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Social Factors Related to the Utilization of Health Care Among Prison Inmates

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Abstract

This study examines the demographic and social factors related to health care utilization in prisons using the 2004 Survey of Inmates in State Correctional Facilities. The findings show that education and employment, strong predictors of health care in the community, are not associated with health care in prisons. Although female inmates have a higher disease burden than male inmates, there are no sex differences in health care usage. The factors associated with health care, however, vary for women and men. Notably, Black men are significantly more likely to utilize health care compared to White and Latino men. The findings suggest that, given the constitutionally mandated health care for inmates, prisons can potentially minimize racial disparities in care and that prisons, in general, are an important context for health care delivery in the United States.

Keywords

health care utilization; medical conditions; gender; race; prison

Introduction

Due to the Eighth Amendment's protection against "cruel and unusual" punishment, prisons represent an "equal access" health care system (Delgado & Humm-Delgado, 2008). In the 1976 U.S. Supreme Court case *Estelle v. Gamble*, the court ruled that prisoners are entitled to access to care for diagnosis and treatment, a professional medical judgment, and administration of the treatment prescribed by the physician. Therefore, prisons ideally minimize differences in economic status, health coverage, and other factors that can influence access to care similar to the Veterans Health Administration (Saha et al., 2008) and the Medicare program (Schneider, Zaslavsky, & Epstein, 2002). This makes prisons

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uniquely situated to provide health care to individuals who are underserved in their communities (Freudenberg, 2001; Glaser & Greifinger, 1993).

The quality of health care services in prisons and jails, however, has been highly criticized. The shortcomings of health care services in U.S. correctional settings have been widely documented in academic (Delgado & Humm-Delgado, 2008; Greifinger, 2006), legal (Dockery v. Epps, 2013), journalistic (Leonard, 2012; Ridgeway & Casella, 2013), and other institutional (Human Rights Watch, 2012; National Commission on Correctional Health Care [NCCHC], 2002) forums. For example, Brinkley-Rubenstien and Turner (2013) found that HIV-positive inmates often experience a delay in medical treatment as well as low quality of care. The Health Status of Soon-to-Be Released Inmates, a comprehensive report presented to the U.S. Congress, demonstrates that many prisons are not adequately addressing inmate health (NCCHC, 2002). Not all states have system-wide treatment protocols for chronic diseases or policies and procedures for discharge planning for inmates who require ongoing care. The report concludes that there is a tremendous and largely unexploited opportunity to benefit public health by improving correctional health care practices.

It is important that health conditions be treated in prison because 95% of inmates will return to their communities without health coverage (Iglehart, 2014), although this is changing with the passage of the Affordable Care Act (Regenstein & Rosenbaum, 2014). Given the overrepresentation of men and racial/ethnic minorities in U.S. prisons, providing diagnosis and effective treatment during incarceration may help reduce population health disparities. Research has documented that improving physical health is an important step in reintegrating inmates into the community (Visher & Bakken, 2014; Wilson & Wood, 2014). One study found that inmates in Ohio and Texas reporting physical health, mental health, and substance abuse problems prior to being released have poorer employment outcomes; are more likely to need housing assistance; are heavy consumers of emergency room visits and hospitalizations without health insurance; engage in more criminal activity; and are more likely to be reincarcerated (Mallik-Kane & Visher, 2008).

This study examines the differential utilization of health care in prisons among a nationally representative sample of inmates. The main research question is, does the utilization of health care by inmates vary by demographic and other social factors? The demographic factors examined include age, sex, race/ethnicity, marital status, socioeconomic status, and veteran status. Childhood trauma is also examined, given the high rates among inmates (Belknap & Holsinger, 2006; James & Glaze, 2006) and the potential association with help-seeking behaviors (Centers for Disease Control and Prevention, 2013). Also examined are a number of factors related to the incarceration experience, such as the total number of past incarceration episodes, the number of years served, offender status, participation in programming and work assignment, and phone calls and visits from family and friends.

Methods

Data were from the 2004 BJS Survey of Inmates in State Correctional Facilities (SISCF; Bureau of Justice Statistics, 2007). The sample was designed to be nationally representative

of the state inmate population. First, prisons were randomly selected for participation and then inmates were randomly selected. Participation was voluntary. The final sample included 14,499 inmates in 287 prisons. The study sample for the current analysis is limited to only inmates aged 18 and older who are non-Hispanic White, non-Hispanic Black, or Latino, and who are sentenced. Patterns of missingness were examined and 94% of cases contained no missing data on the variables of interest. Given the low level of missing data, a listwise deletion was performed. This resulted in a final sample size of 12,323, which included 2,459 women and 9,864 men (85% of original sample). A subsample for analysis included only inmates who reported a current medical condition (n = 3,876; 32% of the study sample). Inmates were first asked whether they ever had problems related to the illness. A follow-up question asked whether they still had problems with the illness. The medical conditions included in the study subsample were cancer, hypertension, diabetes, heart problems, kidney problems, asthma, cirrhosis, and hepatitis.

Measures

The outcome variable was using health care for a current medical condition (yes/no). In the SISCF, inmates who reported a current health problem were asked, “Have you seen a doctor, nurse, or other health care person for this since your admission?” The study included measures for age, non-Hispanic White, Hispanic Black, Latino, marital status (never married vs. all other categories), high school/General Education Development (GED), employed prior to incarceration, and veteran status. High school/GED attainment and employment prior to incarceration are used as indicators of socioeconomic status. Childhood trauma was assessed as experiencing either sexual abuse or physical abuse. Inmates were asked to report whether they had experienced unwanted sexual contact or physical abuse prior to admission to prison. A follow-up question asked whether this occurred before the age of 18. Inmates who indicated that sexual abuse or physical abuse occurred before age 18 were coded as having experienced childhood trauma. Inmate factors included violent offender status, drug offender status, total number of past incarcerations, and the number of years served to date during the current incarceration episode. The incarceration experience was also characterized by participation in a job or educational training program since admission and the number of hours spent on work assignment in the previous week. External social support while incarcerated was indicated by whether the inmate had received telephone calls or visits from family/friends.

Analysis

First, sex differences in health conditions were examined using the full study sample (N = 12,323). Prevalence rates for the health conditions were reported for women and men. A χ^2 test reports the unadjusted health differences between women and men and an odds ratio (OR) reports the differences in health conditions between women and men controlling for age and using sample weights. Similar results have been previously reported from this data set (e.g., Binswanger et al., 2010; Maruschak, 2008). Second, sex differences in each of the demographic and other study variables were examined using the subsample of inmates reporting a current medical condition (n = 3,876). Among inmates with a current medical condition, unweighted sex differences are reported using a χ^2 test or t-test and weighted comparisons are reported using bivariate logistic or linear regression.

The multivariate analysis has three main logistic regression models. First, a model directly compared health care utilization between women and men with a current medical condition controlling for all demographic and other social factors. The remaining models were stratified by sex because women and men have different pathways to imprisonment (Belknap & Holsinger, 2006) and because incarcerated women have worse health (Binswanger et al., 2010; Sered & Norton-Hawk, 2008) and lower programming availability (Anderson, 2003; Eliason, Taylor, & Williams, 2004) compared to incarcerated men, and women's prisons often struggle to meet the health care needs of women (Delgado & Humm-Delgado, 2008; Eliason et al., 2004). The stratified models used prison-level fixed effects to control for prison-level contextual and compositional effects on utilization of health care (Allison, 2009). All multivariate analyses used sample survey weights to adjust for the complex sampling design of the study.

Findings

Almost half of women (43.3%) reported at least one current medical condition compared to almost one third of men (28.5%; $\chi^2 = 200.0$, $p \leq .001$; Table 1). When adjusted for age and sampling weights, men had significantly lower odds of reporting a current medical condition ($OR = 0.48$, $p \leq .001$). Women reported a significantly higher prevalence for each health condition at the $p \leq .001$ level compared to men, except for cirrhosis, which was significant only at the $p \leq .10$ level. Despite the sex disparities in disease burden, there were no differences in using health care among women and men (84.9%vs. 85.6%, $\chi^2 = 1.9$, $p = 0.165$; Table 2). Women with a current medical condition were younger (37.9 vs. 40.0 years, $t = -5.2$, $p \leq .001$) and less likely to be Black (35.8%vs. 44.1%, $\chi^2 = 22.1$, $p \leq .001$) compared to men. Women were also less likely to have never married (38.9% vs. 45.9%, $\chi^2 = 15.6$, $p \leq .001$), have been employed prior to incarceration (58.1% vs. 71.8%, $\chi^2 = 66.3$, $p \leq .001$), and be a veteran (1.5% vs. 15.9%, $\chi^2 = 152.3$, $p \leq .001$). The incarceration experiences of women and men also differed. Compared to men, women with a current medical condition have been incarcerated less often (1.3 vs. 1.7 episodes, $t = -3.6$, $p \leq .001$), have served less time (2.7 vs. 5.5 years, $t = -13.7$, $p \leq .001$), and were less likely to be violent offenders (29.7% vs. 53.8%, $\chi^2 = 180.8$, $p \leq .001$) while more likely to be drug offenders (26.2% vs. 15.6%, $\chi^2 = 58.2$, $p \leq .001$). There were no sex differences in participation in job/education training, hours spent in work assignment, or receiving phone calls or visits.

Table 3 presents the results from the multivariate logistic regression. Model 1 confirms that there were no sex differences in utilization of health care ($OR = 0.92$, $p = .528$). For every 1 year increase in age, inmates had 6% higher odds of utilizing health care ($OR = 1.06$, $p \leq .001$). Black inmates had higher odds of using health care compared to Whites ($OR = 1.40$, $p \leq .01$), while there were no Latino–White differences. An additional model (not shown) changed the reference category to Black. The findings show that both Whites ($OR = 0.72$, $p = .003$) and Latinos ($OR = 0.76$, $p = .077$) had significantly lower odds of health care than Blacks. Finally, length of time in prison ($OR = 1.06$, $p \leq .001$) and participation in job/education programming ($OR = 1.27$, $p \leq .05$) were positively associated with health care.

Models 2 and 3 (Table 3) present the findings of the multivariate fixed effects logistic regression. The Black–White differences were found specifically for men ($OR = 1.40$, $p \leq .05$). Figure 1 presents the predicted probability of health care for Black and non-Black men over time in prison. It shows that Black men had a higher probability of health care compared to non-Black men during the first 5 years of incarceration. As time in prison increases, the differences converged. It is worth noting that the average length of incarceration for men was just over 5 years. The models also show an interesting interaction with childhood trauma. This relationship was graphed in Figure 2. There were no sex differences in health care among those who reported no childhood trauma. Among inmates who reported childhood trauma, however, women were more likely to use health care services. In fact, women who reported childhood trauma were significantly more likely to use health care than women who did not report childhood trauma, while the reverse was true for men. Finally, participation in prison activities (e.g., job/education programming, hours spent in work assignment) had a positive influence on health care for women but not men.

Discussion

The health care of inmates in prison has remained a poorly understood topic of research (Binswanger, Redmond, Steiner, & Hicks, 2011; Moore & Elkavich, 2008). Given that older inmates are a growing population (Delgado & Humm-Delgado, 2008), the health care needs of inmates will continue to increase since increasing age also means increasing incidences of chronic illness and disabilities (Mitka, 2004). Given the constitutionally mandated health care for inmates, prisons can help minimize population disparities in health care. Indeed, the current study found that education and employment, strong predictors for health care in the community (National Center for Health Statistics, 2012), are not associated with health care in prisons. Also, even though female inmates have a higher disease burden than male inmates, a finding previously documented (Binswanger et al., 2010), there are no sex differences in health care usage. The factors associated with health care, however, vary for women and men. For example, social support and social networks appeared to be more important for health care for women. This suggests that increasing women's opportunities to build and maintain relationships both inside and outside of prison may be beneficial for their health. A second key finding is that men who experienced childhood trauma have lower health care usage. This reinforces the importance of offering trauma-informed care for adult male prisoners (Levenson, Willis, & Prescott, 2014), an issue that has been well documented for female prisoners (e.g., Covington & Bloom, 2006).

A third key finding is that Black men are significantly more likely to utilize treatment compared to every other racial group. The findings suggest that prisons may be an important site for health care for Black men, given their low levels of access to health care outside of prison. Research has consistently documented Black–White disparities in health care for noninstitutionalized adults (Hayward, Miles, Crimmins, & Yang, 2000; Marmot, 2005). For example, a 2007 Kaiser Family Foundation report provides evidence for racial differences in health insurance coverage, access to primary care, and treatment for specific medical conditions (James, Thomas, Lillie-Blanton, & Garfield, 2007). Some studies find that racial disparities persist even after adjustment for socioeconomic differences and other health care-related factors (Kressin & Petersen, 2001; Mayberry, Mili, & Ofili, 2000). Research with

criminal justice–involved populations also supports this view. Mortality research documents that Black male prisoners have lower death rates than Black male non-prisoners largely because of protections from external causes of death (Patterson, 2010; Spaulding et al., 2011), suggesting a potential prison health benefit for Black men. A study on health care expenditures found that individuals with recent criminal justice involvement make up 4.2% of the U.S. adult population, yet account for an estimated 7.2% of hospital expenditures and 8.5% of emergency department expenditures (Frank, Linder, Becker, Fiellin, & Wang, 2014). Since Black men are overrepresented in criminal justice–involved populations (Alexander, 2010; Clear, 2007; Pettit & Western, 2004) and underrepresented in community health care coverage (Mayberry et al., 2000; Smedley, Stith, & Nelson, 2002), providing quality health care in prisons, as well as in transition to the community after prison, can potentially contribute to reducing Black–White health disparities in the United States.

Limitations

There are several study limitations that need to be considered. First, the study is unable to account for access to health care prior to prison. Additionally, health care utilization is conceptualized as receiving any care. It does not capture the number of medical visits, the type of treatment offered, or the quality of the services provided. The conclusions of this study are attenuated because of this limited conceptualization of health care utilization. Second, it is unable to account for the timing of diagnosis, severity of symptoms, or the patterns of treatment. Each of these could impact who decides to seek health care. Perhaps the greatest limitation is that the health measures rely on self-report. This severely limits the validity of this study. However, the SISCF is the best sample available to answer the research question because it is the only large, nationally representative survey of inmates available in the United States. Surveys that include measured health such as the National Health and Nutrition Examination Survey exclude institutionalized populations (Ahalt, Binswanger, Steinman, Tulsky, & Williams, 2011). Relatedly, it is possible that different conclusions would be found with more recent data, given the recent changes in correctional health care spending and health care policy (e.g., Boutwell & Freedman, 2014; Iglehart, 2014). The data used in this study are 10 years old. It is important that correctional health and health care continue to be monitored at the national level (NCCHC, 2009).

Conclusion

This study suggests that prisons are an important site for health and health care delivery in the United States similar to schools (Eccles & Roeser, 2011; Ringeisen, Henderson, & Hoagwood, 2003) and the military (Hoge, Auchterlonie, & Milliken, 2006; Tuerk, Grubaugh, Hamner, & Foa, 2009). More research is needed to understand how health care utilization varies by prison and the environmental factors that influence whether inmates use health care services. Future research should also consider both the potential health benefits of prison and the potential negative effects of imprisonment on health (e.g., stress, injury, communicable diseases) in order to better understand how prisons influence population health (Binswanger et al., 2011; Brinkley-Rubenstein, 2013).

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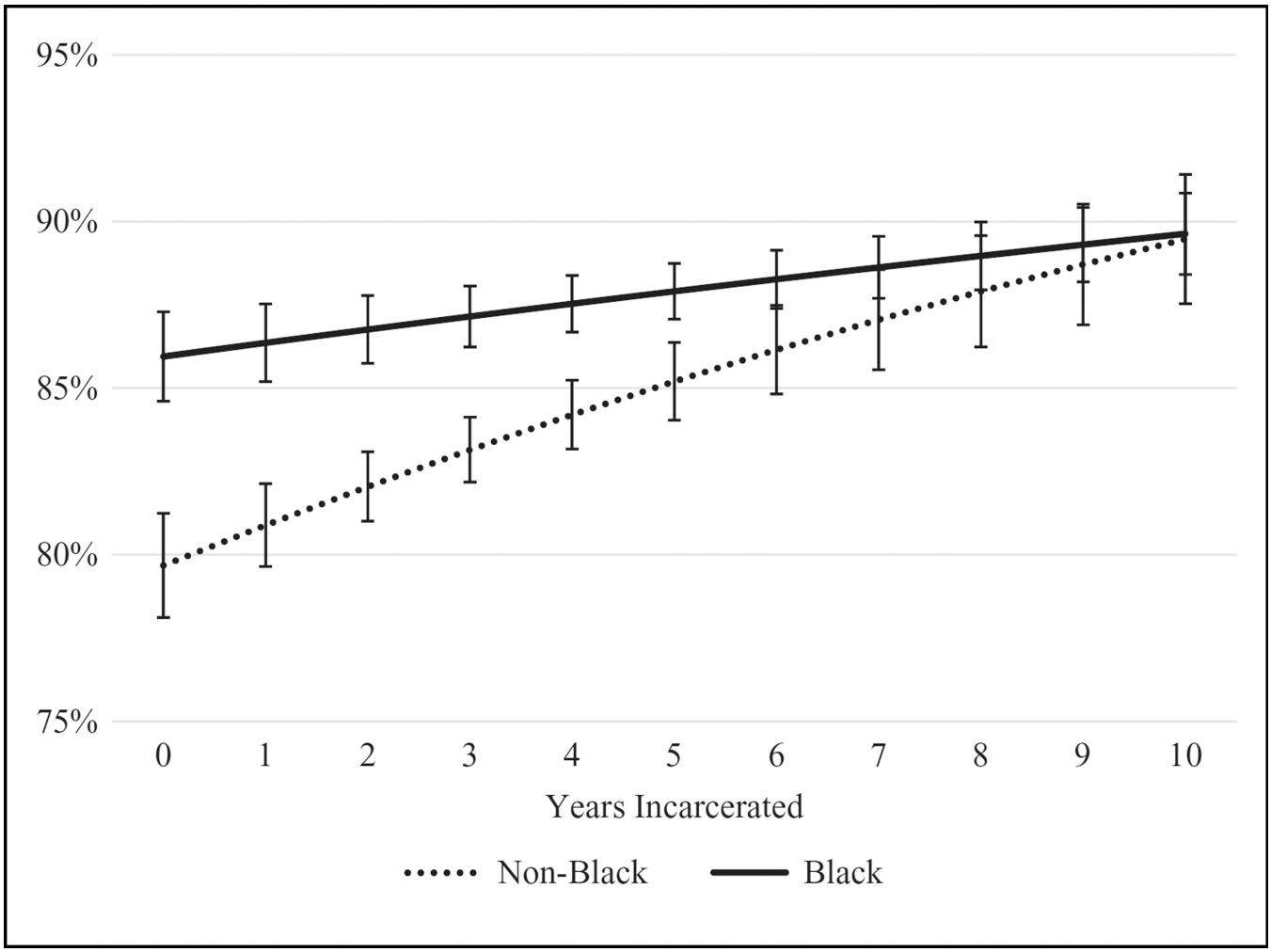

Figure 1.
Predicted probability of health care utilization with 95% confidence intervals for Black and non-Black men by years incarcerated (less than 1 year to 10 years).

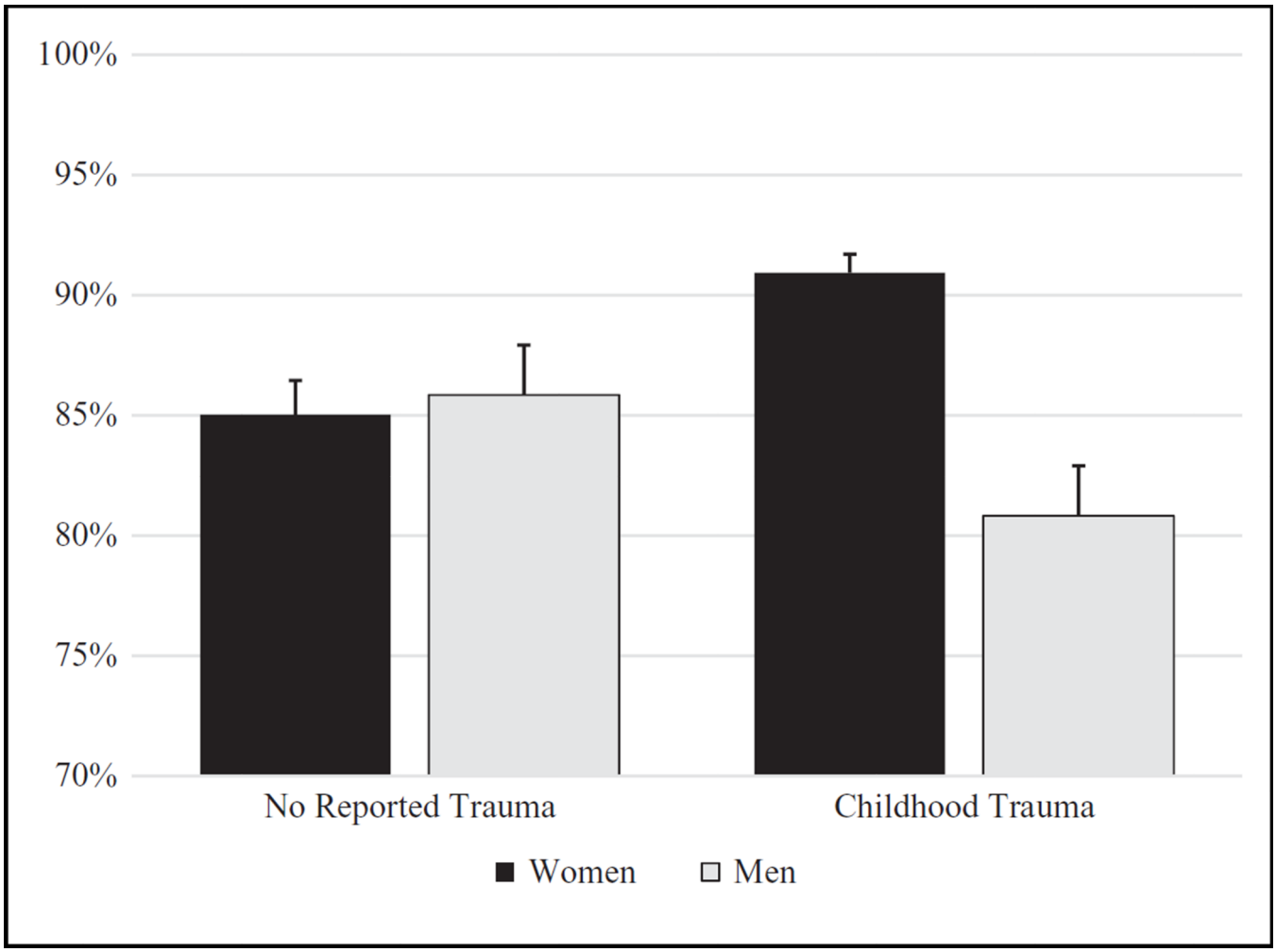

Figure 2.
Predicted probability of health care utilization with 95% confidence intervals for women and men who did and did not report childhood trauma.

Table 1

Sex Differences in Health Conditions.

	Female		Male					
Variables	***n***	**%**	***n***	**%**	χ^2	***p***	**Adj. *OR*[a]**	***p***
Any health condition	1,065	43.3	2,811	28.5	200.0	.000	0.48	.000
Asthma	448	18.2	797	8.1	222.4	.000	0.38	.000
Kidney	161	6.5	278	2.8	79.6	.000	0.39	.000
Heart problems	208	8.4	561	5.7	25.8	.000	0.60	.000
Diabetes	125	5.1	367	3.7	9.5	.002	0.60	.000
Hypertension	413	16.8	1,324	13.4	18.4	.000	0.73	.000
Cancer	54	2.2	69	0.7	44.6	.000	0.27	.000
Cirrhosis	32	1.3	90	0.9	3.0	.082	0.70	.095
Hepatitis	228	9.3	469	4.8	75.3	.000	0.46	.000
Sample size	2,459		9,864				12,323	

[a]Odds ratios are adjusted with age and sampling weights.

Table 2

Descriptive and Bivariate Analysis of Study Variables by Sex.

	Female		Male					
	(*n* = 1,065)		(*n* = 2,811)		Unweighted Comparison		Weighted Comparison	
Variables	***n***	**%**	***n***	**%**	χ^2/t	***p***	***OR/B***	***p***
Medical treatment	893	84.9	2,407	85.6	1.9	.165	1.04	.726
Age (mean)		37.9		40	−5.2	.000	2.27	.000
White	537	50.4	1,139	40.5	30.9	.000	0.63	.000
Black	381	35.8	1,240	44.1	22.1	.000	1.43	.000
Hispanic	147	13.8	432	15.4	1.5	.222	1.25	.035
Never married	414	38.9	1,291	45.9	15.6	.000	1.31	.000
High school	694	65.2	1,894	67.4	1.7	.191	1.10	.225
Employed	619	58.1	2,018	71.8	66.3	.000	1.80	.000
Veteran	16	1.5	447	15.9	152.3	.000	11.20	.000
Childhood trauma	157	14.7	358	12.7	2.7	.100	0.81	.048
Past incarcerations (mean)		1.3		1.7	−3.6	.000	0.48	.000
Years served (mean)		2.7		5.5	−13.7	.000	2.80	.000
Violent offender	316	29.7	1,513	53.8	180.8	.000	2.76	.000
Drug offender	279	26.2	437	15.6	58.2	.000	0.56	.000
Job/education training	505	47.4	1,311	46.6	0.2	.664	0.95	.519
Hours in work assign (mean)		14.7		13.8	1.6	.106	−0.86	.140
Phone calls	877	82.4	2,360	84.0	1.5	.228	0.97	.796
Visits	329	30.9	785	27.9	3.3	.069	0.86	.064
Sample size	1,065		2,811				3,876	

Table 3

Results From Multivariate Logistic Regression Examining Utilization of Health Care.

	Model 1		Model 2[a]		Model 3[a]	
	Total		Women		Men	
Variables	***OR***	***p***	***OR***	***p***	***OR***	***p***
Male	0.92	.528	—		—	
Age	1.06	.000	1.05	.000	1.06	.000
Black	1.40	.003	1.25	.324	1.40	.022
Latino	1.06	.740	1.43	.230	0.89	.549
Never married	1.10	.449	1.30	.231	1.09	.540
High school	1.13	.340	1.12	.562	1.01	.936
Employed	0.88	.247	0.81	.284	0.94	.672
Veteran	0.82	.247	0.40	.177	0.82	.322
Childhood trauma	0.76	.059	1.62	.091	0.68	.023
Past incarcerations	0.99	.732	1.02	.641	1.00	.790
Years served	1.06	.000	1.16	.002	1.06	.001
Violent offender	0.93	.600	0.94	.792	0.89	.427
Drug offender	0.81	.242	1.01	.962	0.91	.612
Job/education training	1.27	.025	1.62	.016	0.16	.203
Hours in works assignment	1.00	.178	1.01	.042	0.00	.479
Phone calls	1.02	.892	1.62	.070	0.23	.325
Visits	1.07	.515	1.19	.425	0.14	.944
Observations	3,876		967[b]		2,323[b]	

[a]Includes prison fixed effects.

[b]Sample size reduced due to lack of variation in the outcome for some prisons.