experience of  
527 incarceration for the ageing prisoner is quite poor, given the inconsistent physical, emotional  
528 and social care support offered from prison intake to release and beyond.

529

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## References

546

547

548 Aday, R. H. (1994). Aging in prison: A case-study on new elderly offenders. *International*  
549 *Journal of Offender Therapy and Comparative Criminology*, 38(1), 79-91.

550

551 Aday, R. H. (2005). Aging prisoners' concerns toward dying in prison. *Journal of Death and*  
552 *Dying*, 52(3), pp. 199-216. doi:<http://dx.doi.org/10.2190/CHTD-YL7T-R1RR-LHMN>

553

554 Aday, R., & Webster, E. (1979). Aging in Prison: The Development of a Preliminary Model.  
555 *Offender Rehabilitation* 3(3), 271-282.

556

557 Ahalt, C., & Williams, B. (2015). How can criminal justice systems from police to probation  
558 address the medical and social care needs of elderly prisoners? Available at:  
559 [https://www.penalreform.org/blog/declining-health-advancing-years-prison-call-](https://www.penalreform.org/blog/declining-health-advancing-years-prison-call-policy-oriented/)  
560 [policy-oriented/](https://www.penalreform.org/blog/declining-health-advancing-years-prison-call-policy-oriented/) [Accessed 25 Oct. 2016]

561

562 Allen, R. S., Phillips, L. L., Roff, L. L, Cavanaugh, R., & Day, L. (2008).  
563 Religiousness/Spirituality and Mental Health Among Ageing Male Inmates. *The*  
564 *Gerontologist*, 48(5), 692–697.

565

566 Allen, R. S., Harris, G. M., Crowther, M. R., Oliver, J. S., Cavanaugh, R., & Phillips, L. L.  
567 (2013). Does religiousness and spirituality moderate the relations between physical and  
568 mental health among aging prisoners? *International Journal of Geriatric Psychiatry*,  
569 28(7), 710-717. doi:<http://dx.doi.org/10.1002/gps.3874>

570

571 Anderson, I. (2015). A report on the findings of the ADASS (Association of Directors of  
572 Adult Social Services) survey of social care activity in prisons and approved premises –  
573 Quarter 1 2015/16. Available at: [https://www.adass.org.uk/media/4231/an-analysis-of-](https://www.adass.org.uk/media/4231/an-analysis-of-social-care-activity-in-prisons-and-approved-premises.pdf)  
574 [social-care-activity-in-prisons-and-approved-premises.pdf](https://www.adass.org.uk/media/4231/an-analysis-of-social-care-activity-in-prisons-and-approved-premises.pdf) [Accessed 10 May 2017].  
575

576 Andrews, D. A., & Bonta, J. (2010). *The psychology of criminal conduct (5th Edition)*.  
577 New Providence, NJ: LexisNexis.  
578

579 Atabay, T. (2009). *Handbook on prisoners with special needs*. United Nations Publications.  
580 Vienna, Austria: United Nations Office on Drugs and Crime.  
581

582 Baidawi, S. (2015). Older prisoners: Psychological distress and associations with mental  
583 health history, cognitive functioning, socio-demographic, and criminal justice factors.  
584 *International Psychogeriatrics*, 28(3), 385-395.  
585 doi:<http://dx.doi.org/10.1017/S1041610215001878>  
586

587 Baldwin, J., & Leete, J. (2012). Behind bars: the challenges of an ageing population.  
588 *Australian Journal of Dementia care*, 2(1), 16-19.  
589

590 Barnao, M., Ward, T., & Casey, S. (2016). Taking the good life to the institution: Forensic  
591 service users' perceptions of the Good Lives Model. *International Journal of Offender*  
592 *Therapy and Comparative Criminology*, 60(7), 766-786.  
593

594 Barnao, M., Ward, T., & Robertson, P. (2016) The Good Lives Model: A New Paradigm for  
595 Forensic Mental Health. *Psychiatry, Psychology and Law*, 23(2), 288-301.

596 Barry, L. C., Wakefield, D. B., Trestman, R. L., & Conwell, Y. (2015). Active and passive  
597 suicidal ideation in older prisoners. *The Journal of Crisis Intervention and Suicide*  
598 *Prevention, 37*(2), 88-94. doi:<http://dx.doi.org/10.1027/0227-5910/a000350>  
599

600 Bishop, A. J., Randall, G., & Merten, M. J. (2014). Consideration of forgiveness to enhance  
601 the health status of older male prisoners confronting spiritual, social, or emotional  
602 vulnerability. *Journal of Applied Gerontology, 33*(8), 998-1017.  
603 doi:<http://dx.doi.org/10.1177/0733464812456632>  
604

605 Booth, D. E. (1989). Health Status of the Incarcerated Elderly. *Journal of Offender*  
606 *Counseling Services Rehabilitation, 13*(2), 193-213. doi: 10.1300/J264v13n02\_11  
607

608 Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative*  
609 *Research in Psychology, 3*(2), 77-101.  
610

611 Chu, C. M., & Ward, T. (2015). The good lives model of offender rehabilitation: Working  
612 positively with sex offenders. In Ronel, N. & Segev, D. (eds.) *Positive Criminology*.  
613 Abingdon, United Kingdom: Routledge, pp. 140-161  
614

615 Chaiklin, H. (1998). The elderly disturbed prisoner. *Clinical Gerontologist: The Journal of*  
616 *Aging and Mental Health, 20*(1), 47-62.  
617

618 Convention for the Protection of Human Rights and Fundamental Freedoms (European  
619 Convention on Human Rights, as amended) (ECHR) art. 3.  
620

621 Cooney, F., & Braggins, J. (2010). Doing time. Good practice with older people in prison –  
622 The views of prison staff. London: Prison Reform Trust.  
623

624 Cornish, N., Kimmett, E., Hewson, A., & War S. (2016). *Social care or systematic neglect?*  
625 *Older people on release from prison*. London: Prison Reform Trust.  
626

627 Crawley, E. (2005). Institutional thoughtlessness in prisons and its impacts on the day-to-day  
628 prison lives of elderly men. *Journal of Contemporary Criminal Justice*, 21(4), 350-  
629 363. doi:10.1177/1043986205282018  
630

631 Crawley, E., & Sparks, R. (2006). Is there life after imprisonment? How elderly men talk  
632 about imprisonment and release. *Criminology and Criminal Justice*, 6(1), 63-82.  
633 doi:10.1177/1748895806060667  
634

635 Davoren, M., Fitzpatrick, M., Caddow, F., Caddow, M., O'Neill, C., O'Neill, H., &  
636 Kennedy, H. (2014). Older men and older women remand prisoners: mental illness,  
637 physical illness, offending patterns and needs. *International Psychogeriatrics*, 27(5),  
638 747-755.  
639

640 Department of Health (2001). *National Framework for Older People*. London: Department of  
641 Health.  
642

643 Di Lorito, C., Völlm, B., & Dening, T. (2017). Psychiatric disorders among older prisoners:  
644 A systematic review and comparison study against older people in the community. *Aging*  
645 *and Mental Health*. 2017 Feb 7:1-10. doi: 10.1080/13607863.2017.1286453. [Epub ahead

646 of print].  
647  
648 Docherty, J. L. (2009). The Healthcare Challenges of Older People in Prisons – a briefing  
649 paper. Prison Health Research Network. Available at:  
650 <http://www.ohrn.nhs.uk/resource/Research/OlderPrisonersReview.pdf> [Accessed 18 Nov.  
651 2016].  
652  
653 Doron, I. (2007). Heaven or hell? Aging behind bars in Israel. *International Journal of Aging*,  
654 9(2), 145-159. doi:<http://dx.doi.org/10.2190/HA.9.2.e>  
655  
656 Fazel, S. (2014). Older people and the criminal justice system. In J. Gunn and P. J. Taylor  
657 eds., *Forensic Psychiatry: Clinical, legal and ethical issues*. London: Taylor and Francis,  
658 pp. 523-528.  
659  
660 Fazel, S., Hope, T., O'Donnell, I., & Jacoby, R. (2004). Unmet treatment needs of older  
661 prisoners: a primary care survey. *Age & Ageing*, 33(4), 396-398.  
662  
663 Fazel, S., McMillian, J., & O'Donnell, I. (2002). Dementia in prison: Ethical and legal  
664 implications. *Journal of medical Ethics*, 28(3), 156-159.  
665  
666 Forsyth, K., Senior, J., Stevenson, C., O'Hara, K., Hayes, A., Challis, D., & Shaw, J. (2015).  
667 'They just throw you out': Release planning for older prisoners. *Ageing & Society*, 35(9),  
668 2011-2025. doi:<http://dx.doi.org/10.1017/S0144686X14000774>  
669  
670

671 Fortune, C. A., Ward, T., & Mann, R. (2015). Good lives & the rehabilitation of sex  
672 offenders: A positive treatment approach. In: Linley, A. & Joseph S. (eds.) *Positive*  
673 *psychology in practice (2nd ed.)*. Hoboken, NJ: John Wiley & Sons.  
674

675 Handtke, V., & Wangmo, T. (2014). Ageing prisoners' views on death and dying:  
676 contemplating end-of-life in prison. *Journal of Bioethical Inquiry*, *11*(3), 373-386.  
677 doi:<http://dx.doi.org/10.1007/s11673-014-9548-x>  
678

679 Hodel, B., & Sanchez, H. G. (2012). The Special Needs Program for Inmate-Patients with  
680 Dementia (SNPID): a psychosocial program provided in the prison system. *Dementia*,  
681 *12*(5), 654-660. doi:<http://dx.doi.org/10.1177/1471301211432952>  
682

683 Howse, K. (2003). Growing old in prison: a scoping study on older prisoners. London: Prison  
684 Reform Trust. Available at:  
685 [http://www.prisonreformtrust.org.uk/uploads/documents/Growing.Old.Book\\_-\\_small.pdf](http://www.prisonreformtrust.org.uk/uploads/documents/Growing.Old.Book_-_small.pdf)  
686 [Accessed on 5 Dec. 2016]  
687

688 Joyce, J., & Maschi, T. (2016). "In here, time stands still". *The rights, needs and*  
689 *experiences of older people in prison*. Irish Penal Reform Trust: Dublin, Ireland.  
690

691 Laws, D. R., & Ward, T. (2011). *Desistance from sex offending: Alternatives to throwing*  
692 *away the keys*. New York, NY: The Guilford Press.  
693

694 Leigey, M. E. (2008). Life while serving life: Examining the correctional experiences of  
695 older inmates serving a life without parole sentence. *Dissertation Abstracts International*

696        *Section A: Humanities and Social Sciences*, 68, pp. 3599.

697

698    Loeb, S. J., Steffensmeier, D., & Myco, P. M. (2007). In their own words: older male  
699        prisoners' health beliefs and concerns for the future. *Geriatric Nursing*, 28(5), 319-  
700        329. doi:<http://dx.doi.org/10.1016/j.gerinurse.2007.02.001>

701

702    Lord, A. (2014). Integrating risk, the Good Lives Model and recovery for mentally  
703        disordered sexual offenders. *Journal of Sexual Aggression*, 22(1), 107-122.

704

705    Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G., The PRISMA Group (2009).  
706        *Preferred Reporting Items for Systematic Reviews and Meta- Analyses: The PRISMA*  
707        *Statement*. *PLoS Med*, 6(7), e1000097. doi:10.1371/journal.pmed1000097

708

709    Moll, A. (2013). Losing track of time: dementia and the ageing prison population. Mental  
710        Health Foundation, London. Available at:  
711        [http://www.mentalhealth.org.uk/content/assets/PDF/publications/losing-track-of-time-](http://www.mentalhealth.org.uk/content/assets/PDF/publications/losing-track-of-time-2013.pdf?view=Standard)  
712        [2013.pdf?view=Standard](http://www.mentalhealth.org.uk/content/assets/PDF/publications/losing-track-of-time-2013.pdf?view=Standard) [Accessed 10 Oct. 2015]

713

714    National Institute for Health and Care Excellence (2015). *Mental Wellbeing and*  
715        *independence in older people. NICE guideline (NG32)*. London: National Institute for  
716        Health and Care Excellence.

717

718    NVivo qualitative data analysis Software (2012). Melbourne, Australia: QSR International  
719        Pty Ltd.

720

721 Pluye, P., Robert, E., Cargo, M., Bartlett, G., O’Cathain, A., Griffiths, F., Boardman, F.,  
722 Gagnon, M.P., & Rousseau, M.C. (2011). *Proposal: A mixed methods appraisal tool for*  
723 *systematic mixed studies reviews*. Available at:  
724 <http://mixedmethodsappraisaltoolpublic.pbworks.com> [Accessed on 12 May 2017]  
725  
726 Reed, M. B. (1980). *Aging in a total institution: The case of older prisoners* (Doctoral  
727 Dissertation). Available at: <https://www.ncjrs.gov/pdffiles1/Digitization/65232NCJRS.pdf>  
728 [Accessed 10 Dec 2016]  
729  
730 Resettlement and Care for Older ex-Offenders and Prisoners (RECOOP) (2015). Available at:  
731 <http://www.recoop.org.uk/pages/resources/> [Accessed on 25 Oct. 2016]  
732  
733 Robertson P., Barnao, M., & Ward, T. (2011). Rehabilitation frameworks in forensic mental  
734 health. *Aggression and Violent Behavior, 16*(6), 472–484.  
735  
736 Senior, J., Forsyth, K., Walsh, E., O’Hara, K., Stevenson, C., Hayes, A. C., Short, V., Webb,  
737 R., Challis, D., Fazel, S., Burns A. and Shaw, J. (2013). Health and social care services for  
738 older male adults in prison: the identification of current service provision and piloting of  
739 an assessment and care planning model. *Health Services and Delivery Research, 1*(5).  
740 doi:10.3310/hsdr01050  
741  
742 Steiner, E. (2003). Early release for seriously ill and elderly prisoners: Should French  
743 practice be followed? *Probation Journal, 50*(3), 267-276.  
744  
745

746 Wahidin, A. (2011). Ageing behind bars, with particular reference to older women prisoners  
747 in prison. *Irish Probation Service*, 8, 109-123.  
748

749 Ward, T., Mann, R. E., & Gannon, T. A. (2007). The Good Lives Model of offender  
750 rehabilitation: Clinical implications. *Aggression and Violent Behavior*, 12(1), 87–107.  
751

752 Ward, T., & Maruna, S. (2007). *Rehabilitation: Beyond the risk paradigm*. London, UK:  
753 Routledge.  
754

755 Ward, T., & Stewart, C. A. (2003). The treatment of sex offenders: Risk management and  
756 good lives. *Professional Psychology, Research and Practice*, 34(4), 353–360.  
757

758 Ward, T. & Willis, G. (2016). Dynamic Risk Factors and Offender Rehabilitation: A  
759 Comparison of The Good Lives Model and The Risk-Need Responsivity Model. In: Laws,  
760 D. R. & O’Donohue, W. (eds.). *Treatment of sex offenders: Strengths and weaknesses in  
761 assessment and intervention*. New York, NY: Springer, pp 175-190.  
762

763 Williams, B. A., Stern, M. F., Mellow, J., Safer, M., & Greifinger, R. B. (2012). Aging in  
764 correctional custody: Setting a policy agenda for older prisoner health care. *American  
765 journal of Public health*, 102(8), 1475-1481.  
766

767 Yorston, G. A. (2015). Managing aggression and violence in older people. In G. Dickens, P.  
768 Sugarman and M. Picchioni eds., *Handbook of secure care* (179-192). London: The Royal  
769 College of Psychiatrists.  
770

771 Table 1. The 11 classes of primary goods (i.e. needs) identified by the GLM (Retrieved from  
772 <https://www.goodlivesmodel.com/information>)  
773

Primary good	Notes
1. Life	Includes healthy living and functioning
2. Knowledge	How well informed about things that are important to them
3. Excellence in play	Hobbies and recreational pursuits
4. Excellence in work	Includes mastery experiences
5. Excellence in agency	Autonomy, power and self-directedness
6. Inner peace	Freedom from emotional turmoil and stress
7. Relatedness	Including intimate, romantic, and familial relationships
8. Community	Connection to wider social groups
9. Spirituality	In the broad sense of finding meaning and purpose in life
10. Pleasure	Feeling good in the here and now
11. Creativity	Expressing oneself through alternative forms

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784 Figure 1. Selection of papers

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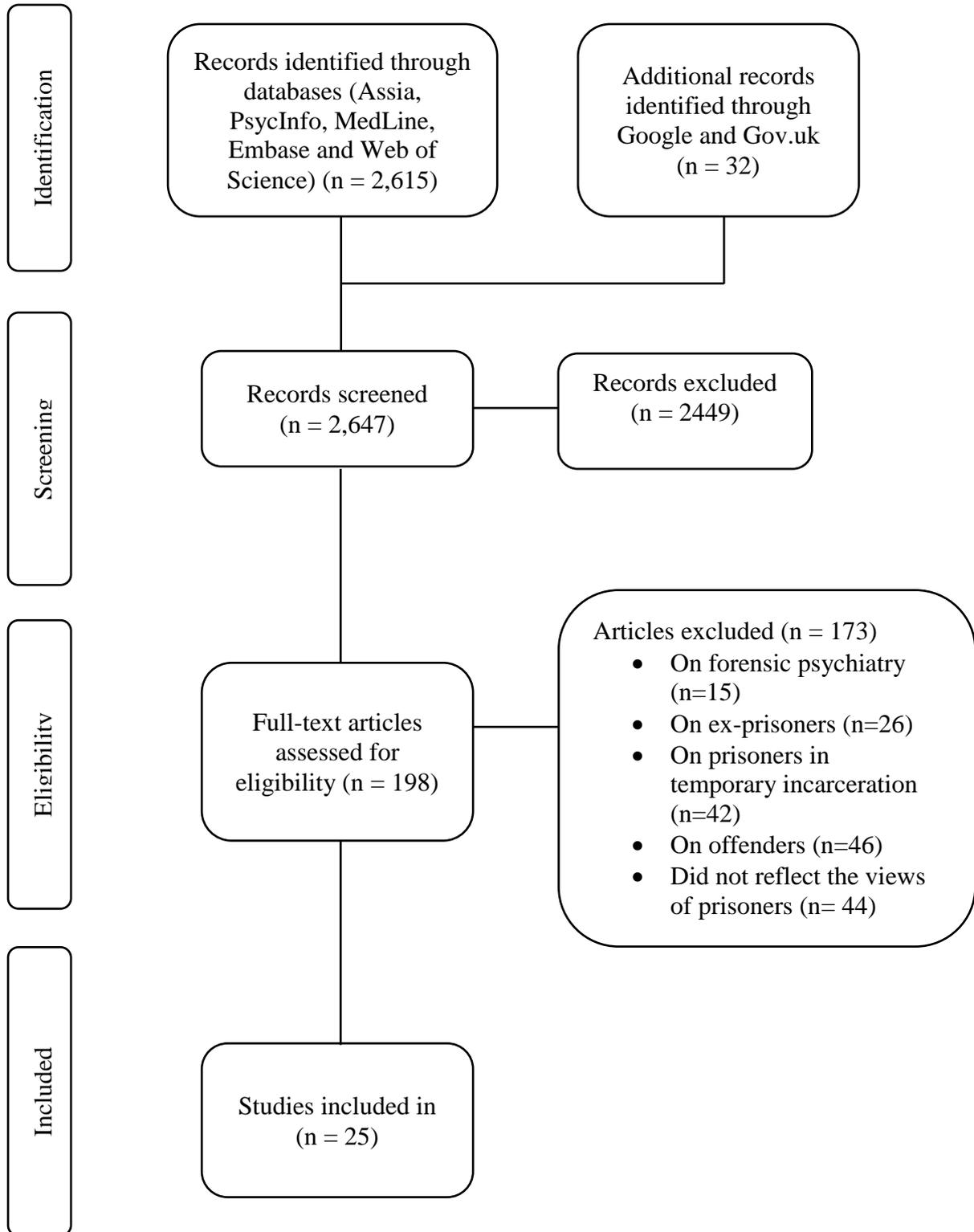


Table 2. Study quality screening through the MMAT (Pluye et al., 2011)

Article	Screening*		Qualitative studies				Quantitative studies				3. Mixed methods**			Score***
	A	B	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.2	
Aday, 1994	✓	✓	✓	✓	✓	✗								75
Aday, 2005	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✗	72
Aday & Webster, 1979	✓	✓	✓	✓	✓	✗	✓	✓	✗	✗	✓	✓	✗	63
Allen et al., 2013	✓	✓					✓	✗	✓	✗				50
Allen et al., 2008	✓	✓					✓	✓	✓	✓				100
Baidawi, 2015	✓	✓					✓	✓	✓	✗				75
Baldwin & Leete, 2012	Non-empirical													
Barry et al., 2015	✓	✓					✓	✗	✓	✗				50
Bishop et al., 2014	✓	✓					✓	✗	✓	✗				50
Booth, 1989	Non-empirical													
Chaiklin, 1998	Non-empirical													
Crawley, 2005	✓	✓	✓	✓	✓	✗								75
Crawley & Sparks, 2006	✓	✓	✓	✓	✓	✗								75
Doron, 2007	✓	✓	✓	✓	✓	✓								100
Fazel et al., 2002	✓	✓	✓	✓	✓	✗								75
Fazel et al., 2004	✓	✓					✓	✓	✓	✓				100
Forsyth et al., 2015	✓	✓	✓	✓	✓	✗								75
Handtke & Wangmo, 2014	✓	✓	✓	✓	✓	✗								75

Hodel & Sanchez, 2012	Non-empirical													
Joyce & Maschi, 2016	✓	✓	✓	✓	✓	✗								75
Leigey, 2008	✓	✓	✓	✓	✓	✓								100
Loeb et al., 2007	✓	✓	✓	✓	✓	✗								75
Moll, 2013	Non-empirical													
Reed, 1980	✓	✓	✓	✓	✓	✓								100
Senior et al., 2013	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	90

Note: Omission to report on items were rated with a negative (i.e. 'No') score on the ground that the MMAT investigates basic areas, which must be addressed in a study for it to be considered of good quality.

\* Initial screening, administered to all articles, regardless of their methodology. Articles which did not pass this were discarded

\*\* Relevant criteria from the qualitative (1) and quantitative (2) domains can be applied for mixed methods studies

\*\*\* Percentage of yes on total (excluding criteria A and B)

A. Are there clear qualitative and quantitative research questions (or objectives), or a clear mixed methods question (or objective)?

B. Do the collected data allow address the research question (objective)?

1.1. Are the sources of data (archives, documents, informants, observations) relevant to address the research question (objective)?

1.2. Is the process for analysing data relevant to address the research question (objective)?

1.3. Is appropriate consideration given to how findings relate to the context, e.g., the setting, in which the data were collected?

1.4. Is appropriate consideration given to how findings relate to researchers' influence, e.g., through their interactions with participants?

2.1. Is the sampling strategy relevant to address the research question?

2.2. Is the sample representative of the population under study?

2.3. Are measurements appropriate (clear origin, or validity known, or standard instrument)?

2.4. Is there an acceptable response rate (60% or above)?

3.1. Is the design relevant to address the qualitative and quantitative research questions (or objectives)?

3.2. Is the integration of qualitative and quantitative data (or results\*) relevant to address the research question (objective)?

3.3. Is consideration given to the limitations associated with the divergence of qualitative and quantitative data (or results\*)?

Table 3. Study characteristics

Author	Year	Country	Article	Theme of article	Design	Methodology	Sample (n)	Age	Site
Aday	1994	USA	Journal	Experience of imprisonment	Case-study	Qualitative	25	68 ( $\bar{x}$ )	1
Aday	2005	USA	Journal	Death	Cross-sectional	Mixed	102	59 ( $\bar{x}$ )	1
Aday & Webster	1979	USA	Journal	Experience of imprisonment	Cross-sectional	Mixed	40	55+	1
Allen et al.	2013	USA	Journal	Religion	Cross-sectional	Quantitative	94	45+	1
Allen et al.	2008	USA	Journal	Religion	Cross-sectional	Quantitative	81	50+	1
Baidawi	2015	Australia	Journal	Health status	Cross-sectional	Quantitative	233	50+	>1
Baldwin & Leete	2012	Australia	Journal	Dementia	Editorial	-	-	-	-
Barry et al.	2015	USA	Journal	Suicidal ideation	Cross-sectional	Quantitative	124	50+	>1
Bishop et al.	2014	USA	Journal	Forgiveness	Cross-sectional	Quantitative	261	45+	>1
Booth	1989	USA	Journal	Health status	Discussion paper	-	-	-	-
Chaiklin	1998	USA	Journal	Treatment	Discussion paper	-	-	-	-
Crawley	2005	UK	Journal	Experience of imprisonment	Observational cross-sectional	Qualitative	80+	65+	>1
Crawley & Sparks	2006	UK	Journal	Release	Observational cross-sectional	Qualitative	80+	65+	>1
Doron	2007	Israel	Journal	Experience of imprisonment	Cross-sectional	Qualitative	12	50+	1
Fazel et al.	2002	UK	Journal	Dementia	Case-study	Qualitative	2	69+	1
Fazel et al.	2004	UK	Journal	Treatment	Cross-sectional	Quantitative	203	60+	>1
Forsyth et al.	2015	UK	Journal	Release	Longitudinal	Qualitative	62	60+	>1
Handtke & Wangmo	2014	Switzerland	Journal	Death	Cross-sectional	Qualitative	35	51+	>1
Hodel & Sanchez	2012	USA	Journal	Dementia	Discussion paper	-	-	-	1
Joyce & Maschi	2016	Ireland	Report	Experience of imprisonment	Cross-sectional	Qualitative	23	50+	>1
Leigey	2008	USA	Thesis	Experience of imprisonment	Cross-sectional	Qualitative	25	50+	>1
Loeb et al.	2007	USA	Journal	Release	Pilot	Qualitative	51	50+	1
Moll	2013	UK	Report	Dementia	Report	-	-	-	>1
Reed	1980	USA	Thesis	Experience of imprisonment	Cross-sectional	Qualitative	19	59 ( $\bar{x}$ )	1
Senior et al.	2013	UK	Journal	Health	Cross-sectional	Mixed	127	60+	>1