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

Running head: Systematic review on ageing prisoners.

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

Main points

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

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Abstract

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

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

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

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

Introduction

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

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

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

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

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

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

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

1. <u>Person-centredness</u>, which considers the person’s preferences, aspirations and 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

Inclusion criteria:

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

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

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

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

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

Exclusion criteria:

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

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

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

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

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

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

Quality screening of the studies

We undertook a quality screening of our sources using the Mixed Methods Appraisal Tool (MMAT) – Version 2011 (Pluye et al., 2011), a validated screening tool for complex 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

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

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

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

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

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

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

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

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

Another important response to the hardship of imprisonment is the potential for reconciliation 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

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

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

A compromise between security and treatment is offered by specialised geriatric prison units, which are the subject of a heated debate. Some argue that they require large financial investments, promote age segregation, lack stimulation, and discourage family visits, if located further than general prisons (Howse, 2003). They also contend that ageing inmates exert a calming effect on the younger prisoners in a mixed environment (Howse, 2003). Others object that these units offer humane and specialist care in a safer environment (Fazel et al., 2004).

Undoubtedly, dedicated units for the ageing patients could provide opportunities for improving end of life care. In Switzerland, assisted suicide is legal practice for terminally-ill 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.

Conclusion

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

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

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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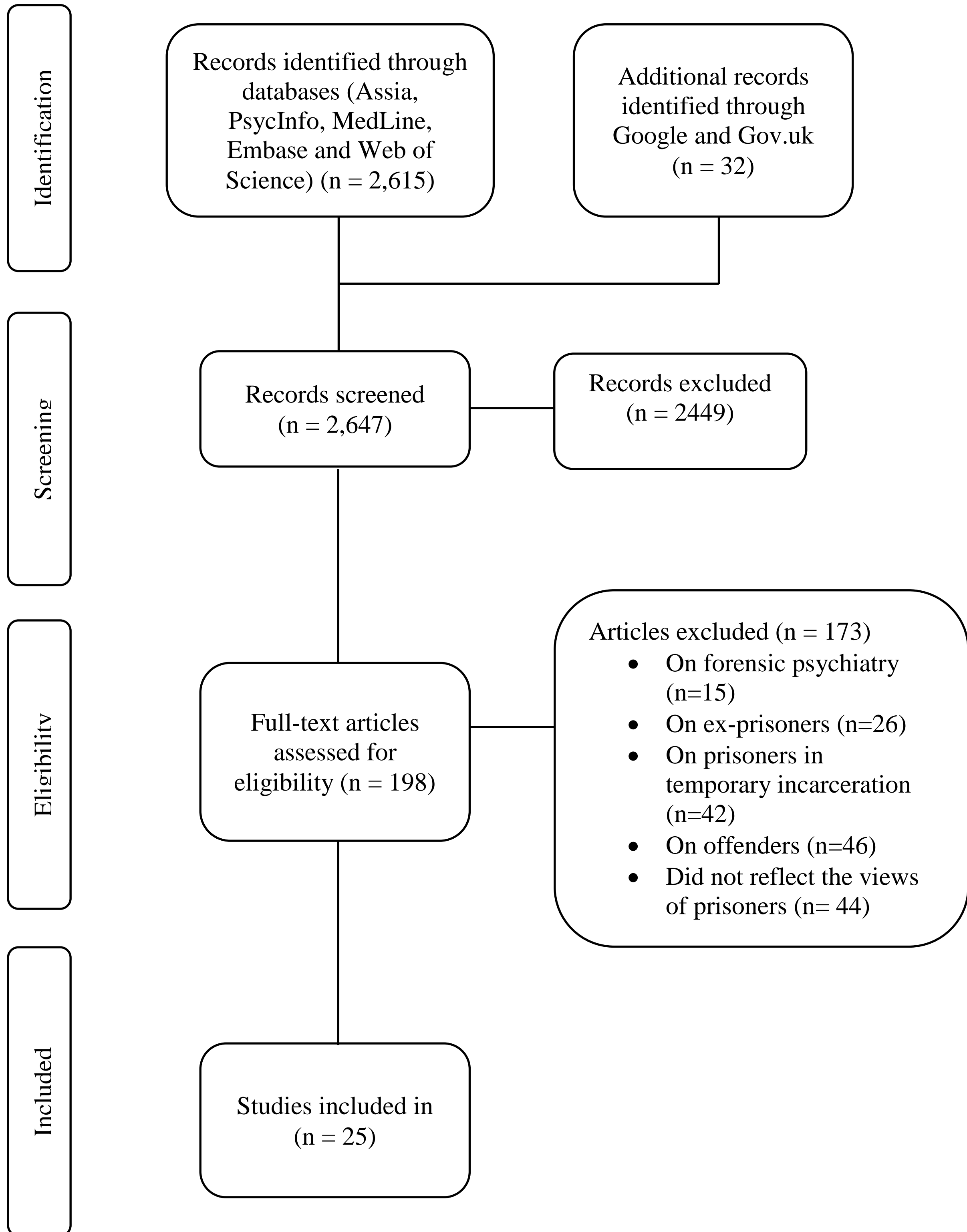

Table 2. Study quality screening through the MMAT (Pluye et al., 2011)

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