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Title page

Full manuscript title:

Supporting mental health and wellbeing of an ageing prison population through creative nature-based interventions

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Abstract:

This manuscript focuses on an evaluation of a conservation and nature-based pilot project (BOOM) conducted in a UK local prison as part of the Greener on the Outside for Prisons (GOOP) therapeutic horticultural programme. BOOM developed a tree and plant growing nursery where prisoners approaching the end of their sentences helped to restore endangered fauna and flora. They also engaged in tree-planting sessions within the prison grounds. Over 100 prisoners participated overall, with approximately a fifth of these going on to take part in an accredited course and engage in creative, arts-based activities related to nature as part of the project.

Researchers carried out a series of focus groups with prisoners and staff who had taken part in prison-based BOOM activities during 2022-2023. In addition to BOOM staff, 18 prisoners were interviewed in four narrative-based focus groups, which gave participants a forum to discuss their experience of the project. A thematic analysis of this data has drawn out key themes in relation to health and wellbeing benefits of the project for an ageing prison group and opportunities and challenges that arise from partnership working in this context. These health and wellbeing themes incorporate trust, connecting with nature, raising environmental consciousness, the value of creativity and thinking beyond the gate. These findings have implications for future prison-based projects involving older prisoners, who are the fastest growing group in the prison population, and whose particular health and wellbeing needs are not currently entirely understood or met within the UK prison system.

Main Text:

Introduction

In England and Wales, the percentage of young (under 30) male prisoners is decreasing and conversely the percentage of older prisoners is increasing (HMPPS, 2023). Male prisoners aged 60+ are the fastest growing age group in prison in England and Wales, rising by 243% between 2002 and 2019 to 8,588 people, a shift from 2% to 6% of the total prison population (House of Commons Justice Committee, 2020). Commonly, prisoners aged over 50 are often described as 'older prisoners' within the criminal justice system (Davies et al., 2023). However there remains a degree of ambiguity over the term (Beard et al., 2016). Older prisoners are the fastest growing age group globally (Vannier and Nellis, 2023). This poses a challenge for staff and prison systems who have to manage

death, dying and ill-health associated with older age alongside the existing complexities of prison job roles (Davies et al., 2023). This paper examines a pilot project delivered in one UK prison that worked with this particular prison demographic to engage them with nature.

Connecting Prisoners with Nature

In England and Wales, prison farms and gardens have been in existence since 1852 to produce food for consumption by prisoners and staff and provide a healthy and hard day's work in the open air (Lander, 1992). While variations exist globally, 'green' or 'nature-based' prison programmes essentially provide a form of eco-therapy to prisoners - which is prescribed physical and psychological therapy through nature-based methods (Jiler, 2006). Participation in these programmes usually involves engaging in gardening and horticultural activities such as landscaping, cultivating plants and learning about environmental stewardship and caring for nature and animals (*ibid.*) and in prisons in England and Wales, prisoners are paid for undertaking these tasks as part of a job/prison employment (Prison Inside, 2023). Recent research suggests a positive impact of nature, especially gardening and horticultural programs, on people in prison - specifically that access to and interaction with nature leads to improved physical, emotional and mental health and wellbeing, as well as showing an increase in pro-social behaviour (Moran and Turner, 2019). Prison horticulture linked with environmental sustainability programs are gaining increased attention (Sustainability in Prisons Project, 2019), although prison gardens (historically) are generally not designed to impact specifically on therapeutic rehabilitative or behavioural outcomes.

Prisons have potential to make a major contribution to improving the health, wellbeing and life chances of some of the most marginalized and excluded individuals in the society (Baybutt et al., 2019). Furthermore, accessing people in the places where they live their lives and make choices is a key public health approach (Dooris, 2013). Although complex, there is increasing evidence highlighting a range of health and wellbeing benefits across the lifecourse of connecting people with nature and their local landscapes (Buck, 2016) however in prisons these benefits have yet to be fully realised. For example, Lewis (1996) suggests that just as the interaction of human nature with green nature can enhance feelings of peace, self-esteem and restoration for people in everyday life, it can be beneficial in prison contexts. Prison-based horticultural programmes in prison settings offer multiple benefits - relating to skills development, behaviour and self-esteem (Flagler, 1995) and therapeutic and aesthetic respite from the wider prison, offering safe, healing places that contribute to prisoners' survival strategies and allow staff relief from harsh workplace environments (Baybutt and Chemlal, 2016). In England and Wales, prisoners are paid a basic prison wage of between £8-£12 to 'work' in Farms and Gardens (Prison Inside, 2023) which offers an additional incentive to engage in horticultural activities. The amounts of payment for prison jobs more broadly are mainly regarded by prisoners as poor or inadequate, while some prisoners see the work as a means of passing time and have argued that they would do it anyway, whether they were paid or not (Maycock and McGregor, 2023). Whilst O'Brien et al. (2011) noted that active hands-on engagement with nature is effective in enabling marginalized people to reintegrate into society by facilitating skills development, improving self-confidence, creating social networks, providing meaningful activity and developing a sense of responsibility. Differentiating between the effects of physical activity and contact with nature can be difficult within contemporary studies of prison gardening programmes (Moran and Turner, 2019), as is accounting for the positive effect of simply being outside (Elseby et al., 2016).

Older prisoners with multiple co-morbidities and a higher prevalence of chronic disease in comparison to their younger counterparts, arguably experience greater challenges to maintaining their health and wellbeing in prison (Davies et al., 2023). The multi-faceted health needs experienced by this demographic relate to cardiovascular, respiratory, and musculoskeletal disorders, poor functional ability caused by restricted mobility or disability, and impaired cognitive function and mental health disorders including dementia (Fazal et al., 2004). This suggests that the older the prisoner, the higher likelihood of encountering barriers to remaining active, functioning, and ageing with dignity in particularly challenging prison built environments that are generally difficult to navigate for people who experience problematic mobility and sensory impairments (Novisky, 2018).

At a time when older prisoners represent the fastest growing population within our prisons, there have been calls for a more diverse and creative physical activity offering in our prisons to ensure that more vulnerable, inactive or less physically abled prisoners are also able to benefit from the social, psychological and physical benefits (Meek, 2018). Non-exercise activities like gardening are widely acknowledged as a way to supplement existing opportunities available to people in prison to be physically active (Elger, 2009), with those who are least active most likely to benefit in terms of long-term health (Matthews et al., 2015).

Greener on the Outside for Prisons (GOOP) is a long-standing asset and nature-based health and justice intervention in prisons in England¹. GOOP harnesses the resources of the whole prison, embedding culture change within the structures and processes of the setting. It is unique because it provides a model of whole system working that uses a

¹ <https://www.uclan.ac.uk/research/institutes/iclsj/centre-for-criminal-justice/social-and-restorative/greener-on-the-outside-prisons-project>

'settings' approach (Dooris, 2009) to engage and join up different parts of the prison with nature-based activities and therapeutic horticulture, working with and alongside the prison Farms and Gardens team. Participants are identified via prison systems and the health or recovery provider based on criteria set within each prison - this may relate to mental (ill) health, violence, aggression or self-isolating behaviour but could also be related to non-communicable diseases, the impacts of ageing, or a change in capacity to be involved in prison workshops. The settings approach reflects an ecological model that takes account of the dynamic, complex interactions between personal, organisational and wider environmental factors that influence health and is underpinned by the principles of equity, participation, empowerment, sustainability and working in partnership (*ibid.*).

Partnership working is key to delivering and sustaining locally focused context-specific initiatives. One of GOOP's partnerships has been with Back on Our Map (BOOM) a UK-based four-year project established in 2019, supported by the National Lottery Heritage Fund and led by the XXXXXX and XXXXXX. BOOM aims to re-engage communities in XXXXXX, England with their natural environment, by restoring the landscape and reintroducing and reinforcing 10 locally threatened or extinct native species. As part of the project, BOOM staff worked alongside the established Greener on the Outside for Prisons (GOOP) project within one prison which had a distinctive demographic of mainly older men, some of whom had reached UK retirement age. This provided an opportunity to scope the potential to link in the community project: BOOM. Prison staff were involved in partner focus groups at development stage of BOOM which preceded the main programme of delivery. Prison staff consulted with prisoners involved in GOOP and gauged that there was enthusiasm to be BOOM participants and participate in the John Muir Award.

The project activities included the following: developing a rare tree and plant growing nursery inside the prison for onward restoration of endangered fauna and flora into the community, specifically Aspen saplings which were cultivated from root cuttings. Some prisoners who were eligible for release on temporary licence (ROTL) and approaching the end of their sentences were able to transplant these trees to local community settings. Prisoners also engaged in tree-planting sessions within the prison grounds; Identifying species within the prison habitat, including wildflower and pond areas. Species included butterflies and amphibians and reptiles, which led to the discovery of the endangered natterjack toad within the site. Over 100 prisoners had some degree of participation, although this could be as a single activity, e.g. planting a tree or they could be involved in multiple aspects of the project overall. BOOM staff ran two 'drop in' days for existing GOOP participants, to explain what participating in a John Muir Award² (JMA) focussed programme would entail. Prison staff also place posters inside the prison offering the opportunity to participate. The JMA is designed to encourage people connect with, enjoy and care for wild places. It is accessible and non-competitive, open to all who can understand and meet the Award Criteria (older children/ adults) and can be gained working in isolation or, as in this case, as a group. There are three levels of the JMA and for this project BOOM focused on the 'Discovery' award with 22 prisoners taking part in and engaging in creative, arts-based nature activities. This led to a community exhibition of prisoner arts outputs and a field trip to the venue for those who were eligible to be released on temporary licence (ROTL). Prisoner participation in the project was voluntary and did not otherwise affect their engagement in other gardening, horticultural or other land-based activities in the prison. Participants were able to choose which aspects of the project they wished to participate in (for example, people with mobility

² <https://www.johnmuirtrust.org/john-muir-award>

issues could opt to take part in arts-based activities while participants who were less interested in observing wildlife could plant trees).

All GOOP participants who chose to take part in the John Muir award and who were still in prison at the time of the focus groups were invited to take part in the evaluation by researchers from XXXXXX. It was made clear to participants that the researchers were those evaluating the GOOP programme and therefore working independently of the BOOM staff who facilitated the project. This aspect of the evaluation shone a light on the specific activities of BOOM, but within in the context of the long-standing GOOP programme in this particular prison. Individual consent forms were signed by each participant, and they were made aware that participation in the evaluation was entirely voluntary. The research team had H.M. Prisons and Probation Service National Research Committee (HMPPS NRC) approval (Ref: XXXXX) to conduct this evaluation, as well as the researchers' university Health Ethics Committee approval (Ref: HEALTH0159). BOOM staff required up to date Disclosure and Barring Service (DBS) approvals to work inside the prison.

Evaluation Aims

The aims of the evaluation where to ascertain both the impact of the project and the process of implementing it within the GOOP context of partnership working in a prison with a majority of older men/prisoners. Specifically:

- To what extent did participants feel that taking part nature-based activities had an effect on their health and wellbeing?
- How does BOOM specifically address the needs of an ageing prison population?
- What were the opportunities and challenges in setting up and delivering BOOM for the staff involved?

Materials and Methods

Researchers carried out four focus groups during 2022-2023 with predominantly older prisoners who had participated in the John Muir Award and a focus group with BOOM staff who had organised specific creative and ecological activities. In total, 18 prisoners were interviewed in four focus groups, and two BOOM staff. These focus groups were semi-structured and narrative-based, giving participants time and space to discuss experiences of taking part in the project. The focus groups with participants explored the key outcomes of participation in BOOM on the health and wellbeing of the participants and their likes and dislikes of the project. For the purposes of this evaluation, the research team were focused on a thematic analysis of qualitative data to explore dimensions of eudaimonic wellbeing being that were discussed by the participants and staff involved. That is, elements of the stories of the evaluation participants that revealed elements of self-actualization, personal expressiveness, and vitality (Niemiec, 2014).

The focus groups were conducted at two separate time points to ensure as wide a coverage as possible of participants (as not all could be present at the times of the site visits due to their personal appointments). The interview techniques used were designed to provoke as much narrative-based response as possible from participants in order to build up the story of the BOOM project as they experienced it. The researchers attempted to look at consistencies between participants concerning health and wellbeing benefits, but also to try to learn from the project from the voices of those who did not necessarily enjoy certain elements.

All focus groups were audio recorded and transcribed verbatim by a member of the research team. A two-stage thematic analysis (Braun and Clarke, 2006) of this data was conducted by the research team using NVivo 14 software. Initially, one member of the research team conducted a line-by-line analysis of transcripts in relation to the aims of the

evaluation (O'Leary, 2004). This initial analysis and coding were cross-checked and refined by another member of the research team. Finally, the original coder attempted to further refine the coding. Key themes in relation to the health and wellbeing benefits and arising challenges of the project for this ageing prison group are presented in the 'Results' section.

Results

In this section, prisoner quotes are attributed to focus group (FG) and number of participant (#X). Given that this was a pilot project of a type that to our knowledge had never been attempted in the prison before, the evaluation attempted to understand the process of how the project was designed by the BOOM staff:

Back On Our Map has this reintroduction and reinforcement project, so built into our activity plan at the beginning of the project was [this prison] [...] as an opportunity to work with communities that wouldn't normally engage within nature or species type work. So it was a bit of an experimental thing in a way [...] right from the beginning, we were really keen to work with the prison, not knowing what to expect. (BOOM Staff#1)

Staff had initial concerns regarding what the prisoners would make of BOOM, however these were allayed once they began working together. As the initial stages were during COVID-19 lockdown restrictions, a certain amount of flexibility was required:

We didn't know how the men were going to react to it, whether they thought it was going to be something fluffy and a bit dismissive. But actually, it's been a great experience, because we found even from the first session, which we've improvised. [laugh] You know, I mean, the first session you had COVID didn't you? (BOOM Staff#1)

As much as this was a new experience for the prisoners, members of the BOOM team also talked about this project as something they hadn't attempted before and one they were initially apprehensive about:

I was initially very nervous about it at first, and I've still found it quite a challenging environment to work in sometimes. But the more the group has developed [...] that familiarity has been really helpful and it has got easier as the process has gone on, I think, but also in its way, it's the most rewarding thing I do at work because I've had to sort of push myself to do it. But [...] to see the rewards of it [...] when you turn up and they're really happy to see you I think it's been really nice. So challenging but rewarding, I would say. (BOOM Staff#2)

Compared to earlier GOOP evaluations (XXXXXX; XXXXXX), different outcomes particularly resonated with this demographic: building trust, (re)connection with nature, raising environmental consciousness, the value of creative activity and thinking beyond prison.

Building trust

Subject to the conditions of individual prisoners' sentences, BOOM culminated in some participants being able to visit an exhibition of the creative outputs of the project displayed in a local community setting. The way the participants were treated by BOOM staff and those involved in organising the day had an impact on the participants:

They put a lot of trust into us prisoners [...] We have made mistakes in our lives, we accept them, and we want to move on. And [for people to] treat us like, the normal society, how you would treat your next-door neighbour. (FG3#1)

As BOOM staff worked with participants for nearly a year, staff were able to build up rapport with prisoners and frequently worked with them in green spaces within prison grounds and (subject to Release on Temporary Licence (ROTL)³, the local community.

Participants appear to have valued the time BOOM have taken to develop the activities:

The government over the last few years seems to have been trying to make life harder for people in prison [...]. Not many have come out on our side. So it's great to have people coming in and not treat us like we are the spawn of the devil. People coming to chat to us and treat us with respect. And that's [...] one of the best things about it, the people from outside. (FG4#1).

(Re)connection with nature

The BOOM project appeared to enable prisoners to unlock the ability to see natural surroundings within the prison had been closed off to them until their participation.

What really hit home to me here was after 11 years standing in that potato field on the second day, I was close to tears because it was, 'oh my God, I've missed this'. I've missed every plant, every living insect and animal. It was just bang; it was like that. It was like a wakeup call that we've had under your nose all these years and almost been blind to it. I've never [thought] to stop and go, 'wow, look at the colour of that leaf. (FG1#6)

This focus on observing has enabled participants to use available greenspaces to aid their mental health and wellbeing.

"[On the wing] I can feel myself getting stressed, getting anxious, whatever is going on in your head. You can escape now. In the summer you can escape [...] I can just

³ A prisoner having permission to leave the prison for a short time whilst still serving a prison sentence.

come out myself, head down the field and sit one of the benches. And I'm not listening to somebody shouting or playing their music on the wing. I'm not listening to the sound of the cell doors clanging together or somebody talking rubbish three foot from my cell door. All I can hear is nature, the grass rustling, grasshoppers making the noise, the birds tweeting. Natural normal sounds of life. And that is so healing to spend 20 minutes [...] just sat down there. Shut your eyes". (FG1#1)

Raising Environmental Consciousness

As a counterpoint for how nature may benefit participants, several discussed their increased concern for the environment after participation in BOOM:

Outside [...] I used to be able to fix things. And now I see the world struggling. Now I see the biodiversity, the insects, the birds all the animals all the creatures struggling. We're the only thing left to help. (FG1#6)

One participant, despite not being eligible for ROTL and unable to experience the environment outside of the prison at the time of the focus group, spoke with enthusiasm at what he saw as a shift in mindset within the prison:

You are right what you say about the environment, we are the only people that can fix the thing having broken it. And so, it does matter. And if you can make people aware, for years, people [have been] writing in the Inside Times⁴ about plastic bags and [now] we're moving beyond that [...] that's what it's done for me. (FG1#3)

The Value of Creative Activities

⁴ Weekly online newspaper for prisoners (<https://insidetime.org/>)

A valuable but more contentious element of BOOM to deliver the 'shared learning' element of JMA, was the incorporation of artists to facilitate a variety of activities with the participants. For some, this was a welcome opportunity to engage with an activity they were already interested in, in an environment where these activities were restricted, while finding that creative activities made them look at nature differently:

I was told that there was an artist involved I thought alright I'll have a bit of that [...] then discovering as I came on the course that you know, it's more than just about art and [...] you can actually find out within nature just through, you know, some of the things that we see day to day that we don't actually consider, but obviously through working with BOOM, and obviously the John Muir award, I was able to actually expand my mind as it were and see that [...] it's more than just canvases and painting on walls and you know, there's beauty within just natural things that we find day to day in nature. (FG2#5)

However, one participant described how he struggled to engage with activities that others found mindful, as he wanted to get on with the more physical aspects of the project:

I have enjoyed it...I don't want anyone to think I haven't, but the whole idea of...making pictures with leaves and things. It's been a little bit key stage one for me. It's the kind of thing my kids did in primary school...It's all a bit too childish. (FG3#2)

For others, the creative activities were a source of anxiety, due to a self-perceived lack of ability and concern they were going to be judged:

If I'd have known it was going on show I wouldn't have attended. I have no talent but I was encouraged to do it [...] Then when I was told it was going in a frame. I

don't want to frame mine. It really is dreadful. Next thing you're told it's going in a show in an art gallery you're like, does mine have to? Because it's really bad, but no it's going and I'm not comfortable with it. [...] I felt uncomfortable when I painted it. I felt uncomfortable when I framed it. I feel uncomfortable looking at it on a wall.

(FG2#2)

Thinking Beyond the Gate

A valuable function of BOOM is that it enables participants to think of the environment outside of the prison differently. This operated on two levels. Firstly, some participants were allowed to be ROTL'd as part of their sentence at that stage. Participants spoke of how they had wanted to use these opportunities differently as a result of BOOM:

I've recently been talking [...] about ROTL [...] about what things I wanted to do. And one of the things I asked about [...] is I said, 'Can I be picked up at the gate by my wife? And can we put down that we're going to climb the hill over there?' [...] We normally put down a town you want to visit. [...] I want to go up there, I want to see what those things are about growing up there and see if it's any different to here.' (FG1#4)

Secondly, for participants who were not able to be ROTL'd, BOOM served as a kind of visioning exercise for nature-based activities they could partake in when they were released, including volunteering and employment:

It'd be really useful if the BOOM project could have those links with the community and especially in areas of our release, where we could do have a work experience and work towards awards because they could branch off to different areas such as forestry. [...] I'd like to [...] clean canals up and things like that. (FG2#1)

Discussion

BOOM was aiming to engage a range of communities with their local natural environments through landscape restoration and species reintegration of which the prison was one of a number of local 'community' sites. This brought many advantages to the prison. BOOM brought expertise (ecology, biodiversity and specific skills relating to delivering the project) and resources (e.g. they covered the costs of the JMA, supplied 500 trees and provided staffing to co-plant, and provided the mechanisms for participants to showcase their artwork beyond the prison). BOOM staff also had extensive knowledge of the local area that enabled delivery of some aspects of the JMA. By working in partnership with GOOP, there were advantages for BOOM staff also: They were connected with key people within the prison to operationalise their activities swiftly and, most importantly, to a group of participants who in the main, were already interested in this type of project. These connections meant that BOOM were able to 'hit the ground running' to involve the prison as one of the community sites and deliver within the funding timeframe.

The particular prison group demographics (older and for the most part with a high level of written and verbal communication skills) means that elements of BOOM which were successful may be less so when transferred to another prison environment (for example for young people or a higher security prison). This partnership provided a pilot project with sufficient flexibility to be modified and test it out in other prison environments subject to future funding. A thematic analysis of data highlighted a number of key health and wellbeing themes from the BOOM project. What was clear from the discussions is that for most of the participants the project was empowering due to the level of recognition it gave to them. Not only were they provided a space to give an outlet to develop their creativity, they were also respected enough to be given a public forum with which to

demonstrate this creativity and connect with the wider community. They were also able to contribute something which they considered to be worthwhile to the local community environment through planting and conservation work.

Furthermore, the health and wellbeing implications were clear: BOOM enabled participants to connect with the local environment and view it differently. This benefited participants with the ability to be mindful and used the local greenspace (both within and, where appropriate outside the prison grounds) as a tool to relax and de-stress. Another key factor of both GOOP and BOOM participation is the benefits to mental wellbeing and the ability to think about the future in a positive way. This took the form of thinking about taking the specific skills learned during BOOM beyond prison and looking forward to exploring their local communities with members of their family.

Alongside this, we have considered what we believe to be the main opportunities and challenges of partnership working in this prison context for future prison-based GOOP work and congruent projects such as BOOM identifying four main learning outcomes. Firstly, the drop-in sessions and poster campaign to recruitment participants was effective and referred to by several focus group participants as to how they discovered the project. Those interviewed generally (with one exception) appeared to have a high level of comprehension, so this might not be as effective in other types of prison. However, given the setting, these means of communicating the project, coupled with prison staff members who are already working with participants on the GOOP programme and were able to verbally inform potentially interested participants about the BOOM project does appear to be the most effective means of engagement.

Secondly, BOOM appears to have balanced practical and creative activities well for the most part. Most participants were impressed with the range of activities that were on offer. This encouraged an inclusive group atmosphere, as there was generally varying

appealing elements for most interests and levels of experience. Some voiced that they would like to have done more 'practical' elements (more planting and conservation work) over the creative activities. However, a balance is inherently difficult to manage when attempting to appeal to a large-sized group with mixed levels of interest and experience. With a concentration of older men in this prison, the creative and observational tasks were often more appropriate for levels of health and mobility. It was also noted that some of the men were uncomfortable with their artwork being publicly displayed possibly due to their lack of confidence in their own ability or experience. This was fed back to the BOOM staff in order to help them plan for future projects which could take this element into account.

Thirdly, the project presented challenges for ROTL working and group coherency. Some participants who weren't able to be ROTL'd weren't able to engage with the project to the same extent as those who were, and missed out on opportunities (e.g. planting in community areas and visit the arts exhibition). This highlights the nature of working in prison more than the design of BOOM, as to only facilitate activities that only the whole group could engage in would limit the scope of what is possible. Nevertheless, it is an aspect of project work in this context that needs careful consideration, as it risks excluding participants who may benefit from its outcomes.

Finally, BOOM has left a legacy in the region. The tree-planting and conservation work within the prison and local community has left an indelible mark on the region after the project has finished. What is less visible, but also permeated the focus groups was the connection with nature it had invigorated in the participants. Some spoke of how they had changed their activities when on ROTL by going on walks and exploring nature locally), others who did not have these privileges spoke of how they had started viewing nature differently and/or what nature-based activities they would like to do in the future post-

release. Accreditation through the John Muir Award and NVQ Horticulture were some practical ways of ensuring there were tangible outcomes of BOOM for participants and could be a focus of future studies (e.g. on the wider older prison population).

As this evaluation was of a pilot project in one prison, there are no comparison sites. We were also aware that both BOOM staff and the research team were non-prison staff people coming into the prison to coordinate and evaluate the project. This change of personnel and in the case of participants who were ROTL'd, scenery, injected a sense of novelty into what is ordinarily a routine of sameness. Within this context prisoners may be inclined to 'please' researchers and gloss over any negative experiences. However, within these parameters the research team attempted to be thorough in its qualitative investigation by conducting a series of focus groups with all participants who consented to be interviewed and staff involved with facilitating BOOM.

Conclusions

Whilst the benefits of more general exposure to nature and greenspace are well documented, the particular configuration of BOOM in this prison, which focused on creative activities and aspects of nature which may be more appealing to an ageing prison population have implications for future prison-based projects involving older prisoners. This demographic is the fastest growing population in prisons globally, whose particular health and wellbeing needs are not currently entirely understood or met within prison systems. In order to progress BOOM as part of the wider GOOP programme, previous GOOP evaluations with different demographics of prisoner have demonstrated that for other prisoner populations (e.g. younger prisoners) BOOM would need sufficient flexibility to tailor elements of the project, and this would best be achieved in consultation with staff and prisoners at each prison prior to projects beginning. Due to the highly

flexible nature of BOOM and GOOP combined, it appears that this could be rolled out to the wider GOOP programme with the older prison populations in other prisons nationally.

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Authorship confirmation/contribution

The thematic analysis was conducted independently by XXXXXX. XXXXXX is the Project Manager of BOOM at the XXXXXX, was interviewed for the evaluation and contributed information about the project. XXXXXX is Director of the XXXXXX and leads the GOOP programme across prisons in England and contributed contextual information about the collaboration between GOOP and BOOM. Both also offered comments about the rest of the manuscript.

Authors' disclosure statements

XXXXXX is not involved in the development or implementation of BOOM or GOOP and is employed by the University of [XXXXXX] as XXXXXX.

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References:

Baybutt, M. and Chemlal, K. (2016), Health-promoting prisons: theory to practice. *Global Health Promotion*, 23, 66-74.

Baybutt, M., Dooris, M.T. and Farrier, A. (2019), Growing Health in UK Prison Settings. *Health Promotion International*, 34 (4). pp. 792-802. ISSN 0957-4824

Beard J.R., Officer A.M. and Cassels A.K. (2016), The World Report on Ageing and Health. *Gerontologist*. 2016 Apr;56 Suppl 2:S163-6. doi: 10.1093/geront/gnw037. PMID: 26994257.

Braun, V. and Clarke, V. (2006), Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101.

Buck (2016), Gardens and health: Implications for policy and practice. National Gardens Scheme, May 2016.

Davies, M., Hutchings, R., Keeble, E. and Schlepper, L. (2023), Living (and dying) as an older person in prison: Understanding the biggest health care challenges for an ageing prisoner population. Research report April 2023.

https://www.nuffieldtrust.org.uk/sites/default/files/2023-04/Nuffield%20Trust%20-%20Older%20prisoners_WEB.pdf [Accessed 15 December 2023]

Dooris, M (2009), Holistic and sustainable health improvement: The contribution of the settings-based approach to health improvement. *Perspectives in Public Health*, 129 (2009), 1.

Dooris, M. (2013), Expert voices for change: bridging the silos - towards healthy and sustainable settings for the 21st century. *Health and Place*, 20, 39-50.

Elsley, H., Murray, J. and Bragg, R. (2016), Green fingers and clear minds: Prescribing 'care farming' for mental illness. *British Journal of General Practice* (2016), 99-100.

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

Flagler, J.S. (1995), The role of horticulture in training correctional youth. *Horticultural Technology*, 5, 185-187.

Her Majesty's Prison and Probation Service (2023), Offender Equalities Annual Report. Ministry of Justice Official Statistics Bulletin (Published 30 November 2023). [accessed 05/12/2023]

House of Commons Justice Committee (2020), Ageing prison population: Fifth Report of Session 2019-21. 27th July 2020, House of Commons.

<https://committees.parliament.uk/publications/2149/documents/19996/default/>

[accessed 20th December 2023]

Jiler, J. (2006), *Doing Time in the Garden: Life Lessons Through Prison Horticulture*. New Village Press.

Lander (1992), The convicts who reap what they have sown. *Financial Times weekend*, 3-4 October 1992, p.vii.

Lewis, C.A. (1996), *Green Nature, Human Nature. The Meaning of Plants in Our Lives*.

Urbana, Chicago and Springfield: University of Illinois Press; 1996.

Matthews, C.E., Moore, S.C., Sampson, J., Blair, A., Xiao, Q., Keadle, S.K., Hollenbeck, A. and Park, Y. (2015), Mortality Benefits for Replacing Sitting Time with Different Physical Activities. *Medicine & Science in Sports Exercise*, 2015 Sep;47(9):1833-40. doi:

10.1249/MSS.0000000000000621.

Maycock, M. and McGregor, D. (2023), 'I do enjoy the work, but I think the wages in the jails are shocking': Analysing prisoner wages as a pain of imprisonment using Foucault's artifice. *Incarceration*, 4. <https://doi.org/10.1177/26326663231170767>

Meek, R. (2018), *A Sporting Chance: An Independent Review of Sport in Youth and Adult Prisons*. London: Ministry of Justice.

Moran, D. and Turner, J. (2019), Turning over a new leaf: The health-enabling capacities of nature contact in prison. *Social Science & Medicine*, 23, June 2019, 62-698.
<https://doi.org/10.1016/j.socscimed.2018.05.032>

Niemiec, C.P. (2014), Eudaimonic Well-Being. In: Michalos, A.C. (eds) *Encyclopedia of Quality of Life and Well-Being Research*. Springer, Dordrecht.
https://doi.org/10.1007/978-94-007-0753-5_929

Novisky, M.A. (2018), Avoiding the Runaround: The link between cultural health capital and health management among older prisoners. *Criminology*. 56(4), pp.643-678.

O'Brien, L., Burls, A., Townsend, M. and Ebdon, M. (2011), Volunteering in nature as a way of enabling people to reintegrate into society. *Perspectives in Public Health*, 131, 71.

O'Leary, Z. (2004), *The Essential Guide to Doing Research*. Sage, London.

Prison Inside (2023), How Much Do Prisoners Get Paid in the UK in 2023?
<https://prisoninside.com/how-much-do-prisoners-get-paid-in-the-uk-in-2023/#:~:text=The%20minimum%20wage%20for%20prisoners%20working%20regular%20prison,skilled%20labor%20%E2%80%93%20up%20to%20C2%A340%20per%20week> [accessed 15th July 2024]

Sustainability in Prisons Project (2019), *Fiscal Year 2019 Annual Report*. The Evergreen State College, Department of Corrections Washington State.

<http://sustainabilityinprisons.org/wp-content/uploads/2019/12/SPP-Annual-Report-FY19-for-web.pdf> [accessed 20th December 2023]

Vannier, M. and Nellis, A. (2023), 'Time's relentless melt': The severity of life imprisonment through the prism of old age. *Punishment & Society*, 1-22. DOI:

10.1177/14624745231154880journals.sagepub.com/home/pun