

# House arrest with electronic monitoring: the Rio de Janeiro experience

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**Abstract** This article outlines the House Curfew with Electronic Monitoring (HCEM) experience in Rio de Janeiro (Brazil). Recently implemented in this Brazilian jurisdiction, HCEM has already achieved positive outcomes in terms of post-trial de-incarceration, as it reduced the open prison population by 35% from 2009 to 2014. In addition to describing and critically discussing these changes in the Rio de Janeiro criminal justice system, the study also reports offenders' perceptions regarding this new crime control method in Rio de Janeiro. This perspective provides interesting feedback regarding HCEM in terms of safety, its punitive character, technological problems, constraints, and stigmatisation.

## Introduction

Prison overcrowding is a critical phenomenon that highlights the political agenda of Western societies. In the last few decades, the effectiveness of mass incarceration in ensuring public safety and reducing crime rates has been questioned by prominent social theorists, activists, and critics of prison ideology [1–6]. The diminished value of imprisonment in terms of crime prevention and its associated collateral effects have generated a renewed interest in the broader use of criminal alternatives that provide greater community participation in crime control and offer rehabilitation to a wide range of offenders [7, 8].

A major implementation barrier to community-based corrections is judges' lack of confidence in compliance, particularly in the absence of a more reliable and

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sophisticated form of surveillance. Traditional non-custodial sanctions, such as probation, are considered overly lenient and usually do not have popular support as punishments for intermediate crimes. Consequently, most magistrates impose prison sentences on intermediate offenders because of the lack of a non-prison strategy that balances public safety, responsibility, and offender rehabilitation.

In this context, electronic monitoring (EM) emerges as a promising alternative for intermediate crimes because it not only maintains the inmate's familial and social ties but also ensures public safety by providing a high level of supervision and accountability for offenders. Theoretically, this technology could be used on a wide range of offenders for a variety of purposes: as an alternative to a prison sentence (the front- and back-door system); as pre-trial detention; or as an additional supervisory tool for correctional programs. Such implementations can significantly humanise different stages of the criminal justice process; however, the technology also can be used as an instrument of state power and domination.

Net widening is an unexpected consequence of community-based corrections, particularly in regard to low-risk offenders. [2, 4, 9]. Although electronic surveillance is typically applied to those who would not normally receive prison sentences or were otherwise on probation, there is recent evidence of its successful implementation for high-risk or intermediate offenders [7]. For example, in Florida, a GPS monitoring system combined with a house curfew is primarily imposed on convicts who have committed more serious crimes and studies have shown that this strategy significantly reduces the likelihood that offenders will commit new crimes or abscond from supervision [9]. One analysis demonstrated that the use of EM reduced the risk of failure for all groups of offenders to 31% [10]. In England, research regarding the use of a home detention curfew (HDC) with EM to enable early release for short-term offenders (from 3 months to 4 years) provides evidence that the HDC is preferable to keeping offenders in custody. The analysis also suggests that early-release offenders are no more likely to engage in criminal behaviour than similar offenders who were ineligible for the program [11].

The potential of EM to reduce the inmate population is also evidenced in South America. The Brazilian criminal justice system recently began (June 2010) using EM in specific cases, such as house arrest and jail release for work and/or study. Combined with changes in jurisprudential and sentencing practises, these legislative reforms are enabling the gradual replacement of open prisons with a combination of house arrest and EM. According to official statistics (National Penitentiary Department), the number of convicts in Rio de Janeiro serving sentences in open prisons decreased by 35% from December 2009 to June 2014. In contrast, the corresponding rates in states that have not implemented house arrest with EM are progressively increasing, which demonstrates the diversionary effect of EM.

Considering the versatility and multiple potential outcomes of EM, numerous issues related to its implementation have been discussed in past research, including the range of its application, groups targeted, and technological variations [12, 13]. Recognising that this emerging technology should not be embraced uncritically, systematic theoretical and empirical investigations are required to examine potential negative consequences of EM and avoid its abusive application.

## EM in Brazil

For fundamental and empirical reasons, this study concerns EM in Brazil, with a specific focus on the post-trial stage in Rio de Janeiro. EM was recently approved in this Brazilian jurisdiction and this study examines why and under what circumstances it was developed, while also analysing whether the original implementation goals are being achieved.

The prison situation in Brazil is one of the most complex social issues in the country. According to official data<sup>1</sup>, in the first half of 2014, the number of persons deprived of their liberty in Brazil exceeded 600,000. Contrary to the global trend, Brazil witnessed an impressive 33% increase in its imprisonment rates over five years, reaching an average of nearly 300 people imprisoned for every 100,000 inhabitants. The number of prisoners is considerably higher than the almost 377,000 available spaces in the penitentiary system, creating a deficit of 231,062 spaces, which indicates an occupancy rate of 161%. In other words, approximately 16 individuals are incarcerated in a space designed for 10 people.

On a global scale, Brazil has the fourth largest prison population in the world in terms of absolute numbers, behind only the United States, China and Russia. With respect to the rate of imprisonment, among the 20 countries with the highest number of prisoners in the world, the Brazilian prison population is also the fourth largest, behind the United States, Russia and Thailand. Brazil also has the fifth highest rate of pre-trial imprisonment among the countries compared. Of all the people deprived of liberty in Brazil, 41% were arrested without a final judgement.

Regarding the profile of incarcerated people in Brazil, the majority are young (56%), black (67%), male (56%) single (57%), and have a low educational level. In addition to the overcrowding situation, Brazilian prisons are characterised by precarious conditions, with limited access to health, work, and education. The data alone indicate the seriousness of the prison situation in Brazil and underscore the need to encourage and invest resources in reliable alternatives to prison.

During the last several decades, several new alternatives were introduced in Brazilian criminal law to divert offenders from prison (including pecuniary sanctions, community work, and probation). However, because of the lack of effective supervision, most offenders had their sentences converted into prison due to their non-compliance with conditions and terms. In addition, the government must consider public opinion, which in general views non-custodial measures (such as probation) as too lenient and insufficiently punitive. The gradual loss of legitimacy of the criminal justice system has reached such a dire level that, when compared with alternative policies, the doctrine of “law and order” has gained more strength and acceptance in a society that yearns for the resurgence and expansion of criminal law. Thus, even outside of the prisons, citizens suffer the consequences of the government’s failure to reform the prison system, experiencing alarming increases in violence and feelings of insecurity. In

<sup>1</sup> National Penitentiary Department, Ministry of Justice. Integrated System of Penitentiary Information - INFOPEN. Annual Report. Available at <https://www.justica.gov.br/noticias/mj-divulgara-novo-relatorio-do-infopen-nesta-terca-feira/relatorio-depen-versao-web.pdf>.

this context, EM emerged as a promising intermediate sanction, one that would provide a greater level of offender accountability and surveillance than traditional non-custodial measures [9].

For these reasons, the use of EM in Brazil was first approved in June 2010. According to authorities, the main objectives of EM implementation were to avoid institutionalization and to assist offenders in their early reintegration into society. In addition, EM would ensure public safety through the strict supervision of offenders and would receive more popular support because it is considered a second-generation alternative with a punitive character that falls between probation and imprisonment.

Although there are different types of devices available to monitor individuals depending on the offense committed, the criminal justice stage, and the characteristics of the offender, all EM programs in Brazil use GPS technology. The use of GPS means that the offender is constantly tracked, regardless of the type of offense, sentence length, or the individual characteristics of the offender. The electronic device comprises the following two components: a waterproof bracelet (placed on the ankle) and a communication unit. Both components must be attached to the individual and cannot be more than six feet apart. The communication unit contains a modem GPS chip, which provides the offender's location and other necessary information to the monitoring centre.

In addition to providing accurate real-time location data on offenders, this electronic device achieves the following surveillance objectives: the establishment of inclusionary and exclusionary zones, immediate tampering notification, and constant communication with the surveillance centre. In certain cases, such as those involving domestic violence, a portable tracking unit can be used by the victim to alert him or her to an offender's approach and enable quick action by the surveillance centre, which can range from a telephone message to the activation of military support. If the conditions of an EM order are violated, the GPS pinpoints the offender's precise location, making his or her apprehension by law enforcement authorities a relatively easy task. In the event of a violation, the offender will be brought before a judge, who will probably revoke the EM privilege and re-establish the offender's prison sentence unless there is a plausible justification for the violation.

Due to the lack of national guidelines to standardize the operationalization of EM, each federation unit adopts its own logic and follow-up procedures for the surveillance centre, which is operated by the National Penitentiary Department in partnership with federal units. In Rio de Janeiro, a private company was selected by a competitive bid to implement the monitoring centre, which is located in downtown Rio de Janeiro and handles all state monitoring cases. There is a prevalence of penitentiary agents on the surveillance centre's team, followed in terms of proportion by employees of the contracted company. Workers trained in social psychology participate in only 35% of the federal units' teams (the Rio de Janeiro team does not include such a participant).

According to the initial law enacted in 2010, EM could be implemented only in the post-trial stage and in the following two situations: house arrest and temporary absences from prison to visit family or participate in courses/work. Permission to serve a sentence under house arrest is authorised by the Brazilian courts only in special cases

relating to physical or mental conditions (i.e., convicts serving sentences in the open regime,<sup>2</sup> persons aged 70 years or older, those suffering from a serious illness, and those who have minor or disabled children or are pregnant). Temporary absences allow inmates who meet the legal requirements (good prison behaviour, as determined by a group of professionals) to leave the penal facility (without direct supervision) to visit their family, attend courses, or participate in rehabilitative activities.

These authorized applications of EM in the post-trial stage have neither reduced mass imprisonment nor prevented entry into the prison system. Instead, these measures have only intensified the surveillance of individuals who were not previously monitored. According to a document titled, “The Implementation of the Electronic Monitoring Police in Brazil” [14], the introduction of EM in the post-trial stage has not contributed to the reduction of incarceration rates because it has basically been used to reinforce oversight of sentence compliance (86.18%).

Indeed, convicts with certain physical or mental conditions already had the right to serve their sentences at home. In this case, EM was introduced solely to increase surveillance. The same is true for the second legal application of EM. Specifically, short absences from prison to visit family and/or work were permitted by law in specific situations. In these cases, EM was introduced to ensure offenders’ return through strict supervision. As noted in the literature, new programs often supplemented rather than replaced incarceration [2, 15].

Because the law has not achieved the desired goal of de-incarceration, various states of the federation, through their agents, are discussing strategies to operationalize EM as an effective alternative to the hegemonic use of imprisonment. The courts, particularly those in Rio de Janeiro, are expanding legal theories and restructuring the punishment system in order to achieve the intended outcomes.

According to Brazilian law, convicts who have served part of their sentences in a semi-open regime and have demonstrated good prison behaviour are permitted to serve the last part of their sentences in an open prison. This system is built on self-discipline and allows the offender to participate in authorised activities during the day (e.g., work, studies, and courses) without any type of surveillance. At night and on weekends, the offender must be confined to a state establishment (i.e., a halfway house).

After the implementation of EM in Rio de Janeiro State, the courts began permitting offenders who are serving their sentences in open prisons to apply for house arrest with EM. This method is generally implemented only in the post-trial stage for offenders who have already completed part of their prison sentences and have shown good behaviour. In addition, the convict should be submitted to an interdisciplinary team (psychologists, psychiatrists, and social workers) that can evaluate whether the candidate fulfils the subjective requirements for release from prison and completion of his or her sentence at home under electronic surveillance.

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<sup>2</sup> In the Brazilian penal system, a custodial sentence should be executed in stages (*downgrading incarceration conditions*), moving from the highest grade of imprisonment (closed facility) to the lowest (semi-open conditions and open prison) in order to gradually reintegrate convicts into society. In closed facilities, convicts are not allowed to leave jail for external activities. In a minimum security facility (semi-open conditions), offenders can apply for authorisation to work, study, or visit family. The open regime is served in a state establishment called a *casa de albergado*, which is similar to a halfway house, where offenders sleep and participate in activities.

Through this seemingly benign interpretation, judges are creating a new penalty regime – house arrest with EM – that does not formally exist in the Brazilian criminal justice system. Judges have offered the following humanitarian and pragmatic arguments to justify their interpretation of the law: overcrowded institutions (the lack of space in halfway houses); consistent guarantees of compliance with the sentence (intensive supervision); and rehabilitative progress through the recovery of social and family ties.

The monitored offenders are able to leave prison and serve the final portion of their sentences at home, using the GPS electronic bracelet 24 h a day, even when they are not at home. The duration of the EM depends on the remaining sentence and thus varies by case. As implemented in Brazil, the house curfew program does not necessarily mean that a person is restricted to a single specific place (i.e., home). Rather, the regime generally allows users to leave their homes for authorized daily activities, such as work, accommodation of a child's routine, sports, and entertainment. The offender must wear the bracelet all day and must adhere to his or her curfew. To be eligible for EM, candidates must accept certain conditions imposed by the judge. The most common legal conditions are: adherence to inclusion and exclusion zones; honouring curfews; recharging the EM battery as needed; submitting to continuous surveillance by the centre; and taking care of the "ankle" to avoid possible damage to the equipment.

This new regime has produced significant results in terms of de-incarceration. In December 2009 (before the implementation of the EM system), a total of 715 convicts in Rio de Janeiro were serving sentences in open prisons, which are meant to house 280 individuals. Five years later (June 2014), the number of convicts serving sentences in open prisons was reduced to 250 and open prison capacity increased to 392 individuals.<sup>3</sup> In contrast, the corresponding rates in states that have not implemented house arrest with EM continue to increase. Even with the exponential growth of incarceration in recent years, the data show that the number of offenders serving sentences in open prisons has decreased, mainly because of the replacement of halfway houses by house arrest with EM. This positive result is reviving academic discussions about the abolition of open prisons, which will likely occur in the near future.

Undoubtedly, these changes will not eliminate overcrowding, because the number of inmates in open prisons represents only a minor segment of the prison population. Nonetheless, they reflect an important shift towards the necessary penal reform that must occur in Brazil. As the data show, EM can be an effective tool to promote de-incarceration if it is used correctly. It is also important to highlight that in 2011, Brazilian criminal law expanded the use of EM for individuals in the pre-trial stage, which can help to avoid the collateral effects of imprisonment on individuals who have not been convicted of crimes.

In addition to numerical statistics and cost/benefit data on EM, it is important to collect feedback from offenders. The offender's perspective will provide additional knowledge regarding the EM system, such as its safety, effectiveness, punitive character, technological problems, constraints, and stigmatisation. Juridical issues, such as

<sup>3</sup> National Penitentiary Department, Ministry of Justice. Integrated System of Penitentiary Information - INFOPEN. Annual Report. Available at <http://portal.mj.gov.br/main.asp?View=%7BD574E9CE-3C7D-437A-A5B6-22166AD2E896%7D&Team=&params=itemID=%7BC37B2AE9-4C68-4006-8B16-24D28407509C%7D;&UIPartUID=%7B2868BA3C-1C72-4347-BE11-A26F70F4CB26%7D>.

human rights violations, are best understood through an assessment of the offender's perceptions. In this regard, the next section will discuss the results of fieldwork research on offenders who were eligible to serve the final part of their sentences under house curfew with EM (HCEM).

## Methodology

Previous research concerning offenders' perceptions of EM and the punitive character of intermediate sanctions has already been documented in past research [16, 17]. The results are contradictory and the findings indicate that offender perceptions may vary depending on a number of factors, such as individual characteristics and personal experiences [18, 19]. The different realities and cultures in which EM is introduced can also influence the offender's perceptions regarding the sanction. In Brazil, few studies have focused on this outlook because EM is a recent phenomenon. Understanding the offender's perspective regarding the EM experience in Rio de Janeiro will demonstrate how the characteristics of a society (e.g., the criminal justice system, geographic factors, and prison conditions) influence the perceptions and implications of EM in the offender's daily life. Examining the offender's perspective will also identify unresolved issues and help to minimise negative outcomes in the areas of public safety, stigmatisation, and individual rights violations.

The current research is based on a case study in Rio de Janeiro that asked specific questions regarding the motivations, constraints, conditions, and expectations of offenders who were serving the final part of their sentences under house arrest with EM. The interviews were based on self-reported questionnaires containing up to 48 items regarding personal information (e.g., ID, age, employment, and educational level) and criminal history (type of offense and prison term), as well as a wide range of questions concerning respondents' views on being monitored. All interviews were conducted in person in a separate room of the Public Defender's Office in Rio de Janeiro.

To collect the data, four visits were made to the Public Defender's Office<sup>4</sup> responsible for cases in criminal court, where offenders receive continuous legal assistance. In total, 52 offenders were interviewed in person on between November 6 and 22, 2013. All respondents were males between 19 and 57 years of age. Prison terms varied from 2.6 to 37 years, mainly for drug trafficking. All subjects served part of their sentences in state institutions (closed, semi-open, or open) before being able to apply for HCEM. The confidentiality of personal data was safeguarded to preserve their individual rights.

The questions were divided into the following three groups: perceptions regarding the restrictive conditions; the surveillance experience; and the punitive character of the sanction. In the first group, respondents were asked if they were previously advised about the legal restrictions involved in EM. This question elicited respondents' comprehension levels regarding EM conditions and their implications for offenders' daily lives. Specific and scaled questions were subsequently asked to measure their comfort level regarding the restrictive conditions. At this stage, respondents could explain

<sup>4</sup> Pursuant to the Federal Constitution of Brazil, the Public Defender's Office is the state agency that provides full and free legal assistance to people who cannot afford legal services. Currently, the Public Defender's Office is responsible for representing most of the prison population in Rio de Janeiro.

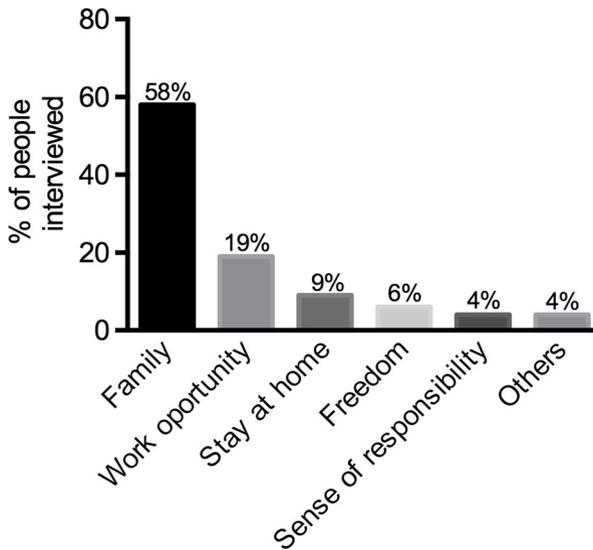
which legal conditions were the most difficult to follow and which were the least invasive in their daily lives. Beyond the imposed conditions, offenders discussed additional restrictions that they imposed on themselves to avoid societal stigmatisation and labelling. With respect to possible indignities, the offenders were asked about the visibility of the electronic apparatus. Regarding the severity of the sanction, the research was designed to measure where offenders place EM on a punitive scale. At this stage, the offenders expressed their opinions about the severity of EM compared to that of halfway houses, community work, and prison. The motivations used to justify their opinions were also collected. The second group of questions addressed the EM experience. First, respondents were asked about their reasons for choosing HCEM instead of the halfway house (which they are free to leave during the day and to which they return to sleep, all without intensive supervision by the EM GPS system). Then, questions regarding their perceptions of potential violations of their individual rights were asked, as follows: a) whether they considered the constant monitoring a significant problem; b) whether they felt that their privacy and intimacy were invaded; c) whether they felt that their homes became prisons; and d) whether they felt that HCEM interfered with their family lives and routines. Their motivations for serving the sentence with HCEM were measured by exploring the following questions: a) whether they felt more motivated serving the sentence through HCEM and, if so, why; and b) whether they thought that being monitored helped to develop a sense of responsibility and self-discipline. Regarding the possible stigmatising effects of EM, respondents were asked the following questions: a) whether they experienced any type of constraint when using the bracelet; b) whether they felt comfortable using the bracelet in public; c) whether they considered the bracelet obvious; and d) whether they experienced technical problems with the EM apparatus.

To present an accurate portrayal of the offender's perspective, certain comments made in response to the open-ended questions were translated and transcribed literally. Additional questions were put to the public defenders to gain a better understanding of the entire criminal process and the main issues concerning monitored offenders. The first author's work experience in the central prison system and the Human Rights Centre of the Public Defender's Office was also important in analysing the responses to open-ended questions. Qualitative findings were integrated with quantitative findings for a more complete description of the EM experience. Fig. 1 was created using GraphPad Prism 6.0 software (GraphPad Software, Inc., San Diego, California, USA).

## **Offenders' perceptions**

### **Perceptions about the restrictive conditions**

In Rio de Janeiro, when an offender meets the requirements to apply for open prison, he/she can also make a written request to replace open prison to house arrest combined with EM. If the request is approved, the offender usually appears in front of a judge, where he/she formally accepts the conditions of the EM regime. During the interviews, the vast majority of the offenders complained about monitoring conditions that are intrinsic to the system, such as home confinement and a strict schedule. They also declared that they were not aware of at least one of the imposed conditions (67%). One



**Fig. 1** Major benefits of EM program

respondent thought that by wearing the bracelet, he would recover all of his freedom. He declared “I thought that by being monitored I would be allowed to leave town without permission” (offender’s declaration).

With respect to the impact of restrictive EM conditions on their daily lives, the data demonstrate that the offenders’ experiences may vary depending on personal characteristics. For example, the prohibition on leaving town without court permission is considered the most disruptive condition for offenders who work outside their villages or whose families are from other states (4% of respondents). For the remaining offenders, this condition does not impact their daily lives. Overall, the majority (73%) consider the home confinement schedule to be the most difficult restriction. According to offenders, strict curfew rules can conflict with their work commitments, affect their social lives, and disrupt their routines. If they arrive home late because of a traffic jam or because their supervisor requested that they work overtime, they could be returned to jail for violating their curfew. Because they must be home by 8 pm, they cannot study or attend mass after work (mass and classes typically end after 8 pm). This specific condition was also deemed problematic in emergency situations: “I failed to comply with the schedule because my wife is pregnant, and if she needs to go to the doctor, I will take her, regardless of the time” (offender’s declaration). Clearly, exceptional situations can be justified in court. However, this process involves going to the Public Defender’s Office (and thus losing a day of work), justifying the violation, and awaiting completion of the legal process to avoid re-imprisonment (or to be released, if the offender was imprisoned for the violation). The strict curfew is the most disruptive restriction from the perspective of the offenders.

Weekend confinement was the second most disruptive restriction (15%). One offender questioned the rehabilitative effect of community-based corrections: “It conflicts with the purpose of rehabilitation. I think excluded zones to be avoided should be established instead of just confining us at home.” Another offender complained as

follows: “We are detained in the same way as in prison” (offender’s declaration). Complaints regarding the loss of offenders’ social lives were also made.

Regarding the duty to recharge the battery, 6% of the respondents considered this restriction to be difficult because of the short battery life: “The problem is that the equipment is low-tech, and the battery loses its charge very quickly. Because of work, it is not always possible to recharge.” According to 84% of the respondents, the least restrictive condition is their appearance in court to justify their activities and sign the newsletter. According to the Brazilian legal system, monitored individuals must justify their activities in court and sign the newsletter every three months. The 16% of respondents who considered this requirement a problem cited economic reasons (e.g., they have no money to get to the court office, they lose a day of work) or time constraints (e.g., because they live far from the court, they do not have enough free time to meet this commitment).

In addition to the legal restrictions and their inherent collateral effects (such as not being able to visit friends on the weekend, not being able to go out at night, or not being able to stay late at work), most respondents imposed additional restrictions on themselves to maintain their privacy or to avoid constraints and stigmatisation.

Because the climate of the region is typically warm and thus the apparatus is visible, the surveyed offenders suffer from more restrictions than necessary. Asked about the ability of others to see the appliance, 81% of respondents considered it difficult to hide because of its size (60%), the type of clothing they wear (20%), and the part of the body on which it is used (10%). In this regard, the offenders made the following suggestions:

“The bracelet is like a watch; thus, if it was worn on the wrist, it would be less embarrassing.”

“The intent is that the public not know about the monitoring, but on the ankle, the monitor is difficult to hide. It should be a watch.”

The stigmatisation effect was also noted during the interviews, with six offenders blaming lost employment opportunities on the electronic anklet. One respondent, after reporting three unsuccessful employment applications, stated that “If I had not commented on the monitoring, I would have gotten the job.”

### **Perceptions about the Surveillance Experience**

Regarding the surveillance experience, the data indicate that 50% of the offenders did not care that they were constantly monitored. Their reasons for accepting the monitoring varied. One respondent said he was used to it and did not consider it a significant problem or an invasion of his privacy (“I am used to it” / “shame is being imprisoned and not being monitored”). Other respondents considered monitoring a necessary stage in the retributive and rehabilitative process (“I am watched because I did something wrong” / “It helps to develop the sense of responsibility” / “It’s a form of confidence that the state provides for those who want to change their lives”). Regarding potential violations of individual rights, 52% of respondents reported feeling that their privacy was invaded, but that they accepted this invasion because they had

no better option (“It is better than being in prison”). Similarly, 70% of respondents viewed EM as a controlling and restrictive sanction.

Regarding the stigmatising effects of wearing the EM anklet, the majority of respondents said that they felt constrained using the electronic apparatus in public (74%). When respondents were asked about embarrassing situations, 71% that they illustrated such incident:

“I was performing an important service and did not want to miss the opportunity. The monitor started beeping too much. My boss asked if it was a phone, and I said yes.”

“Every day that I walk in my community, the police ask me questions because I have an electronic device. They ask me if I have killed any policemen.”

“I was in college, and the unit started beeping in the middle of class. I was very embarrassed.”

“I was wrongly re-arrested for 11 days because the device indicated an inappropriate disruption.”

Many of the embarrassing situations were caused by technical issues. According to the results, 94% of offenders reported operational problems with their devices. The most common problems were the following:

- 1) Equipment failure (10%)
- 2) Signal failure (24%)
- 3) Location error (the device signalled a location that differed from where the monitored person was actually found) (5%)
- 4) The system incorrectly signalled escape (2%)
- 5) The charger stopped working (15%)
- 6) Inappropriate disruption (24%)
- 7) The device beeped improperly (4%)
- 8) The equipment stopped working (4%)
- 9) The name of the offender was incorrect (3%)

### **Perceptions about the Punitive Character of the Sanction**

Previous research suggests that offenders’ perceptions regarding the severity of graduated sanctions will vary depending on different factors, such as the offender’s demographic characteristics or previous punitive experience [17]. In the present study, 100% of respondents had been in jail before entering HCEM. Considering their prior experience, all respondents (100%) considered the EM program less punitive than prison, as the following comments reflect: “You can track me as long as I am away from prison”; “Nothing is worse than being imprisoned”. Even when compared with halfway houses, the EM experience was considered significantly less punitive (96%). In this regard, certain factors can influence the offender’s perception, such as family

ties, educational status, and employment. For example, offenders with stable families and children typically preferred the EM program to halfway houses because they could continue their daily activities in the EM program.

When asked why they preferred EM to halfway houses, the majority cited family and/or better work opportunities. By staying with their families, they gave up some of their freedom: “In the halfway houses, we have more freedom, but we are far away from our families.” Poor incarceration conditions also influenced their choice of house arrest with electronic surveillance: “If the conditions of halfway houses were not so inhumane, I would choose them instead of electronic surveillance.” In contrast, offenders who had lost their social and family ties typically preferred halfway houses because they can be free during the day and are less exposed to the stigmatising effects of the bracelet. One offender who preferred the halfway house commented that “We avoid the curiosity of the people”. Another respondent indicated that some offenders are afraid of returning to their residences because of the type of offense they committed (especially those who live in high-risk areas on the periphery, or *favelas*). A minority of respondents preferred to stay in halfway houses in order to avoid constant monitoring, especially if they believed that open prison conditions were reasonable. Some preferences related to educational status. For example, one individual preferred the halfway house because he was at graduate school and did not want to be labelled a criminal by his colleagues.

Finally, some offenders were not eligible for HCEM and thus remained in halfway houses. To apply for HCEM, an offender must provide proof of a fixed residence. Those who have lost family ties and key links in their social networks suffer from poor economic circumstances or are homeless and ineligible for the EM program.

Compared to community corrections, EM was considered more punitive and controlling by 42% of the offenders (12% of the sample did not answer this question). Respondents considered EM an intermediate sanction between prison and community corrections. The positive outcomes in their daily lives were evidenced by the reported benefits of the EM experience. For 58% of respondents, contact with family was considered the major benefit of the program, as illustrated in Fig. 1. Work opportunities, a sense of responsibility and freedom were also positive motivations for choosing the EM program. Regarding public safety, 81% of respondents were motivated to serve the remainder of their sentences with EM because of the following factors: family, work, freedom, and facilities (see Fig. 1).

## Conclusion

The necessary search for penal alternatives for prison is a highly complex challenge that depends on multiple actions and close coordination within the criminal justice system. The current study demonstrated that EM can be an important tool in the de-incarceration process in the post-trial stage. As the data showed, the implementation of HCEM provides an early release option for individuals sentenced to various terms of imprisonment and reduced Rio de Janeiro's inmate population (in open prisons) by 35% between December 2009 and June 2014. In light of the exponential growth of the Brazilian prison population, EM can be an important instrument to avoid over-incarceration.

In addition to the potential of EM to reduce the prison population, the analysis of offenders' perceptions showed that the use of EM has facilitated personal empowerment, accountability, and the rehabilitation of monitored individuals. As noted in the study, family, work and a sense of responsibility were the main motivations identified by offenders for choosing EM. Regarding the negative consequences of EM, the collected data revealed implementation problems that put offenders into unnecessary embarrassing situations. In Brazil, EM was introduced without a previous pilot project, which resulted in unintended consequences, errors and technical issues that could have been foreseen and avoided.

With respect to the restrictive conditions, the data indicated a lack of understanding among offenders regarding the sanction and its limitations. Although an offender's release order provides information about the imposed restrictions, the majority of offenders stated that they had accepted the sanction (house arrest with EM) without clearly understanding the program's rules, which shows a need for greater awareness among monitored individuals about their duties and rights.

The stigmatisation effect was also evidenced, and offenders imposed additional restrictions upon themselves to prevent or reduce problems in their daily lives. Typical Brazilian weather is another factor that should be considered when selecting the technology and the part of the body on which the electronic apparatus is placed. Stigmatisation is more apparent in warm countries, where shorts and T-shirts are frequently worn instead of pants and jackets. Technical issues and apparatus visibility are also linked to stigmatisation and significantly intrude upon the privacy of monitored individuals. These issues highlight the importance of pilot projects and research to gain a better understanding of the technology and how best to apply it.

With respect to the punitive character of the sanction, offenders considered EM an intermediate sanction between prison and halfway houses. The data also indicated that the majority of offenders considered EM a more positive experience than jail, which means that EM can achieve rehabilitative and punitive functions in a balanced manner when used as an alternative to prison. Empowerment and the development of a sense of responsibility was evidenced in the interviews, in which offenders declared that they felt more motivated to serve the remainder of their sentences and would not risk losing the benefits of EM by trying to escape or abscond from supervision. This revelation demonstrates that EM can also contribute to public safety.

Considering the numerous individual rights violations that accompany life in prison, restrictions on individual rights such as privacy and intimacy appear to be legitimate if the EM device is used effectively to reduce the prison population and the harsh effects of the traditional correctional system. The choice of technology employed and the conditions imposed are also indicative of the appropriateness of the measure. In general, the EM experience in Rio de Janeiro shows positive outcomes and does not seem to be incompatible with fundamental rights, though there are risks associated with the improper and abusive use of EM. By leveraging technological innovation, EM can become a promising tool for the necessary penal reform that must be achieved in Brazil to resolve problems in the penitentiary system. The major challenges will be to contain its indiscriminate application, to support research and pilot projects to avoid unintended consequences, and to measure efforts to implement EM in a balanced manner.

## Compliance with ethical standards

**Conflict of Interest** The authors declare that they have no conflict of interest.

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