Efficacy And Ethicality of Home Electronic Incarceration for Regional Jails

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

Extremely high incarceration rates are urging reform for criminal justice systems in the United States. The NAACP (2023, p. 1) reports that "despite making up close to 5% of the global population, the U.S. has nearly 25% of the world's prison population." Elevated incarceration rates present significant threats to communities by causing the "disruption of social and family networks, diminishing the community's economic potential, and fostering distrust and resentment towards law enforcement" (Stemen, 2017). In most areas around the world, "rates of increase for women behind bars have outpaced men" (Enos, 2017). As indicated in the figure below, mass incarceration results in the deterioration of health, trust, and mental health in communities (Hickson, A., et al., 2022). Reformation efforts such as Home Electronic Incarceration (HEI) or Monitoring (HEM) have made it possible to decrease prison populations among other benefits, but there is insufficient analysis to determine whether HEI methods are worth retaining.

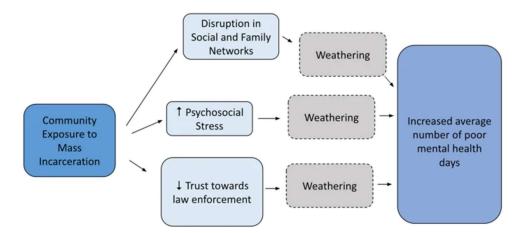


Figure 1. Conceptual Model of Mass Incarceration Effects on Communities (Source: Hickson, A., et al., 2022)

The Albemarle-Charlottesville Regional Jail (ACRJ) system is comprised of Charlottesville City, Albemarle County, and Nelson County. The jail system also supports the University of Virginia Police Department and the Blue Ridge Juvenile Detention Center. The Albemarle-Charlottesville area justice system is experiencing an "over-reliance on incarceration, which has exacerbated the spread of COVID-19 behind bars" (Fair and Just Prosecution, 2020). United States jails and prisons have been responsible for 661,000 cases of COVID-19 being documented since the pandemic's outset (Samuelson, 2021). Virginia state officials were encouraged to adjust release criteria to enable HEI practices to exist for those inmates at higher risk for disease or nearing the end of their sentence (Clarke, 2020). These unusual circumstances enabled by the Covid-19 pandemic encouraged criminal justice communities, such as the ACRJ, to implement HEI methods as a means of lessening disease risk (Dornfeld, et al., 2023). Improvements to the system exceeded original expectations with "benefits [extending] to both inmates and to the community" (Cleary, 2021) and now, criminal justice communities are tasked with discerning the efficacy of HEI technology as a means of structural reform. With the electronically confined population only increasing in recent decades (Pew Charitable Trust, 2016), analysis surrounding HEI and its efficacy is crucial. The goal of this research paper is to assess the viability and ethicality of Home Electronic Incarceration (HEI) as a reformative solution within the criminal justice systems of the Albemarle-Charlottesville area.

Case Context

The project encompasses providing quantifiable recommendations in support of HEI efforts to address high incarceration rates and minimize jail operating costs, resulting in improvements to mental health wellbeing for incarcerated individuals and influencing successful reintegration into

communities. Data include reports and observations studies obtained from jail visits, interviews with jail personnel and police officers, and relevant academic case studies maintained by various institutions or organizations. In cooperation with the University of Virginia Hospital, Virginia Department of Behavioral Health and Developmental Services, and the Region Ten Community Services, the project has the potential to impact Charlottesville regional communities and the greater central Virginia region. Not only do ACRJ incarcerated individuals comprise those involved, jail staff members, judicial system personnel (CCJB, BJMHS, JACC, R10), civil service workers, incarcerated peoples' families, victims of crime, and the greater Charlottesville/Albemarle community are all significant entities within the scope of this project. Certain technical constraints affect both judicial decision-making and data analysis such as regional, state, and federal regulations, case-specific technicalities (acceptability of HEI from the victim), jail budgeting, and the technological capabilities of the HEI devices.

Existing technology in the realm of electronic monitoring is reliant upon varying contextual factors, offenders' individual characteristics, and the way electronic monitoring (EM) is applied. These dynamic elements collectively determine whether EM serves as a tool for control and punitive measures, or if it genuinely provides a viable alternative to traditional incarceration. As highlighted by Richter et al. (2021), the dual potential of EM to serve as either a punitive measure or an incarceration alternative center on the specific implementation and administration within individual cases.

EM devices utilize advanced technology that relies on GPS and cell tower signals to provide precise location data. Remarkably, some EM devices have the capability to detect blood-alcohol levels through the analysis of an individual's sweat, as detailed by Anderson (2014). This convergence of technology and methodology highlights the adaptability of electronic monitoring

in modern criminal justice systems. The court systems play a crucial role in determining the extent of restrictions imposed on individuals through electronic monitoring devices. Authorities have the power to mandate that individuals "reside in a specified place" (US Courts, 2023). These devices pose technical risks primarily associated with the potential malfunction of the GPS system. The data generated by the devices are transmitted, collected, and examined by ACRJ personnel. The primary function of these devices is to continuously pinpoint and monitor individuals placed under house arrest. The goal and context of this study is to examine the ethical dimensions and viability of HEI, as it is a device that already plays a major socio-technical role in regional jail systems.

Socio-Technical and Ethical Perspectives

Much of the controversy against the practice of HEI on a larger scale can be attributed to a threat to the public and financial costs. Common positions are that "spending even significant amounts of money to incarcerate offenders who pose an ongoing threat to public safety is almost always justified, and saving money is never a sufficient justification for otherwise unjustified releases from prison" (Newburn, 2023). Other arguments in favor of HEI due to lessened recidivism, or the likelihood of an offender 'reoffending,' which is referred to as the recidivism rate. Recidivism rates are "measured by criminal acts that result in rearrest," and are often coincided with incapacitation rates, specific deterrence, and rehabilitation (NIJ, 2023). Many studies acknowledge that "recidivism and escape rates" are lower for those in HEI programs as opposed to standard jail time (Esteves, 1990). In addition to these facets of financial concerns, recidivism, and escape rates, the humanitarian perspective

tends to lean towards HEI where offenders can be effectively integrated into their communities.

One approach to understanding the connections between humans and technology is Thomas Hughes's theory of technological momentum. As defined by Hughes (1987, p. 76), technological momentum occurs when "technological systems acquire momentum" and starts to "possess direction, or goals." A significant aspect of technological momentum is the concept of technology transfer, which can be defined as the system being transferred to another environment to adapt to that setting's factors. During the COVID-19 pandemic, significant steps were taken to decrease the number of individuals in jail systems such that the spread of the disease was contained. One of the adjustments made to the ACRJ system by Superintendent was "to place any non-violent inmate with an active sentence of thirty (30) days or less remaining on Home Electronic Incarceration (at no cost to the inmates)" (CBS19news, 2020). The challenge of transferring the HEI system to a more inclusive, COVID-19 mitigating approach illustrates the concept of technology transfer. Another approach connecting humans and technology is Hughes's concept of reverse salients as components of a technological system. Reverse salients are components in the system that have "fallen behind" or out of sync with the rest of the system (Hughes, 1987, p. 73). In the context of prison maintenance, reverse salients become evident as certain aspects of the prison system have become outdated yet persist as the system expands. For instance, the continued use of capital punishment to manage prison populations is a component of the past when comparing practices in peer countries. Carol and Jordan Steiker highlight the historical roots of capital punishment stating it "was an essential part of maintaining the slave economy" (2020). Today, however, the United States faces international "criticism" and "pressure" regarding its retention of the penalty as others have abolished it in their transition to

the modern era (Steiker & Steiker, 2020). Despite complex reasons for the penalty's persistence in the U.S., the practice conflicts with principles of rehabilitation and ethical treatment of prisoners. This emphasizes the need to consider prison ethics within the broader socio-technical framework.

Angela Davis, in her book on prison ethics, addresses the ethical dilemmas associated with the intersection of the criminal justice system and quality of human life. In her book, Davis highlights the archaic nature of prison sentencing, emphasizing its historical basis in labor valuation, which was "computed in terms of time" (p. 44). This critique emphasizes the antiquated system of punishment still prevalent today. With her framework, alternatives to serving time in a traditional prison might include diversion programs, electronic monitoring, and rehabilitation programs (Davis, p. 57). By embracing such alternatives, judicial systems can shift away from outdated punitive measures towards realistic solutions that will serve communities more effectively. A high quality of life for an incarcerated individual is not something that needs to be excluded or compromised, especially if the goal is to rehabilitate rather than punish. Davis suggests that these shifts have the potential of "getting at some of the roots of crime" and therefore being more effective long-term (Potier, 2003). Quinn & Holman support HEI as a contribution to the public because it serves as an alternative to revocation, potentially alleviating correctional facility overcrowding. Evidence cited from a study depicting electronically monitored home confinement used almost exclusively as a sanction for offenders describes these systems as "viable case management device[s]" and that they "ameliorate[s] anti-social behavior" (Quinn & Holman, 1991). This supports the argument that electronic forms of incarceration have the potential to function as managers of rehabilitating offenders and alleviate concerns of correctional facilities becoming overcrowded.

Research Question and Methods

Acknowledging the undeniable technical and social concerns related to this topic, I feel prompted to ask the following: Does HEI improve or exacerbate problems within the criminal justice system? Does HEI improve or exacerbate the pre-existing ethical dilemmas underlying prison reform? Addressing these questions regarding HEI's impact on the criminal justice system and ethical dilemmas underlying prison reform will involve these steps: stakeholder involvement, data collection, data analysis, impact assessment, ethical considerations, and reporting recommendations. The research project team will engage various stakeholders including the jail staff members, judicial system personnel (CCJB, BJMS, JACC, R10), and police officers through interviews, ride-alongs, and surveys to draw qualitative insights. Data collected will encompass observational studies, interview transcripts, and academic case studies. Additional data will be explored from government regulation findings, jail budgeting analyses, and yearly crime trend reports (OAR JACC, 2023). As discussed by Rappert and fellow authors, the use of digital forensics requires a balance between investigative efficiency and maintaining individual rights and privacy (2022). Therefore, resulting data analysis and potential system recommendations will be treated and presented with the utmost respect and sincerity due to privacy considerations and substantial amounts of digital data being converted into legitimate evidence for law enforcement. The research steps will be framed according to Thomas Hughes' theory of technological momentum and Angela Davis's review of prison ethics. In doing so, the research will demonstrate that HEI can be adapted to various prison environments, and it can contribute and sustain public preferences and values. By critically analyzing data on program outcomes, participant experiences, and ethical considerations, this study contends that HEI

represents a viable and ethical solution to address the challenges posed by high incarceration rates, benefiting both incarcerated individuals and society.

Methods

The methodology employed in this analysis will involve a qualitative examination of various groups' perceptions and experiences concerning home electronic incarceration. While using incarcerated individuals as study subjects might offer valuable insights, ethical and practical concerns surrounding privacy and feasibility make it an impractical approach. Therefore, consultation groups include jail staff members, civil service workers, and judicial system personnel through case studies and interviews. This diverse range of perspectives will provide a comprehensive understanding of the topic under investigation. To support research findings, relevant research papers will be incorporated as supplemental evidence. Ethical considerations have been carefully weighed throughout the research process, guided by a pragmatic and deontological approach. Measures such as ensuring confidentiality, addressing potential conflicts of interest, and obtaining informed consent have been addressed with relevant stakeholders. Acknowledging the limitations inherent in the sample size, confined to the Charlottesville-Albemarle community, efforts will be made to avoid generalizing findings to other communities. Furthermore, the ethical analysis and framework advocate for efficacy through political rationality and technological momentum, aligning with the overarching goal of promoting ethical and effective practices within the criminal justice system.

Results

The integration of HEI systems within correctional facilities has demonstrated significant efficacy in aiding rehabilitation efforts. Research indicates a reduction in recidivism rates among inmates on HEI, especially for low-risk offenders. The application of HEI for female offenders addresses the unique challenges women face in judicial institutions and poses a viable solution in mitigating abuse. Lastly, HEI offers promising solutions to improving the quality of life for incarcerated individuals while also indicating financial viability. It ensures the ethical treatment of individuals and prioritizes rehabilitation over punitive practices. Therefore, the adoption of HEI represents a progressive step towards modernizing practices within the criminal justice system.

HEI Aids Rehabilitation Efforts

Firstly, HEI helps jail systems move away from outdated punitive systems towards more rehabilitative practices. Findings from the ACRJ suggest that HEI supports rehabilitation efforts in that it reduces recidivism (Kumer, 2023). ACRJ superintendent Martin Kumer suggests this is true for many offenders and research tends to support this notion. According to one research study conducted in Sweden, "intensive supervision combined with EM has a significant impact on reducing reoffending (compared to control groups which had less impact)" (Marklund and Holmberg, 2009). The study relates to those inmates who are 'post-trial,' meaning they are using EM to fulfill the rest of their sentence. Not only does research suggest that offenders are less likely to reoffend when using HEI systems, but HEI as a rehabilitation assistant supports the reintroduction of offenders into their respective communities. An interview was conducted with the ACRJ's Case Manager who is significantly experienced with a survey instrument nicknamed COMPAS which stands for Correctional Offender Management Profiling for Alternative

Sanctions. The tool contains "offender information specifically designed to determine their risk and needs and inform dynamic case plans that will guide the offender throughout his or her lifecycle in the criminal justice system" (Department of Corrections, 2024). In the interview, rehabilitation efforts are noted to be most effective for low-risk offenders, or those who do not have a violent criminal history, few arrests, and fall under an age category at the time of arrest (Hensley, 2024). HEI is highly effective for these groups because incarcerated individuals who are low risk are less likely to be associated with high-risk offenders in jail which tends to encourage further crime (Hensley, 2024). Using Davis's ethical framework, implementation of HEI systems in jails is a practical solution focusing on the long-term goals of reducing recidivism and facilitating successful reintegration into society. In a systematic review of the efficacy of HEI of offenders, it was found that some individuals "have been shown to benefit from more contact with family members" (Belur et. al. 2020). Additionally, feedback from offenders indicated the powerful influence of social interaction (Belur et al. 2020). This approach promotes effective rehabilitation efforts and overall improvement of community safety. Furthermore, it supports the perspective that HEI is ethically sound as it raises questions about fair treatment of offenders, inherent rights of individuals within the criminal justice system, and it emphasizes the importance of just treatment of inmates. With this approach, HEI moves us away from the outdated components of the jail system and more towards Davis's ethical ideal for prison systems that are motivated towards rehabilitating individuals.

HEI for Female Offenders

Another point of contention in support of HEI is the discussion of female offenders. Tammy Shiflett, from the Charlottesville Police Department, describes crime in Charlottesville as continually going up (2023). Shiflett notes that more women are committing crimes than she has

ever seen in her career of more than twenty years (2023). This is supported by other sources such as a study conducted by The Sentencing Project depicting incarcerated women and girls. According to the study, "Between 1980 and 2021, the number of incarcerated women increased by more than 525%, rising from a total of 26,326 in 1980 to 168,449 in 2021" (Monazzam, N, & Budd, K., 2023). Additionally, the Bureau of Justice Statistics cites, "female prison populations have increased more rapidly than male populations" (2005). "Female offenders have different problems to deal with than male offenders. Six out of 10 female offenders in state prisons have sexual or physical abuse in their past." (Van Voorhis and Salisbury, 2016, p.8) Implementation of HEI for female offenders can only decrease the likelihood of sexual or physical abuse for women in jails as it decreases female populations. This dilemma also demonstrates Hughes' concept of reverse salience as components of the current jail system are inadequate and outdated for female needs. With rises in population and instances of abuse, jails cannot meet the needs of female prisoners soon enough. HEI presents a valuable solution for incarcerated women in that it promotes a higher quality of life and HEI technology can be effectively transferred to female user's home environments. According to Cindy Jo Gibbons from the ACRJ, HEI is a "phenomenal program" for women (2024). She shared that "one woman was on HEI serving a 2year sentence and was able to take care of her mother, maintain a relationship with her husband, connect with her children, and further her career" (Gibbons, 2024). Davis's ethical framework for prisons aligns with this perspective, as it aims to mitigate abuse and address gender-related challenges, promoting positive outcomes for incarcerated women. As female populations in jails continue to increase, implementation of HEI devices continues to provide an ethical solution in promoting the ethical and effective practices of the criminal justice system. HEI demonstrates

Hughes' concept of reverse salients where the outdated components of the system transition towards a more ethical and rehabilitative approach that supports incarcerated women.

Financial Viability of HEI

After numerous visits to the ACRJ, it has become ever so clear that HEI provides a financially viable alternative to incarceration at the jail facility. Observational findings depict the jail as lacking in amenities, living conditions, and healthcare. These findings include but are not limited to the following as indicated in the table:

Table 1

Observational Data from Albemarle-Charlottesville Regional Jail, Sept 19, 2023

Category	Observation	Conclusion	Ethical	Potential HEI
			Benefit/Concern	Cost Benefit (to State)
Amenities	Basement kitchen utilized for	Budgetary	Concerns over	Users provide amenities
	bread baking due to cost-	constraints impact	adequate nourishment	which are monitored by
	saving measures; limited	meal provision	for inmates	program; zero cost
	inmate outdoor time			
Living Conditions	Cells are small with poor air	Challenges exist in	Concerning lack of	Living conditions are user's
	circulation; absence of dining	providing basic	quality in living	residence; zero cost
	area; inmate complaints about	comforts and	conditions and	
	temperature regulation	facilities	facilities	
Healthcare	On-site medical professionals	Inadequate medical	Concerning lack of	Health care services vary
	limited to basic tasks; budget	attention due to	adequate medical care	and provided by user; zero
	constraints hinder	budget limitations	for inmates	cost
	comprehensive care provision			

Observations gathered from the ACRJ visit in September 2023 indicate severe budgeting concerns. According to jail officials, HEI's original purpose was for contamination concerns because of the pandemic but has since continued as a means of saving money (Kumer, 2023). While HEI has not been verified to be a long-term economic solution at the ACRJ location, Superintendent Kumer suggests that the ACRJ anticipated HEI device shortages across the country prior to the pandemic (2023). Since then, Kumer has seen an increased reliance on alternative forms of incarceration and monitoring (2023). This trend suggests that communities may increasingly view HEI as an effective solution, despite the lack of research into its economic viability over time. Applying Angela Davis's framework on prison ethics, HEI is an effective solution for addressing financial challenges faced by correctional facilities. It not only enhances the quality of life for incarcerated individuals by prioritizing rehabilitative approaches over punitive ones but also offers a potential solution to the existing emphasis on punishment in jails. By alleviating financial pressures on jails, HEI technology facilitates a shift toward more effective and humane correctional practices.

Discussion

This study aligns with theories advocating for criminal justice reform, especially that of Angela Davis. It contributes to discussions about treating incarcerated individuals humanely and helping them reintegrate into society, a topic that nations globally continue to address. A United Nations resolution in 1990 emphasized that prisons should ensure the safety of inmates and society, promoting the well-being and development of all members (OHCHR). The concept of Humane and Effective Incarceration (HEI) aligns with broader theories of humane treatment and advancing societal goals by extending beyond the confines of the prison system.

Potential limitations with this study include its focus on a specific community and the qualitative nature of the analysis, which may impact generalizability and depth. Future research could address these limitations by expanding to diverse communities and employing quantitative methods for an extended period. Another limitation relates to the technological complexity of HEI. Without a comprehensive understanding of the HEI device and firsthand with its capabilities, there is a risk of misinterpreting or overestimating its functionality.

Moving forward, it would be useful to explore the ethical implications of prison systems more broadly. Angela Davis's analysis of outdated prison systems has significantly shaped my understanding of their underlying motivations: punishment versus rehabilitation. Investigating the current rehabilitation capabilities of prison systems and comparing them with those of other related systems worldwide would be valuable. Additionally, while I did not have the opportunity to engage with attorneys during this study, doing so in future research endeavors would further strengthen my arguments.

This research informs my engineering practice by emphasizing ethical considerations inherent in complex systems. It stresses the importance of responsible engineering practices that prioritize social impact and ethical principles. Integrating these practices into engineering practice can contribute to the development of equitable solutions that promote justice and rehabilitation within the criminal justice system, ultimately advancing societal well-being.

Conclusion

In conclusion, this study examines the effectiveness and ethics of Home Electronic Incarceration (HEI) programs in addressing high incarceration rates. HEI proves to be a viable solution,

reducing recidivism and supporting the reintegration of low-risk and female offenders into society. Despite ongoing debates about its long-term economic impact, HEI offers a financially viable alternative to traditional incarceration. This research emphasizes the importance of prioritizing rehabilitation and community integration in criminal justice practices. It calls for policymakers, criminal justice personnel, and researchers to consider the ethical implications and effectiveness of HEI programs across diverse populations and regions. Ultimately, embracing alternatives like HEI can lead to a more humane and equitable criminal justice system, shifting focus from punishment to rehabilitation. By promoting ethical practices and prioritizing the well-being of incarcerated individuals, we can work towards building a more just society for all.

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