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Scoping review on the use and meaning of sport in prison and after detention

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Abstract: *The aim of this study was to provide knowledge on existing literature and research regarding the use and meaning of sports during and after incarceration. To achieve this, a scoping review was conducted, entering one hundred and seventeen combinations of search terms related to sports and incarceration into Google Scholar and Web of Science, focusing on titles and/or key terms. Ultimately, one hundred and fifty-two publications were included in the scoping review. The identified literature and research on 'the meaning of sports during and after detention' discuss the outcomes related to physical and mental health, behaviour, and the rehabilitation of prisoners, all with the ultimate goal of reducing recidivism and supporting the successful reintegration of ex-prisoners. These results revealed knowledge gaps that are explored in the discussion. The conclusion provides a critical examination of the results and knowledge gaps, highlighting some indications for further research on the meaning of sports for (ex-)prisoners.*

1. Introduction

The reintegration of prisoners into society after their release from prison is a significant global social issue (Meek, 2018; Pager, 2006). This problem is not limited to any specific country (Gisler et al., 2018; Jones & Ekunwe, 2011). Governments around the world are increasingly recognizing – at least in rhetoric - the importance of investing in programmes to support prisoners in their reintegration process, to break the damaging cycle of recidivism, to ensure the right to inclusion, and to alleviate the burden on the criminal justice system and promote economic productivity (Pettus-Davis et al., 2019; Severson et al., 2011; Travis, 2000). More holistic and innovative practices need to contribute to these aims, by developing evidence-based programmes that promote skill development, employment, education, health, housing, and therapeutic outcomes, as these are the key components of successful reintegration programmes (Green, 2019; Roy, 2013). An evident trend in prison settings though, 'penal populism' or 'penal welfarism' is observed where welfare, development, and leisure activities, including sports, receive less attention compared to areas focused on punishment and control. This phenomenon has led to a lack of emphasis on providing opportunities for prisoners to positively develop during and after detention (Garland, 2022; Wacquant, 2009). It is important to note that this observation may vary across different prison systems and countries, and that growing efforts are being made to shift the focus towards rehabilitation and reintegration, where leisure activities and sports can and do play a significant role.



Although a smaller body of research, there is for example growing work in sport for development literature, where it is demonstrated that sport contributes to positive development, social and educational change, and the well-being of individuals and communities (Coalter, 2013; Collison et al., 2019; Levermore & Beacom, 2008; Schulenkorf et al., 2014; Spaaij et al., 2017).

While we recognize the positive impact of sports, it is important to acknowledge the negative aspects as well. These might include issues such as doping use, intense rivalry, and the potential perpetuation of social inequalities within the realm of sports (Atkinson & Young, 2008; Coakley, 2015; Coalter, 2015; Donnelly, 2011; Young 2019). However, there is still a limited understanding of the role of sports and physical activity during and after detention, despite the growing awareness of their benefits.

This scoping review is part of a larger study investigating the meaning of sports for the social reintegration of (ex-)prisoners. Through this review, we aim to explore existing literature and research on the topic of 'sports in prison and after detention'. By identifying knowledge gaps and engaging in a discussion, we hope to uncover new insights and provide a foundation for further research.

2. Methodology

While there is some understanding of the positive and negative impact of sports on individuals in general, there is limited research specifically focused on the use and meaning of sports in the context of detention and post-release. The value of conducting this scoping review lies in its ability to provide a comprehensive overview of the existing literature and research on this particular topic. By systematically mapping and analyzing the available evidence, this scoping review allows for a broader understanding of the use and meaning of sport for (ex-)prisoners. This method enables the researcher to identify key themes, gaps, and patterns in the literature, thus providing a foundation for further research and informing potential interventions or programmes (Levac et al., 2010; Peters et al., 2015).

The first step in a scoping review is to define the research question or objective, which is to understand the use and meaning of sport for (ex-)prisoners. The next step involves selecting appropriate inclusion and exclusion criteria and identifying relevant studies. This process ensures that only studies that meet certain criteria are included in the review. Once the relevant studies have been identified, the data from these studies will be analyzed and synthesized (Arksey & O'Malley, 2005; Daudt et al., 2013).

2.1. Choice of search term combinations

To gain insight into scientific literature as well as grey literature on this topic, the decision was made to use both Web of Science and Google Scholar as search engines. In Web of Science, all studies, articles, and publications that contained a relevant term combination as shown in the table below in the title and keywords were selected to obtain sufficient scientific literature. In Google Scholar, all studies, articles, and publications that contained a relevant term combination as shown in the table below in the title were selected to obtain sufficient scientific literature as well as grey literature. No keyword search function was applied here for the simple reason that this search function is not possible in Google Scholar, and additionally, because grey literature serves as a complement to scientific literature, we will obtain the most accurate additional data by screening through the title.

The choice to screen term combinations in the title and/or keywords of studies, articles, and publications can be justified by a number of advantages. Firstly, it allows for better assessment of whether an article is relevant to your research question and focuses on it. It provides a good overview of the content and subject of the article. This saves time and effort when going through articles that may not be relevant, thus promoting efficiency. Consequently, it provides you with the most relevant articles and publications. Secondly, it helps you focus your scoping review on specific topics or aspects of your research question. Additionally, using a standardized and consistent approach in selecting articles reduces subjectivity and ensures a reliable and reproducible review. However, it is important to note that screening based on search terms in the title and/or keywords is not the only method and presents disadvantages as well. This includes the exclusion of publications and articles that may be relevant but not well optimized with the appropriate search terms in the title or keywords, language barriers resulting in the inclusion of only English publications or those with an English translation, and the possibility of overlapping during the screening of articles.

To reduce the first two disadvantages, the decision was made to include a wide range of term combinations, specifically one hundred and seventeen term combinations. With these term combinations, our aim is to provide the most relevant literature regarding the use and meaning of sports for (ex-)prisoners during and after detention. We have focused on integrating term combinations that explore sports in general, physical activity and exercises during and after detention, but we have also integrated more specific, active (both individual and group) sports that are most popular in prisons worldwide, such as fitness, football, basketball, running, and others that are frequently mentioned in media, like yoga and martial arts. Forms of more passive sports, such as darts and card games, which also fall under the category of sports, were not explicitly integrated in the term combinations due to our choice to focus on active sports. To remove duplications, we used Google Spreadsheet.

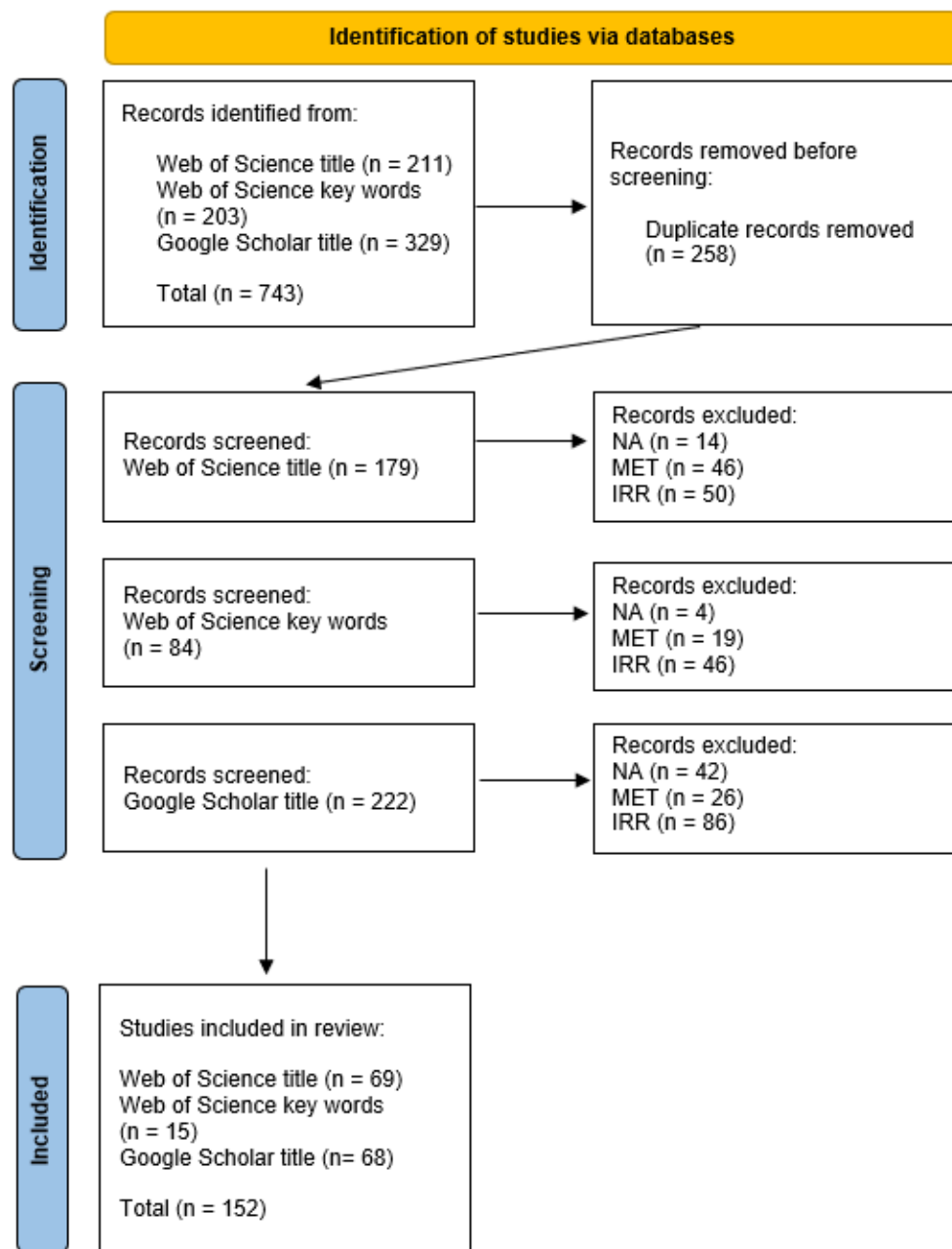
Table 1: Search terms in Web of Science and Google Scholar, used in title / and key words

TERM 1	TERM 2
Basketball Or	Delinquency Or
Fitness Or	Detainee Or
Football Or	Detention Or
Martial arts Or	Imprison* (imprisonment, imprisoned) Or
Physical activity Or	Incarcerat* (incarceration, incarcerated) Or
Physical exercise Or	Inmate Or
Running Or	Offender Or
Sport* (sport, sports, sports-based) Or	Penitentiari* (penitentiary, penitentiaries) Or
Yoga	Prison* (prison, prisoner, prisonment, prisoned) Or
	Post-imprison* (post-imprisonment, post-imprisoner, post-imprisoned) Or
	Post-incarcerat* (post-incarceration, post-incarcerated) Or
	Ex-offender Or
	Ex-prison* (ex-prisoner, ex-prison, ex-imprisonment)

2.2. Inclusion and exclusion criteria

After formulating search term combinations, a PRISMA flow diagram was employed to document the selection, inclusion, and exclusion of studies, articles, and publications in the review process.

PRISMA Flow Diagram



After removing duplications, the records were screened based on abstract, results and conclusion. Three exclusion criteria were applied. The first is NA, which refers to records that were ‘not accessible’ or ‘not available’. The second is MET, which refers to ‘metaphor’. This applies to records where the terms in the title or keywords had a different or metaphorical meaning and therefore did not involve sports during or after detention. Concrete examples to clarify this are ‘prisoner’s dilemma’, ‘run-of’, etc. The last and third exclusion criteria is IRR, which refers to duplications that are ‘irrelevant’ to our research question. This includes all publications referring to sport pedagogies, instrument evaluations, research or coaching programmes for staff or sports teachers, or for sports in a specific prison camps set up during wartime, or where there is no mention of sports during or after a prison period but rather focus on sports for the prevention of delinquent behaviour in students.

This review encompasses a wide range of evidence, including qualitative and quantitative studies, grey literature and expert opinions. Additionally, literature addressing both adult and juvenile prisons is incorporated, considering that the age limit for incarceration varies across countries. Furthermore, it is important to note

that no two prisons are alike, even within the same country. A prison in the United States, for example, differs significantly from one in Belgium in terms of infrastructure, population, operational strategies, and practices. Similarly, the prisons of Hasselt and Antwerp, both located in Belgium, exhibit differences on all these levels. Therefore, no distinction was made regarding prisons or countries, as well as publication dates, gender, or gender differences. Despite the significant differences between prisons, it is still valuable to collectively consider various prisons. All prisons emphasize their role in terms of retribution, deterrence, rehabilitation and incapacitation (Hudson, 1996). As a result, a comprehensive examination was conducted to explore the existing knowledge on the use and meaning of sports for people, both currently incarcerated and those who have been released. Presented below are the findings of this extensive review, providing insights into the role and impact of sport in the lives of (ex-)prisoners.

3. Results of sports during detention

The literature and research regarding sports in prison points to a plethora of benefits for physical and mental well-being, behaviour modification, and educational enhancement. These effects have been observed and reported in a wide range of sports activities, but distinctions between different sports are explored where possible. Furthermore, the potential risk factors and adverse consequences that may be associated with engaging in sports within the prison system are also examined.

3.1. Physical health results

We identified several studies that highlighted the positive effects of sports on prisoners' physical health. Prisoners often spend a significant amount of time inactive and confined to their cells, leading to poor physical health and increased risk of chronic diseases. Sport has been identified as a protective factor against these health issues (Adri et al., 2022; Arana et al., 2018; Brusseau et al., 2018; Camplain et al., 2019; Elger, 2009; Elwood Martin et al., 2013; Ghram et al., 2021; Martos-Garcia et al., 2009; Nair et al., 2016; Papa et al., 2021).

A broad range of published literature - see, for example, Anastasi et al. (2022), Delaney (2001), Hopkins et al. (2019), Kiani and Paydar (2021), MacLean et al. (2022), Mannocci et al. (2018), Moffa et al. (2021), Mutz and Müller (2023), Obadiora (2018a), Penado Abilleira et al. (2023), Sanchez-Lastra et al. (2019), Vaiciulis et al. (2011), Wahl-Alexander and Jacobs (2022), and Woods (2018) - has emphasized the benefits of sports in improving the overall physical health of prisoners. By way of illustration, the Obadiora (2018a) study compared four different sports according to whether or not they promote physical health. Results show a positive correlation between prisoners' physical health perception and all sports examined in this study, namely athletics, badminton, table tennis and volleyball. However, not every sport or form of sport offers the same effect: e.g., a yoga intervention that includes more physical postures may have a great impact on physical health, while a yoga intervention that focuses on yoga philosophy may have a greater impact on mental well-being (Wimberly & Xue, 2016). In addition, in order to be physically active, the prison must be able to facilitate, which is not always the case. Prisoners encounter numerous barriers such as limited availability of sports equipment, limited access to the outdoors, not having appropriate clothing, etc. (Brosens et al., 2017; Camplain et al., 2022; Frowein, 2012).

Sports participation has been found to prevent cardiovascular diseases and improve cardiorespiratory capacity among prisoners (Battaglia et al., 2013; Dooley, 2018; Nair et al., 2016; Pastor & Cucci, 2018). Arana et al. (2018) recommended the implementation of sports programmes in prisons also as a preventive measure to pre-empt health problems and to reduce health costs. Sports and physical activities have been effective in preventing weight gain and obesity among prisoners (Johnson et al., 2019; Papa et al., 2021) and in ensuring a healthier BMI and fat mass (Cardella et al., z.d.; Dransmann et al., 2021; Elwood Martin et al., 2013). Studies have shown that both male and female prisoners experience worsened obesity rates during incarceration. However, abdominal obesity is more prevalent among women and is associated with low physical activity and eating disorders (Lagarrigue et al., 2017). Female prisoners tend to have fewer opportunities for vigorous physical activities and are more likely to engage in moderate physical activities (Camplain et al., 2021; Lagarrigue et al., 2017). Young male prisoners report higher levels of vigorous physical activities compared to young female prisoners (Buzzini et al., 2005). Research also demonstrates that offerings for women are not always designed with the needs of women mind, and can remain limited to leisure activities, despite the common assertion that sports can promote health and improve education and employment (De Marco & Meek, 2022, Martinez-Me-

rino et al., 2018b; Meek & Lewis, 2014b; Merino et al., 2018). Additionally, prison sport initiatives are not always adequately adapted to older prisoners and are typically designed to target young and active prisoners (Pageau et al., 2021).

Although there is some limited evidence that weightlifting can promote the use of illegal steroids (Amtmann, 2001), participation in sports has overwhelmingly been associated with reduced drug and tobacco use among prisoners, contributing to a healthier lifestyle and improved quality of life (Fischer et al., 2012; George, 2005; Link, 2011; Martin-Gonzalez et al., 2020; Moscoso-Sanchez et al., 2017; Obadiora, 2018b; Obadiora & Obadiora, 2018a; Vila et al., 2020; Wimberly, 2019; Williams, 2001; Willy-Gravley et al., 2021). Further evidence suggests that prison sport can prevent insomnia and sleep problems (Adri et al., 2022; Elger, 2009). Furthermore, although Kosendiak et al. (2022) state that there was no effect found between the level of physical activity and knowledge about nutrition, nutritional quality or dietary habits indicated by prisoners, Johnson et al. (2018) demonstrate improvements in physical health, sleep patterns, and attitudes towards healthy eating among prisoners participating in sports initiatives.

3.2. Mental health results

Moderate-intensity physical activity for at least one hour per week is associated with significant improvements in depression scores, anxiety, phobic anxiety, mental disorders, and hostility (Battaglia et al., 2015; Pastor & Cucci, 2018). Prisoners who engaged in physical exercise reported reduced stress, anxiety, depression, tension, guilt, and shame (Bartels et al., 2019; Dooley, 2018; Gallant et al., 2014; Gallego et al., 2023; Penado Abilleira et al., 2023; Sfindla et al., 2018; Verdot et al., 2010; Woods, 2018). Additionally, sports provided a distraction from boredom (Jacobs et al., 2023; Vila et al., 2020), breaking daily routines and providing a temporary escape from reality (Norman & Andrews, 2019; Vila et al., 2020). It can promote camaraderie and a sense of normality (Helleringer, 2000; Reinisch, 2019), promote subjective wellbeing (Herold et al., 2023) or simply serve as a hobby or a meaningful way to spend time during detention (Martinez-Merino et al., 2018a; Sabo, 2001). Jaworska's (2015) study revealed higher levels of emotional stability and extraversion among physically active participants compared to the physically inactive control group. Engaging in prison sports can also facilitate feeling more relaxed, energized, calm, and at peace (Bartels et al., 2019; Martos-Garcia et al., 2009; Parker et al., 2014), help to address prisoners' fundamental psychological needs, including autonomy, competence, and relatedness (Woods et al., 2017a) and contribute to emotional self-control, self-esteem, stress management, and coping with confinement (Meek, 2012; Piot, 2007; Psychou et al., 2019; Uney & Erim, 2019; Vaiciulis et al., 2011). The literature highlighted that sport played a motivating role for prisoners, regardless of their demographic characteristics or offense type (Bairner, 2019; Castillo-Algarra et al., 2019).

There is also significant research focus on the practice of yoga in prison and its mental health benefits (Baskaran, 2015; Derlic, 2020; McGowan, 2021; Rucker, 2006). Yoga has been found to have numerous benefits for individuals, including improvements in psychological well-being, mental health status, and spiritual well-being (Griera, 2017; Pham, 2013; Saharan et al., 2023). It has been shown to reduce stress, depression, anxiety, and psychiatric disorders (Hopkins et al., 2019), while increasing social participation and community dedication (Viorst, 2017). In the prison context, yoga has been found to be an effective intervention strategy, increasing optimism and perceived self-efficacy while reducing perceived pessimism (White et al., 2013) and alleviating rumination (Karup & Hall, 2016), improving physical, psychological, and cognitive well-being (Baskaran, 2015) and aiding in trauma recovery (Hauzinger, 2013; Nicotera & Viggiano, 2021).

The mental health benefits of physical activity, including yoga, often extend to the development of coping skills, such as forgiveness and letting go of fretting (Derlic, 2021). A wide range of published literature, exemplified by Amtmann and Kukay (2016), Auty et al. (2017a), Bilderbeck et al. (2013), Harner et al. (2010), Kerekes et al. (2017), Kiani and Paydar (2021), Link (2011), Ozano (2008), Woods (2018), Woods and Breslin (2023), Woods et al. (2020), and Woods et al. (2017b), underscores that engaging in sport, physical activity and exercise commonly is associated with a decrease in depression, stress, and anxiety, coupled with an augmentation in self-confidence, self-esteem, and the cultivation of self-concept and pro-social identities.

3.3. Behaviour results

A further body of research, with a significant focus on young prisoners, examines the use of sport as an intervention, behaviour and rehabilitation tool to address criminal behaviour and youth crime (Babalola & <https://scholarscompass.vcu.edu/joper/vol8/iss1/7>

Pat, 2019; Meek & Lewis, 2014a; Parker et al., 2014). While policy and political rhetoric have increasingly promoted sport for this purpose, the evidence base supporting its effectiveness in reducing youth crime is still emerging (Roe, 2021a). However, academic research conducted in detention settings focusing on the reintegration of marginalized youth or young adults through sport has shown a clear reduction in delinquent behaviour and desistance (Behjati Ardakani & Ghanbarpoor Nosrati, 2015; Campana et al., 2023; Frowein, 2012; Igbinigie et al., 2023; MacNeill, 2021; Slack, 2000; Van Hout & Phelan, 2014). Despite institutional and gender-related barriers leading to lower participation levels among women (Meek & Lewis, 2014b), they also experience physical, psychological, social, and reintegration benefits from participating in sports activities, which are valuable in promoting good behaviour and desistance from crime (De Marco & Meek, 2022; Kay et al., 2022; Martin-Gonzalez et al., 2018; Martinez-Merino et al., 2017).

Engaging in sport can – when initiatives are designed well - facilitate social interactions and self-regulatory skills (Haggerty, 2013; Jacobs et al., 2023; McCarthy et al., 2022; Middleton et al., 2019; Rousseau et al., 2019), and promote activities that incarcerated populations may otherwise lack the confidence to, dislike, or be reluctant to participate in, such as classroom education or rehabilitation work (MacNeill, 2021; Meek, 2012; Summar, 2001). Sport can also be highly effective in motivating hard-to-motivate populations for resettlement, or psychological intervention (Meek, 2012), which may start a process of development, transformation and desistance (Martins et al., 2021; Meek & Lewis, 2014a). Participating in sport can create discipline and self-control (Grundy & Meek, 2021), and encourage personal growth and recovery (Kerekes et al., 2019; Martos-Garcia et al., 2009; Norman, 2019), develop self-advocacy skills, (Parker et al., 2014) and offer an opportunity to rebalance the disrupted caused by prison conditions (Sempé & Bodin, 2015). However, the virtues of sport in facilitating the smooth-running of a prison are sometimes overlooked, and its use may be instrumentalized for control and surveillance purposes (Bodin et al., 2009; Norman, 2017; 2020) as well as fostering more positive relationships between prisoners and staff members (Hauzinger, 2018; Meek, 2012) and a sense of community among prisoners (Frigout et al., 2020; Gallant et al., 2014; George, 2005; Norman, 2015).

Although there are concerns that some men may use sport to enhance their muscular bodies, with the aim of intimidating fellow prisoners or as a way of displaying or performing their masculinity (Delaney, 2001; Johnsen, 2001; Sabo, 2001), others have attributed a reduction in aggression, violence drug use through sports (Delaney, 2001; Johnsen, 2001; Robène & Bodin, 2014; Sabo, 2001; Fite & Vitulano, 2011), and according to Roe (2021a), sport can disrupt hypermasculinity in prisons and serve to promote inclusiveness and a sense of belonging.

A common objective in utilizing sport as a behavioral tool is in fostering the rehabilitation of prisoners, as sport can help individuals set goals, follow routines, and develop pro-social connections in prison, which may extend beyond the prison gate (Costea, 2010; Link, 2011; Obadiora & Obadiora, 2018b; Parker et al., 2014; Van Hout & Phelan, 2014). Although team sports are typically celebrated as being most effective in this regard, individual pursuits such as weight lifting can also be used as a behaviour tool, teaching discipline, record-keeping, and goal-setting (Amtmann, 2001). Engaging in physical activity, including sports, after detention can have positive effects on personal development, social skills, socialization, and preparing individuals for successful reintegration (Caplan, 1996; Delaney, 2001; Link, 2011; Martin-Gonzalez et al., 2020; Van Hout & Phelan, 2014). Sports can facilitate family engagement after release, strengthening social bonds and support networks and reducing stigma (Meek & Lewis, 2014a) and providing an opportunity to reconnect with peers and the community (Grundy & Meek, 2021). Moreover, sports participation can contribute to reducing aggression levels and promoting successful rehabilitation, ultimately reducing the risk of recidivism (Castillo-Algarra et al., 2019; Delaney, 2001; Gallant et al., 2014; Toof et al., 2022).

Looking specifically at yoga programmes in prisons, these may promote therapeutic engagement (Kovalsky et al., 2021; Muirhead & Fortune, 2016) and support the transition from prison to the community (Saharan et al., 2023; Toof et al., 2022; Wimberly & Engstrom, 2018). Learning yoga and meditation can also lead to changes in thinking strategies and spiritual insights, ultimately promoting a more life-affirming and healthy lifestyle with more resilience (Crawford et al., 2015; Morse, 2019).

3.4. Education results

Various studies highlight that sports activity plays a crucial role in achieving and fulfilling educational, inclusive, and social values, making it highly valuable for prisoners. It has become an essential component in the lives of individuals, allowing them to develop a deep understanding of their bodies, social interactions, and relationships through physical activity. Over time, they learn to effectively manage these aspects of their lives, what fosters successful reintegration (Di Palma et al., 2019; George, 2005; Meek, 2014; Piot, 2007; Torreadella-Flix & Brasó-Rius, 2019; Vila et al., 2019; Williams, 2004). For example, the Real Madrid Foundation social-sport basketball programme was found to enhance prisoners' satisfaction and teach democratic values, emphasizing the positive impact of sports programmes on prisoners' educational development during detention (Vila et al., 2019).

Studies also suggest that sports programmes in prison should focus on education and promoting positive qualities in young people, as these skills can help them navigate the challenges of returning to society (Martins et al., 2021; Parker et al., 2014). Sport conveys values inherent in sports participation, such as discipline, respect, achievement, and cooperation and it provides young people with the capital to develop renewed ambition and optimism about their future lives (Meek, 2014). In addition, sports participation also improves social and interpersonal skills, social capital, problem-solving skills, and decision-making ability (George, 2005; MacNeill, 2021; Torreadella-Flix & Brasó-Rius, 2019). Specifically, group sports like football and basketball are mentioned as sports with an educational value and recovery impact in prisons, and being recognized as beneficial for the further integration of prisoners into the social context (Ortega et al., 2017; Tafuri, 2021). Participants believed that the programme had a beneficial impact on their prison life, future integration into society, general education, learning positive values and continued sports participation after release (Ortega et al., 2017). However, the effectiveness of sports programmes in promoting successful reintegration depends on how they are structured and taught (Brusseau et al., 2018; Meek & Lewis, 2014a).

The way sports are taught is a determinant of prisoners' learning behaviour (Meek & Lewis, 2014a). It is important to note that the disciplinary power of sports can have both positive and negative effects, depending on how it is offered and experienced by prisoners. Positive effects may be that they appropriate discipline and structure and feel good about it, and that teamwork and cooperation are promoted. Negative effects could be that it provokes aggression, exclusion and inequality and fosters hierarchical structures (Torreadella-Flix & Brasó-Rius, 2019). The supportive environment plays a crucial role in determining the outcomes of sports programmes for prisoners (Roe et al., 2019).

4. Results of sports after detention

The literature suggests that sports programmes within prison settings offer a wide range of benefits that can extend to ex-prisoners and promote a safer society. It demonstrates the potential impact of sport on rehabilitation and successful reintegration into society with the ultimate goal of reducing recidivism. It also explores the challenges and barriers that ex-prisoners face in accessing sports activities after release.

4.1. Sport after detention

Sports programmes offer opportunities for positive self-presentation, challenging stereotypes, and reducing stigma associated with ex-prisoners (Meek & Lewis, 2014a). Engaging in physical activity, including sports, after detention can have positive effects on personal development, social skills, socialization, and preparing individuals for successful reintegration (Caplan, 1996; Delaney, 2001; Link, 2011; Martin-Gonzalez et al., 2020; Van Hout & Phelan, 2014).

Moreover, sports participation can contribute to reducing aggression levels and promoting successful rehabilitation, ultimately reducing the risk of recidivism (Toof et al., 2022). Through sports, prisoners may learn to respect rules and regulations, contributing to their reintegration which can also reduce the risk of recidivism (Castillo-Algarra et al., 2019; Delaney, 2001). For some individuals, such as those with children, football provides an opportunity to reconnect with peers, family, community and engage in work or volunteering (Grundy & Meek, 2021). Weight training and voluntary physical activity reduce aggression levels among prisoners, contributing to successful rehabilitation and reducing the risk of recidivism (Castillo-Algarra et al., 2019; Delaney, 2001; Gallant et al., 2014). Amtmann (2001) also mentioned that well-conditioned prisoners

who engage in recreational activities like weight training are more employable upon release and less likely to return to crime.

Other studies have shown that yoga programmes in prisons may contribute to reducing recidivism rates as well, improving variables related to offending, and enhancing offenders' abilities to participate in treatments aimed at reducing their risk of criminal behaviour (Kovalsky et al., 2021; Muirhead & Fortune, 2016). It can help reduce stress and substance use among individuals transitioning from jail or prison to the community (Wimberly & Engstrom, 2018). These practices provide tools for stress reduction and complement substance use treatment during the reentry process. Furthermore, Kovalsky et al. (2021) indicated that yoga may impact recidivism, with lower recidivism rates observed among prisoners who practiced yoga during their incarceration compared to a control group. Also, Saharan et al. (2023) mentioned that the rate of recidivism decreased in prisoners who practiced yoga after release and Toof et al. (2022) states that it decreases behaviours associated with hostility and criminality, benefiting society as a whole. Derlic (2020) confirms this but makes the comment that ex-offenders are not offered these practices in the community and that yoga lessons are a high cost to pay.

Despite the potential benefits, there is limited or no attention paid to prevention and self-management of chronic physical conditions through non-clinical approaches. Healthy eating and exercise are known to reduce the risk of chronic diseases, but most re-entry programmes do not include exercise and nutrition programmes specifically designed with returning citizens in mind (Sneed et al., 2023). Barriers to post-detention sports participation include poor mental and physical health resulting from the detention period, cost constraints, and still a fear of stigmatization in the community due to a criminal history (Norman, 2022).

To conclude, sports programmes in prison may have the potential to positively impact rehabilitation, reintegration, and recidivism rates. However, further research is needed to strengthen the evidence base and inform effective policy and practice in this area. Addressing barriers to post-detention sports participation and providing supportive environments are crucial for maximizing the benefits of sports programmes for ex-prisoners but here too, further research is required (Wimberly & Engstrom, 2018).

5. Discussion: knowledge gaps in current literature and research

The limited research and literature available on the subject of sport and its impact on prisoners has primarily emphasized the positive effects it has on their physical and mental well-being, behaviour, and education. This focus is directed towards providing opportunities for prisoners to lead a healthier lifestyle, promoting discipline and harmony within the prison walls, as well as aiding in successful reintegration into society by reducing the likelihood of reoffending. However, regrettably, the exploration of sport's meaning and usage post-detention remains largely unexplored. Beside this, in the following discussion, we aim to shed light on further gaps in our current understanding of the subject.

The first area of knowledge deficiency that can be identified is the limited understanding of the role of sports in prisons and its impact on individuals after their release, as viewed from an insider's perspective. Martin-Gonzalez and et al. (2019) highlight the scarcity of research that explores the experiences and viewpoints of those directly involved in this context. Furthermore, the concept of reintegration is often defined solely from an outsider's standpoint, with professionals determining which aspects of life, such as employment and housing, should be prioritized in order to facilitate successful reintegration (Wanzele & Wittouck, 2020). Consequently, there is a lack of understanding regarding the perspectives of current and former prisoners, which is crucial for the development of effective interventions (Aga, 2018; Brosens, 2018). Additionally, the voices of prisoners during and after their time in detention are inadequately considered when formulating prison policies.

A second identified limitation is a lack of knowledge on the meaning of sport in a context of detention, besides contributing to non-recidivism. Consequently, research and literature on sport in prison are scarce and fragmented (Bogaerts, 2014; Ting et al., 2018). The current state of literature and research demonstrates the instrumentalization of sport in the context of detention. Sport is utilized as a tool to achieve externally set goals, improve prisoners' physical and mental health, modify behaviour, and provide educational value, all with the ultimate aim of successful reintegration and specifically, reducing recidivism. The utilization of sport in the context of detention is deeply influenced by policy and prevailing research perspectives. While most

studies focus on sports programmes aimed at reducing anti-social behaviour and criminal activity (Van Hout & Phelan, 2014; Nichols, 2007), there is little scientific literature highlighting the significant role of sport and physical activity in the daily lives of many prisoners across various prison settings worldwide (Gallant et al., 2014; Norman, 2020; Martin-Gonzalez et al., 2019). However, there remains a lack of sociological research that delves into the broader meaning of these physical practices in prisons and their impact on individuals both during incarceration and after release (Martos-Garcia et al., 2009).

A third knowledge gap, interconnected with the first two, is a lack of perspective on the meaning of sports in the reintegration of (ex-)prisoners. Supporting prisoners in their reintegration process is often reduced to supporting prisoners in finding work, education, housing and therapeutic counselling (Vanhecke, 2020). In the literature it is recognised that sport can contribute to the reintegration of (ex-)prisoners, in the sense that, through sport, (ex-)prisoners are physically and mentally healthier, their behaviour changed positively, they are encouraged to engage in education, and can contribute to the community (Castillo-Algarra et al., 2019; Delaney, 2001; Martin-Gonzalez et al., 2020). On the other hand, it is also cited by, for example, Roe (2021a; 2021b) that sport could also contribute to a positive future prospect among prisoners, but what this future vision entails has not been established. There is a lack of data, of follow-ups, longitudinal or retrospective research with (ex-)prisoners on their perspective and interpretation of sport and what the link between sport and reintegration means to them. Little is known about whether prisoners' attitudes about the future or their willingness to change are predictive of understanding post-release and reintegration outcomes. Understanding the many challenges prisoners face immediately after release and how ex-prisoners succeed or fail to meet these challenges may help explain the long-term course of a person's transition from prison to the community, but these data are still lacking. In summary, reintegration is reduced to having a job or being in education, housing and, if imposed, therapy. Sport still falls outside this in practice, although there is more and more support, underpinned in part by research, to use sport as a tool to contribute to established reintegration goals. Consequently, still the broad meaning of reintegration involving various life domains and the broad meaning of sport are narrowed down to this. In addition, thought should also be given to what reintegration might mean for someone who will most likely never be released and where his or her prospects of reintegration involve a life within detention.

6. Conclusion

This article examines the existing literature and research on sport in and after detention, with a specific focus on its potential connection to reintegration. The findings emphasize the importance of physical and mental health, behaviour, and education in this context. Additionally, the meaning of sport for prisoners' reintegration and reducing recidivism after detention is highlighted (George, 2005; Kiani & Paydar, 2021; MacNeill, 2021).

However, this review identifies knowledge gaps that indicate a lack of input from (ex-)prisoners themselves and a lack of perspective on the meaning of sports in the reintegration of (ex-)prisoners. To address these gaps, further research is needed to explore the meaning of sport for the social reintegration of (ex-)prisoners. It is crucial to prioritize the voices of (ex-)prisoners in future research, considering their aspirations and future prospects, as well as the broader implications of sport and its relationship to reintegration. This approach requires a broader understanding of reintegration beyond solely focusing on preventing recidivism (Link, 2011). Furthermore, research should not only investigate the benefits of exercise programmes in prison but also explore how physical activity can be encouraged after release, necessitating follow-up data from prisoners post-release (Link, 2011). To address all these gaps comprehensively, interdisciplinary, multilevel, retrospective, and longitudinal research is necessary to delve into the processes of sport activities and the reintegration of (ex-)prisoners.

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