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Mental and Physical Health of Older Incarcerated Persons Who Have Aged in Place in Prison

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Abstract

This study describes physical and mental health of incarcerated males age 50 who spent at least 20 consecutive years in prison, comparing those with life sentences (“lifers”) with those expected to be released/paroled. Data included demographics, chronic medical conditions, self-reported and objective disability, depressive symptoms, suicidal ideation (SI), and social support. The 65 participants (M age = 56.9 [SD = 6.6]) were racially diverse (40% White; 51% Black, 9% Hispanic/Other), incarcerated for $M=26.6$ ($SD=4.5$) years, and 34(52%) were lifers. Among the 39(60%) of participants with visitors, lifers had lower social support scores ($p=0.005$). After controlling for age, race, and chronic conditions, lifers reported disability in a higher number of activities ($p<0.001$), and had higher depressive symptoms ($p=0.08$) and SI scores ($p=0.04$). Health-related differences between lifers and those expected to be released have implications for prison systems including staff training, advance care planning, and need for expanding prison-based hospice programs.

Keywords

successful aging; mental health; physical function; crime

INTRODUCTION

With an incarceration rate of 655 per 100,000 adults, the U.S. incarcerates more people than any other nation. In contrast, Europe as a whole has an incarceration rate of 187 per 100,000, which ranges from 12 per 100,000 in Denmark to 402 per 100,000 in Russia (Walmsley, 2018). Moreover, average sentence length in the U.S. is considerably longer than sentences imposed for the same offense in other countries (Subramanian & Shames, 2014), and life sentences are also imposed much more frequently. Between 2003 and 2016, the number of people serving life sentences without parole (LWOP) in the U.S. increased by 59% (The

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Sentencing Project, 2018) and currently, one in seven persons incarcerated in U.S. prisons has a life sentence (Nellis, 2021). The high rates of incarceration, long sentences, and use of LWOP in the U.S. are largely residual effects of “tough on crime” policies such as the Violent Crime Control Act and Law Enforcement Act of 1994 (Violent Crime Control, 1994). Laws such as these made mandatory minimum sentences the norm and discouraged opportunities for early release. As an unintended consequence, the population of “older” incarcerated persons (i.e., 50 years) has grown substantially.

Older incarcerated persons have rates of chronic illness and disability comparable to those of non-incarcerated people who are 10 to 15 years older (Barnert et al., 2016; Greene et al., 2018; Wangmo et al., 2018; Wildeman & Wang, 2017). Concurrent mental health problems, including depression, psychological distress, and suicidal ideation, are also common (Baidawi et al., 2016; Dudeck et al., 2011). Consequently, health care costs for older prisoners are up to nine times higher than for younger incarcerated persons (Ahalt et al., 2013)(McKillop & Boucher, 2018). However, despite accumulating evidence regarding the health and well-being of older incarcerated persons, in general, service and research efforts have not prioritized incarcerated persons in this group (Kazemaian & Travis, 2015). Thus, our knowledge regarding the health of older prisoners who have “aged in place” within the prison system is essentially nonexistent.

Those who have spent at least 20 years of their lives in prison, i.e., “long-termers”, who are now growing old while incarcerated, comprise a unique subpopulation within the social context of the prison system that is growing steadily (Urban Institute, 2017). In fact, among the top 10% of incarcerated persons in each state in the U.S. who have served the longest terms, the average time served is approximately 20 years among at least half of the states (Urban Institute, 2017). Long-termers are in the position to provide mentorship and contribute to the rehabilitation of younger prisoners (Kazemaian & Travis, 2015). As the prison is their de facto home, long-termers can provide stability in the often stressful prison environment as they are likely adapted to the system, are more likely to exhibit self-control compared with “short-termers,” and rarely engage in misconduct (Hebert, 2019; Jarman, 2020; Kazemaian & Travis, 2015). Thus, maintaining their health and well-being may have beneficial effects on the prison milieu. Alternately, as these individuals become more frail with age, their ability to safely navigate the built prison environment may decrease. Therefore, in addition to the high costs of treating older prisoners’ chronic health conditions, the costs of providing necessary environmental accommodations (i.e., accessible cells) for the growing number of long-termers may be substantial (U.S. Department of Justice Civil Rights Division, 2020).

Moreover, while many long-termers will spend the rest of their lives in prison (i.e., as “lifers”) and will likely die while incarcerated, some will be released to the community in older age. It is possible that even among long-termers, the expectation of release may be differentially associated with health and well-being. For example, for lifers, the inevitability of dying behind bars may be very distressing (Aday, 2005) and may contribute to hopelessness that manifests in poorer health. Alternately, while thoughts of returning to the community may elicit mixed feelings among long-termers who will likely be released, the hope of resuming life outside prison walls may positively impact health. Exploring

health-related differences between lifers and those expected to be released is needed to further understand this growing yet largely forgotten group.

Given the dearth of information available regarding long-termers, it is also important to consider potentially modifiable factors that may impact long-termers' health. Extensive research among community-living persons indicates that higher levels of social support are associated with better mental and physical health (Kim & Thomas, 2017; Mezuk, Diez Roux, et al., 2010). In the corrections setting, prior studies show that maintaining social ties to friends and family "on the outside" is associated with beneficial effects including fewer disciplinary infractions and lower rates of recidivism upon release (De Claire & Dixon, 2017). However, for long-termers, maintaining those ties may be especially difficult. Data are needed to better understand the social context of aging in place in a carceral setting and to determine if social support differs between lifers and those expected to be released.

We sought to evaluate the physical and mental health of incarcerated persons age 50 or older who have spent at least 20 consecutive years in prison, and compare the health of those expected to be released to those who are not, i.e., lifers. We hypothesized that even though all participants had been incarcerated for a similar number of years, lifers would have poorer physical functioning and mental health as compared with those expected to be released. In addition, this study describes visitation and social support reported by these groups. With the aging of the incarcerated population, prisons are increasingly tasked with providing healthcare to, and optimizing the safety of, a growing number of older adults as they age in place. Improved knowledge regarding long-termers' mental and physical health has direct implications for prison health care budgets, programming, correctional officer training needs, and advance care planning including the need for expanding prison-based hospice programs.

METHOD

Study Design and Sample

All participants were enrolled in the "Aging Inmates' Suicidal Ideation and Depression Study (Aging INSIDE)". Aging INSIDE was approved by the UConn Health Institutional Review Board (IRB 16-160-2) and the Research Advisory Committee of the Connecticut Department of Correction (CTDOC). Recruitment procedures have been described elsewhere (Barry, Coman, Wakefield, et al., 2020). In brief, eligibility criteria for Aging INSIDE included age 50 or older, sentenced and incarcerated in one of eight CTDOC prisons, and English-speaking. In addition, to target those who were "aging in place" in prison, eligible participants had an expected release or parole date that was at least 36 months from the date that the recruitment letter was sent (between November 2016 and December 2019). Overall, 241 male participants provided written informed consent. Face-to-face interviews occurred immediately thereafter, and reviews of medical charts and CTDOC administrative data were completed within approximately 2 weeks of each interview.

To focus on the long-term prison population, the present investigation included only those Aging INSIDE participants who had spent 20 or more consecutive years in prison at the time of study enrollment (N=65) as determined via CTDOC records. Those participants were

further dichotomized according to expected release or parole date. Release or parole dates scheduled at least 20 years after each participant's study enrollment date were considered as a proxy for "life sentences." Participants with "life sentences" were compared with those who were expected to be released or paroled within the next 20 years.

Measures

Sociodemographics and health—Age, race (categorized as Black, White, Hispanic/Other), education (number of years), and marital status, were collected during the interview. Average number of chronic conditions was obtained via medical record review of common chronic conditions including hypertension, myocardial infarction, congestive heart failure, stroke, cancer, diabetes, hip fracture, arthritis, chronic lung disease, HIV/AIDS, Hepatitis C, sexually transmitted disease (STD), and Other (e.g./gastro-esophageal reflux disease/peptic ulcer disease; glaucoma/macular degeneration). Participants were also asked to rate their overall health, eyesight, and hearing. Responses were collapsed to form dichotomous variables (excellent/very good/good vs. fair/poor). History of head injury (yes/no) was assessed by asking participants, "Have you ever had a head injury, such as a concussion?"

Correctional factors—Type of offense was categorized as violent or non-violent according to the CTDOC Classification Manual. A lifetime history of recidivism was determined by asking "How many times have you been incarcerated in your life (including this time)?" Those responding that they had been incarcerated at least 2 times were considered to have experienced recidivism.

Physical function—Self-reported disability was assessed using a modified version of the Williams Prison Activities of Daily Living (PADL) Disability Index (Williams et al., 2006). Participants rated their level of difficulty performing five activities specific to living in prison: climbing on/off the top bunk, walking while wearing handcuffs or shackles, standing in line for medications, walking to chow, and cleaning their cell/living space. Those rating level of difficulty as "very difficult" or "cannot do" were considered as having disability in that PADL. The number of PADL disabilities was summed for a total ranging from 0 to 5. In addition, study participants were asked about their ability to independently perform six other basic activities of daily living (ADLs) that are not specific to prison life, including showering, dressing, holding a utensil, using the toilet, transferring from a bed to a chair, and walking up and down stairs. Those rating level of difficulty as "very difficult" or "cannot do" were considered as having disability in that ADL, and these were summed for a total ranging from 0 to 6. Objective functional disability was assessed objectively using the Short Physical Performance Battery (SPPB). The SPPB is a validated instrument that includes the following three timed (in seconds) tasks: a 4-meter walk at one's usual pace, 5 chair rises (sit-to-stand) without using one's arms, and maintaining standing balance while feet are side-by-side and in semi-tandem and full-tandem positions (Guralnik et al., 1994; Guralnik et al., 1995). The test, which is designed for a lay interviewer to administer, takes about 10-15 minutes to complete. Each of the three tasks is then scored from 0 to 4, with 0 indicating inability to complete the task and 4 indicating maximum performance. The values are summed to create a total score ranging from 0 to 12 with higher scores representing better performance. In addition, SPPB scores <10 are considered as indicating mild to severe

functional limitations (Puthoff, 2008). Study participants who were confined to a wheelchair (n=1) were unable to complete the SPPB and thus were coded as missing this variable.

Mental Health—The 9-item Patient Health Questionnaire (PHQ-9) assessed depressive symptom severity (Kroenke et al., 2001). Participants were asked how often in the past 2 weeks they were bothered by problems including “feeling down, depressed, or hopeless,” and “feeling tired or having little energy.” Symptom frequency is rated from 0 to 3 (“from not at all” to “nearly every day”) with scores ranging from 0 to 27 and higher scores indicating higher severity. The Geriatric Suicide Ideation Scale (GSIS) assessed suicidal ideation (SI) severity (Heisel & Flett, 2006; Heisel & Flett, 2016). Study participants indicated their level of agreement with 31 statements using a 5-point Likert scale, from (1) *Strongly disagree* to (5) *Strongly agree*. Total scores range from 31 to 165 (Cronbach’s alpha = 0.93) with higher scores indicating higher severity. We also looked specifically at the Suicidal Ideation (GSIS-SI) and Death Ideation (GSIS-DI) subscales of the GSIS. These subscales measure active SI (i.e., intent to kill oneself; plan to kill oneself; range 10-35) and passive SI (i.e., wish for death without an active plan; range 5-22), respectively. In addition, responding *Agree* or *Strongly agree* to the statement “I have tried ending my life in the past,” which is part of the GSIS but not included in instrument scoring, indicated lifetime suicide attempt.

Social support and visitation—Social Support was assessed through a 7-item survey adapted from the Medical Outcomes Study (MOS) Social Support Survey (Sherbourne & Stewart, 1991) and the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1990). Responses to each question ranged from 1 (none of the time) to 5 (all of the time) for a maximum score of 35. Higher scores indicated more social support. Whether or not the study participants have visitors was obtained through asking “Are there visitors who come to see you?” This variable was dichotomized as “yes” or “no.” In addition, those responding that they did have visitors were asked about frequency of visitations, the person who visits the most often, and whether they have difficulty arranging visits.

Statistical Analysis

Descriptive statistics were used to assess characteristics of the overall sample. T-tests, Fischer’s exact tests, Mann-Whitney Wilcoxon tests, and chi-square tests of independence were used to compare the characteristics and outcomes between those with and without a life sentence. For those physical function and mental health outcomes associated with being a “lifer” (yes/no) in bivariate analyses ($p < 0.05$), we ran Poisson regression or linear regression models to determine if this association still remained statistically significant after controlling for age, race, and number of chronic conditions. Statistics were performed using R (R Core Team, 2020) and SAS version 9.4.

RESULTS

Sociodemographics and health

Participants had spent 20 or more consecutive years in prison at the time of study enrollment (N=65), with an average of 26.6(±4.5) years. Of these, 34 (52%) were expected to remain

incarcerated for at least another 20 years (i.e., life sentence/ “lifers”). The 31 individuals expected to be released had an average of 11.5(\pm 5.0) years left to serve on their sentences. Table 1 presents the characteristics of the study sample overall and according to whether or not they are expected to be incarcerated for at least 20 more years. The average age of study participants was 56.9(\pm 6.6) (range 50 to 79 years). The sample was racially diverse (40% white; 51% Black, and 9% Hispanic/Other), had an average of 12.2(\pm 2.3) years of education, and most had never been married (53%). Study participants had been incarcerated for the first time, on average, at age 23.2(\pm 9.6), and the majority had been incarcerated more than once (68%). None of the demographic characteristics or corrections-related factors differed between the two groups.

Participants had an average of 2.1(\pm 1.0) chronic medical conditions (range 0 to 5), which did not differ between those who were and were not expected to be released within the next 20 years. While not statistically significant, there were some notable differences between the groups, with the lifers faring worse. Nearly half of those who were expected to remain incarcerated reported their overall health as fair or poor compared to one quarter of those expected to be released. There were similar absolute differences between the groups in the proportion of those reporting fair/poor vision (76.5% versus 54.8%; $p=0.11$) and in the proportion of those reporting fair/poor hearing (35.3% versus 9.7%; $p=0.03$). A total of 39 (60%) participants reported a history of head injury (67.6% lifers versus 51.6% of those expected to be released).

Physical function and mental health

Overall, 34(52.3%) of the study participants experienced PADL disability, with lifers reporting disability in a higher number of PADLs than those expected to be released (1.5 \pm 1.6 versus 0.5 \pm 0.8; $p=0.007$, Table 2). After controlling for age, race, and number of chronic conditions, this association remained statistically significant (beta estimate = 0.97 [SE=28]; $p<0.001$). Results are not shown, but are available on request. All 4 participants who reported difficulty performing basic ADLs was in the group expected to remain incarcerated for at least 20 more years. Average SPPB scores were also lower (i.e., worse) in the lifers (10.5 \pm 2.3 versus 11.3 \pm 0.9; $p=0.05$). Furthermore, in this group, 18% had an SPPB score <10, which indicated mild to severe functional limitations, as compared with 3% in the group expected to be released.

Average depressive symptoms score, as assessed by the PHQ-9, was 5.4(\pm 4.9) for the overall sample (Table 2). However, those expected to be incarcerated for least 20 more years had an average PHQ-9 score that was, on average, 2.2 points higher than those expected to be released within 20 years ($p=0.06$). Whereas average GSIS score was 59.4(\pm 17.5), those with life sentences had average scores that were 10 points higher than the scores of those expected to be released (64.0 \pm 18.5 versus 54.5 \pm 15.2; $p=0.03$). Results from the multivariable model were similar (beta estimate GSIS score = 9.10 [SE=4.24]; $p=0.04$). Moreover, lifers’ Suicidal Ideation subscale scores were also significantly higher than the scores of those expected to be released (19.2 \pm 6.3 versus 15.5 \pm 4.8; $p=0.01$). This difference was significant even after controlling for age, race, and number of chronic conditions (beta

estimate SI score = 3.54 [SE=1.41]; $p=0.02$). The Death Ideation subscale scores did not differ significantly between the groups.

Social support and visitation

A total of 39 (60%) participants reported that they have visitors who come to see them and the majority of visits were from a sibling (36%) or a parent (21%). Figure 1 presents the frequency of visits. There were only 4 (10.2%) participants overall who reported having visitors either once per week or more than once a week, with 3 of those 4 in the group expected to be released. Most of the participants who received visitors reported having visitors less than once per month. Figure 2 presents the average social support scores among the total sample ($N=65$), those reporting visitors ($n=39$), and those reporting no visitors ($n=26$). Those with visitors have significantly higher social support scores as compared with those without visitors (27.4 ± 7.3 versus 18.5 ± 8.6 ; $p<0.001$). When considering all 65 participants regardless of whether they report having visitors or not, average social support score does not differ significantly between those with expected release within the next 20 years and those without. However, among the 39 individuals who report having visitors, those with expected release have a significantly higher social support score ($31.1 (\pm 6.1)$) than those without expected release ($24.8 (\pm 7.1)$) ($p = 0.005$). Among those reporting no visitors, the social support scores do not differ significantly according to expected release. Neither visitation nor social support score was significantly associated with physical function or mental health.

DISCUSSION

The population of older adults who are “aging in place” in prison while having spent much of their lives incarcerated is increasing rapidly. Yet, information regarding the health of these individuals is largely non-existent. Understanding the health of “long-terms,” and health-related differences between those who are and are not expected to be released in their lifetimes, holds importance for prison health systems and future planning. We found considerable disability in activities needed for daily living in prison (PADLs), and a high prevalence of depressive symptoms and suicidal ideation. We also found that prevalence of functional impairment and suicidal ideation is greater among those who are not expected to be released in their lifetime, i.e., “lifers”, even after controlling for potential confounders. Furthermore, even among those with visitors, perceived social support scores were lower among the lifers.

Prior studies suggest that incarcerated persons appear older than their stated age, a phenomenon referred to as “accelerated aging” (Greene et al, 2018; Mauer, 2018). Two thirds of our study participants reported their vision to be fair or poor. This is considerably higher than the 13% of community-dwelling men age 65 who report difficulties with vision (Federal Interagency Forum, 2012) and indicates accelerated aging in this group. Compared with those expected to be released, notably more lifers reported deficits with vision and hearing. Sensory deficits, which contribute to unhealthy aging, may be especially concerning in the prison setting where hearing orders and staying alert is critical. Thus, it

may be particularly important for prison systems to devote resources to help address sensory impairment among older adults who have aged in place in prison.

Our findings regarding physical functioning are also consistent with the concept of “accelerated aging”. Among community-dwelling older adults 70+ years of age who responded to a National Health Interview Survey administered from 1982 – 2009, the average predicted probability for an ADL disability was less than 10% (Lin et al., 2012). In our study, 12% of lifers reported having difficulty with 1+ ADLs at an average age of 57. This finding suggests that prison healthcare systems should be increasingly ready to provide assistive care to incarcerated people at a much younger age than would be expected to be required in the outside community (Lin et al., 2012).

We also found that over half of participants reported disability in at least one PADL, with the average number of PADL disabilities higher among those facing probable life sentences. This high percentage of participants reporting difficulty with everyday activities necessary for independence in the prison setting is concerning, especially given the relatively young average age of the study participants. The higher degree of physical impairment among those with probable life sentences was also demonstrated by the SPPB, an objective indicator. As more than 30% of the persons serving life sentences in the U.S. are age 50 and older (Nellis, 2021), our findings suggest that prison systems will likely need to prepare for high rates of disability through means such as environmental accommodations, infrastructure changes, and correctional staff training.

Depressive symptoms and suicidal ideation were also common among these long-termers. Among community living older persons, average PHQ-9 depressive symptom scores are 3.7(\pm 5.1) and 3.4(\pm 4.6) for individuals age 50-59 and 60-69, respectively (Tomitaka et al., 2018), and average GSIS scores are 47.6(\pm 19.1) (Heisel & Flett, 2006). Our sample from the Aging INSIDE study had a notably higher average PHQ-9 score of 5.4(\pm 4.9), which increases to 6.4(\pm 5.5) among lifers, as well as a notably higher average GSIS score of 59.4 (\pm 17.5), which increases to 64.0 (\pm 18.5) among lifers. The Suicidal Ideation subscale score (GSIS-SI) was especially high among the lifers. Our findings highlight the heavy mental health burden experienced among older adults who face life sentences. Furthermore, given that older male adults have the highest suicide rates in both prisons and in the community (Noonan, 2015; Hedegaard et al., 2020), suicide prevention efforts in correctional institutions should be aware that male lifers may be an especially vulnerable group.

Prisons are inherently stressful places characterized by constant surveillance, threats of observing or experiencing interpersonal violence, and limited choice. Thus, considering the large literature supporting the negative effects of chronic stress on health (Geronimus et al., 2006; Mezuk, Rafferty, et al., 2010), it is not surprising that persons who have been incarcerated for at least 20 years have high rates of disability and mental health concerns. Furthermore, considering the high lifetime rates of trauma, grief, and stress reported by older incarcerated persons (Maschi et al., 2015), it is likely that individuals in our study also experienced significant cumulative disadvantage prior to incarceration including poverty, unsafe neighborhoods, and limited access to healthcare. The high prevalence of recidivism,

with more than two-thirds of the sample previously incarcerated, indicates this disadvantage. In addition, the majority of the sample had experienced a head injury. Although we do not know when the head injury occurred (i.e., before or during incarceration) or the circumstances of the head injury, it is an indicator of exposure to a risky environment. Importantly however, the worse physical function and mental health found among the lifers in our study suggests that the added stress of knowing one will live the rest of his life in prison may, in and of itself, contribute to negative health outcomes.

Our findings also show that 40% of long-termers do not receive any visits and visits are infrequent. This is consistent with prior research suggesting that those who have “aged in place” in prison are likely to be estranged from family and friends due to years of confinement (Bond et al., 2005). Relatedly, those with no visitors also had considerably lower social support scores as compared with those reporting visitors. Lack of physical supports and/or perceived emotional support may be especially concerning for those expected to be released given the many negative outcomes associated with reentry (Barry et al., 2018; Binswanger et al., 2007; Jimenez et al., 2021). For example, long-termers frequently experience “post-incarceration syndrome” which is characterized by experiencing post-traumatic stress disorder, institutionalized personality traits (e.g., distrust, limited decision-making abilities), difficulty maintaining relationships and engaging in social interactions, and feelings of alienation (Liem & Kunst, 2013). Limited social support upon release may contribute to the severity of this syndrome for long-termers. This may become even more apparent as policy-makers push for decarceration during the global COVID-19 pandemic (Prison Policy Initiative, 2021). Additionally, even among those with visitors, we found that social support scores were lower among the lifers than those expected to be released within 20 years, further delineating the potential negative impacts of life sentences. Given the small sample size, we were unable to verify if lifers’ worse health outcomes were correlated with their lower social support scores. Future research should explore the role of social support as a potential moderator or mediator of the association between expectation of release and health outcomes.

There are several important limitations of this study to consider. The Aging INSIDE study had a relatively low response rate of 28%. It is possible that individuals with more physical impairments and/or who were experiencing greater depression or suicidal ideation were less inclined to participate. This would thereby result in under-sampling of individuals with greater physical and mental morbidity, and cause this study to under-report the true burden of functional impairment and suicidal ideation experienced by this population. Additionally, because our study sample was relatively small, there was limited power to evaluate differences in categorical outcomes (e.g., difficulty with at least one ADL) between the two groups. Thus, these findings provide a starting point for future research to build on. Finally, our study lacks representation from female and non-English speaking older adults.

This study is the first step in better establishing the needs of older adults who have aged within our prison systems. Nonetheless, it already shows the significant burden of physical disability and mental illness faced by this uniquely vulnerable population at a relatively young age. Furthermore, findings from our study suggest that even among incarcerated individuals who have already served a lengthy amount of time in prison, those with life

sentences are more likely to experience functional impairment, depressive symptoms, and suicidal ideation as compared with those who are expected to be released. These findings raise awareness of the significant costs that U.S. prison systems must be prepared to face as these individuals continue to age within prisons for the remainder of their lives.

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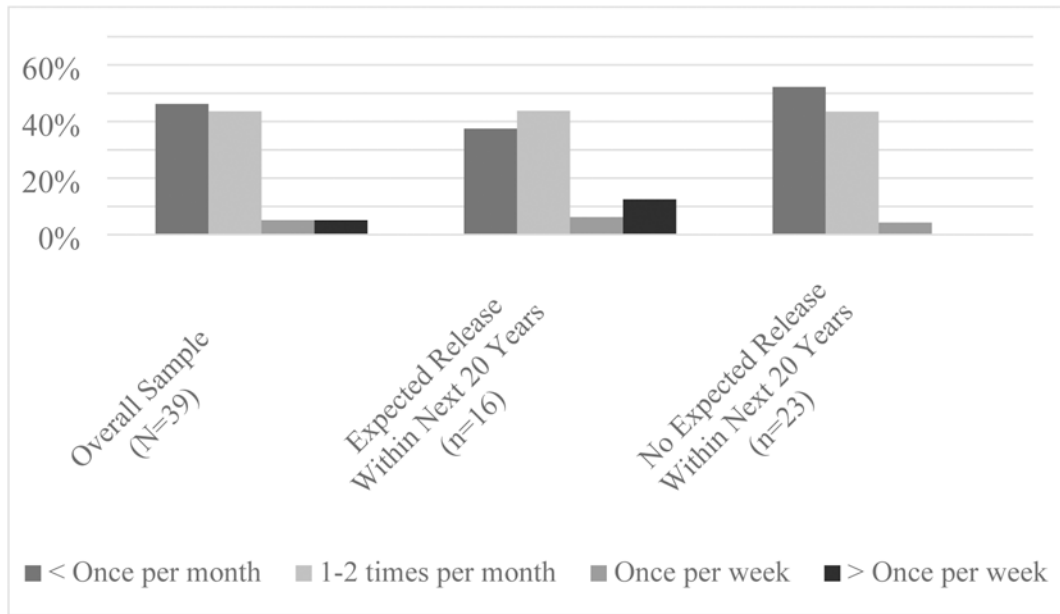


Figure 1. Frequency of visitors among those reporting having visitors (N=39).

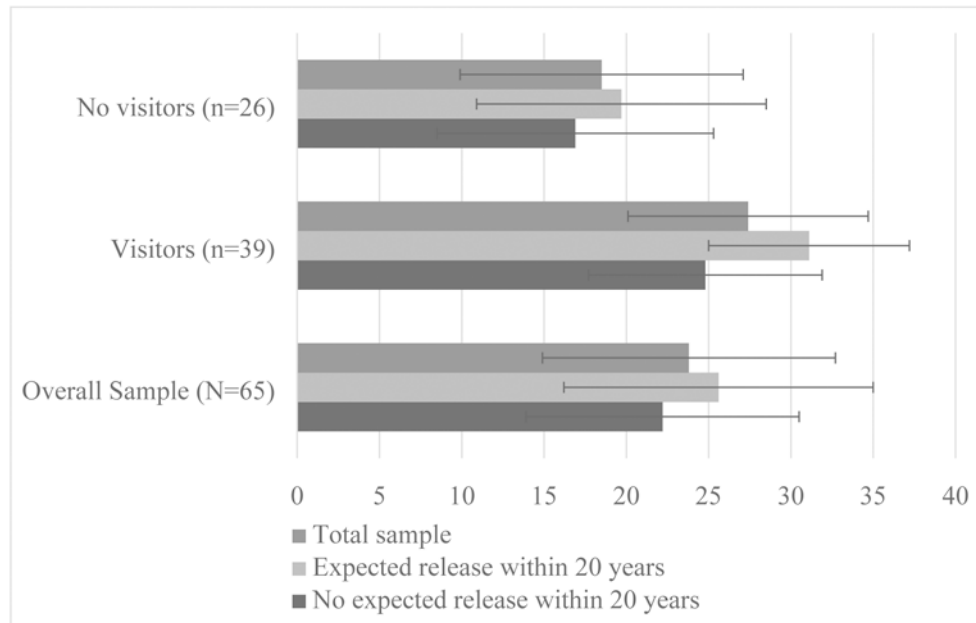


Figure 2. Average social support scores among the overall sample and according to whether or not participants reported having any visitors.

Table 1.

Participant Characteristics.

Characteristic	Overall Sample, N = 65	Expected release within next 20 years, N = 31 (48%)	No expected release within next 20 years, N = 34 (52%)	p-value
Demographics^a				
Age, mean (SD)	56.9 (6.6)	56.4 (6.7)	57.4 (6.5)	0.52
Years of Education, mean (SD)	12.2 (2.3)	12.1 (2.3)	12.4 (2.3)	0.58
Race, n(%)				>0.99
<i>Non-Hispanic White</i>	26(40.0)	12(38.7)	14(41.2)	
<i>Non-Hispanic Black</i>	33(50.8)	16(51.6)	17(50.0)	
<i>Hispanic/Other</i>	6(9.2)	3(9.7)	3(8.8)	
Marital Status, n(%) ^b				0.59
<i>Married</i>	7(10.9)	3(10.0)	4(11.8)	
<i>Never Married</i>	34(53.1)	18(60.0)	16(47.1)	
<i>Divorced / Widowed</i>	23(35.9)	9(30.0)	14(41.2)	
Incarceration-related characteristics^c				
Consecutive Years Already Spent in Prison, mean (SD)	26.6 (4.5)	26.3 (4.1)	26.9 (4.9)	0.56
Age at First Incarceration, mean (SD)	23.2 (9.6)	22.2 (10.5)	24.1 (8.7)	0.44
Has a Prior Incarceration, n(%)	44(67.7)	22(71.0)	22(64.7)	0.78
Current Incarceration is for Violent Offense, n(%) ^d	59(96.7)	28(93.3)	31(100.0)	0.24
Health-related characteristics^e				
Number of Chronic Health Conditions, mean (SD)	2.1 (1.0)	1.9 (0.9)	2.2 (1.1)	0.15
Fair/Poor self-rated vision, n(%)	43(66.2)	17(54.8)	26(76.5)	0.11
Fair/Poor self-rated hearing, n(%)	15(23.1)	3(9.7)	12(35.3)	0.03
History of prior head injury, n(%)	39(60.0)	16(51.6)	23(67.6)	0.29
Fair/Poor self-rated Overall Health, n(%)	24(36.9)	8(25.8)	16(47.1)	0.13

^aStatistical tests used to compare demographic characteristics between those with and without expected release include t-tests (age; years of education) and Fisher's exact test (race; marital status).

^bContains 1 unknown in the "Expected release within next 20 years" group

^cStatistical tests used to compare incarceration-related statistics between those with and without expected release include t-tests (current sentence length in years; age at first incarceration), chi-square tests of independence (prior incarceration), Fisher's exact test (violent offense).

^dContains 1 unknown in the "Expected release within next 20 years" group and 3 unknowns in the "No expected release within next 20 years" group

^eStatistical tests used to compare health-related statistics between those with and without expected release include Mann-Whitney Wilcoxon test (number of chronic health conditions), chi-square tests (vision; head injury; self-rated overall health), and Fisher's exact test (hearing).

Table 2.

Physical function and mental health of study participants.

Outcome	Overall Sample, N = 65	Expected release within next 20 years, n = 31 (48%)	No expected release within next 20 years, n = 34 (52%)	p-value
Physical Function^a				
Has Difficulty with one or more Activities of Daily Living (ADL), n (%)	4 (6.2)	0 (0.0)	4 (11.8)	0.11
Has Difficulty with one or more Prison Activities of Daily Living (PADL), n (%)	34 (52.3)	12 (38.7)	22 (64.7)	0.05
Number of ADLs Individuals Struggle With, mean (SD)	0.1 (0.4)	0.0 (0.0)	0.2 (0.6)	0.05
Number of PADLs Individuals Struggle With, mean (SD)	1.1 (1.4)	0.5 (0.8)	1.5 (1.6)	0.007
Short Physical Performance Battery (SPPB) Score, mean (SD) ^b	10.9 (1.8)	11.3 (0.9)	10.5 (2.3)	0.05
Number of Individuals with SPPB scores ≥ 9 , n (%) [*]	7 (10.9)	1 (3.2)	6 (18.2)	0.11
Mental Health^c				
PHQ-9 Score, mean (SD)	5.4 (4.9)	4.2 (4.1)	6.4 (5.5)	0.06
GSIS Score, mean (SD) ^b	59.4 (17.5)	54.5 (15.2)	64.0 (18.5)	0.03
GSIS Suicidal Ideation Subscale score, mean (SD) ^b	17.4 (5.9)	15.5 (4.8)	19.2 (6.3)	0.01
GSIS Death Ideation Subscale score, mean (SD) ^b	9.7 (4.0)	8.8 (3.2)	10.5 (4.6)	0.10
Lifetime Suicide Attempt, n (%)	16(24.6)	5(16.1)	11(32.4)	0.22

Note: GSIS = Geriatric Suicidal Ideation Scale

^aStatistical tests used to compare physical function between those with and without expected release include Fisher's exact test (difficulty with one or more ADLs; difficulty with one or more PADLs; and Number of Individuals with SPPB scores ≥ 9), Mann-Whitney Wilcoxon test (number of ADLs individuals struggle with; number of PADLs individuals struggle with), and t-tests (SPPB score).

^bThese variables contain 1 unknown within the "No expected release within next 20 years group"

^cStatistical tests used to compare mental health between those with and without expected release include t-test (PHQ-9 score, GSIS score, GSIS suicidal ideation subscale score, and GSIS death ideation subscale score) and chi-square tests of independence (lifetime suicide attempt).