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Mental and Cardiovascular Health of Incarcerated Populations in the United States: A Systematic Review

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ABSTRACT

Diet, exercise, and environment–the trifecta for exploring and understanding the cardiovascular health of any human being. However, the three factors are only the tip of the iceberg, as below lies a multitude of underlying contributors. Mental health, for one, is an important area of study not just for its cognitive effects, but the medical implications it poses. Issues with mental health falter the spinning turbine of adequate diet, exercise, and environment. Mental health issues are a growing area of study among populations, but more unconventional settings (i.e. incarcerated facilities) have only begun to broach the idea of exploration. This paper aims to create more awareness of the medical issues that incarcerated people may face, whether they are cognitive or physical. It will delve into the mental health of US prisoners as well as their cardiovascular health, connecting them altogether to explore the relationship between mind and body. Prisoners' deteriorated cardiovascular health is not simply a product of an unhealthy lifestyle, but also a potentially harmful mind–their mental health can end up taking charge of their own hearts, further fueling the mortality related to cardiovascular issues. Prisoners are often separated in a bubble, where outsiders assume that their issues are simple and not globally applicable concerns. Understanding how the mental health of prisoners can affect their cardiovascular health is not only important to gaining a greater understanding of the prison system, but it is also a key to developing solutions toward the human population in general.

A Note on Awareness

The purpose of this paper is not simply to share results, but to discuss a need for a spread of awareness. Incarcerated individuals are often overlooked as a group in need of attention from the medical community, yet it is there that it is the most needed. Attention and recognition, regardless of any personal biases or subjective opinions, must be given to prisoners. The statement that they live in a bubble is solely a myth, for they face similar or even worse health problems (physical or mental) to the rest of society.

Prisoners need to be given the same medical attention as those of the general population, yet it becomes a matter of justice that prevents society from taking any preventative steps. Incarcerated individuals are at the whims of their own crimes, and their consequence is their jail time. However, prison healthcare is not a matter of justice on whether the most hard-earned criminal deserves to be saved, but instead a matter of medicine. While it is important to consider the moral implications of saving killers and thieves, it is completely irrelevant–the medical mission of every doctor is to help, not to hurt, and leaving prisoners exposed to the atrocities of a lack of proper treatment only harms. It is important for prisoners to be granted the same medical availability as anybody else; while their crimes may not be just, the medical system should be.

It is not expected that a worldwide, rampant spread of medical equality will ensue in one night. However, miniscule alterations can prove to be helpful. For one, increasing the prison staff all around understaffed centers can help not only the prisoners, but also the people watching over them. Additionally, making in-prison mental health centers available in all states can help prisoners feel less isolated to deal with their problems and more equipped with servicing themselves to the point of good health. The most important chance, however, should be reducing the societal

stigma that incarcerated individuals are less deserving of medical assistance simply because of their histories; it will also influence them positively to make better choices (Zimbardo et al., 2006).

Introduction

Mental health issues are gaining more recognition throughout the world, and scientists have started to associate it as a problem in near or of equal importance to physical health conditions (Kolappa et al., 2013). The relationship between the mind and body has begun to be explored not as two separate entities in comparison with each other, but as a symbiotic partnership. In a wide variety of systems, cognitive and emotional challenges are exacerbated by the growing changes of society. From the rapidly proliferating digital world to ethical shifts in lifestyle, alterations are a turbulent yet necessity descriptor of civilization. However, the environment alone is not responsible for the health of a person; the cofactor lies deep within the framework of man, or in other words, his genetics.

The common debate of nature versus nurture impedes numerous societal behaviors, and mental health is no exception. Genetics, for example, play a vital role in the emotional processing and dysfunction of growing humans. DNA is the genetic material of life, and its mRNA product from transcription produces complex structures used in translation to yield proteins. These protein products are associated with numerous cellular functions, and any errors in such programming throughout the various steps can result in potentially destructive results. Negative mutations, such as point mutations, may cause adverse effects such as sickle cell disease or familial cardiomyopathy (Urry et al., 2020). Thus, cardiovascular conditions may be created from the genes individuals possess, leaving them with significant health issues early on in their lives.

While mental health issues may be apparent from problems within the genetic framework of an individual or zygote, some problems have a genetic link to predisposed parents. Bipolar disorder and depression, for example, already have an underlying genetic basis in grandparents or parents that can be passed down to offspring. However, it is important to note that simply because one may possess the genetic predisposition for certain mental health issues, that does not solidify it as certainty–it merely increases the risk that the individual will develop such an issue (Urry et al., 2020). More often than not, it is the environment that serves as the major trigger.

Temperament also serves as a factor in children's mental health. A New York longitudinal study identified three general types of temperament in children (Thomas & Chess, 1986). The first included "easy children," with playful and happy temperaments linked to regular sleeping and feeding schedules. Such children became better adjusted to life in further studies. The second type was "difficult children," characterized by their antisocial and irritable dispositions, as well as complications with establishing regular sleeping and feeding schedules. The fussier infants later on tended to have more conduct problems in childhood, especially boys. They were most likely to develop mental health problems in later childhood; however, they were also linked with a high-spirited personality less likely to become pushovers. The final temperament was the "slow-to-warm-up children," also known as "inhibited children." Such infants had low activity levels, avoided novel stimuli, and reacted to unfamiliar situations by withdrawing and possessed mild distress. The follow-up study linked these types of children more likely to experience anxiety and depression in childhood. Ultimately, infant temperament has provided a remarkable basis for determining mental health issues in children, but it is not solely on such a factor that conditions must be explained.

The nurture side of the debate, environment, is often confused with a definite explanation for behavior. In reality, environment can merely serve as a possible contributing factor, among the many others a child faces, to the development of personality and behavior. Environmental stimuli can range from upbringing to external conditions. Parenting, as documented by psychologists and physicians alike, has profound effects on children. Diana Baumrind, is a female developmental psychologist that identified three basic parenting styles (Zimbardo et al., 2006). However, such data should simply be taken as information, as sociocultural factors and other environmental impacts may emphasize the need for one parenting style over another, and it is impossible to ascertain the rigidity of each style as definitive proof for certain behaviors. In the authoritative style, parents set reasonable limits for children but are not overcontrolling; a parent will explain the reason for behavior, rather than simply making the child blindly adhere to

rules of the house. This type of parenting is most commonly associated with the most positive outcomes for children, increasing their independence, self-esteem, and competence. The authoritarian style of parenting is composed of rigid and controlling parents that are unresponsive to kids' needs and rely on harsh forms of discipline. Children from these parents tend to be moody, withdrawn, conflicted, unhappy, and generally, more likely to have mental health issues. The final parenting Baumrind describes is the permissive style, characterized by an affectionate yet discipline-lax behavior. Kids that undergo the permissive parenting style tend to be impulsive, lacking in self-control, and have underdeveloped interpersonal skills.

Teenagers pose another major problem area of mental health; raging hormones coupled with a growing sense of development, both physically and mentally, can lead to a clash between several relationships. Teetering hormones present in teenagers may fluctuate their mental health, giving them an early onset to issues like depression, schizophrenia, and anxiety–however, the mental health issues can also be limited to the teenage years, as they may "grow out of it" once they complete adolescence and enter their more hormonally stable adult years (Zimbardo et al., 2006).

Mental health may be an issue among children and teenagers, but a growing exposure to many different situations has broadened its recognition in varied systems. From geographic to economic barriers, every culture has its own perception of the issues associated with the mind (Zimbardo et al., 2006). Mental health may also be broken into justice populations, from regular citizens to incarcerated individuals. Prisoners do not face the same range of environments as any other member of society, yet they may possess the exact same mental health problems (BMJ, 2003). However, unlike the rest of the world, the level of mental health care they receive, as well as the physical problems associated with it, has often failed to be noticed as a problem area to study.

Prisoners are often overlooked as a system of individuals with medically concerning and potentially inadequate standards of healthcare. Low income, poverty, disability, or death serve as contributing factors to a lack of medical care. Incarcerated individuals garner less attention from the public for several reasons. Primarily, the social status assigned to prisoners is low, and therefore their societal influence is also below the standard. Incarcerated individuals are often deemed unworthy of proper medical treatment as the result of any actions they have been accused or convicted of (Ritacco & Krystyna, 2019).

Correctional funding has also failed to garner the proper recognition; several countries have even expressed a lack of certainty as to what the cost overlooks. An inadequate amount of funding is associated with maintaining the health of prisoners, and instead focuses on legal and judicial proceedings concerning the incarcerated. For instance, a 2018 study identified and compared the prison healthcare costs for ten countries. Researchers analyzed financial reports on correctional services and screened records. The results were astonishing; in India, a mere $5,900 was the annual operating expenditure per prisoner, but only 2% of it was used for healthcare–that's $118 for one person, one entire year (Sridhar et al., 2018). South Africa and Ireland's healthcare expenditure was only 4% of their operating expenditure. Even in the more developed United States, 18% of all annual operating costs per prisoner was attributed to healthcare. When looking further into healthcare expenditure descriptions, the United States spent money on basic primary medical care, yet failed to do so on diagnostic tests (including lab services and screening), consultants (including external psychiatric, gynecological, dental, and optical), nursing care, and hygiene; other countries had even more areas they did not fund. Ultimately, correctional funding is present, yet it is hardly there; the bare minimum is often fulfilled, yet the other parts to healthcare that make it well-rounded and life-sustaining are missing. Even though most countries fund basic healthcare in correctional facilities, other equally important components, such as gynecological consultants and hygiene, make healthcare in prisons limited and inflexible to accurately fulfill human medical needs.

Society is also given the impression, whether it be unbridled or purposeful, that incarcerated people do not elicit the same or as harmful medical conditions as the rest of the world. As they are under the supervision of the government, society deems their care sufficient to maintain a state of life (Ritacco & Krystyna, 2019). To the rest of the world, the isolation of a group of people highlights their differences in a spotlight. However, the reality of the issue is that prisoners are in a goldfish bowl–separated from the world, yet not so separate from its problems.

Mental Health in Prisons

Incarcerated individuals face several injustices, yet are they *all* rightfully deserved? The simple answer, however complex its elaboration may be, is no. Although each situation is uniquely different, prisoners are convicted of a crime; the severity of the crime or motive behind it may be up for ethical debate, but the medical treatments they receive should remain objective. Coupled with any mental repercussions incarcerated individuals may face, the mere isolationist conditions of the prison warrant a need for recognition and further scientific investigation (Andersen,2004). The mental health of prisoners is not a topic to be brushed off to the side, nor is it an issue that requires individuals to find empathy or remorse; simply addressing the mental conditions of prisoners is sufficient enough to provide a deeper understanding of our correctional culture.

Isolation

A recent Danish study on remand prisoners concerns the effects of isolation (Andersen, 2004). The objective was primarily to observe psychiatric morbidity and apply it to a small population. The method consisted of reviewing literature related to psychiatric disorders in incarcerated groups and then comparing it to the longitudinal study in Danish remand prisoners. It measured the differences between incarcerated individuals in solitary confinement and non-solitary confinement; the latter entailed being able to talk to other prisoners and be around them. The results were eye-opening; through psychometrics, researchers found psychiatric morbidity (ex. schizophrenia) is high and ever-increasing in prisoners as compared to the general population–that means medium to high scores were spread across the subjects. At the beginning of imprisonment, there is a strong probability of adjustment disorders, which increase by *twofold* in solitary confinement. North American prisons even have a higher prevalence of psychopathy than other places like Europe. The most common drug disorder present in the prisons was opioid dependence, which was followed by a lack of treatment options. They concluded how an isolation in an environment correlated with an isolation in the incarcerated individuals' minds–those in solitary confinement reported more mental health issues, such as depression. Several mentally ill patients remained undetected, however, either from a lack of complete screening or the impossibility to accurately record all prisoners' state of minds amidst the incarcerated people's own illusions and avoidance of admittance. Through such data, it is proven just how significantly an environment can impact a person. In the prison environment especially, which is already confined and restrictive, having no help can cause ruin to flourish–ruin not just for the prisoners, but to the entire structure of society itself.

Prison Environment

Scant information is known about how mental health impacts incarcerated individuals, yet more and more modern studies are finally uncovering the truth behind the matter. A 2015 paper touches upon the prison climate's influence on its occupants' mental health, specifically focusing on what a prison environment truly means. Known first and foremost as a place of enclosure, the prison environment is primarily regarded by prisoners as having a negative influence on their mind (BNurs et al., 2015). Incarcerated individuals saw prisons as a trapping, restrictive environment that not only fed their delusions of isolation, but also made them feel less induced to correct their ill-solicited behaviors or tendencies. A surprising result of the qualitative study, however, was that some incarcerated persons viewed prisons as a place of respite, honing to their antisocial needs. To them, prisons provided a foundation and structure for living their lives–something they required in order to efficiently function, and something lacking in the regular world. However, is it truly respite for prisoners to be forced into a herd-like routine, or is it instead the molding of compliance in order to prevent them from seeing its true intent: limitation? While prisons may offer incarcerated individuals an opportunity to access health services, what purpose does it serve if the services themselves are considered sub-par and below the minimum standard? The majority of prisoners' mental health decline contributes to the

growing predicament of safe medical accessibility for incarcerated people. It is important to note, however, that any ethical debates about whether or not prisoners should be faced with such an environment is not a topic this paper aims to uncover; the objective truth that many prisoners do not like their environment and that it may contribute in part to a decline in their own mental health is all that should be derived from the information above.

A 2003 study in a local prison in southern England gathered significant evidence in the case of the mental health of prisoners. It was a qualitative study with focus groups, centered more on the effects and details rather than numerical data. First, the recurring concept of isolation was studied. The study used reports from prisoners and prison staff to conclude that in general, periods of isolation negatively fueled incarcerated individuals' declining mental health (BMJ, 2003). Prisoners reported that they felt more frustration, anxiety, and anger when separated because it correlated with their own loss of control. When the topic of drugs came up, prisoners had even more to say. Incarcerated individuals that had never even abused drugs before their time in the correctional facility said they abused them as a way of coping with the interminable and tedious hours spent in the prison. The concept of "escape" became enticing to prisoners because the place they resided in induced boredom and increased levels of irascibility. Prisoners' anxiety and stress levels were also influenced not only by the physical environment of the prison, but also the interpersonal environment that included their prison staff. Negative relationships between staff members and incarcerated individuals contributed to prisoners' growing sense of discontentment and stress. When they were isolated, prisoners felt frustrated, and so they took it out on other incarcerated individuals and even the correctional staff, resulting in a greater aggravation and bitterness surrounding circumstances. Prison staff themselves also reported a correlated and increased anxiety level. All in all, correctional culture is centered around violence and prisoners' own internal bias that they are "lesser" humans; the lack of organization and lack of appropriate staff contribute to members' high stress levels. In the study, it was noted that the prison staff would even become medically *sick* from having to deal with all the pressures unleashed upon them, which then put forth a greater coercion for a full staff. With an insufficient prison staff and therefore a lack of complete control over them, incarcerated individuals were more prone to violent outbursts and bullying. Improving the mental health of prisoners, therefore, would not only create a safer environment for them, but it would also be beneficial to the prison staff.

Cultural Divisions

Different groups may also have different mental health effects in prisons. Minorities, for one, may be prone to more interminable mental health issues, as negative qualities from a young age are harder to get rid of as the years advance than merely worsening them. However, they have also been found less susceptible to mental health issues because of their lack of exposure toward a wider range of issues adults seem familiar with. Ethnic and racial disparities among incarcerated individuals may also contribute to distinct mental health problems. The book *Mental Health Services: A Public Health Perspective* details how in general, African Americans have lower rates of major depressive disorders (MDD). Despite such a finding, when MDDs in the Black community do appear, they seem to garner a higher severity in both implementation and treatment. Women in the black racial group seem to have a higher prevalence rate of MDDs, with an astounding ⅔ of female individuals. However, such a statistic bypasses within the racial group itself, disputed by Caribbean blacks' male prevalence rate of 50%. Studies of Latino racial groups indicate how Latinos have lower rates of reported functional impairment for depression, as well as diabetes and other chronic illnesses. However, that seems to be the only difference, as similar levels of functioning and symptoms are present (Levin et al., 2004). When applied to incarceration centers, it is unfair to simply dub the entire system as one and the same regarding mental health. Different groups, from minorities to ethnic and racial groups, exhibit contrasting impairments and frequencies of impairment of mental illnesses.

Cardiovascular Health in Prisons

There is an enormous cardiovascular disease health burden in prisons, with a lack of cognizance and a lack of accessible treatment lodged in its core. Cardiovascular disease prevention is not a notable topic of concern in present society, nor is finding healthy ways to treat heart conditions. Thus, the prevention, diagnosis, and intervention of cardiovascular disease is necessary to improve physical health conditions in prisons. However, even the heart needs a push to sustain the body, and so do prison systems if true awareness is to be spread.

Cardiovascular Issues in Prisoners

The National Inmate Survey was a study conducted from 2011 to 2012. An important consideration of surveys is the idea of a population. A population covers the total group of individuals that are subjects of interest to a survey. In most cases, especially in the case of the National Inmate Survey, it is impossible to gather all subjects of interest, so samples, or subsets of a population, are used instead (Zimbardo et al., 2006). Allowing researchers to generalize, a random sampling of 3,833 state prisoners and 5,494 jail inmates were selected in the National Inmate Survey. Seven cardiovascular conditions were recorded in each group. In some cases, the state prisoners had a higher percentage of a problem than jail inmates. 30.2% of state/federal prisoners had hypertension, as compared to the 26.3% of jail inmates; 9.0% of state prisoners had diabetes, as compared to the 7.2% of jail inmates; 73.6% state prisoners were overweight or obese, as compared to the 61.6% of jail inmates. In other cases, jail inmates have a higher percentage of cardiovascular-related problems. 10.4% of jail inmates had heart-related problems, as compared to the 9.8% of state/federal prisoners. 20.1% of jail inmates have asthma, as compared to the 14.9% of state prisoners; 6.7% of jail inmates have kidney-related problems, as compared to the 6.1% of state prisoners; 2.3% of jail inmates had a stroke, as compared to the 1.8% of state prisoners. Overall, jail inmates had 44.7% of any chronic condition, and state prisoners had 43.9% (Wang et al., 2017). Either way, however, heart-related issues dominated the health problems most incarcerated individuals faced. Such data proves how cardiovascular health issues of prisoners are vividly present, yet barely nothing has been done to fix those numbers. Thus, it seems that prisoners may be living in a goldfish bowl, but they are certainly not treated as such; no, they are not treated correctly at all.

Restrictions for Prisoners

Cardiovascular disease is the primary cause of death among prisoners. Even those that were recently freed have a higher risk of dying of cardiovascular disease than the general population. In the National Survey of Prison Health Care from 2011, it was found that only 30 of the 45 participating states offer lipid tests to screen for cardiovascular disease risk, 29 of 45 offer electrocardiograms, and a mere 23 of 45 (51%) offer lipid tests, blood pressure management, and electrocardiograms. There are only 25 of 45 states that offer an on-site cardiology speciality referral, and 2 that offer off-site referrals (Wang et al., 2017). The problem with such numbers is that they are too low; all states should be active members in the monitoring of cardiovascular health for prisoners. The opportunities granted to each prisoner is subjective in the fact that it depends entirely on where he or she lives; for example, if someone needed an electrocardiogram and could not get one, yet another in a neighboring state was able to receive it, then how would that be fair? All fifty states need to be cohesive on the topic of cardiovascular health in prisons, or certain advantages and disadvantages could positively and negatively affect incarcerated individuals. An important theme word of the prison system is *justice*–what happens when the first four letters of that word do not exist?

There are unique restrictions to physician care in incarceration facilities. 80% of incarcerated individuals in the 2011 National Survey of Prison Health Care reported seeing a physician at least once, but there was a catch. Prisoners had to make copayments, which require insurance, to even be examined (Wang et al., 2017). Insurance is a luxury not all prisoners have, and they certainly may not even know what a copay entails. This demonstrates the lack

of versatility offered to prisoners–there is one strict format given to them to follow, and if they cannot pursue that very course, they will not get what they came for.

To add even more fuel to the fire, there are also security concerns. High risk prisoners are denied the same availability and ease of care as the rest of prisoners. Furthermore, a lack of adequate healthcare in correctional funding is caused by a lack of service for the prisoners–little to no staffing and barely any equipment adds to the decreased availability of medical treatment. Funding is deficient, and so is insurance: Medicaid and Medicare covers *zero* in-prison health care, and other insurance companies cover less than 1% of care (Wang et al., 2017). Thus, how can prisoners make a copayment that *needs* insurance if insurance does not even cover prison healthcare? The data refutes the counterargument that prisoners are in charge of themselves and should take the necessary precautions to be healthy. How can they do that if they have no money to pay for such services? Prisoners quite literally have to pay money to keep themselves *alive*, even though they cannot earn any money in their environment. Naturally, incarcerated individuals will cut costs to save themselves from a life of debt and only get medical help when it becomes absolutely paramount–when it becomes life or death. That is when an inconsequential heart concern snowballs into a substantial cardiovascular disaster.

The Effect of Prisons on Cardiovascular Health

Incarceration is like a spider web, stretching its influence on each thread of silk; one particularly important strand is cardiovascular disease. Cardiovascular disease is greatly impacted by the prison setting. Socioeconomic position, family conditions, and substance use may increase the likelihood of cardiovascular disease, and the prison environment may foster it further through continued isolation and a lack of individual control (Wang et al., 2017). When it comes to the heart, problems cultivate even more problems, leading to an avalanche of chaos.

The worst part: even after release, prisoners are not granted as many liberties as the general population. They are restricted from using food stamps, public housing, federal grants, and free healthcare (Wang et al., 2017). Such limitations may pose as a problem for cardiovascular-disease risk individuals with no money to spend on their own health. Imagine being freed from a prison just to enter a whole new one–this time, with much more dangerous possibilities.

Poor diet and a disturbed sleep may also contribute to stress levels and therefore cardiovascular disease. The general population has access to a variety of diets, from gluten-free to low-sodium. Prisons do not take into account specific health restrictions for individuals and may contribute to a harmful diet for persons that are prone to cardiovascular disease. There is certainly no room for vegetarians, dieters, or only-organic consumers in the prison setting. The ability to exercise is also limited in prisons, which may hurt prisoners if they require a certain amount to properly keep their bodies functioning. The cardiovascular health of an individual is shaped by exercise, and with limited time for it, prisoners' hearts may start to deteriorate (especially with age). This proves just how narrowing the prison environment is for cardiovascular health. Measures for countering such drawbacks must be encouraged, whether that be in the form of healthier, cost-friendly diets or a larger variety of workout options (Wang et al., 2017).

Mental Health and Cardiovascular Health

Mental health issues have long-before been regarded as invisible, unseen problems–a person sick in the mind was often considered insane. Recently, however, the societal stigma associated with a lack of attention on mental health has started to disappear. Mental health is being regarded as a topic of concern and a true illness in today's world. People are starting to realize that mental health is not "just in the mind," for its effects are also pronounced in the body. Poor mental health has started to become linked to several physiological problems, specifically cardiovascular issues (Levin et al., 2004).

Depression

Depression is often considered a mental illness associated with a lack of motivation and profound melancholy, but it is also a contributor to cardiovascular health problems (Zimbardo et al., 2006). Patients with depression report a three-fold higher prevalence of cardiovascular disease. The American Heart Association even regards depression as a *major* risk factor for coronary heart disease. Astonishingly, it seems that what starts in the brain can find its way down to the heart. Furthermore, there is a reported 80% risk of developing or worsening cardiovascular issues in adults struggling with depression, despite any past history of heart-related problems. Depression often accompanies the cardiovascular health issues of anginas, increased cortisol levels, atherosclerosis, myocardial infarctions (simply put, heart attacks), increased platelet activity, strokes, atrial fibrillation, and sudden death. The relationship between depression and heart issues is a two-way street, however, as cardiovascular dilemmas may prompt depression in patients. This clearly illuminates the symbiotic relationship between mind and body–what starts in one may find its way to the other, leaving them interconnected in a silky web. However, to combat such issues, patients are told to have some sort of regular moderate exercise, mindful meditation, focused breathing, medications, and cognitive behavioral therapy (Chaddha et al., 2016). Now imagine trying to do any of those in a prison. Can true progress ever be achieved? The only answer right now, unfortunately, is no; such solutions are incredibly unbeknownst and rare to find in correctional facility systems. Despite any personal opinions or subjective beliefs, it is clearly visible that the correctional system has confined prisoners not only physically, but also medically.

Other Mental Health Problems

Three main mental health issues also contribute to cardiovascular issues: anxiety, anger, and stress. Symptoms of such conditions overlap with those of heart problems, such as chest pain and heart palpitations. Anxiety and negative feelings like anger and grief releases the hormone adrenaline, which increases blood pressure and constricts arteries, possibly like that of a myocardial infarction. It may also contribute to atrial fibrillation, atrial flutter and tachycardia, premature ventricular contractions, and sudden death. Plaque disruption resulting in a myocardial infarction, stroke, aortic dissection, or rupture are results of repeated temporary increases in blood pressure. Anxiety and stress may also cause drug addictions and smoking problems in individuals, which greatly impact their cardiovascular health by damaging important bodily processes and systems contributing to a general health (Chaddha et al., 2016).

Now, simply imagine a prison setting, with limited space or time to do anything. Naturally, anxiety and stress levels may skyrocket, and other times, irascibility may flourish; either way, the correctional facility environment may be a breeding ground for mental health problems. It is truly no surprise, then, that so many prisoners have cardiovascular issues. What *is* surprising, however, is what little recognition the connection receives. In reality, prisoners face a similar set of medical problems as the rest of the world, not the opposite. Ultimately, the isolationist culture of prisons causes mental health problems in incarcerated individuals, in turn deteriorating their cardiovascular health (and vice versa). Yet, prison healthcare does not cover services that can prevent expensive and time-costly treatments in the future. Society must make the push to provide more mental health resources for prisoners, as well as recognizing that there is a definite relationship between the intangible and tangible. The goldfish bowl placed upon prisoners must be removed, for the basis of aid lies in the removal of bias.

Conclusion

Poor mental health is widely prevalent in prison systems–however, it is often unspoken. From incarcerated individuals battling smoking and drug addictions to depression, anger issues, and stress, mental health problems dominate the correctional setting. Isolation has even proven to be an instrumental factor in increasing levels of anxiety and violence

in incarcerated prisoners. The environment has also supported the idea of prisoners' declining mental health, as its restrictive and unsupportive conditions inspire a lack of treatment for patients' own minds (BNurs et al., 2015).

Producing the idea of progress and hope in incarcerated individuals will not only improve their mental health, but also inspire their physiological health to benefit as well. If one believes in the evil of another, the victim of such thinking may also believe in his own demise–the same works the other way. That is the way of self-fulfilling prophecies, and as a society, an utmost importance should be placed on making the fates of prisoners uncemented; that way, they can decide for themselves if they want to change their lives for the better (Zimbardo et al., 2006).

Cardiovascular health in prisons is also a pressing issue, with a lack of funding and a lack of facility care accompanying many at-risk individuals. Most states do not have the proper equipment and treatment services available to prisoners to ensure the protection of their heart health. Basic, bare minimum resources are not sufficient to fully treat the growing cardiovascular concerns in incarcerated populations. From hypertension to heart attacks, even professionals know how dangerous it is to leave heart issues untreated (Wang et al., 2017).

Overall, the declining mental health of incarcerated persons contribute to the decline of their cardiovascular health. Incarceration may act as a primary stressor, a nagging impulse for prisoners that can induce negative coping mechanisms such as smoking and depression. Unfair diet, exercise conditions, and isolation can promote a lack of additional treatment for prisoners. Smoking, depression, anxiety, anger, and stress are some of the several factors that can lead to cardiovascular disease, and the lack of available treatment makes it even worse for prisoners to cope with. On top of their crippled mental health, they are forced to battle a physical issue associated with it. Even released prisoners are not given the freedom to improve their physical health, their barriers the product of government restriction and forced isolation (Chaddha et al., 2016).

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