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Punishment and survival – incarcerated persons' experiences with extreme heat in Texas prisons

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Abstract

Purpose – The impact of extreme heat on prisons and carceral facilities is becoming increasingly visible, yet remains overlooked by scholars, practitioners and policymakers. Prisons are a unique type of infrastructure designed to severely limit and control the movement of hundreds and even thousands of individuals as a form of punishment. This leads to many significant challenges to mitigating the risk of heat-related illness in prisons and other carceral spaces that have remained overlooked across many disciplines including emergency management, disasters, corrections and public health.

Design/methodology/approach – For this study, we analyzed 192 surveys from incarcerated persons in state prisons throughout Texas to understand how incarceration and the punitive prison environment create challenges to managing extreme heat in prisons.

Findings – We found that characteristics of modern incarceration, including communal distribution of resources, crowded conditions and a lack of agency for incarcerated people, create barriers to accessing resources during periods of extreme heat. Furthermore, the punitive nature of the prison environment as manifested in the relationship between staff and incarcerated persons and certain prison policies also create barriers to incarcerated persons accessing resources to reduce their risk of heat-related illness and death.

Social implications – These issues are particularly relevant to the health and safety of incarcerated persons during periods of extreme temperatures but also speak broadly to the implications of incarceration, disaster risk, and the advancement of human rights for incarcerated people.

Originality/value – This article addresses a gap in the literature by including the perspectives of persons incarcerated in Texas prisons experiencing extreme heat and implicates the characteristics of incarceration and punishment in the production of disaster risk.

Keywords Prison, Disaster risk management, Heat wave, Human rights, Disaster and emergency management

Paper type Research paper

Introduction

The impact of extreme temperatures and other hazards on carceral facilities is becoming increasingly visible. Extreme heat is impacting prisons across the world, especially those that do not have air conditioning or other temperature regulation (Holt, 2015; Archer, 2022; Skarha *et al.*, 2022; Cheung, 2023). Prisons are designed to severely restrict the movement of

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hundreds and even thousands of individuals as punishment. This creates significant emergency management challenges for managing extreme temperatures for incarcerated persons. Incarcerated populations are disproportionately from racial and ethnic minorities and communities with diminished access to educational and economic opportunities (Wacquant, 2016; Clear and Frost, 2015; Alexander, 2012). The incarcerated have disproportionately high rates of disabilities for which they often do not receive adequate care (Maruschak *et al.*, 2021; Wilper *et al.*, 2009). Mental illness is disproportionately high among incarcerated persons, while support and treatment are extremely limited (PRI, 2022; Fazel and Seewald, 2012). Previous research has identified the vulnerability of incarcerated persons to extreme heat; however, none have examined the role of incarceration itself in managing the impact of extreme heat within prisons. Prison systems are complex as policies and practices vary from nation to nation. Prison systems around the world are struggling to manage the impact of extreme heat among incarcerated people and prison staff (Cheung, 2023; Archer, 2022; PTI, 2010). This study focuses on the experiences of incarcerated people in the USA state of Texas, a state that has become a flashpoint in the USA for how states manage and respond to heat crises. We analyzed 192 surveys from incarcerated persons in state prisons throughout Texas to understand *how incarcerated persons experience extreme heat in the prison environment and how incarceration and the prison environment determine their experience with accessing resources and taking protective action*. Our results have significant implications for climate justice and understanding how incarceration produces disaster risk for marginalized people.

Literature review

Managing hazards in prisons

There are nearly 11 million persons incarcerated in prisons and other penal institutions globally (Fair, 2022). The USA has the highest rate of incarceration among all nations at 583 per 100,000 persons and more than 1.9 million persons incarcerated (Sawyer and Wagner, 2024). The rate of incarceration is even higher in Texas, where 219,000 persons are incarcerated at a rate of 840 per 100,000 persons (PPI, 2024). Prisons are uniquely vulnerable to hazards, and their presence in communities contributes to disaster risk for incarcerated and free populations (Purdum *et al.*, 2021; Purdum, 2019; Schwartz and Barry, 2005). Prisons are typically large institutions which detain and severely restrict the movement of hundreds and often thousands of people as punishment. Prisons have often been built without consideration of local hazard risk (Gaillard, 2012; Freeman, 1996). Prisons built in rural areas may experience limited access to emergency response and management resources compared to more urban communities (Straub *et al.*, 2020). They typically operate as their own "little towns," which allows them to remain highly autonomous within communities but also to maintain distance from accountability from the public (Maur and Chesney-Lind, 2002).

Incarcerated people are particularly marginalized in disaster management. They cannot take similar protective actions when exposed to hazards similar to free people. As Schwartz and Barry (2005) described, "Prisons are not like other public agencies. They are responsible for the safety of large numbers of individuals who are usually locked up and cannot protect themselves in many emergency situations" (p. 3). Instead, incarcerated people must fully rely on prison administration leadership, policy and staff to have their needs met and their rights protected (Purdum, 2019). Incarcerated people are significantly stigmatized in disaster processes, as they are primarily perceived through the lens of a threat, regardless of the context (Chmutina *et al.*, 2022; Purdum, 2019). With fewer worker protections, incarcerated people are exploited for their labor in disasters (Purdum, 2023; Purdum and Meyer, 2020; Goodman, 2012).

Extreme heat and incarcerated people

Exposure to extreme temperatures is expected to increase with climate change (Mukherjee and Mishra, 2021). Rising temperatures have had a profound effect on human health (Madrigano *et al.*, 2018). Heatwaves have been found to negatively affect mental health and extreme heat has been linked to increased rates of suicide among incarcerated persons (Liu *et al.*, 2019; Gao *et al.*, 2019). Incarcerated persons are particularly vulnerable to the impacts of extreme temperatures due to high rates of physical and mental health vulnerabilities. Prisons in the United States of America, like hospitals and schools, have been primarily constructed with concrete, which traps and retains heat (Beiser, 2019; Kessler, 2000). In 2022, *USA Today* reported that 44 of the 51 states in the USA did provide air conditioning in all of their prisons (Santucci and Aguilar, 2022).

This issue is not restricted to the USA, as incarcerated people and carceral staff suffer from heat-related illness around the world (HRW, 2022). During heatwaves in France in 2019, prisons would "distribute fresh water free of charge, increase surveillance of particularly vulnerable prisoners (the elderly, pregnant women, etc.)" and "extend the duration of walks and facilitate access to medical services" (Campistron, 2019). Incarcerated persons in Russia were given electrical fans during heat waves in 2010 (PTI, 2010). In July of 2022, the UK Ministry of Justice issued guidance to prisons to identify the vulnerable incarcerated people, work to minimize exposure to heat and offer fluids and fans (Archer, 2022). Hong Kong prisons responded to extreme heat by installing large fans and painting some facilities with reflective paint in 2023 (Cheung, 2023). These examples serve to show that prisons in the USA and around the world have typically worked to manage the impacts of extreme heat on incarcerated people in similar ways due to similar characteristics of imprisonment.

Extreme temperatures in prisons and climate justice

Prisons and other carceral spaces and systems facilitate exposure to a variety of climate hazards (Gribble and Pellow, 2022; Purdum *et al.*, 2021; Opsal and Malin, 2020) while also contributing significantly to global greenhouse gas emissions (McGee *et al.*, 2020). Addressing the impact of extreme heat and other climate-related hazards in prisons is a significant issue of environmental and climate justice (Purdum *et al.*, 2022, 2021; Pellow, 2019). The overwhelming majority of incarcerated persons in the USA and around the world are racial and ethnic minorities (Lugalia-Hollon and Cooper, 2018). Incarceration rates for indigenous people are disproportionately high across the world, but their experiences are often erased within carceral systems (Weatherburn, 2014). Recent scholarship has established a strong relationship between incarceration, disasters and racial capitalism (Purdum, 2023; Pellow and Montague, 2022). Like with other hazards, we see how the impacts of extreme heat on incarcerated persons reflect environmental racism and are being increasingly centered by climate justice scholarship and activism (Pellow, 2019).

Methods

Texas prisons and the survey instrument

The majority of Texas prisons do not have air conditioning in their facilities. In 2019, 75% of Texas prisons did not have air conditioning in housing areas. The Texas Department of Criminal Justice (TDCJ) emergency protocols for heat mirror those of other prisons in the USA and around the world including expanding access to water, showers and access to limited isolated cooled areas within the prison (TDCJ, 2018). The data for this project include surveys collected by the Texas Prisons Community Advocates (TPCA), which collected the surveys from incarcerated members of their organization to better understand how they were experiencing extreme heat and TDCJ's related policies. The TPCA shared the surveys with

the research team through a data sharing agreement. The surveys in this analysis were filled out by incarcerated persons in Texas between the fall of 2018 through the end of 2019. The TPCA mailed the surveys to the incarcerated persons who had signed up to be on their organizational mailing list. Furthermore, any family member or community member could download a survey and mail it to their incarcerated loved one who would then mail and return it to the TPCA from their prison unit. Incarcerated persons would also frequently write to the TPCA and request surveys for themselves and to share with their fellow incarcerated persons in their prison unit's network. The surveys did not ask for any demographic information or personal identifying information but did include their names and TDCJ numbers. In total, 86% of the participants were housed in male units and 14% were housed in female units. One participant identified as a transgender woman in an answer to a survey question.

Analysis

We conducted a content analysis of responses to a select number of open-ended qualitative questions included in the survey ($N = 192$) that were selected for this paper, as they describe incarcerated persons' experiences with the TDCJ emergency management policies for extreme heat during their incarceration in Texas prisons. The completed surveys were shared with researchers at Texas A&M through a data sharing agreement between the research team and members of TPCA's leadership. Surveys were scrubbed of this information and any other identifying information. Qualitative research in disasters has been invaluable, especially in engaging with previously unexplored phenomena (Phillips, 2014). First, two members of the team performed open-coding on responses using Atlas.ti software to identify emerging basic themes. The team members then performed selecting coding of the data in relation to those themes to connect the patterns with larger concepts (Charmaz, 2001; Strauss and Corbin, 1990). After each step, the two coders met to review themes and patterns to affirm inter-coder reliability. Answers to the questions were short, typically in two to three sentences, because the space to answer the questions was limited. Some of the responses seem abbreviated by participants in their nature due to this need to conserve space to get as much information in the short space available. This paper focuses on the responses to five qualitative questions by incarcerated persons who describe their access to certain resources and the quality of those resources. The questions asked about incarcerated persons experiences and access to water, showers and cooled respite areas.

Results

The analysis of the qualitative questions related to incarcerated persons' experiences accessing resources meant to mitigate their individual risk of heat-related illness revealed several themes in relation to how incarceration and the prison environment affect incarcerated person's ability to take protective action: (1) resources are primarily distributed communally, leading to scarcity of resources and poor quality of resources when accessed; (2) the punitive environment, meaning resources could be withheld out of punishment (3) and an overall lack of power and agency for incarcerated persons.

Communal distribution of resources and crowded facilities

Prisons are congregate spaces where many people live in dormitory-type areas or cell blocks with a smaller number housed in isolation (death row, solitary confinement and/or administrative segregation). Prisons are already known for having a scarcity of resources, including those considered basic for sustaining life such as potable water, food and healthcare due to a lack of investment and crowded conditions (Dolovich, 2022; PRI, 2022). Resources that

the prison provides are primarily distributed communally and incarcerated persons are expected to share those resources. In the context of Texas prisons' emergency protocols, this primarily includes access to water and ice, showers, cooled areas within the prisons, commissary items for purchase (fans, cooling shirts and towels and electrolyte drinks) but also the time and attention of staff (TDCJ, 2018). The following section discusses incarcerated persons experiences with communally distributed resources and crowded facilities.

Overcrowding and scarcity of quality resources

Participants described how their access to communally distributed resources like water, showers and cooled respite areas is impeded not only by the high demand for the resources but also by the crowded nature of the facilities. For example, when incarcerated persons are not confined to their cells, they have to access water from a communal water cooler. Yet participants described that the coolers consistently run low or empty due to the extreme demand and the large number of people relying on them. One participant commented, "They refill coolers every 2 or 3 hours. But with over 100 inmates drinking, they never stay full more than 20 minutes." Another described how this means they are constantly waiting for water in the prison units, "They keep one cooler for water in the dayroom. As soon as it's filled, it's empty. Then it's all about waiting for the next fill-up."

On any given day, the shower infrastructure in prisons is under significant pressure due to the large amounts of people using them. One participant commented, "Even though most showers work, one shower for 48 inmates is not enough," while another participant commented, "One cold shower for 53 people. We are sometimes told by officers we can't shower at all [. . .]," meaning they may not access showers for their required minimum once a day shower, let alone an additional shower to cool down. Participants described the same challenges with respite areas as other resources like water and showers of having to share the space with so many other people, "The hair cut area [barber shop] is too small and the area in the chapel area . . . is not enough large enough space for a lot of people to gather in." Crowded units and scarce communal resources mean incarcerated persons cannot consistently access them, even though policy states they are to be available to prevent heat-related illness and death among the incarcerated.

As incarcerated persons experienced a scarcity of communal resources due to crowding, they also experienced diminished quality of those resources. When access to a shower must be shared, especially among so many people, this can lead to incarcerated persons not only having fewer showers but also shorter, less effective showers. One participant commented that they are able to shower once a day for about "30 s." Another described that showers for them are, "Once [a day] and its walk in, walk out." Sharing a water cooler in common areas not only meant that they would have less access to water but also that they could not prevent others from contaminating that water quality. One participant described how officers handing ice out would contaminate it by using their hands to pass it out, "it gets roaches crawling all over the white buckets they use to pass it out and the officers stick their dirty hands in the water." Others described their fellow incarcerated persons sometimes doing this to access the coveted ice within coolers. Participants reported the igloos that water is distributed out of are rarely cleaned, if at all, "We have igloos [coolers] with ice and water but they are not cleaned and a lot of time have dirt and hair in it." Water quality is a significant concern because incarcerated persons may not want to drink the water, even to reduce their risk of heat-related illness, because it's visibly contaminated. This is particularly important because dehydration significantly increases the risk of heat exhaustion (El-Shafei *et al.*, 2018).

Surviving extreme heat in a punitive environment

Lockdowns. Incarcerated participants described how unit lockdowns [1] led to restricted or total cut off of resources during periods of extreme heat. Access to water, showers and cooled respite areas is structured in communal areas. Lockdowns negate access to those spaces. One participant commented, "Frequently they will not distribute the water during lockdown periods." However, it is possible that incarcerated persons may have access to water in their cell through a commonly used sink and toilet combination appliance. Yet it is unclear how prevalent they are. During lockdowns, water supply may even be purposefully shut off, meaning there is no access to water (Key, 2017). Showers were described as unavailable during lockdowns. One participant commented they could shower day to day "unless [there is a] lockdown for shortage of employees or shake down." [2] If participants request access to respite or to get a cool shower, officers may deny them if they are upset during the lockdown. One participant commented that, "officers get upset during unit lockdown [. . .] and no longer allows us respite areas." This means that incarcerated persons are cut off from the resources that are primarily used by the prisons to mitigate the risk of heat-related illness.

Segregation and restrictiveness of custody levels. The TDCJ policy does not mention that any specific classification of incarcerated persons may be denied or have restricted access to any of the resources described in the policies. However, obvious restrictions are present such as those confined to administrative segregation and/or solitary confinement or to severely restricted areas like death row. Unlike other incarcerated persons, those on death row are "recreated individually" and live "separately in single-person cells, with each cell having a window," meaning they do not have access to communal spaces or communal resources (TDCJ, 2023a). It is unclear how prisons distribute resources to those on death row or those confined to solitary confinement. TDCJ's policies also place restrictions on certain levels of incarcerated people to prevent them from purchasing commissary items including those meant to reduce risk of heat-related illness like fans, water bottles, cooling shirts and cooling towels. Access to the commissary may also be restricted if you have a medical condition or as punishment (TDCJ, 2023b; TDCJ, 2018).

Access to resources can also be restricted arbitrarily based on an incarcerated person's custody level [3] or perceptions of their crime. One incarcerated commented, "I was denied because I was G4 by Sgt. [redacted] and that respite was full," [4] while another commented they were denied access to respite because an officer told him they were "running medium custody only." Participants described how if they were in more secure housing areas, it was more challenging for them to access resources. For example, one participant reported that they could only access respite during the evening, the cooler part of the day, because of their custody level, "If you are on medium custody, it is only during the evening. If you are on the dorms [lower security housing] 24/7." Participants described how perceptions of their crimes by staff may also lead to their being denied access to resources to mitigate heat-related illness or being subjected to punishment. One participant described requesting respite and being approved to go, only to be taken to solitary confinement and not the designated communal respite space: "One time when I was allowed to go [to respite], instead of putting me into the a/c at the medical area, they placed me into a tiny locked area in the administrative segregation area. Many officers here have verbally told us that they do not want to provide a/c to 'child molesters'."

A punishing environment to discourage use of resources. The extreme demand on communal resources in the prison may increase the risk of staff abusing incarcerated persons through harassment, intimidation and retaliation. One participant described being harassed by staff once inside of respite due to staff wanting to tamp down the demand for using the space, "If a inmate is granted access in the respite area, he is harassed by prison officials because they don't want us in these areas." Another participant described how at first, respite areas were more comfortable spaces, but over time they removed the sitting equipment, and

the officer in charge began looking for reasons to start writing up disciplinary cases on those who requested access to the space:

> At first, they had tables and chairs and no time limit. Then they removed all sitting apparatus, put squares of tape on the floor and put a correctional officer in charge to write everyone cases. [Respite] was discouraged.

Several participants described this same scenario across different prison units and talked about how these changes purposefully made incarcerated persons uncomfortable, "Respite areas here were strongly discouraged by removing tables and chairs, forcing you to sit on the floor and put the worst guard on the unit in charge of it," while others described being forced to stand, "Sometimes had to stand facing wall with arms straight at your sides." These severe conditions led to a very strict environment where incarcerated persons could easily be given a disciplinary case for otherwise normal or necessary behavior, "A very small compact area in the visitation room. Usually filled to capacity with a seating room (standing only). Once a day for about a 30-min period. Very strict conditions where you're given a disciplinary case for almost anything." This discouraged incarcerated persons from requesting to go to respite, "As mentioned, staff keep the area warm and discouraging, intimidating inmates from wanting to go."

Risking disciplinary punishment. Incarcerated persons also described how they could be penalized for trying to protect themselves and even each other from the dangerous impacts of the heat. The scarcity of ice during extreme heat days led to incarcerated persons opening the lids to the igloo coolers to get the ice inside. However, doing so meant that you could get a disciplinary case written up by a correctional officer, "We get a case of theft of we get caught taking ice." Another participant described how if you try to share resources, especially with those who are indigent and have no funds to purchase commissary items (water, cooling towels, etc.), you can get a disciplinary write up, which can impact a person's ability to get parole:

> If you're indigent in this unit, you're in trouble. The unit won't supply you with anything. Trying to share with each other will get you a traffic and trading case, and will mess up your parole.

Others described how they would be punished for trying to hold staff accountable for not following the heat-related policies, especially in terms of facilitating access to resources. An incarcerated participant who was designated by TDCJ as sensitive to the heat described being taken outside to a fan instead of to a cooled respite area, "Stg. [redacted] tried to put me in a cage outside with a fan blowing on me. At this time, I showed her my heat restriction and was told to go back to my housing area before she wrote me a [disciplinary] case." Another participant described how officers threaten to write them up for refusing to leave the cooled respite area, "The officers threaten to write us up for disobeying a direct order if we don't leave when they tell us to which is messed up because Security is not trained, medically, to properly diagnose whether or not our health is at risk."

Agency, frustration and conflict

Lack of agency and conflict among incarcerated persons and staff. The lack of agency for incarcerated persons paired with the extreme demand for scarce communal resources means that in reality, officers make arbitrary decisions about if and when certain resources may be accessed by incarcerated persons. Participants described being denied resources based on the whims, capacity and perceptions of the officer. If officers did not perceive that incarcerated persons were at risk of heat-related illness, they may prevent incarcerated persons from accessing necessary resources. For example, one participant described how they were denied access respite because, "A CO [corrections officer] said I was faking it." If an

officer did not want to facilitate access for a resource or felt they did not have the time, they did not have to explain themselves even if it violated the policy. Another participant described, "Usually because they don't want to do it or they feel as though it's not really needed or they just don't give any reason at all." Another commented, "Depending on the officers working, he will choose how (his) policy will take play." As discussed in previous sections, when officers intentionally make accessing resources uncomfortable, this can escalate to conflict. One participant described officers trying to rush incarcerated persons out of respite, escalating into abuse as officers started to "yell, curse, taunt, tease us to upset us to push us out." In turn, incarcerated people described escalating conflict to advocate for themselves. One participant described that water, a life-sustaining resource, was only "provided when we start yelling and screaming for water to be passed out." However, incarcerated persons may avoid trying to access resources at all to avoid this conflict and remain safe. "I've never asked to go to the respite area for fear of being yelled at, to me it's avoiding a conflict and there's been plenty of time I wanted to go."

Ingenuity, agency and making difficult choices

Grievances system. Prison systems point to "grievance" systems in place that are described by agencies as giving incarcerated persons agency in reporting when policies and their rights are being violated. The TDCJ reports that incarcerated persons are able to submit written complaints and staff must respond fairly, promptly and without retaliation. However, incarcerated persons did not perceive the grievance process as honest, fair or timely. Participants described the system as responding to their grievances with "false statements" and refusing to "actually investigate." Incarcerated persons described having no faith in the system and did not trust that staff or the system as a whole took grievances seriously. One participant commented, "[The staff] laugh at those," while another commented, "Filing grievances is a joke. It does not work!!!" Previous research has identified similar issues with the grievance process in the Texas prison system including a lack of independent oversight, failure to resolve legitimate grievances and a lack of consequences for staff who do not adhere to the process (PJL, 2017). Even so, incarcerated persons still try to make change through that system. Purdum *et al.* (2022) reported the most recently available data on grievances for the Texas prisons system, which showed that between September 2019 and August 2020, incarcerated persons filed 6,341 grievances related to heat policies.

Ingenuity and exercising agency. The survey did not specifically ask incarcerated persons how they coped with the failures of the current policies; however, some incarcerated persons did describe how they would exercise agency in trying to improve their access and quality of resources. One incarcerated person described how they made their own water filter due to water quality concerns: "I am compelled to put a handmade filtration adapter on the spigot provided at the cell sink to filter the dirty water supplied." Another described how incarcerated persons would create their own cups to access ice if they did not have access to one. However, this led to unsanitary conditions, as the water was exposed to potential contaminants, "water cooler exposed to unsanitary conditions, i.e. inmates dipping their caps into cooler to dip out ice for personal use."

Filling out the survey must be recognized as an act of agency for incarcerated people, as they document their experiences and challenge the narrative of the prison agency, which controls their lives and futures. One participant described how they were risking retaliation from the system and their ability to make parole by describing their experiences in the surveys, "The unit has improved some, but not to a humane level. I want to make parole, telling you these things could easily prevent that." Several participants described participating in lawsuits to try and change the current conditions.

Discussion

This study implicates carceral policy and infrastructure in the production of disaster risk. Prisons and incarceration function to physically isolate and spatially confine what become entire communities of people. Spatially confining persons into communities of isolation as a means of punishment leads to a context in which distributing resources, including those that sustain life, are also severely confined. There is no escape from the hazard, and there is no path to equitable access of resources compared to others in the free community. The power dynamic that punishment creates also means that incarcerated persons must navigate their status as individuals who are to be punished and who are under conditions of punishment to access resources to protect their health and safety when exposed to hazards, leading to severely inequitable outcomes, including trauma and the risk of further punishment. Incarcerated people are vulnerable to harm not just because they are exposed to hazardous conditions like extreme heat, but they are also socially prevented from accessing resources necessary to protect their health and safety and allowed to suffer from exposure as part of their punishment.

It is not enough to address the harm incarcerated people are currently subjected to by solely focusing on mitigating the exposure to hazards, such as by cooling temperatures within prisons through the use of air conditioning or other means. Efforts must also be made to fully address how incarceration itself has produced the disaster risk in the first place. This outcome is in line with previous literature, which has shown the myriad of ways in which criminal legal systems harm marginalized communities (Clear and Frost, 2015; Pager, 2008; Gilmore, 2007). Therefore, those engaged in disaster risk reduction efforts and/or advancing the human rights for incarcerated people should support and invest in efforts to decarcerate and create alternatives to incarceration to address harm and a need for accountability stemming from crime in communities. Furthermore, such efforts would be significant for climate justice, as incarceration and the subsequent harm from exposure to hazards while incarcerated fall overwhelmingly on marginalized communities.

Conclusion

The results of this study reveal how the nature of incarceration and punishment contribute to and produce risk of heat-related illness by creating significant and often insurmountable challenges to incarcerated people and prison staff in preventing heat-related illness and death. Prisons are characteristically congregate facilities where hundreds and even thousands of persons are incarcerated and housed under severely restricted conditions compared to persons in the free world. Resources are not distributed to incarcerated persons individually but communally, as they do not have the individual agency to access them on their own. This leads to a scarcity of resources that can be accessed by incarcerated persons and also diminishes the quality of those resources if they should be accessed.

Incarcerated persons struggle to access resources that are codified in policies to reduce heat-related illness and death because of the punitive environment. Lockdowns, a feature of carceral facilities, mean that incarcerated people cannot access the resources that are distributed communally, and prisons are not structured to get resources to them individually, meaning the primary strategy of prisons to mitigate risk of heat-related illness and death is cut off at the knees. Under normal daily conditions, incarcerated persons struggle to access resources due to differences in how prison systems segregate and punish persons depending on how they are classified due to their crime and other characteristics. Incarcerated persons do not all experience incarceration in the same way. There are varying levels of severity in terms of restrictiveness, which can lead to diminished access to resources. Perception of how deviant a person was in their crime may also lead to their being arbitrarily punished by having access to resources to reduce the risk of heat-related illness restricted. Furthermore, in

an environment where there is a scarcity of resources and incarcerated persons are designated as a population to be punished, it is acceptable among prison staff to use arbitrary and formal punishments to reduce demand on resources.

Incarcerated persons must then risk punishment, even so extreme that they may be denied parole or have to serve additional time, in order to access resources meant to reduce their risk of heat-related illness and death. This exacerbates conflict between incarcerated persons and staff, as incarcerated persons must fully depend upon staff to facilitate access to life-sustaining resources like water and cooled air. When staff do not have the capacity to do so, incarcerated persons have to lobby them for access to resources that the current policies entitle them to. They have to push back against those in authority who may perceive they do not really need the resources or just do not want to do so. To access resources which may keep them safe and alive, incarcerated people have to make extremely difficult choices as they risk entanglement with corrections officers and prison staff who hold their futures in their hands. This leads incarcerated persons to have to make difficult choices in terms of how much they fight back to get access to those resources or if they decide to make their experiences known to the larger world through participating in a study such as this one, which could risk retaliation.

Limitations and future research

The surveys were limited in the number of questions and the amount of available space for comments due to the cost of mailing the survey to incarcerated individuals by the nonprofit organization. Future work should allow for more in-depth qualitative discussion to further elucidate the role of punishment in disasters. This paper does not address potential differences in carceral settings including private prisons, jails, military prisons, persons on parole (Henry and Wachtendorf, 2023) or prisons incarcerating immigrants and refugees. This paper also does not address social vulnerability stemming from experiences of gender, queerness, race, age, income or disability that may influence experiences with heat and heat-related policies while incarcerated, as suggested by previous disaster literature. Papers addressing these issues are forthcoming but were beyond the scope of this paper, which we believe is foundational for such future scholarship. Future work should also explore how investments in decarceration and alternatives to incarceration affect both individual and community resilience to climate change.

Notes

1. A "lockdown" refers to the practice of confining all incarcerated people to their cells for a period of time, typically used to bring the incarcerated population under control (Sundt *et al.*, 2008).
2. "Shake down" refers to when an incarcerated person or their cell is searched for contraband (ZCG, 2024).
3. Custody classifications are based on the individual's record of convictions while in the free world and while incarcerated (TDCJ, 2005).
4. G4 is a classification within TDCJ where incarcerated persons are "classified as medium custody because of behavioral problems, and as a result, live with certain restrictions" (TDCJ, 2010).

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