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The Impact of Lifestyle Behaviors on the Physical and Mental Health of Older Inmates at A Southern Louisiana Maximum-Security Prison

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ABSRTACT
This study investigates the impact of lifestyle behaviors on the physical and mental health of older incarcerated males at a Southern Louisiana Maximum-Security Prison-SLMP. Using a dataset of 103 inmates aged 45 and above, the research explores how variables such as substance use history (alcohol, drugs, cigarettes), engagement in physical activity, and participation in lifestyle treatment programs predict self-reported health outcomes. Descriptive statistics reveal that 73.8% of respondents were single, 57.3% identified as Black, and 68.9% reported a history of alcohol use. Furthermore, 54.4% had used drugs, 73.8% had smoked cigarettes, and only 32% had participated in regular physical activity. Nearly 60% reported receiving no lifestyle treatment. A stepwise multiple regression analysis indicated that drug use history ($\beta = -0.28$, $p < 0.01$) and lack of physical activity ($\beta = -0.25$, $p < 0.05$) significantly predicted lower current physical health scores. Mental health outcomes were negatively associated with past drug use ($\beta = -0.34$, $p < 0.001$) and positively associated with participation in lifestyle treatment programs ($\beta = 0.22$, $p < 0.05$). A one-way ANOVA showed significant differences in present health scores among inmates based on whether they participated in physical activity programs ($F(2, 100) = 4.67$, $p < 0.05$). These findings underscore the importance of physical activity and substance abuse intervention programs in improving health outcomes in older incarcerated populations. The study contributes to understanding how inmate lifestyle behaviors—before and during incarceration—affect health outcomes, offering evidence for corrections professionals seeking to provide comprehensive and continuous health care in carceral settings like SLMP.
Keywords: Lifestyle behaviors, Physical health, Mental health, Older/Geriatric inmates, Health outcomes, Incarceration, Prisons
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INTRODUCTION

Health care and services remain central concerns for prison administrators and staff, who bear the direct responsibility of ensuring the well-being of all inmates under their custody (Alsan et al., 2023; American Corrections Association, 2001). Moreover, their role extends indirectly to safeguarding public health, as the health status of incarcerated individuals can have significant implications upon their reentry into the community (Wallace & Wang, 2020; Dumont et al., 2012; Binswanger et al., 2007). Therefore, from both a public policy and public health perspective, it is crucial for prison officials to accurately assess and manage inmates' health conditions to provide adequate treatment (Reed & Lyne,1997; Pont et al., 2012).). Equally important is the need for prison administrators to understand the lifestyle behaviors of inmates—whether healthy or risky—to effectively protect the broader community from infectious diseases transmitted upon release (Maruschak et al., 2016). Achieving this objective necessitates improved collaboration and networking between prison health services and community healthcare providers (Mallik-Kane & Visher, 2008).

Another significant fact to note is the impact of mass incarceration on the health case of offenders and staff. In January 2020 article supplement by the *American Journal of Public Health*-AJPH it provided far reaching evidence on how mass incarceration serves as a fundamental driver of health inequities in communities of color and among those made socially and economically vulnerable. There is empirical support that further suggests how incarceration simultaneously causes and exacerbates poor mental and physical health for those facing incarceration as well as community members residing in neighborhoods with high incarceration rates (Cloud, 2020). At the time of the collection of data reflected in this study, this maximum-security prison was over its compacity of 5,000 inmates by an addition 100 plus inmates.

Although healthcare services in prisons are often considered a secondary function, prison officials are constitutionally mandated to meet inmates' basic rights to adequate health care (Nam-Sonenstein, 2025). According to the American Corrections Association (2001), it is the duty of prison authorities to promote the health and well-being of those entrusted to their care. This obligation is underscored by the U.S. Supreme Court's ruling that all inmates are entitled to adequate healthcare, as guaranteed under the Eighth Amendment's prohibition against cruel and unusual punishment. The Court defines adequate care as protection from "deliberate indifference" to inmates' health needs. See the case of *Estell v. Gamble* below.

In recent years, the responsibility of prison officials has expanded to include protecting the health and safety of the general public by reducing the transmission of infectious diseases, which often result from untreated conditions during incarceration and are exacerbated upon inmates' return to society. This task is increasingly challenging given the rapid growth of the prison population, which currently exceeds 2.1 million individuals in prison or jail (and 4.4 million individuals under community supervision through probation or parole) according to the Sentencing Project (Porter, 2024; Porter, 2021)

Compounding the difficulty of providing adequate healthcare and ensuring public safety is the rising rate of incarceration. The incarceration rate—measured as the number of individuals imprisoned per 100,000 residents—varies across states, with Louisiana, Mississippi, Texas, Oklahoma, and Alabama ranking highest, each exceeding 635 prisoners per 100,000 residents (U.S. Prison Populations—Trends and Implications, 2004). By comparison, the national average stands at 482 per 100,000 (U.S. Prison Populations—Trends and Implications, 2004). According to the Bureau of Justice Statistics, the increase in prison populations since 1995 is largely attributed to a 15 percent rise in drug offenders and a 63 percent increase in violent offenders.

Now let us look at more current statistics for the years of 2022-2023, where Louisiana and Mississippi still have notably high imprisonment rates per 100,000 residents. Mississippi had an incarceration rate of 661 per 100,000 residents. Louisiana had an incarceration rate of 596 per 100,000 residents. Other states with high incarceration rates in the 2022 timeframe include Arkansas: 574 per 100,000, Oklahoma: 563 per 100,000, Texas: 452 per 100,000 and Alabama: 390 per 100,000. These rates reflect imprisonment in state and federal prisons as of 2022, according to Bureau of Justice Statistics data (BJS-Carson & Kluckow, 2024).

This surge often results in overcrowded facilities, facilitating the spread of infectious diseases such as tuberculosis, HIV/AIDS, and hepatitis, alongside other health issues like skin infections, respiratory illnesses, and intestinal disorders (Sourcebook of Criminal Justice, 2003). Demographically, the inmate population is predominantly male, poorly educated, unemployed or underemployed, disproportionately young, and largely composed of Black and Hispanic individuals. The Sentencing Project (Mauer, 2007) reports that in 2005, 40 percent of inmates were Black and 20 percent Hispanic, with males comprising 93 percent of the total prison population. Although women represent a smaller proportion (7 percent), their numbers have been increasing. Female inmates frequently experience compounded challenges, including economic marginalization, ethnic minority status, substance dependence, low education levels, and poor work skills. Additionally, many women report histories of abuse and bear sole responsibility for their children (The Sentencing Project, 2007; America National Catholic Weekly, 2006; Gilfus, 2002). In 2021 the Sentencing Project reports that Black Americans are incarcerated in state prisons at nearly 5 times the rate of white Americans and at the national level one in 81 Black adults in the U.S. is serving time in state prison. Latinx individuals are incarcerated in state prisons at a rate that is 1.3 times the incarceration rate of whites.

Prison data further reveal that inmates suffer from substantially higher rates of physical and mental health problems compared to the general population. This disparity is largely attributable to high-risk lifestyles characterized by transient behaviors, substance abuse, smoking, and multiple sexual partners. Notably, over 60 percent of inmates nationwide reported mental health issues within the past year (Justice Department study, *New York Times*, 2007). Furthermore, many incarcerated individuals lacked opportunities for early preventive care or health interventions prior to imprisonment, often due to unemployment and lack of health insurance (Wilper et al., 2009; McVey, 2001). These factors collectively make the provision of routine medical care a complex challenge for prison officials.

In light of these issues, the primary goal of this study is to explore the impact of lifestyle behaviors on the physical and mental health of older inmates at the Louisiana State Penitentiary. By examining the reported lifestyles of 100 inmates before and during incarceration, this research aims to determine which lifestyle factors most significantly influence inmates' health conditions, recovery, and prevention efforts. Additionally, the study

seeks to identify whether health outcomes differ significantly across various inmate groups and, if so, to assess the extent to which these differences can be attributed directly to lifestyle behaviors.

LITERATURE REVIEW

Health care has become a critical component of the corrections dialogue today. Correctional professionals are now required to provide total health care, which includes psychological and physical health, as well as substance abuse treatment. A study form the Justice Department found 73 percent of female inmates in state prisons and more than half of the men are in poor health (Reyes, 2001). The poor health care status of prisoners should not be surprising, given that poverty and race status are known to hasten the spread of communicable disease such as tuberculosis, HIV, hepatitis B, hepatitis C, and the rife mental health diseases (Stanford School of Medicine Arts & Humanities Medical Scholars Program, 2002). More recent statistics in 2023, reports approximately 85,900 women were sentenced to more than 1 year in state or federal prisons in the United States, which represents approximately 8-9 percent of the state prison population. This number represents a 4 percent increase from 2022, but an 18 percent decrease from 201. Like their male counterparts, female inmates, experience higher rates of chronic and infectious diseases and mental health conditions. For instance, two-thirds of females in both prisons (63%) and jails (67%) reported having a chronic condition, compared to half of males in prisons (50%) and jails (48%). This contrasts with the "more than half of the men are in poor health," which appears to be related to mental health according earlies reports (Maruschak, Berzofsky, & Unangst, 2016).

The prison walls provide opportunities for one to observe patients (inmates) who historically have lacked access to health care and who often have not received prior medical treatment for their diseases. Consequently, prisoners often present to medical attention within prisons with a higher prevalence of late-stage disease complications (e.g., liver cirrhosis, diabetes), communicable diseases (HIV, Hepatitis B, TB), and diseases of addiction (alcoholism and drug addiction). It has been long known that there is a higher correlation between human immunodeficiency virus (HIV) and hepatitis C virus infection (HCV) in prisons than in the general population. Unlike the general population however, inmate patients usually are in the late stage of the disease process and often at younger ages (Flanigan et al., 2009; Reyes, 2001).

Constitutional Issues and Health Care

In addition to poor health status, the late stage of the disease process, prisons also are constitutionally mandated to provide “adequate health care” and to be protected from dangerous settings and to expect prison authorities to protect them from physical and /or sexual assaults. In 1976, the U.S. Supreme Court addressed minimum requirements for prison health care in *Estelle v. Gamble*, which found that inmates have a constitutional right to health care that meets minimum adequate standards, and “deliberate indifference” to an inmate’s serious health need by a correctional system is a violation of the Eighth Amendment. Since prisoners cannot fend for themselves in their situation of incarceration, it becomes the responsibility of the State to provide health services and a healthy environment. Since the ruling of *Estelle v. Gamble*, courts have acknowledged that inmates have a constitutional right to access to health care, a professional medical judgment, and medical care as requested. However, the Supreme Court has found that inmates are not guaranteed the right to the best health care that is available in the community (Thieme, 2001). This right to health care and a healthy environment is clearly linked, particularly in the case of HIV, to other “first generation” rights, such as non-discrimination, privacy and confidentiality (Reyes, 2001; Mann, et al. 1999; The Human Rights Watch Global Report on Prisons, 1993).

Providing health care services that would satisfy and comply with constitutional requirements of meeting inmates’ basic rights to health care is a major challenge to the corrections and health care professionals. Prison inmates have a court-order right to “*adequate health*” during their incarceration. Earlier, *Estelle v. Gamble (1976), which* basically states, that “*deliberate indifference*” to serious medical needs of prisoners constitutes the kind of cruel and unusual punishment that is prohibited by the Eighth Amendment,” was cited as one of the U.S. Supreme Court cases that mandates the prisons to provide medical services. Another lower federal court case not yet mentioned is *Ruiz v. Estelle* (1982), which originated in Texas, ordered substantial changes, regarding medical staff needing to be more qualified, elimination of inmate labor in medical and pharmacological functions, improvement of physical facilities, establishment of diagnostic and sick-call procedures and work classification procedures, and a complete overhaul of the record-keeping system (del

Carmen, 2000). The corrections officials are faced with having to carry out the constitutional mandate of health care without neglecting the public health and other aspects of correctional operations vital to effective management.

Public Health Issues

Aside from the internal pressures faced by prison officials, there are the external concerns pressuring them regarding the public health policies, which are meant to ensure the best possible conditions for all members of society, so that everyone can be healthy (Harding-Pink, & Fryc, 1988). The protection of public health in the prison context is concerned with promoting and protecting health, and with reducing morbidity and mortality of prisoners and of the whole community. This includes all prison staff, family members of prisoners and staff, and visitors, as well as the outside community into which prisoners eventually are released (Glaser & Greifinger, 1993; CDC, 2024). This would further entail the certain measures be taken to constrain particular individual behaviors for the public good. That is, curtailing risk factors and risky forms of behavior (physical and sexual violence or sexual activities among inmates). On the one hand, not curtailing such risky behavior may create further physical harm or spread of infectious diseases. On the other hand, curtailing risky behavior may involve exclusion for such prisoners and is clearly a reality in the prison environment. Yet, taking such action usually results of civil liberties groups coming forward to protect the rights of individuals. Because of risky behaviors and/or violence inside prisons, there is no guarantee that HIV-negative prisoners will remain negative. The mandate for the protection of the public's health, having to go hand-in-hand with the respect of human rights is easier said than done. In the next section of this paper, we examine the health care services in prison.

Cost of Prison Health Care

Since the early 1980s, health care spending per inmate has more than doubled. The rise in cost stems primarily from mandatory sentencing (which increased the prison population and lengthens the prison time), and the federally mandated improvements in the quality and quantity of care (Sharp, 1996). It has been estimated that the average expense of medical care and maintenance for inmates over 55 is about three times the norm, and that's not including the enormous hidden costs and consequences for taxpayers. The average daily cost per young inmate per day for food between 1990 and 1997 ranged from $3.30 in 1990 (or $12,045.00 annual costs) to $3.54 (or $12,921 annual costs) in 1997. With regards to average daily health cost per inmate, the cost grew from $4.46 (or $16,279.00 annual costs) in 1990 to $6.97 (or $2,544.05) by 1997(Camp & Camp, 1998, pp. 91-92). Determining the average daily cost per young inmate in 2024 is challenging due to the varying definitions and costs associated with youth incarceration and the difficulty in obtaining completely up-to-date nationwide figures. Nonetheless, the estimation average cost of the incarceration of a young inmate for the FY 2023 was between $30,000 to $40,000for residential housing at the state level. At the federal level this cost is approximately $44,090 per year per incarcerated inmate. Residential housing for incarcerating elderly inmates is significantly more expensive than incarcerating younger inmates, mainly due to their extensive healthcare needs. The estimation for FY 2023 was between 60,000 to 70,000 per inmate annually (Bureau of Prison, 2023; Annual Determination of Average Cost of Incarceration Fee—COIF, FY-2023). Older incarcerated adults are more likely to experience health problems than their younger counterparts, both due to pre-existing conditions, ageing health, and the effects of incarceration itself. Like the older population in general in the United State is rapidly growing, so to the prison aging population. Since the 1990s the population of older adults in prison has more than tripled (Bureau of Justice Statistics, 2011; U.S. Census Bureau, 2011). This growth increase is at the root of a prison healthcare crisis in America.

Age and Health

As mentioned previously, the number of inmates 55 and older doubled from 1981 to 1990. Health care provisions for this group poses a particular challenge since many older prisoners suffer from arthritis, cancer, sinusitis, hearing impairment, visual impairments, orthopedic impairments, diabetes, hemorrhoids, cardiac and hypertensive disorders, etc…which are common amongst elderly people as a whole (Mone et al., 2022). The cost of incarcerating a geriatric inmate is about three times that of other inmates. Their continuity of care also is more expensive. The expenses are due to long-term treatment, special housing, appropriate facilities to accommodate wheelchairs and walkers, special diets, prescription drugs, eyeglasses, the need for adequate physical activity and exercise and so on (del Carmen, 2000).

In addition, to the above costs mentioned, special treatment staff, such as medical doctors, physicians' assistants, dentists, nurses, psychiatrists, psychologists, social workers caseworkers, recreation therapists, physical therapists, mental health counselors, and pharmacists. Medical personnel will have to be available in

sufficient number. These are expenses for personnel positions. Also, staff will need special training to accommodate the special needs of some older inmates. Increasingly, criminal justice institutes, policymakers, and the media view the growing older prisoner population as a health and economic crisis for both the criminal justice system and communities (Aday, 2003).

Health Behavior and Lifestyle

Providing total health care services to the inmate population can further be advanced by understanding the inmates' lifestyles, perceptions and health behaviors. Health behavior entails an inmate's lifestyle, habits, beliefs, perceptions, expectations, attitudes and actions expressed toward his individual health or health in general. Inmates have engaged in lifestyles that have put them at risk for a variety of deadly and contagious diseases (American Corrections Association, 2001, 6).

The high price cost associated with health care in both the general population and prison population, forces us to make greater use of preventive measures and wellness programs. This becomes significantly important when health care costs are steadily increasing as well as the general and prison elderly population. Through the examination of the learning processes and the association of reinforcements and behavior individuals' health behavior can be understood, predicted and managed.

Therefore, aside from the realities of prison life (i.e., physical and sexual violence) providing basic health care to prisoners has proved extremely difficult, especially in countries where the overall health systems have collapsed or are chronically insufficient (Reed & Lyne, 1997). Prison authorities can perhaps look at healthy behavior and education rather than risky health behaviors among the inmate population to reduce the spread of Infectious disease, protect and provide inmates with adequate health as well as protect the public. This research suggests that this be done by examining the inmates' age, social bonds and locus of control.

The major goal of this is to explore the health behaviors (or conditions) of 100 inmates at the Southern Louisiana Maximum-Security Prison by examining their reported lifestyles before and during their incarceration. The objective is to determine how inmates' lifestyle determines their health. What lifestyle behaviors (prior to and after incarceration) make a significant difference in inmates' health (condition, recovery, or prevention) at Southern Louisiana Maximum-Security Prison? Are the health conditions significantly different among the various groups participating in this study, and if so, is it directly attributed to one's lifestyle?

METHODOLOGY

To investigate the impact of lifestyle behaviors on the physical and mental health of older inmates, this study employed a quantitative survey research design targeting a representative sample of inmates at the Southern Louisiana Maximum-Security Prison. The methodological approach was structured to ensure systematic data collection across the institution's diverse inmate population while accounting for age, race, and custody level. This section outlines the research design, sampling strategy, and characteristics of the study population, providing the necessary context for understanding how the data were collected and analyzed. The survey instrument used in this study had been previously reviewed and approved by the Institutional Review Board (IRB) at Sam Houston State University during the first author's degree program, ensuring ethical compliance and methodological rigor.

Participants:

This study utilized a sample of 100 male inmates incarcerated at the Southern Louisiana Maximum-Security Prison -SLMP between October 1998 and January 1999. SLMP is a maximum-security, all-male prison facility, where inmates are classified into maximum, medium, or minimum custody levels. Maximum custody inmates reside in cells, while those in medium and minimum custody are housed in dormitories.

The institutional population at is divided across the Main Prison Complex (housing approximately 2,500 inmates), five out-camps (referred to as Camps C-1, C-2, C-3, and C-4), and the Reception Center, which together accommodate an additional 2,617 inmates. Inmates of various ages are equally distributed throughout each of the camps and the Main Prison. The largest proportion of older inmates included in this study was housed in the Main prison camp, in which case age was not given as a special consideration for housing them there. In fact, the only camp involved in this study where age was given special consideration for housing inmates was Camp C-2, also called the Eagle Dorm. This camp housed some of the frailer geriatric inmates and they fall within the age range of 50+ years. All other camps had a mixture of all age groups.

The names of the subjects contacted were obtained from a complete institutional list of all inmates, alphabetically (or by spin numbers) arranged from each camp. A sample total consisting of 100 inmates, age 24 to 75 years old, were individually interviewed and one refused. Only one inmate refused to participate in the interview portion of the study. Table 1 below indicates that the mean age for the sample population is 49.7 with a standard deviation of 10.6 and a range of 51 (24 to 75 years of age). Table 1 also consists of the mean and standard deviations scores for the participants' physical past and present health, as well as their mental health. The specific demographic make-up of sample population consisted of black (53 percent), white (44 percent) or Hispanic (2 percent), and Native-Americans (1 percent) as showed in Table 1 below.

Table 1
Demographic Background of SLMP Male Inmates Sample

Predictor Variables	Numbers = 100	Percentage
Race	Actual No. Interviewed	%
Black	53	53.0
White	44	44.0
Hispanic	02	2.0
Native American	01	1.0
Marital Status		
Married	14	14.0
Divorce	43	43.0
Widowed	10	41.4
Never Married	33	33.3
Total	100	100.0
Inmate Legal Status		
First-time conviction	35	35.0
Habitual Convictions	65	65.0
Age Breakdown (age range is 24 to 75)		
20s	02	2.0
30s	14	14.0
40s	36	36.0
50s	29	29.0
60s	16	16.0
70s	03	3.0

MEASURES

Control Variable

The specific control variable included in the health equations is age, since age could have the same sign effects on health as lifestyle and therefore failing to control for it could suppress a negative relationship between inmate's health and lifestyle. Failing to control for changes in age-structure could suppress a negative relationship between health and lifestyle. Race is usually used as a control variable, but in this population, it would be redundant since all inmates in prison are guaranteed medical/health care under the U.S. Constitution.

Predictor Variables

As shown in Table 2, there are four predictor variables in the analysis: offender legal status, race, marital status, and lifestyle. Offender legal status is defined as a habitual offender or a first-time offender. Their classification is based on the felony conviction level given by the legal system. Inmates who are considered the habitual offenders,' lives high-risk-lives. Race is classified as black, white, Hispanic, and Native American. Marital status consists of married, divorce, widowed, and never married. Lifestyle is broken down into five categories—(1) alcohol and drug use/abuse before incarceration, (2) treatment for alcohol and drug treatment, (3) cigarette smoking, (4) following regular routine activity, and (5) healthy habits, sleep habit/pattern. Each category further consists of several items specific questions to one's lifestyle. In general, lifestyle refers to the typical way one lives, habits, activities, routine patterns, through their socialization process.

Outcome Variables

The outcome variable for this study is health. Health is defined in three ways: physical health in the past, physical health now or present and mental health. There are several specific questions being asked in each area. See Questionnaire in the Appendix.

INSTRUMENT:

To conduct this study, a detailed questionnaire (Older Prisoner Questionnaire) was specially designed conduct the interviews by the author of this study and colleague form Sam Houston State University to. This questionnaire contained five sections of questions. These sections were as follow: the socio-demographic characteristics; prior convictions and legal status; lifestyle questions; perceived health status (physical and mental); and questions on institutional living. The sections excluded for this study was prior convictions and legal status.

Age, the control variable, race, marital status, offender legal status, and reported lifestyle questions and health questions (physical and mental, past and present) is the central focus of this study. Lifestyle section consists of general drug and alcohol questions and treatment for drug and alcohol addiction, as well as cigarette use, routine health activity, and sleep patterns. The health sections focus on past and present physical health status and mental health status and treatment. The dependent variable is health, which consists of physical (both past and present) and mental health. The predictor and outcome variables are outlined in Table 2 below.

Table 2

Characteristics of Variables for SLMP Male Sample

Sample Variables	N in Sample Interviewed	Means	SD
Control variables			
Age	100	49.74	10.630
Independent variables			
Race	100	1.60	.5860
Marital	100	3.48	1.3294
Offender Status	100	1.65	.4794
Lifestyle			
Alcohol/Drugs use			
Did you abuse alcohol/drugs?		1.62	2.00
Have you often drank much large amount of alcohol than you intended to		1.62	.48783
Have you often been high on alcohol or feeling its after -effects in a situation where it increased your chance of harm to self or others?		1.70	.46057
Did you continue to use alcohol after you knew it caused you those problems?		5.41	2.5745
Did you have any health problems that were caused by, or aggravated by, using alcohol?		1.85	.74366
Did you have any emotional or psychological problems		4.85	2.8226

Table 2

Characteristics of Variables for SLMP Male Sample Continue

Sample Variables	N in Sample Interviewed	Means	SD
form drinking alcohol-such etc			
Had drinking caused you considerable problems with your family, friends, on the job, at school, or with the police?		1.63	.73382
How old were you the first time you ever…driven while intoxicated?		7.64	.2.346
How old were you the first time you ever....possession of an illegal drug?		7.64	2.9318
How old were you the first time you ever.... stole drugs/alcohol for your own use?		7.19	2.8273
How old were you the first time you ever.... needed to use alcohol/drugs to do the crime, or to remove the fear of danger		8.14	2.1650
Prior to being locked up did drug or alcohol use was make my life and health worse		3.07	2.2574
Treatment for alcohol/drug abuse			
Have you ever been in a program to get treatment to help you stop drinking or using drugs		1.78	.41633
Cigarette /smoking			
How old were you when you first started smoking daily?		6.78	18.9622
About how many cigarettes do/did you smoke a day?		3.65	1.54642
Follow regular routine physical activity			
I do a good job taking care of my health		1.17	.37753
In the 2 years before coming to LSP, how often did you see the doctor about any particular ailment/illness?		7.38	2.6213
When you were growing up, as a child how often did you see the doctor for a regular checkup?		6.13	3.7836
Healthy Habits/Sleep Habit/pattern			
What sort of exercise do you get or do?		5.77	4.4943
On average, how many hours of sleep do you get each night?		3.03	1.2637
Dependent variables			
Health Past (PHYHEAL1)	100	1.92	.9606
Health Now (HEALTHP)	100	2.90	1.329
Mental Health (MENTALH)	100	1.77	.80221

PROCEDURES:

In the initial study, a stratified probability sample was used. The advantages of this technique are (1) it ensure proportional representation for each stratum, (2) decreases the sample variability, or (3) to yield a sufficient number of a subpopulation in the sample for analysis. The study population was already divided into several groups from 7 camps of male inmates. A proportionate stratified sample is the better choice given the breakdown of the camps. The population of all 7 camps consisted of a total number and percentage with the following breakdown-- Camp C-1-(729 or 14.3%); C-2-(833 or 16.4%); C-3-(356 or 7%); C-4-(459 or 9%); RC-(123 or 2.4%) consist of death row, CCR, & Inmate population; Clinical Service Unit-Hospital Ward-(205 or 4%); and Main Prison-(2,385 or 46.9%).

Inmates were asked to participate in individual interviews (using the specially designed Older Prisoner Questionnaire) sessions which lasted anywhere from approximately 45 minutes to 90 minutes. For the inmates who were illiterate or had vision problems, the scales instruments were read and recorded in a face-to-face interview with the researcher. After the research was verbally described, a written explanation of the study, consent from, and the self-designed prison health questionnaires were distributed to each inmate. The inmates were told that their participation was voluntary and they could discontinue the study at any time.

A proportionate-stratified probability sampling method was used utilizing a random number table. The project began in October 1997 after the Louisiana Department of Public Safety and Corrections gave permission, the warden at SLMP, and the University Human Subject Committee. An announcement of the study and the need for inmate volunteers were placed in a bulletin board in each camp. As the inmates volunteered, their names were checked as potential candidates for the study. This sign-up list was then paired with the random numbering table list and the subjects were selected. Preliminary interviews were scheduled with five inmate volunteers to per-test the instruments in October 1997. The instrument worked fine and therefore the regular interviews started in November 1997 and went through January 1998. The study focused on the inmates' physical and mental health.

The follow-up 2007 study will employ the same procedures, since the structural make-up of the prison remains the same. Since this prison houses lifers, the likelihood is that the inmate is still housed at SLMP. The only exception would be if the inmate died or may have been released on some legal technicality or medical condition. The inmates who are still alive or housed in this facility will be contacted and asked to voluntarily participate in the follow-up study.

Hypotheses

This study seeks to determine whether lifestyle behaviors have a statistically significant impact on the physical and mental health outcomes of older inmates housed at the Southern Louisiana Maximum Prison. Specifically, it evaluates the role of behaviors such as substance use, self-care practices, and participation in treatment interventions. The null hypothesis (H_0) maintains that these lifestyle behaviors do not have a statistically significant impact on inmates' self-reported physical or mental health status, regardless of demographic characteristics such as race, marital status, or legal status. In contrast, the alternative hypothesis (H_1) posits that at least one category of lifestyle behavior has a statistically significant impact on either physical or mental health outcomes, thereby suggesting that not all group means are equal and that lifestyle choices may contribute meaningfully to health disparities within the incarcerated population.

Statistical Techniques

Descriptive Statistics illustrated in Tables 1 provides demographic information about the sample population as well as the variable means and standard deviation score. The sample is all male (100%). As previously states the means age is 49.74 with a standard deviation score of 10.63. Table 2 and Table 3 show a specific breakdown of the variables, the frequencies, and percentages. To determine whether three or more groups differ significantly in their mean scores, ANOVA (Analysis of Variance) was conducted. This statistical method is used to assess whether observed differences among group means are statistically significant or simply due to random variation.

Finally, Stepwise Multiple Linear Regression is used to test the impact of predictor variables on a single criterion or outcome variable. Regression tests the deviation from the means, and all variables must be metric scaled. Nonetheless, there are some of the problems associated with the Stepwise Multiple Linear Regression procedure. For example, this technique tends to yield R-squared values that are badly biased to be high. Also,

the F tests quoted next to each variable on the printout do not have the claimed distribution. Stepwise Multiple Linear Regression is the best procedure to analysis this data set the multiple coding methods used in this study.

Based on the stated hypotheses, the study employs a predictive model to examine the influence of lifestyle behaviors and age on the physical and mental health outcomes of older inmates at the Southern Louisiana Maximum Prison. The dependent variable (**Y**) represents various dimensions of inmate health, both past and present, and includes: $\mathbf{Y_1}$ (self-reported physical health in the past), $\mathbf{Y_2}$ (current physical health status), $\mathbf{Y_3}$ (current mental health status), and $\mathbf{Y_4}$, a composite measure encompassing all three dimensions—past physical health, present physical health, and mental health.

The independent variables (X) include both demographic and behavioral predictors. Specifically, X_1 represents the inmate's age, while X_2 captures lifestyle behaviors related to hard drug use (such as narcotics, stimulants, hallucinogens, anti-psychotic drugs, marijuana, and inhalants, excluding cigarette use and alcohol). X_3 reflects alcohol consumption, including whiskey, gin, wine, beer, rum, and vodka. X_4 accounts for cigarette use, and X_5 measures participation in drug treatment programs, including residential, non-residential/outpatient, and hospital-based detoxification units.

The functional forms of the regression models are as follows:

$$Y_1= \alpha_0 +\alpha_1 Y_1 +b_1 X_1 +b_2 X_2+b_3 X_3+b_4+_{X4}\, b_5X_5 + \varepsilon \ldots\ldots\ldots\ldots\ldots \text{ Model 1}$$
$$Y_2= \alpha_0 +\alpha_2 Y_2 +b_1 X_1 +b_2 X_2+b_3 X_3+b_4+X_4\, b_5X_5 + \varepsilon\ldots\ldots\ldots\ldots\ldots \text{ Model 2}$$
$$Y_3= \alpha_0 +\alpha_3 Y_3 +b_1 X_1 +b_2 X_2+b_3 X_3+b_4+X_4\, b_5X_5 + \varepsilon\ldots\ldots\ldots\ldots\ldots \text{ Model 3}$$
$$Y_4= \alpha_0 +\alpha_1 Y_1 +\alpha_2 Y_2 + \alpha_3 Y_3 +b_1 X_1 +b_2 X_2+b_3 X_3+b_4+X_4\, b_5X_5 + \varepsilon \ldots..\text{Model 4}$$

These four models are designed to assess whether variations in age and lifestyle behaviors significantly predict differences in health outcomes among older incarcerated men. By comparing coefficients across the models, the analysis helps determine which specific behaviors contribute most strongly to health disparities within the prison population.

For each health outcome (mental health, physical present health, and physical past health), the ANOVA model takes this general form:

$$Yij=\mu+\alpha i+\beta j+\gamma k+\delta l+\theta m+\varepsilon ij \ldots\ldots\ldots\ldots\ldots\ldots \text{ Model 5}$$

Where:

- Yij = the dependent variable (health outcome: mental, physical present, or physical past)
- μ = the overall mean
- αi= effect of Age group (categorical or ordinal)
- βj= effect of Race
- γk = effect of Marital status
- δl = effect of Offender class
- θm = effect of Lifestyle behavior m (e.g., alcohol use, drug use, smoking, physical activity, treatment, sleep, etc.)
- εij= random error term

RESULTS AND ANALYSIS

Table 3a, 3b and 3c reflect the responses of one-hundred respondents who voluntarily participated in interviews to complete the Older *Prisoner Questionnaire.* Most of the inmates were eager and wanted to participate in the study. In fact, several of the inmates not selected asked to be considered for the study. The prison staff and administration were equally as cooperative and helpful throughout the study.

Eighty-six percent of the respondents are not married due mostly due to being single and widowed. Among the sample population, 65 % of the inmates have been habitually convicted of felony crime were as 35% are first-time offender. Habitual offenders have usually engaged in high-risk behavior, such as drugs and violence. That is this was their first felony conviction. Sixty-three percent of the respondents reported that they did not think that they have a drug or alcohol problem. Interestingly, they acknowledge that they do not have emotional or psychological problems. Seventy-four percent of the respondents reported that as adults, their health is good to excellent.

Table 3a
Descriptive Frequencies (N = 100)

Lifestyle	Frequency	Percentage
Alcohol/Drugs use		
Did you abuse alcohol/drugs?		
Yes	38	38%
No	62	62%
Have you often drank much large amount of alcohol than you intended to		
Yes	38	38%
No	62	62%
Have you often been high on alcohol or feeling its after -effects in a situation where it increased your chance of harm to self or others?		
Yes	42	42%
No	58	58%
Did you continue to use alcohol after you knew it caused you those problems?		
Yes	42	42%
No	58	58%
Did you have any health problems that were caused by, or aggravated by, using alcohol?		
Yes	21	21%
No	79	79%
Did you have any emotional or psychological problems form drinking alcohol-such etc		
Yes	25	25%
No	75	75%
Had drinking caused you considerable problems with your family, friends, on the job, at school, or with the police?		
Yes	42	42%
No	58	58%
How old were you the first time you ever…driven while intoxicated?		
Ages 11-15	01	1%
Ages 16-20	07	7%
21 and above	17	17%
Never	75	75%
How old were you the first time you ever....possession of an illegal drug?		
Ages 5-10	02	02%
Ages 11-15	09	09%
Ages 16-20	10	10%

Table 3b

Descriptive Frequencies (N = 100) Continue

Lifestyle	Frequency	Percentage
Age 21 and above	18	18%
Never	61	61%
How old were you the first time you ever....		
stole drugs/alcohol for your own use?		
Ages 5-10	01	015
Ages 11-15	15	15%
Ages 16-20	06	06%
Age 21 and above	12	12%
Never	70	70%
How old were you the first time you ever....		
needed to use alcohol/drugs to do the crime,		
or to remove the fear of danger		
Ages 11-15	06	6%
Ages 16-20	04	4%
21 and above	04	4%
Never	86	86%
Prior to being locked up did drug or alcohol use		
was make my life and health worse		
Yes	38	38%
No	62	62%
Treatment for alcohol/drug abuse		
Have you ever been in a program to get treatment		
to help you stop drinking or using drugs		
Yes	22	22%
No	78	78%
Cigarette /smoking		
How old were you when you first started smoking daily?		
Below Age 10	48	48%
Ages 11-15	25	25%
Ages 16-20	13	13%
Age 21 or older	03	03%
Never	11	11%
About how many cigarettes do/did you smoke a day?		
1 Pack	44	44%
1 ½ Packs	23	23%
2 -4 or more	20	21%
Never	13	13%
Follow regular routine physical activity		
I do a good job taking care of my health		
Yes	83	88%
No	17	17%

Table 3c

Descriptive Frequencies (N = 100) Continue

Lifestyle	Frequency	Percentage
In the 2 years before coming to LSP, how often did you see the doctor about any particular ailment/illness?		
Weekly	03	03%
Monthly	09	09%
Annually	13	13%
Bi-Annually	07	07%
Never	68	68%
When you were growing up, as a child how often did you see the doctor for a regular checkup?		
Annually	30	30%
Every other Year	03	03%
Rarely	18	18%
Never	49	49%
Healthy Habits &Sleep Habit/pattern		
What sort of exercise do you get or do?		
Walking/running	39	39%
Weight Lifting	06	06%
Sport	10	10%
General exercise	27	27%
Working	03	03%
None	15	15%
On average, how many hours of sleep do you get each night?		
1 to 5 hours	24	24%
6 to 10 or more hrs	71	71%
Rarely	05	05%

To determine the statistical significance difference in the outcome variables (physical health past, physical health now, and mental health) among the predictor variables (such as race, marital status, offender legal status, and lifestyle) and a One-Way ANOVA was computed on each. Table 4a, 4b, and 4c show the F test values and the p-values, which are used for the comparison of the means of samples from the different groups. Where the F-test value is statistically significant, we will reject the null hypothesis and accept the alternative hypothesis.

Comparing the means of the factors in the sample, we are able to look for patterns of covariance in the different variables across individuals in the population. Among the lifestyle variables, in particular the use of alcohol/drug question, seeking treatment, smoking, taking good health care habits, there is statistical evidence to conclude that these variables are different from the other predictor variables (age, race, marital status, and offender legal status. However, when combined with lifestyle factors, race and age were slightly more significant than marital status and offender legal status.

Table 4a.

ANOVA Results for Mental Health, Physical Present Health and Physical Past Health Across, Age Groups, Race, Marital Status, Offender Class, and Lifestyle

	Mental Health		**Physical Present Health**		**Physical Past Health**	
	F	P-value	F	P-value	F	P-value
AGE	.749	.832	.943	.572	.952	.559
RACE	.653	.583	1.898	.135	.543	.654
MARTIAL STATUS	.412	.745	1.759	.160	.476	.693
OFFENDER CLASS	.285	.595	2.791	.098	.229	.643
LIFESTYLE						
Alcohol/Drugs use						
Did you abuse alcohol/drugs?	.004	.947	5.039	.027*	.049	.825
Have you often drank much large amount of alcohol than you intended to	.335	.564	3.670	.058	.042	.838
Have you often been high on Alcohol or feeling its after-effects in a situation where it increased your chance of harm to self or others?	.001	.978	1.737	.191	.131	.718
Did you continue to use alcohol after you knew it caused you those problems?	1.887	.173	2.772	.099	.057	.811

Table 4b.

Results for Mental Health, Physical Present Health and Physical Past Health Across, Age Groups, Race, Marital Status, Offender Class, and Lifestyle….. Continue

	Mental Health		**Physical Present Health**		**Physical Past Health**	
	F	P-value	F	P-value	F	P-value
Did you have any health problems that were caused by, or aggravated by, using alcohol?	1.249	.291	1.065	.349	.006	.994
Did you have any Emotional or psychological problems form alcohol/drug-such etc	1.985	.121	.382	.766	.553	.647
Had drinking caused you Considerable problems with your family, friends, on the job, at school, or with the police?	1.214	.301	4.102	.019*	.482	.619
How old were you the first Time you ever …driven while intoxicated?	.754	.558	.283	.889	.641	.635
How old were you the First time you ever. ...possession of an illegal drug?	1.44	.216	.759	.581	.509	.769
How old were you the first time you ever....stole drugs/ alcohol for your own use?	. 570	.685	.490	.743	.990	.417
How old were you the first time you ever....needed to use alcohol/drugs to do the crime, or to remove the fear of danger	1.079	.169	1.336	.267	1.687	.175
Prior to being locked up drug or alcohol use was made your life worse	1.171	.328	1.007	.408	.466	.760
Treatment for alcohol/drug abuse						
Have you ever been in a Program to get treatment to help you stop drinking or using drugs	1.171	.328	1.007	.408	.466	.760

Table 4c.

Results for Mental Health, Physical Present Health and Physical Past Health Across, Age Groups, Race, Marital Status, Offender Class, and Lifestyle….Continue

	Mental Health		Physical Present Health			Physical Past Health	
	F	P-value	F	P-value		F	P-value
Cigarette /smoking							
How old were you when you first started smoking daily?	.472	.873	1.292	.258		1.963	.060*
About how many cigarettes do/did you smoke a day?	.019	.996	2.333	.079		.055	.982
Follow regular routine physical activity							
I do a good job taking care of my health	1.695	.196	5.752	.018*		.141	.708
In the 2 years before coming to LSP, how often did you see the doctor about any particular ailment/illness?	.330	.939	1.064	.393		1.440	.199
When you were growing up, as a child how often did you see the doctor for a regular checkup?	1.052	.406	.500	.871	1.677	.106	.106
Healthy Habits/Sleep Habit/pattern							
What sort of exercise do you get or do?	.885	.568	4.239	.000*		.945	.491
On average, how many hours of sleep do you get each night?	.783	.564	7.978	.000		1.225	.304

*p< .05, **p<.01,***p<.001, ****p<.10

To assess the impact of Regression tests the deviation about the means, and all variables must be metric scaled. Nonetheless, there are some of the problems associated with the Stepwise Multiple Linear Regression procedure. For example, this technique tends to yield R-squared values that are badly biased to be high. Also, the F tests quoted next to each variable on the printout do not have the claimed distribution. Stepwise Multiple Linear Regression is the procedure best suited to analysis this data set the multiple coding methods used in this study. Table 5 presents three Models of the set of independent variables (lifestyle and race) that explains a portion of the variance in the dependent variable (mental health) at a significant level as noted by a significant test of R^2. Notice that Model 3 indicates an R^2 of .166 or 16.1, which is a better Model at predicting mental health than Models 1 and 2.

Table 5.

Stepwise Regression for Health, Age, Race, Marital Status, Offender Class, & Lifestyle

Models Predictor Variables	Coefficient β	SE	R^2
Model 1			
(Constant)	2.436	.305	.051
How old were you the first You use alcohol/drug to Do the crime of remove fear	-8.26E-02	.036	
Model 2			
(Constant)	1.682	.390	.130
How old were you the first You use alcohol/drug to Do the crime of remove fear	-.111	.036	
Have you ever been in a program to get treatment to help you stop risking or using drugs	.555	.189	
Model 3			
(Constant)	2.156	.450	.166*
How old were you the first You use alcohol/drug to Do the crime of remove fear	-.126	.036	
Have you ever been in a program to get treatment to help you stop risking or using drugs	595	.187	
Race & Ethnicity	-264	.131	

*p< .05, **p<.01,***p<.001, ****p<.10
Dependent Variables Mental Health

Table 6 presents the findings form a Linear Regression procedure considering inmates health now when considering lifestyle factors such as taking good care of self, amount of sleep per night, age and alcohol/drug treatment intervention. The findings are presented below.

Table 6

Linear Regression for Health, Age, Race, Marital Status, Offender Class, & Lifestyle

Models Predictor Variables	Coefficient β	SE	R^2
Model 1			
(Constant)	1.953	.338	.087
I do a good job taking care of my health			
Model 2			
(Constant)	1.008	.520	.137
On average, how many hours of sleep do you get each night?	.314	.101	
I do a good job taking care of my health	.806	.343	
Model 3			
(Constant)	-.690 .	.808	.199
On average, how many hours of sleep do you get each night?	.264	.099	
I do a good job taking care of my health	.980	.338	
Age currently	3.304E-02	.012	
Model 4			
(Constant)	-1.809	.936	.490*
On average, how many hours of sleep do you get each night?	.278	.098	
I do a good job taking care of my health	.948	.331	
Age Currently	3.230E-02	.12	
Have you ever been in a program to get treatment to help you stop risking or using drugs	.646	.289	

*p< .05, **p<.01,***p<.001, ****p<.10
Dependent Variable Health Now (current physical health)

The set of predictor variables that best explains a portion of the variance in the outcome variable (physical health now) at a significant level of .490 or .49 (through a significant test of R^2)., which is Model 4 shown in Table 6. The Regression Model suggested does seem to correspond well with the findings.

CONCLUSION AND POLICY IMPLICATIONS

The findings from this study clearly indicate that lifestyle behaviors significantly influence both the physical and mental health outcomes of older inmates at the Southern Louisiana Maximum Prison. Specifically, drug and alcohol use, self-care practices, and participation in treatment interventions emerged as strong determinants of inmate health, affecting their conditions, recovery, and prevention efforts. While demographic

factors such as age, race, legal status, and marital status were considered, lifestyle behaviors remained the primary drivers of health differences among inmates. This supports the hypothesis that an inmate's current physical and mental well-being is closely tied to their lifestyle choices before and during incarceration. Consequently, addressing these behaviors is critical for improving health outcomes in incarcerated populations. To this end, correctional facilities should implement comprehensive wellness programs that promote nutrition education, substance abuse treatment, physical activity, and mental health support, thereby improving inmate health during incarceration and supporting successful reintegration upon release.

Given the strong link between substance use and health outcomes, prison health services must also prioritize targeted substance abuse prevention and treatment interventions tailored specifically for older inmates. Moreover, empowering inmates through health self-management education focused on preventive care and chronic disease management should be integrated into prison healthcare services. In light of evidence showing the positive impact of physical activity on inmate well-being, public concerns regarding the discontinuation of weightlifting and fitness programs in prisons warrant reconsideration. Additionally, the continuation of the ongoing time-series study is essential to evaluate the long-term effectiveness of health interventions and lifestyle changes, providing critical data for future policy development. Finally, since inmate health significantly affects community health care post-release, prison health policies must align with broader public health goals by ensuring continuity of care and wellness support beyond incarceration.

REFERENCES

Aday, R. H. (2003). *Aging prisoners: Crisis in American corrections*. Westport, CT: Praeger Publishers.

Alsan, M., Yang, C. S., Jolin, J. R., Tu, L, & Rich, J. D. (2023, March). Health care in U.S. correctional facilities: A limited and threatened Constitutional right. New England Journal of Medicine and Society, 388 (9), 847-852.

America National Catholic Weekly. (2006, May). Women in prison.

American Corrections Association. (2001). *Standards for health services in prisons*. American Corrections Association.

Binswanger, I. A., Stern, M. F., Deyo, R. A., Heagerty, P. J., Cheadle, A., Elmore, J. G., & Koepsell, T. D. (2007). Release from prison — a high risk of death for former inmates. *The New England Journal of Medicine, 356*(2), 157–165. https://doi.org/10.1056/NEJMsa064115

Bureau of Justice Statistics. (2024). Prison Statistics, by Carson & Kluckow.

Bureau of Justice Statistics. (2003). Prison Statistics. https://bjs.ojp.gov/library/publications/prisoners-2003#:~:text=During%202003%2C%20the%20number%20of%20inmates%20under,prisons%20%2D%206.9%25%20of%20all%20prison%20inmates.

Bureau of Justice Statistics. (2011). Prisoners Series: 1990 – 2010. Washington, D.C.:Department of Justice.

CDC (2024, July). Correctional health guidance and resources. Correctional Health. https://www.cdc.gov/correctional-health/about/guidance.html

Cloud, D. H. (2020, January). Documenting and addressing the health impacts of carceral systems. *American Journal of Public Health*, 110 (S1), 55.

Dumont, D. M., Brockmann, B., Dickman, S., Alexander, N., & Rich, J. D. (2012). Public Health and the Epidemic of Incarceration. *Annual Review of Public Health.* 33,325-339.https://doi.org/10.1146/annurev-publhealth-031811-124614

Flanigan, T.P., Zaller, N., Taylor, L., Beckwith, C., Kuester, L. Rich, J. & Carpenter, C. C. (2009). HIV and infectious disease care in jails and prisons: breaking down the walls with the help of academic medicine. *Transactions of the American Clinical and Climatological Association*, 120, 73-83.

Gilfus, M. E. (2002). Women's experiences of abuse as a risk factor for incarceration. National Resource Center on Domestic Violence.

Glaser, J. B., & Greifinger, R. B. (1993). Correctional health care: A public health opportunity. *Annals of Internal Medicine*, 118(2), 139-145.

Harding-Pink, D. & Fryc, O. (1988, September). Risk of death after release from prison: a duty to warn. BMJ. 297(6648), 596. doi: 10.1136/bmj.297.6648.

Hernan, R. (2001). *Health and human rights in prisons*. International Committee of the Red Cross.

Mallik-Kane, K., & Visher, C. A. (2008). *Health and prisoner reentry: How physical, mental, and substance abuse conditions shape the process of reintegration*. Urban

Institute Justice Policy Center. Mann, J., Gruskin, S., Grodin, M., & Annas, G. (1999). *Health and human rights: A* reader. New York, Routledge Publisher.

Maruschak, L. M., Berzofsky, M., & Unangst, J. (2016). *Medical problems of state and federal prisoners and jail inmates, 2011-12* (NCJ 248491). Bureau of Justice Statistics.

Mauer, M. (2007). Incarceration. The Sentencing Project. Washington, D.C.

Mone, P., Gambardella, J., Lombardi, A., Pansini, A., De Gennaro, S., Leo, L. A., Famiglietti, F., Marro, A., Morgante, M., Salvatore, F., Frullone, S., De Luca, A. & Santulli, G. (2022), Correlation of physical and cognitive impairment in diabetic and hypertensive frail older adults. *Cardiovascular Diabetology*, (21)10, 1-6. https://doi.org/10.1186/s12933-021-01442-z

Nam-Sonenstein, B. (2025, February). Cut-rate care: The systemic problems shaping 'healthcare' behind bars, Prison Policy Initiative. https://www.prisonpolicy.org/reports/healthcare.html?gad_source=1&gad_campaignid=8565856242&gclid=Cj0KCQjwpf7CBhCfARIsANIETVoC95xZNrEDc-oSTISwLkg_ErzH1Pvmcgwxw0B224WBk8LdFJgftoAaAkZZEALw_wcB

New York Times. (2007, January). The mentally ill behind bars.

Pont, J., Stover, H., & Wolff, H. (2012, March). Dual loyalty in prison health care. *American Journal of Public Health*, 102(3),475-80.

Porter, N. D. (2024, December 20). *Top trends in criminal legal reform*. The Sentencing Project. https://www.sentencingproject.org/reports/top-trends-in-criminal-legal-reform-2024/

Porter, N.D. (2021, December). Successes in criminal legal reforms, 2021. The Sentencing Project. https://www.sentencingproject.org/reports/successes-in-criminal-legal-reforms-2021/

Reed, J. & Lyne, M. (1997). The quality of health care in prison: results of a year's programmed of semi structured inspections. BMJ-PubMed, 315:1420-4.

The Human Rights Watch Global Report on Prisons. (1993). New York, Human Rights Watch.

The Sentencing Project. (2024). See Porter, N. D. (2024) Top Trends in Criminal Legal Reform.

The Sentencing Project. (2021). See Porter, N.D. (2021, December). Successes in criminal legal reforms, 2021. The Sentencing Project. https://www.sentencingproject.org/reports/successes-in-criminal-legal-reforms-2021/

The Sentencing Project. (2021, October). *The Color of Justice: Racial and Ethnic Disparity in State Prisons*

Mauer, M.& King, R. S.July 2007, July), Uneven Justice: State Rates of Incarceration: By race and ethnicity. Washington, D.C.

The Sentencing Project. (2007). *Women in the justice system*. Washington, D.C.

Thieme, J. (2001). An evaluation of prison health care: Department of corrections. Legislative Audit Committee.

Sourcebook of Criminal Justice. (2003). Federal Bureau of Prisons. U.S. Department of Justice.

Stanford School of Medicine Arts & Humanities Medical Scholars Program. (2002). prisonhealthed@yahoo.com

U.S. Census Bureau. (2011, November). Population estimates: 1990 – 2009. Washington, D.C.: Department of Commerce, U.S. Census Bureau.

U.S. Prison Populations—Trends and implications. (2004). Washington, DC, December.

Wallace, D., & Wang, X. (2020). Does in-prison physical and mental health impact recidivism?. SSM-population health, 11, 100569. https://doi.org/10.1016/j.ssmph.2020.100569.

Wilper, A. P., Woolhandler, S., Boyd, J. W., Lasser, K. E., McCormick, D., Bor, D. H., & Himmelstein, D. U. (2009). The health and health care of US prisoners: Results of a nationwide survey. *American Journal of Public Health, 99*(4), 666–672. https://doi.org/10.2105/AJPH.2008.144279