

ABSTRACT

Title of Thesis

FEDERAL AND STATE INMATES'
PARTICIPATION IN LEISURE AND
RECREATION

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There is extensive debate among criminal justice and policy experts surrounding how “tough” prison conditions should be, and deciding what activities are available for inmates to participate in may have important implications for their behavior, safety of staff and inmates, and taxpayers (Bierie, 2012; Ambrose & Rosky, 2013). Existing research on inmate participation is limited, and there is little research on a nationally representative U.S. scale. The current study aims to address this gap by conducting a detailed descriptive analysis of how inmates in state and federal correctional facilities in the U.S. spend their time. Using the Survey of Inmates in State Correctional Facilities and Federal Correctional Facilities, important statistics are calculated to shed light on the availability and use of television, reading, physical recreation, and additional activities. The results of the study present the levels of access of federal and state inmates to televisions and reading materials, as well as the proportion of inmates that report participating in these activities. This study also examines the proportion of inmates that report participating in physical recreation and an “other” category (defined in the survey as activities such as playing cards, arts, crafts, and games). Implications of this data are discussed, as are future directions.

FEDERAL AND STATE INMATES' PARTICIPATION IN LEISURE AND RECREATIONAL
ACTIVITIES

by

Julieta Magud

Thesis submitted to the Department of Criminology and Criminal Justice at the
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Introduction

In any prison, “leisure” looks different than it would in society, given that it isn’t “free” time (Gooch & Sheldon, 2019). Instead, as Gooch and Sheldon (2019) explain, recreation is a “confined escapism,” used to temporarily free inmates of the monotony of everyday life (p. 409). There is evidence to suggest that such poor conditions of prison are detrimental to prisoners and staff (Bierie, 2012; Ambrose & Rosky, 2013). Since the 1980s, “warehouse prisons” have been on the rise, a model of incarceration that involves prioritizing the retributive and incapacitative qualities of prison as opposed to the rehabilitative quality (Phelps, 2011). Following this ideology of prison life, inmates are isolated from society and engaged into their own smaller, more restrictive world (Phelps, 2011). A rise of retributive goals in incarceration pose threats to inmate well-being, and their freedoms are reduced. In this study, leisure and recreation time (LRT) refers to the recreational activities that people in prison are given the chance to do: playing sports, playing games with other inmates, and learning new skills. The current paper aims to provide a descriptive analysis of the use of LRT by prison inmates.

While people could have many opposing viewpoints about how prisoners should be treated, prison conditions may not only impact prisoners, but also, correctional staff and the general public. On the one hand, some argue that harsher conditions are a better deterrent, and that providing leisure time to inmates is expensive to taxpayers (Ambrose & Rosky, 2013). On the other hand, others argue that access to recreation and leisure benefits inmates’ psychological well-being, which in turn impacts their health and thus becomes less expensive for the taxpayers in the long run (Ambrose & Rosky, 2013). The existing literature covers very little about how much inmates use their leisure opportunities; moreover, the literature that does exist is mostly outdated.

Literature Review

Frey and Delaney (1996) surveyed inmates in 1987 on their activities and participation in leisure, while also presenting interesting points about the effects of recreation. They reported that prison recreation may help guards to understand dynamics when prisoners are placed in groups together, allowing them to understand where tensions build and create an overall safer environment. In their study, they found that 50% of inmates participate in activities, and of those who do, there were lower levels of participation in “active” recreation (for example, 49% in weightlifting) and a higher participation in “passive” activities (for example, 86% watch television). The results indicate support for the notion that recreation is important to create safety for staff. Moreover, Frey and Delaney (1996) looked at how leisure participation correlated with attitudes about prison life, finding no significant correlation. However, the researchers mention that in order for the psychological effects of recreation to occur within a prison, participation must be higher (Frey & Delaney, 1996).

A more recent study describing how inmates use their time comes from Ballance (2019). In this analysis, researchers asked a sample of inmates in the Bahamas to rate their activity preferences, which activities they spent time doing, and their level of access to reading and entertainment materials. The majority reported preferring to spend their time working, followed by sleeping, sports or leisure activities, studying, watching TV, and then cleaning (Ballance, 2019). More males reported wanting to participate in LRT such as sports in comparison to females (Ballance, 2019). Ballance (2019) adopted Frey and Delaney’s (1996) framework of passive and active classifications of leisure to their own study, finding that females preferred passive activities more than males as their first choice of leisure, and that they were more likely than men to choose television as their first choice activity. For select activities, time spent in

activities was measured, and results showed that the majority of time was spent working, followed by educational activities, sports, and finally, entertainment. A unique feature of this study is that they measured inmates' access to television and reading materials, finding that only 3.4% of females and 1.3% of males had access to television, whereas 75% of females and 52-68% of males reported having access to reading materials. It is important to consider, however, that just because somebody has access to something, doesn't mean they're actually participating in it.

A gap in the LRT literature is the lack of consensus for methodology for measuring LRT. In prior research, there has been a wide array of methods used and each method used has advantages and disadvantages. Brosens et al. (2015) conducted an analysis on the determinants of inmates' participation in prison activities, in other words, what motivates inmates to choose to participate. To measure LRT participation, researchers asked participants five yes or no questions about activities of sports, classes, contact with training/employment services, the library, and socio-cultural training courses (Brosens et al., 2015). Responses were coded as 0 (no) or 1 (yes) and each participant was given a participation score from 0-5 based on the sum of their responses (Brosens et al., 2015). Some ambiguities in this measurement are that sports questions are asked about participation within the last month, whereas the other questions have no clear timeline. Additionally, contact with a training service does not necessarily indicate participation, nor does going to the library necessarily indicate actual reading.

Link (2011) measured leisure in a more open-ended scale, having participants define what they felt leisure was and then asking them to check which of the activities listed they did in their free time. This survey also has them indicate the activities that were and were not available, as well as how much time they spent in an "average day" completing certain activities (Link,

2011). This is a comprehensive measure of LRT, including three parts: open ended questions about seriousness in leisure, structured questions about seriousness of leisure, and finally, rehabilitation status. However, the scale asks in-depth about the meanings and motivations behind completing leisure activities, which is out of the scope of the current study. To my knowledge, most of the literature on LRT and measuring it is very mixed, and there is debate about what methods are best to measure it.

Another gap in the LRT literature stems from the fact that despite a large body of research in this area, there is not much in the United States, and the studies that do exist tend not to span the entire country. For example, Vaičiūnienė (2018) evaluated spare time in correctional facilities in Lithuania, concluding that educational programs are not very meaningful to inmates, that inmates are often responsible for their own recreational activities, and that the main reported form of leisure is to walk around the prison. These findings, while important and interesting, are likely different from patterns seen in the US given the vastly different structure of prisons. There is a significant amount of evidence that the typical European prison experience is different from the American experience (Tonry, 2022).

Understanding how prisoners spend their leisure time allows researchers to gain more insight into the experiences of everyday prison life. As Gooch and Sheldon (2019) explain in their multi-site ethnography, the structure that allows prisons to run with minimal problems is the same structure that creates a “mundane and monotonous experience” (p. 408). A lack of activity and a lack of autonomy may feel like empty, meaningless time (Gooch & Sheldon, 2019).

Hesitation for providing leisure to inmates stems from the idea that prison life should not be pleasurable so as to properly deter (Ambrose & Rosky, 2013)¹. Researchers use the findings from Frey and Delaney (1996) to argue against the need for active recreation: that only about

¹ It's important to note that Ambrose & Rosky (2013) is a literature review.

50% of inmates participated in any form of leisure, most of which chose to participate in more passive activities (Ambrose & Rosky, 2013). Some people in the general public also fear that the equipment, such as that for weightlifting, makes inmates stronger and more physically dangerous, however, the researchers emphasize the importance of exercise as a way to cope with the stress of prison life, especially for the many prisoners suffering from mental illness (Ambrose & Rosky, 2013). Moreover, weightlifting has been found to have positive effects on psychological well-being and reduced the frequency of verbal aggression, hostility, and anger (Wagner et al. 1999; Cooper & Berwick, 2001).

LRT is relevant to inmates' well-being in more ways than one. Fox and Crocker (2024) explained that idle time in prison has negative impacts on an inmate's mental state, and that negative impacts of idle time in prison boredom may harm rehabilitation and thus result in re-entry. In their study, inmates reported "suffering from doing nothing" (Fox & Crocker, 2024, p. 702). Negative impacts on mental state included feeling a lack of emotional support, rights, and meaning to everyday life (Fox & Crocker, 2024). Inmates also reported that they felt they had "nothing to wake up for," with little activities available to promote wellbeing (Fox & Crocker, 2024). Staff agreed with the notion that inmates had little to do, and reported that this resulted in bad behavior as a result of inactivity, or the use of illicit drugs to combat boredom (Fox & Crocker, 2024).

There is a plethora of evidence to suggest that LRT positively impacts inmates, as well as evidence that a lack of LRT is negatively impactful. Stephenson et al. (2001) conducted a meta-analysis² on "time out of the cell," concluding that lower time out of the cell and lower

² The studies included in the analysis included participants in prisons (excluded if secure hospitals), had outcomes of mental health, suicide, self-harm, and violence (excluded if only physical health measured), and finally, if it included exposure variables of time out of cell, time in purposeful activities, or partial measures of these (excluded if activities only recorded as in the cell). Discussion papers, policy papers without original data, commentaries, book chapters, editorials, and conference abstracts were excluded. The studies come from around the world.

time in purposeful activities was associated with decreased mental health (including anger, stress, frustration, depression, anxiety, and related symptoms) and higher suicide risk (p.54). Figueroa (2011) studied incarcerated women in Puerto Rico, finding that leisure activities and prison programs serve as a coping mechanism for the monotony and depressive nature of prison life. In this study, researchers found that coping strategies were related to recreation through stress relief, increased self-esteem, expansion of hobbies, and development of decision making and problem solving skills (Figueroa, 2011). Access to recreational activities was considered an outlet for the women, a way to improve themselves (Figueroa, 2011).

In an article from *Corrections Today*, Braxton-Mintz (2009) recommended the use of recreation as an incentive, emphasizing that exercise could be taken away as a punishment for bad behavior.³ In Australian prisoners, Cashin et al. (2008) found that those who reported engaging in more exercise (within the last four weeks) reported less hopelessness, as measured by the Beck Hopelessness Scale (1974). Additionally, Kiani and Paydar (2001) conducted a meta-analysis on LRT in Iranian prisons. Through this search, they concluded that exercise in Iranian prisons supports prisoners mentally and physically (lower anxiety, depression, stress, and violence), and may reduce violence during leisure time. Finally, Wagner et al. (1999) found that engaging in weight training could be an important variable in reducing inmate aggression levels.

Activities such as reading are also found to be important to well-being. Brosens et al., 2014 concluded that libraries may serve as a bridge to participation in other activities, a gateway towards additional LRT. The combination of these studies suggest the positive influences that LRT may have on inmates.

³ This is an article taken from *Corrections Today* from the National Institute of Corrections. The source of their claims (i.e. their methodology), is unknown.

Moreover, a lack of activity may lead to unwanted outcomes. In 2009, Braxton-Mintz examined the impact of exercise on prison misconduct as well as the monetary costs involved. They found that exercise equipment was less costly than paying for broken items as a result of misconduct, and that misconduct was lower when regular exercise was conducted (Braxton-Mintz, 2009). They emphasized that if inmates don't have activities to keep them occupied, they may occupy themselves with harmful activities (Braxton-Mintz, 2009). Occupied inmates may create more positive relationships with fellow inmates and staff, learn productive ways to cope with emotions, and allow them to learn important skills (Braxton-Mintz, 2009). In line with this idea, Gooch and Sheldon (2019) explain that idleness can lead to behaviors such as "brewing hooch," substance use, humiliation of other inmates, and non-consensual sexual activity (p. 414).

A foundational paper for my own study is Bierie (2012), who looked at physical conditions including noise, clutter, cleanliness, and privacy, and their impact on inmate violence. The analysis found that prisons with better environments had significantly lower inmate violence, independent of staff characteristics, and structural factors. While Bierie (2012) addresses the issue of physical conditions in terms of clutter, safety precautions, and general cleanliness, it demonstrates the impact that the environment can have on an individual's behavior. The current study will also be looking at the prison environment, but specifically at leisure as a part of the environmental conditions. The phenomenon, which Bierie (2012) found support for, refers to the deprivation hypothesis of criminology. This hypothesis suggests that an individual's behavior while incarcerated is a direct result of the environment in which inmates are in (Lahn, 2008). On the contrary, the importation theory suggests that people bring in their prior beliefs to prison which is the root of their behavior (Lahn, 2008). Both theories have

support, and Lahn (2008) found support at the macro-level for the deprivation hypothesis and at the micro-level for the importation hypothesis. Lahn (2008) also recorded an interaction between the variables of crowding and aggression, suggesting that both theories are relevant predictors of misconduct (Lahn, 2008). Both importation and deprivation theories are important to the current study as they are central theories about how prison conditions shape behavior. Thus, I attempt to analyze the condition of the environment and leisure in order to allow further research to evaluate the hypotheses. However, it is important to acknowledge that both theories have support.

In sum, the principal question in this study is: what kinds of leisure and recreation time (LRT) are inmates taking part in? While the literature has explored aspects of leisure time and misconduct, the specific elements of the dataset used in this study have never directly been analyzed. The current study is not only important to understanding where the correctional system should place their funding, but can also be useful for later research connecting leisure time to other variables (i.e. violence, recidivism, re-entry), and to the design of policies to mitigate these and other problems of the correctional system. This study will advance the literature by providing information on a national scale about the extent to which inmates participate in and have access to different types of leisure and recreation time.

Dataset and Measures

The measures in the current study are from The Survey of Inmates in State Correctional Facilities and the Survey of Inmates in Federal Correctional Facilities Questionnaire (SPISCF

and SPIFCF) from 2004.⁴ The responses in the dataset span from October 2003 to May 2004 in state and federal correctional facilities. The dataset was collected through personal interviews with inmates and asks about individual traits, family background, current and past offenses (sentences and time served), criminal history, prison activities, prison conditions, program participation, drug and alcohol use, drug and alcohol treatment, and health care. Interviews consisted of computer-assisted personal interviewing (CAPI) and all participants were made aware that their participation was voluntary and their personal information confidential.

The data was obtained using a two-stage sample design. In the first stage, both federal and state prisons were selected.⁵ Of 297 state prisons selected,⁶ 14 were out of scope,⁷ so 4 female reserve facilities were added to the sample, making for a total of 287 participating prisons. In the second stage of sampling, inmates within prisons were selected.⁸ Of the 40 federal facilities sampled, only one resulted in noninterviews. For the state prisons, 13,098 males and 3,054 females were sampled, and for federal prisons, 3,347 males and 1,009 females were

⁴ This survey was conducted through the Bureau of Justice Statistics, and the dataset is available from the Inter-University Consortium for Political and Social Research at the University of Michigan.

⁵ The codebook indicates that for state facilities, the sample was selected from two universe files obtained from the 2000 BJS census of State and Federal Correctional Facilities. The first contained 1,549 state facilities and the second file contained 36 prisons. For the Federal facilities, the sample was drawn from one universe file from the Federal Bureau of Prisons and contained 148 prisons.

⁶ For the first universe file: state and federal data was separated into male and female sampling frames, and if both were in one institution, they were in both frames. Some state prisons were selected with certainty if populations were over 6,445 males or 1,808 females. Prisons not selected with certainty were grouped into eight strata by census region and ordered by size. 211 male and 58 female state prisons were chosen using selection based on probability proportional to size. Two reserve samples were included later due to insufficient number of responses. In the second universe file, supplemental facilities were selected with the same strata procedure. For federal prisons, there were no mixed gender facilities. Three prisons were selected with certainty, one female and two male, and remaining male prisons were grouped into five stratas and remaining female prisons into 2, both by security level. In each stratum, they were ordered by size of population.

⁷ "Out of scope" not defined within the codebook.

⁸ To select inmates within state facilities, researchers were given a list of inmates from each facility, and using a computer, a random start point, and predetermined skip interval, inmates were selected. For the federal prisons, nondrug offenders made up the minority (44% of males and 34% of females), so systematic sampling with a random start and predetermined skip would result with the same proportions. To ensure enough nondrug offenders in the sample, researchers oversampled, and then 1 of every 3 drug offenders was retained.

sampled. The state data resulted in a nonresponse rate of 10.88% and the federal data resulted in a nonresponse rate of 15.38%.⁹

In this study, I will focus on the “prison activities” portion of the survey.¹⁰ The measures that will be used in this study come from Section 10 of the Survey of Inmates. This section, titled “Prison Programs and Activities” asks questions about the various activities that inmates participate in during the day, week, and during their entire period of incarceration. The questions used for this study ask about physical exercise, television, reading, and “other recreation” defined as cards, crafts, and games (see Appendix B). The questions ask about participation within the last 24 hours and responses are yes, no, or don’t know. Using this information, I will be studying inmate’s LRT for the given sample.

Strengths and Weaknesses

A strength of the data I am using is that it is based on a nationally representative sample. The inclusion of representative samples of both federal and state inmates increases the generalizability of the study. The questions in the measures described above cover a wide range of topics, including the research question of interest. Many other measures of leisure in the literature only survey inmates in a specific prison or a couple of prisons within one state. Therefore, the SPISCF and SPIFCF provides a wider range of data and has a higher external validity than other measures of leisure that have been used within the literature. For example, Brosens et al. (2015) gathered data from one prison in Belgium, Cooper and Berwick (2001)

⁹ Within each stratum, systematic random sampling was used to select prisons. This included a random start and a sampling interval.

¹⁰ To use this data for a descriptive study, a Human Subjects Research Determination form was submitted to the Institutional Review Board (IRB) at the University of Maryland, College Park. After review from the IRB, it was determined that the research in this study is not considered human subjects research, and therefore, does not require IRB approval (see Appendix A).

looked at two prisons in England, Frey and Delaney (1996) sampled from one prison in Nevada, Link (2011) looked at those incarcerated in the state of Oregon, etc. This information is still highly important, but a strength of the current measure is the ability to look across states and regions of the US. Therefore, the SPISCF and SPIFCF appear to be the only nationally representative survey for US inmates that directly answers my questions.

A weakness of the measure I am using is that, while this same survey was conducted again in 2016, the questions about leisure were unfortunately removed. The fact that this question was discontinued from the 2016 survey is important to note, as it indicates some limitation of the available data for LRT on a national scale. It also prevents comparisons of leisure time use in 2004 and 2016. That said, 1997 data is also available and the comparison between these two years could also be interesting.¹¹ A comparison between 2004 and 1997 data may provide insight into the discontinuity of the question. Finally, the largest hurdle for this particular dataset is the amount of missing responses, leading to uncertainty.

The format of the questions in the survey are as follows. The first variable for leisure is physical recreation. For this measure, there are three questions: (1) if an inmate has participated in physical recreation within the last 24 hours, (2) how many hours they spent in physical activity, (3) how many minutes they spent in physical activity. For the measure of “other,” which includes arts and crafts, card games, and socializing with other inmates, the questions follow the same pattern: (1) if the inmate has participated in other recreation within the last 24 hours, (2) how many hours they spent in other recreation, (3) how many minutes they spent in other recreation. For the measure of television, there are four questions, (1) if there is a television available for them to watch, (2) if they have watched television within the last 24 hours, (3) how

¹¹ While this analysis was not able to be completed given time constraints, it would be an interesting continuation of the current study.

many hours they have spent watching TV, and (4) how many minutes they spent watching TV.

The measure of reading follows the same pattern as television with four questions: (1) if there are books, magazines, and newspapers available for them to read, (2) if they have read within the last 24 hours, (3) how many hours they have spent reading, and (4) how many minutes they spent reading. Please see Appendix B for the exact questions.

Data Analysis Plan

To address the research question of “What kinds of leisure and recreation time (LRT) are inmates taking part in?,” the SPISCF and SPIFCF from 2004 will be analyzed. In order to conduct these analyses, adjustment and correction of the raw data are necessary. This survey includes complex random sampling, which, unlike simple random sampling, does not give every person in the population the same probability of being chosen. In the sampling process, each federal and state inmate had a known and nonzero chance of being in the sample. However, it is not simple random sampling because they did not have an equal probability of being in the sample. Complex survey data needs to be adjusted correctly in order to yield the proper results. The data in this survey involves the use of replicate weights in order to adjust the data, which, as Lumely (2004) explains, are necessary to use when samples are collected with unequal probability. The process of using replicate weights helps to adjust the data to give each observation the weight which corresponds to its probability of selection, and therefore, ensure that this dataset is nationally representative. The SPISCF and SPIFCF codebook assigns different

replicate weights to be used for federal males, federal females, state males, and state females.¹²

Once this is complete, the goal of the data analysis is to provide a descriptive table for each variable by gender and type of facility.

Descriptive statistics will be calculated for each type of LRT. For physical recreation, this study reports the proportion of inmates that participate in physical activity, also including 95% confidence interval, as well as the upper bound, lower bound, and confidence intervals for these bounds. This same analytical pattern is applicable for the “other recreation” question. The descriptives for television and reading will be more complex, but the study provides the same measurements of the proportion of inmates involved in these activities, and 95% confidence intervals. However, in order to be considered as a part of this measure, they must have reading materials or a television available to them in the first place, which creates an exclusionary question. The reported means will be the unconditional means, or in other words, the proportion reported is for the entire sample, not just those that have access to those materials.

While the 95% confidence intervals for each mean will address sampling error, this study also addresses non-sampling error. To address non-sampling error due to missing data, it’s important to calculate bounds. When data is missing responses, the estimates do not account for the missing values, which means that it is necessary to have upper and lower bounds that describe what the lowest possible and highest possible that the estimate could have been, had the data had been completed. These confidence intervals also require bounds, which will also be presented. The data will be presented in tables and in graphs, as shown in the results and appendix (see Appendix C).

¹² While this code is provided to be used in SAS, it was translated into R. Replicate weights were used given that it was what was provided for the publicly available dataset. Accessing the secure dataset was not within the scope of the thesis.

Results

In the data analysis, inmates were divided into four analytical groups: males in federal facilities, females in federal facilities, males in state facilities, and females in state facilities. For each group, all six questions of LRT were looked at: television access, watching television, reading material access, reading, physical recreation, and “other” (arts and crafts, socializing with other inmates, board games, etc). For each question in each group, the mean is based on the missing-at-random mean (MAR) assumption. This measure accounted for the proportion of inmates that reported participating in said activity, or having access to the materials for said activity. Given that the means follow the MAR assumption, they do not account for the missing data and result in uncertainty of the estimates. For each mean calculated, a 95% confidence interval was found to account for sampling error.

Next, it was important to calculate a lower and an upper bound to account for the non sampling error that results from the missing data. The available data contains many incomplete, “don’t know,” and “NA” replies, which lead to complications during analysis. The best way to understand the importance of bounds is an example which reflects those given by Manski (1995). Say that, in a sample of 20, 12 people replied “yes” to having access to televisions, 4 people replied “no” and 2 people did not respond. The estimated proportion of those with access to television would be $12/18$, or 0.667 and those without access would be $4/18$, or 0.222. However, there were 2 missing responses, so these estimates are incomplete. Had the 2 missing responses been “yes”, the proportion would be $14/20$, or 0.7 and had the responses been “no’s,” the proportion would be $12/20$, or 0.6. Thus, the bounds for the proportion of people with access would be $[0.6, 0.7]$ for the estimate of 0.667. Therefore, bounds are important for understanding what the true proportion could be. It is also important then to calculate confidence intervals for

the bounds too. Calculating confidence intervals around these bounds is necessary, and this necessity can be explained using an applicable example. If the probability that someone reads is “theta,” then the confidence interval on the bounds is the probability that the lower bound of theta is in the confidence interval for the lower bound of theta *and* the upper bound of theta is in the confidence interval for the upper bound of theta. To calculate 95% confidence intervals for the bounds that jointly trap the population bounds at a 95% rate, we use Bonferroni-corrected limits (Manski, 2003). Manski (2003) explains that by calculating 97.5% intervals for each bound, we obtain one 95% confidence interval.

To recap, for measures of access to television, access to reading materials, physical recreation participation, and “other” participation, the mean, confidence interval, and upper and lower bound (with confidence intervals) were calculated. In order to calculate the mean for those who watch television and for those who read, it was important to decide whether this mean should be conditional or unconditional. In other words, whether this should be the proportion of inmates that read given that they have access to reading materials, or if it should be the proportion of inmates that read from the entire sample. It was determined that the unconditional mean would better respond to the overall research question given that access levels were very high. Therefore, the unconditional mean for these measures is presented in the tables. Moreover, there was also a decision of whether or not to use weighted data for these calculations. Both the weighted and unweighted numbers were calculated and proved to be fairly similar. However, to avoid confusion, only the weighted means are presented (with the exception of federal males, just for reference).

In order to guide reading of the presented graphs and tables, it is best to look at the first group studied as an example: federal males. The graph and table show that among males in

federal facilities, a proportion of 0.956 reported that they had access to television. I am 95% confident that the population proportion of federal males with access to televisions lies between 0.935 and 0.97. The lower bound¹³ for those who reported having access to television is 0.934 with a 97.5% confidence interval between 0.907 and 0.953. The upper bound is 0.957 with a 97.5% confidence interval between 0.933 and 0.973. Together, these 97.5% confidence intervals jointly trap the 95% confidence interval, from 0.907 to 0.973.

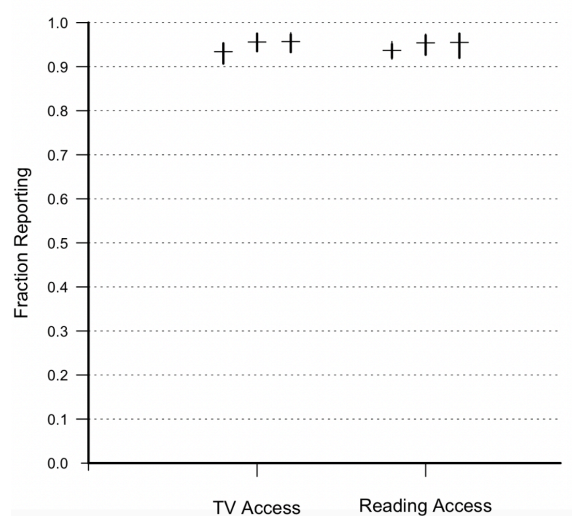


Figure 1: Federal Males' Access to LRT

In the above graph, the leftmost value represents the lower bound, the middle value represents the mean, and the rightmost value represents the upper bound. The center of each cross represents each value, where the lines extended from the center value represent the confidence interval. These results demonstrate high levels of access to televisions and reading materials among federal inmates.

¹³ This means that, if all of the missing responses (including “don’t know”, N/A, and missing) would have reported having access, the proportion for the mean would reflect the upper bound, and had they all reported not having access, the estimate for the mean would reflect this lower bound (Manski, 1995).

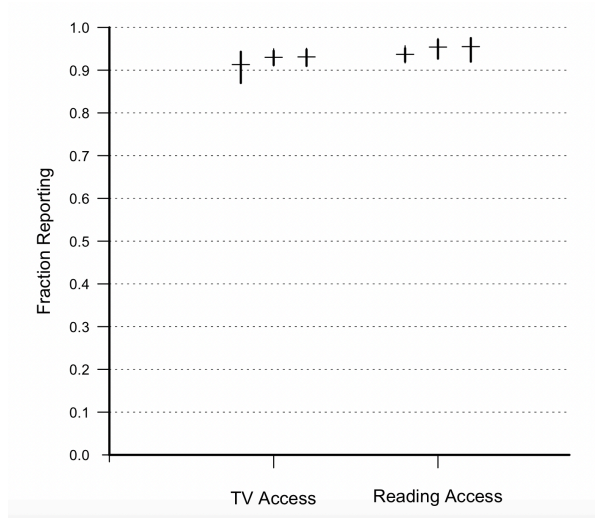


Figure 2: Federal Females' Access to LRT

In the figure for federal females, a similar trend is seen. Access rates are high, most of them being above 0.9. For this reason, it was determined that reporting the “unconditional” proportion for measures of watching television and reading would be best suited.

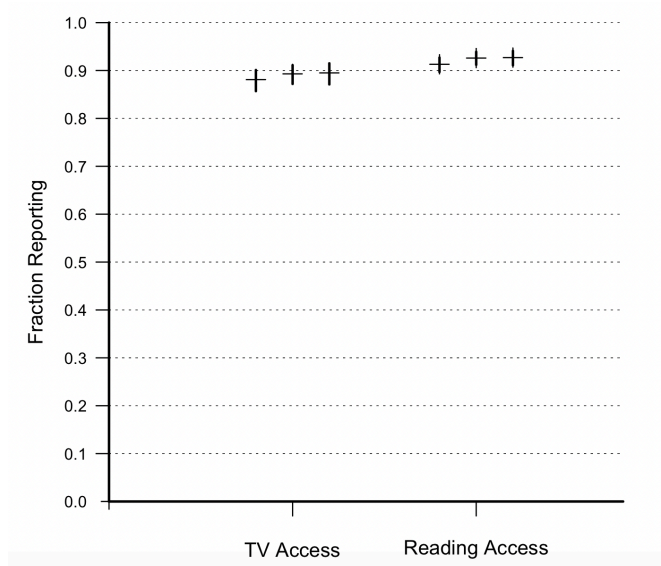


Figure 3: State Males' Access to LRT

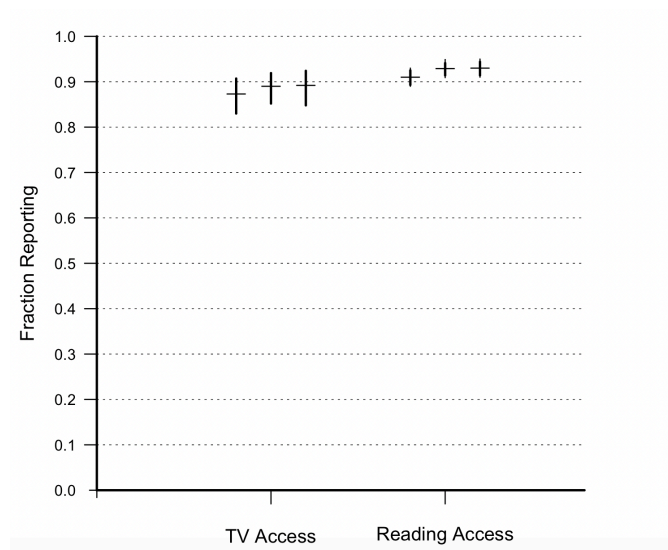


Figure 4: State Females' Access to LRT

In the state data, similarly high levels of access are observed for both males and females and for television and reading materials. The means for watching television and reading for state inmates are also unconditional to access. Next, similar graphs and tables were created to represent the level of participation in the four activities.

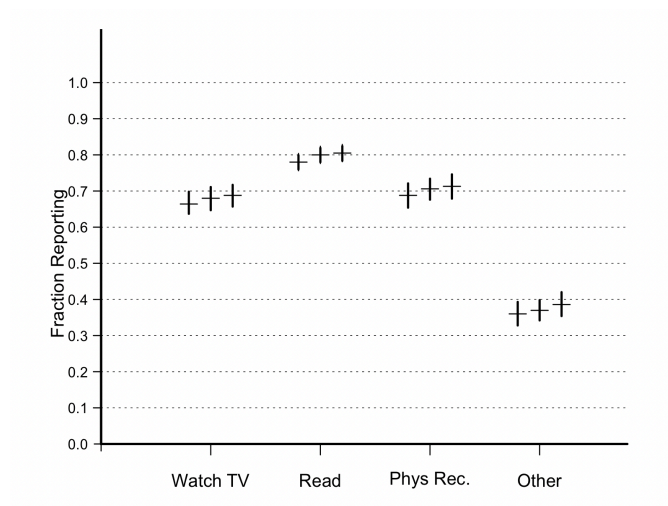


Figure 5: Federal Males' Participation in LRT

From the federal male data, inmates participate the most in reading, followed by television and physical recreation (which we cannot conclude a difference), and finally, the “other” category.

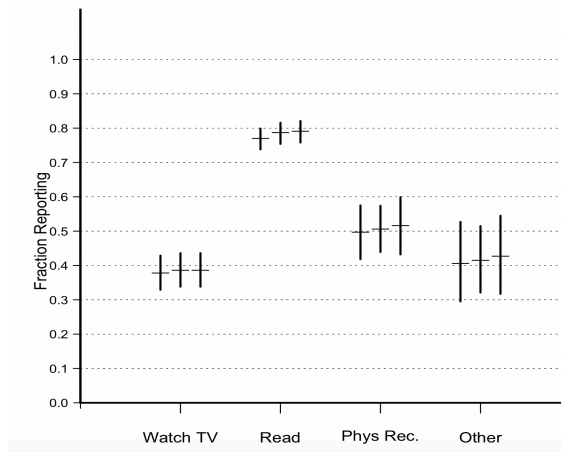


Figure 6: Federal Females' Participation in LRT

For federal females, we can only conclude that reading was the activity that they participated in the most. The confidence intervals are wider for these measures given that this was the smallest group analyzed.

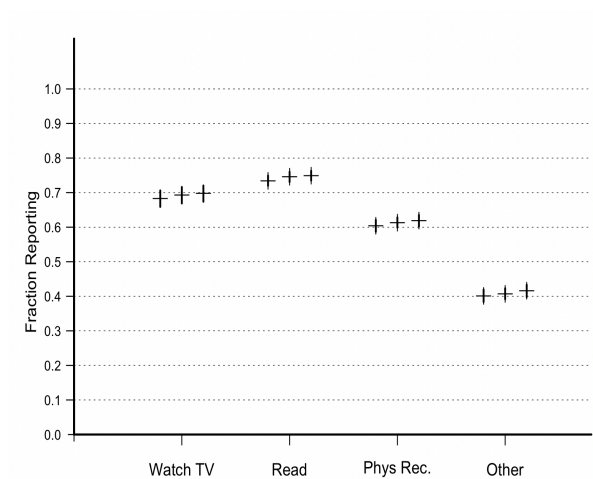


Figure 7: State Males' Participation in LRT

State males appear to participate the most in television and reading, though we cannot conclude which is greater. This is followed by physical recreation and finally, “other.”

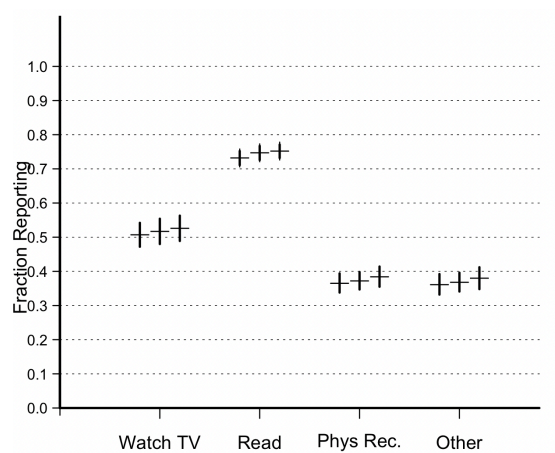


Figure 8: State Females' Participation in LRT

State Females participate the most in reading followed by watching television. No conclusion can be drawn about whether they participate more in physical recreation or in “other.”

From the four figures above indicating the level of participation of federal and state inmates in LRT, there are some patterns that can be observed. For example, among federal males, federal females, and state females, reading is the highest reported activity. A key pattern is that physical recreation and watching television are both more highly reported among federal and state males rather than federal or state females. State and federal males reported the least amount of participation in the “other” category.

Discussion

Completing this thesis has demonstrated gaps within the criminological literature, one being the mixed methodology for studying leisure, and another being the small number of studies done in the US. The current study addresses some of these gaps by providing a clear time frame for LRT participation (the last 24 hours), and by using a nationally representative dataset.

The descriptive statistics revealed in this study are relevant to further research pertaining how inmates spend their time. Given that three groups reported reading at the highest rate, it can be inferred that reading is highly important and often utilized within correctional settings. The disparities that are found between males and females' participation in physical recreation may give important insight into gender norms within facilities. Further research on this participation gap is necessary.

It may also help to draw relationships between how inmates spend their time and other outcomes, such as misconduct or recidivism. With the SISCF and SIFCF, it is not possible to draw cause-and-effect conclusions, however, correlations are possible. For example, it could be useful to look at the current study data in relation to sentence length. The potential issue of temporal ordering may come into play, but the findings may still be relevant and useful in advancing ideas in this actor. Thus, a good descriptive analysis is necessary to advance the literature in this area of correctional research. In order to look at the effects of one variable on another, a good descriptive of the first variable is necessary. It may be of interest to the field to compare measures of this study to additional variables of inmate behavior. Understanding how prison-level variables impact inmate behavior is important for advancing the importation and deprivation models of inmate violence.

Some limitations of the current analysis are the missing data, which as a result, leads to uncertainty within conclusions. Another limitation comes from the fact that the questions regarding leisure, the exact ones used in my study, were discontinued from the 2016 survey. This discontinuity prevents future research from conducting a comparison with the 2004 and 2016 data to analyze changes in trends over time. However, the 1997 survey does include these questions, which allows for a comparison to be made. The removal of these questions in future

surveys is unknown, and may provide insight about current interests within the field. Future research of LRT in correctional facilities should focus on addressing gaps within methodology in order to create a concise measure to look at how inmates spend their time. The more that is known about how inmates spend their time, the more that can be known about the impacts of this time. In turn, proper knowledge of these statistics can enable data-supported policies to address problems in the prison system.

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Appendix A



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irb@umd.edu
www.umresearch.umd.edu/IRB

DATE: October 15, 2025

TO: Julieta Magud, BA
FROM: University of Maryland College Park (UMCP) IRB

PROJECT TITLE: [2377963-1] Participation in Leisure Time Among State and Federal Inmates

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF NOT HUMAN SUBJECT RESEARCH
DECISION DATE: October 15, 2025

Thank you for your submission of New Project materials for this project. The University of Maryland College Park (UMCP) IRB has determined this project does not meet the definition of human subject research under the purview of the IRB according to federal regulations.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact the IRB Office at 301-405-4212 or irb@umd.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Maryland College Park (UMCP) IRB's records.

Appendix B

- “In the last 24 hours, did you spend any time doing physical exercise, for example sports, weightlifting, or running?”
 - (1) Yes
 - (2) No
 - “How much time did you spend doing physical exercise?”
 - ___ hours
 - ___ minutes
- “Is there a television available for you to watch in this prison?”
 - (1) Yes
 - (2) No
 - “In the last 24 hours, did you watch any television?”
 - (1) Yes
 - (2) No
 - “How much time did you spend watching television?”
 - ___ hours
 - ___ minutes
- “Are there any newspapers, magazines or books available to you, either in the library or from other inmates?”
 - (1) Yes
 - (2) No
 - “In the last 24 hours, did you spend any time reading?”
 - (1) Yes

- (2) No
- “How much time did you spend reading?”
 - ___ hours
 - ___ minutes
- “In the last 24 hours, did you spend any time in other kinds of recreation, for example, arts, crafts, playing cards or other games?”
 - (1) Yes
 - (2) No
 - “How much time did you spend doing these activities?”
 - ___ hours
 - ___ minutes

Appendix C

Table 1. Federal Males' Participation in LRT

Question	Mean (95% CI)	Lower bound (CI)	Upper Bound (CI)
Access to TV	0.956 (0.935,0.97)	0.934 (0.907, 0.953)	0.957 (0.933, 0.973)
Watch TV (Conditional)	0.711 (0.676,0.744)	0.664	0.731
Watch TV (Unconditional)	0.664 (0.645,0.682)	0.648 (0.630 0.666)	0.672 (0.654, 0.689)
Watch TV (Unconditional, Weighted)	0.680 (0.647,0.711)	0.664 (0.627,0.698)	0.688 (0.657,0.717)
Access to Reading Materials	0.964 (0.951, 0.974)	0.942 (0.921,0.958)	0.965 (0.949,0.976)
Read (Unconditional)	0.81 (0.795,0.825)	0.79 (0.775,0.806)	0.815 (0.799,0.830)
Read (Unconditional, Weighted)	0.800 (0.780,0.819)	0.780 (0.760,0.799)	0.805 (0.784,0.824)
Physical Recreation	0.706 (0.676, 0.734)	0.688 (0.654,0.721)	0.713 (0.679,0.746)
"Other"	0.3698 (0.342, 0.398)	0.360 (0.328,0.393)	0.386 (0.354 0.420)

Table 2. Federal Females' Access and Participation in LRT

Question	Mean (95% CI)	Lower bound (CI)	Upper Bound (CI)
Access to TV	0.930 (0.912, 0.945)	0.913 (0.870,0.943)	0.931 (0.910,0.948)
Watch TV (Unconditional, Weighted)	0.386 (0.338,0.436)	0.378 (0.329,0.429)	0.386 (0.338,0.436)
Access to Reading Materials	0.954 (0.927, 0.971)	0.937 (0.920,0.951)	0.955 (0.920,0.975)
Read (Unconditional, Weighted)	0.787 (0.754,0.816)	0.770 (0.738,0.799)	0.791 (0.758,0.821)
Physical Recreation	0.506 (0.439, 0.574)	0.497 (0.418,0.575)	0.516 (0.432,0.599)
"Other"	0.415 (0.321, 0.515)	0.406 (0.295,0.527)	0.427 (0.317,0.545)

Table 3. State Males' Access and Participation in LRT

Question	Mean (95% CI)	Lower bound (CI)	Upper Bound (CI)
Access to TV	0.893 (0.872, 0.911)	0.881 (0.857,0.901)	0.895 (0.871,0.915)
Watch TV (Unconditional, Weighted)	0.693 (0.669,0.716)	0.683 (0.659,0.706)	0.698 (0.674,0.720)
Access to Reading Materials	0.926 (0.912, 0.939)	0.913 (0.897,0.927)	0.927 (0.911,0.941)
Read (Unconditional, Weighted)	0.746 (0.731,0.760)	0.734 (0.720,0.749)	0.749 (0.735,0.763)
Physical Recreation	0.613 (0.599, 0.628)	0.604 (0.587,0.621)	0.619 (0.602,0.635)
"Other"	0.407 (0.392, 0.423)	0.401 (0.384,0.419)	0.416 (0.398,0.433)

Table 4. State Females' Access and Participation in LRT

Question	Mean (95% CI)	Lower bound (CI)	Upper Bound (CI)
Access to TV	0.89 (0.852, 0.919)	0.873 (0.830,0.907)	0.892 (0.848,0.924)
Watch TV (Unconditional, Weighted)	0.517 (0.480,0.554)	0.507 (0.472,0.542)	0.526 (0.489,0.563)
Access to Reading Materials	0.929 (0.914, 0.941)	0.910 (0.893,0.925)	0.930 (0.914 0.944)
Read (Unconditional, Weighted)	0.747 (0.726,0.767)	0.732 (0.711,0.752)	0.752 (0.732,0.771)
Physical Recreation	0.372 (0.347, 0.398)	0.365 (0.338,0.394)	0.384 (0.355,0.414)
"Other"	0.368 (0.341, 0.396)	0.361 (0.332,0.392)	0.38 (0.348,0.412)