Published in final edited form as:

J Correct Health Care. 2019 April ; 25(2): 143–161. doi:10.1177/1078345819833387.

Prevalence and correlates of disability among a sample of victimized women on probation and parole

Kirsten E. Smith^{*,1}, Amanda M. Bunting^{2,*}, Seana Golder¹, Martin T. Hall¹, George E. Higgins³, and TK Logan^{4,5}

¹Kent School of Social Work, University of Louisville, Louisville, Kentucky, 40292, United States

²Department of Sociology, University of Kentucky, Lexington, Kentucky, 40508, United States

³Department of Criminal Justice, University of Louisville, Louisville Kentucky, 40292, United States

⁴Department of Behavioral Science, University of Kentucky, Lexington, Kentucky, 40508, United States

⁵Center on Drug and Alcohol and Research, University of Kentucky, Lexington, Kentucky 40508, United States

Abstract

The purpose of this exploratory study was to establish the prevalence of disability as measured by self-reported Social Security Disability Insurance (SSDI) receipt among a sample of women on probation and parole who have experienced interpersonal victimization in childhood and/or adulthood. Women receiving SSDI in this sample were more likely to be older, White, to live alone, and to score lower on measures of social support compared to women not receiving SSDI. SSDI-recipients were also more likely to report poorer health, chronic pain, and more frequent healthcare service utilization. High rates of adverse childhood experiences, rape, adult victimization, and an overall greater severity of post-traumatic stress disorder symptomatology were observed for women receiving SSDI. Groups had similar overall mental health profiles and diverged primarily on trauma variables. Findings support the need for trauma-informed care and highlight the possibility that some criminal justice system-involved women likely qualify for SSDI yet are not receiving it.

Introduction

As of 2014, there were 1.2 million women involved in the U.S. criminal justice system (CJS), a 700% increase from 1980 (Carson, 2015). Of these women, approximately 1.06 million were on probation/parole, with the remainder residing in correctional facilities (Carson, 2015). The public health consequences of such substantial increases in

*Corresponding Author: Kirsten Elin Smith, Kent School of Social Work, University of Louisville, Louisville, Kentucky, 40292, United States; Phone: 859-475-2021; kirstenelin.smith@louisville.edu.

*The second author was supported by the National Institute on Drug Abuse (T32DA035200). The funding agency had no role in study design, data collection or analysis, or preparation and submission of the manuscript. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health

incarceration rates for this marginalized population, who is already medically underserved and at elevated risk for poor health outcomes, may not be fully realized for years to come (Dumont, Brockmann, Dickman, Alexander, & Rich, 2012; Nowotny, Belknap, Lynch, & DeHart, 2014; Schnittker & John, 2007). Although prevalence of morbidities among CJS-involved women has been established as being higher than those found among the general population (Bronson, Maruschak, & Berzofsky, 2015), the long-term health profile of CJS-involved women is unclear. Disability, conceptualized as chronic health-related impairments which limit everyday functioning, is an underexplored phenomenon within the literature. Increases in overall life expectancy suggests that disability rates will likely rise for aging CJS-involved women who present with myriad health conditions, but who are living longer than in previous generations (Williams et al. 2006).

Chronic disability can impinge upon the quality of life of the individual (Wittchen, Carter, Pfister, Montgomery, & Kessler, 2000) and is a considerable public health cost (Bloom et al., 2012). CJS-involved women comprise a uniquely vulnerable population (Salisbury & Van Voorhis, 2009) and it is likely that by more accurately establishing disability prevalence among this group additional vulnerabilities will be revealed which have thus far remained unexplored. Given the potential avenues for service delivery and intervention prior to the onset of disability, it is important that this under researched area is advanced. Identifying correlates of and elucidating potential causal pathways to disability among CJS-involved women may help inform interventions that lessen the likelihood that health conditions deteriorate into chronic disability.

Background

The majority of women who enter the CJS have a complex and complicated history, defined in large part by cumulative disadvantage and threats to safety and well-being (Chesney-Lind, 2003; Rosseger et al., 2009; Salisbury & Van Voorhis, 2009; Simpson, Yahner, & Dugan, 2008; Tjaden & Thoennes, 2000). Many CJS-involved women will have experienced a range of stressors and traumatic episodes prior and subsequent to CJS-involvement, including abuse, sexual victimization, intimate partner violence (IPV), homelessness, low socioeconomic status (SES), social exclusion, mental and physical health problems, and substance use disorder (SUD) (Aday, Dye, & Kaiser, 2014; Bennett, Holloway, & Farrington, 2008; James & Glaze, 2006; Kushel, Hahn, Evans, Bangsberg, & Moss, 2005; El-Bassel et al., 2004; Green, Miranda, Daroowalla, & Siddique, 2005; Schnittker & John, 2007; Weiser et al., 2009). Oftentimes, these factors are co-occurring and reinforcing insofar as initial vulnerabilities (e.g. economic disadvantage, SUD) increase the likelihood for further victimization, adversity, and poor health (e.g. IPV, homelessness, SUD relapse) (Koob, 2009; Logan, Walker, Jordan, & Leukefeld, 2006; Gutierrez & Van Puymbroeck, 2006; Lynch, DeHart, Belknap, & Green, 2012; McHugo et al., 2005).

Of importance to this discussion is the association between adverse events and victimization in childhood and continued adversity and victimization during adulthood, including poor health outcomes (Edwards, Holden, Felitti, & Anda, 2003; Felitti et al., 1998; Min, Minnes, Kim, & Singer, 2013; Tripodi & Pettus-Davis, 2013). Adverse childhood experiences (ACEs) have been found to be associated with multiple health risks in later life, including

SUD, depression, attempted suicide, sexually transmitted diseases, obesity, heart disease, and criminal offending, (Anda et al., 2006, 2007; Chapman et al., 2004; Dube et al., 2003; Felitti et al., 1998; Lynch et al., 2017; Mason et al., 2016) in a manner such that the number of ACEs produces a graded relationship with poor adult outcomes. This strong graded relationship has additionally been found among individuals reporting disabilities (Harkonmäki et al., 2006; Rose, Xie, & Stineman, 2014).

CJS-involved women also experience high rates of pervasive stressors in adulthood, such as economic and occupational uncertainty, barriers to accessing services, homelessness, psychological abuse, social marginalization, and community instability (e.g. neighborhood violence, environmental hazards), all of which can contribute to declines in health (Adler & Newman, 2002; Benach et al., 2014; Berkman & Glass, 2000; DeLongis, Folkman, & Lazarus, 1988; Folkman, 2013; Galster, 2012; Greenberg & Rosenheck, 2008; Hatzenbuehler, Phelan, & Link, 2013; Kawachi, Subramanian, & Kim, 2008; Pico-Alfonso, 2005; McEwen & Morrison, 2013; Van Olphen, Eliason, Freudenberg, & Barnes, 2009). It is unclear, though, what the culmination of a lifetime of stress and adversity produces in terms of CJS-involved women's long-term health outcomes. For instance, higher rates of some specific types of chronic and infectious disease (e.g., HIV, hepatitis, bipolar disorder) have been observed among CJS-involved women (Binswanger, Krueger, & Steiner, 2009; Dumont et al., 2012; Meyer, Springer, & Altice, 2011), however, insufficient attention has been given to considering women's health trajectories parallel to any arc of CJS-involvement across the lifespan.

Thus far, national estimates of disability prevalence among CJS populations have been produced by government-led survey initiatives. Such surveys have used different criteria for operationalizing the term disability and may have failed to capture many important respondent characteristics, such as social history, psychological symptom onset, and morbidity type (Bronson et al. 2015; Wilper et al., 2009). In determining disability prevalence among incarcerated individuals, the 2011-12 National Inmate Survey (NIS-3) operationalized 'disability' similarly to the U.S. Census Bureau's American Community Survey, in which a disability is constituted by any impairment falling within the categories of cognitive, vision, hearing, ambulatory, self-care, or independent living. Any difficulties reported in these areas by incarcerated individuals qualified them as 'disabled' for NIS-3 purposes. However, the authors noted limitations of such measurement, including the fact that self-report was restricted to individuals who had the capacity to complete the survey (e.g. those with severe impairments were excluded) and that mental health disorders were not included. Moreover, etiology was not determined.

Despite these limitations, the NIS-3 provides some of the most recent national estimates of disability among incarcerated individuals. Overall, the health of incarcerated individuals is poor compared to the general population, with 13-16% of individuals indicating multiple disabilities as (Bronson et al., 2015). Using 2002 Survey of Inmates in Local Jails and 2004 Survey of Inmates in State and Federal Correctional Facilities data, Wilper and colleagues (2009) estimated that between 39% and 43% of incarcerated individuals had a chronic physical or mental health condition and noted that mental health conditions among incarcerated individuals is likely higher than the estimates produced by their analyses given

the prevalence of undiagnosed mental health symptoms. Using the same survey data, Binswanger et al. (2009) found that incarcerated individuals were at increased odds for chronic conditions such as arthritis, hypertension, asthma, hepatitis, and cancer compared to the general population.

CJS-involved women have higher rates of disability than their male counterparts, with 40% of women in prison and 49% of women in jail reporting at least one disability in 2012, compared to 31% and 39% of men, respectively (Bronson et al., 2015). Serious mental health conditions (e.g. bipolar disorders, major depressive disorder) are also significantly higher among incarcerated females compared to males (Baillargeon, Hoge, & Penn, 2010; Binswanger et al., 2009; Steadman, Osher, Robbins, Case, & Samuels, 2009). CJS-involved women can be frequent consumers of health services, yet somewhat paradoxically, this group often experiences disruptions in and barriers to accessing healthcare and receiving adequate treatment (Ramaswamy, Upadhyayula, Chan, Rhodes, & Leonardo, 2015; Sered & Norton-Hawk, 2013; Wippler et al., 2009).

Beyond studies examining health and disability among geriatric individuals who are incarcerated and investigations exploring the institutional barriers to quality of life among incarcerated elderly individuals, there are limited data describing the prevalence, characteristics, and correlates of disability among CJS-involved women (Fazel, Hope, O'Donnell, Piper, & Jacoby, 2001; Human Rights Watch, 2012; Loeb & AbuDagga, 2006; Williams et al., 2006, 2009). To date, there are no studies examining disability prevalence among non-elderly women on probation and parole. Given what we do know about CJS-involved women, it is likely that there are CJS-involved women in the community with functional impairments who are in need of targeted services yet whose needs are under-recognized and who are under-served. Many important questions remain regarding the nature of disability generally and for CJS-involved women specifically. This is partially because disability as a construct can be gauged using multiple metrics and yet still not fully capture the essence of what it means to experience disability (Barbotte, Guillemin, & Chau, 2001). Indeed, the proportion of individuals who are functionally disabled in the U.S. is unknown (National Institutes of Medicine, 2007) and there remains no universal definition for what establishes 'disability' proper (Brault, 2012). These epidemiological and conceptual issues make researching disability among CJS-involved women challenging, but no less important.

Purpose

Poor health outcomes have been observed for CJS-involved women, yet it is uncertain how many CJS-involved women are considered disabled outside of institutional settings, such as women on probation/parole. It is unclear what factors differentiate disabled CJS-involved women from non-disabled CJS-involved women, despite potential similarities. The current research may help explicate some of the significant factors associated with disability in a population with high rates of socioeconomic disadvantage, mental and physical illness, SUD, and a history of victimization. Using data from a study of women on probation and parole in Kentucky, the purpose of this exploratory study was to establish the prevalence of disability status using Social Security Disability Insurance (SSDI) receipt and to compare

women receiving SSDI to those not receiving SSDI across demographic characteristics, health, psychological functioning, victimization, and service utilization.

Methods

A primary data analysis was conducted using baseline data obtained from a sample of women on probation and/or parole who have experienced victimization (N=406). Between July 2010 and January 2013 adult women (age >18) on probation (N=307) and/or parole (N=92) in the Louisville metro area (Jefferson County) were recruited via in-person contacts, flyers, direct mailing, and electronic/print media. Screening eligibility was conducted via telephone and in person. Study eligibility criteria included: a) current probation/parole status, b) sexual activity with a male partner in the 30 days prior to study involvement, and c) a history of physical and/or sexual abuse. Victimization experiences were not limited to a particular developmental period or type, thus women who had reported experiencing physical and/or sexual abuse from a parent, caretaker, intimate partner, or non-intimate partner as a child or adult (or both) were included in the sample. Of those screened for study inclusion, 81% were eligible to participate. Computer-assisted interviews (ACASI; NOVA Research Company, 2003) were conducted in person by trained female staff. Extensive information was provided to the respondents during the process of informed consent on possible risk and safeguarding of confidentiality. In addition, the women were made aware that the research team had received a certificate of confidentiality from the National Institutes of Health. Participants were compensated \$35 for their time and were debriefed upon completing the interviews. The study was approved by the University of Louisville Institutional Review Board.

Measures

Demographic information was captured using age, educational attainment (high school diploma/GED), employment (i.e. has ever been employed, current employment status), living situation (e.g. living alone vs. living with others, homelessness), marital status (e.g. single, married or in a relationship, and divorced, separated, or widowed), and race was self-reported by study participants.

Disability status was determined by self-report of past-30-day receipt of SSDI benefits. The Social Security Administration (SSA) defines disability as: “the inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment(s) which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months” (SSA, 2017a, para 4).

Health status was operationalized using HIV status along with items adapted from the Medical Outcomes Study: 36-Item Short Form Survey Instrument (Ware & Sherbourne, 1992). Items consisted of five categorical variables measured via statements describing perceived general health (e.g. “In general, would you say your health is: excellent, very good, good, fair, poor?”), bodily pain, (e.g. “How much bodily pain have you had during the past 4 weeks?”), and limitations in activity (e.g. difficulty walking, difficulty doing activities such as carrying groceries or moving a table).

Healthcare utilization was measured using past 12-month number of healthcare visits, any lifetime episodes of SUD treatment, and any past-12-month psychiatric service medication utilization adapted from the MOS 36-Item Short-Form Health Survey (SF-36) Selection (Ware & Sherbourne, 1992).

Childhood adversity and victimization was operationalized using questions adapted from the Revised Conflict Tactics Scale (Straus, Hamby, Boney-McCoy, & Sugarman, 1996), Tolman's Psychological Maltreatment of Women Inventory revised to address the construct of childhood victimization as opposed to adult women, and questions from Mullings et al. (2003) study involving incarcerated women (Tolman 1989, 1999). These adapted questions yielded 11 dichotomous variables pertaining exclusively to psychological abuse (e.g. "Did your parents or caretaker ever insult, shame, or humiliate you in front of others?"), physical abuse, (e.g. "Did your parents or caretaker ever physically hurt you on purpose (including grabbing, slapping, burning, scalding, punching, choking, throwing you around, or harshly spanking you?"), sexual abuse (e.g. "Did your parents or caretaker ever force or threaten you to do sexual things other than intercourse?" and "Was your first sexual intercourse consensual?"), emotional neglect (e.g. "While growing up, did you frequently feel unloved?"), economic insecurity/neglect (e.g. "While growing up, did you often did not have enough food to eat?"), and family instability (e.g. parents marital status and "Did you ever see anyone abuse your mother?").

Psychological functioning was operationalized using current psychological distress, locus of control (LOC), and self-esteem. **Current psychological distress** was determined using the 18-item Brief Symptom Inventory (BSI 18) (Derogatis, 1993) which measured the degree to which nine symptom dimensions (i.e. somatization; obsessive compulsive; interpersonal sensitivity; depression, anxiety; hostility; phobic anxiety; paranoid ideation; psychoticism) were experienced over the past seven-day period (0= not at all; 4=extremely). A global severity index (GSI) was also produced as an indicator of the overall recent psychological distress experienced. Alpha reliabilities for the BSI subscales range from .80 to .91. **LOC** was measured using the 40-item Adult Nowicki-Strickland Internal-External Control Scale (ANSIE) (Nowicki & Duke, 1974) comprised of questions to which participants can endorse a 'yes' or 'no' response, including 15 reversed coded questions. Greater number of 'yes' responses (and 'no' responses for reverse coded questions) yield higher scores indicating a *greater* external LOC. Alpha reliability for the ANSIE ranges between .56 and .83 (Nowicki & Duke, 1974; Roueche & Mink, 1976). **Self-esteem** was measured using the Rosenberg Self-esteem Scale (RSE) (Rosenberg, 1965) which ranges from 0-30, with lower scores reflecting lower self-esteem. The mean reliability estimate for the RSE (derived from Heise 1969 single item scale equation and comparable to Cronbach's alpha) is .75 (Robins, Hendin, & Trzesniewski, 2001).

Trauma was operationalized using diagnostic criteria for PTSD and PTSD severity which were measured using the 49-item Posttraumatic Stress Diagnostic Scale (PDS; Foa 1995; Foa, Cashman, Jaycox, & Perry, 1997). The PDS has been found to be reliable and valid in its diagnostic capabilities using DSM-IV criteria (Foa, 1995; Griffin, Uhlmansiek, Resick, & Mechanic, 2004; Powers, Gilliam, Rosenfield, Jerud, & Foa, 2012).

Finally, **social support** was measured using a 4-item version of the Medical Outcomes Study-Social Support Survey (MOS-SSS) which assesses practical and emotional supports as well as affection (e.g. “Someone to help with daily chores if you were sick”, “Someone to love and make you feel wanted) and which has been determined as a reliable and valid measure of social support among victimized CJS-involved women (Higgins, Marcum, Golder, Hall, & Logan, 2015).

Data Analysis

Data were analyzed using SPSS-24. Descriptive statistics were examined for all relevant variables in order to establish prevalence of SSDI among the sample. Chi-square and t-tests were utilized to determine statistically significant differences between those receiving SSDI and those who were not.

Results

In the sample of 406 women, 83 (20.4%) were receiving SSDI. Thus, one-fifth of the sample was conceptualized as disabled. Demographic and health variable differences between women receiving SSDI and those who were not found are reported in Table 1. Women receiving SSDI were older ($\bar{x} = 41.6$ vs. 36.1), more likely to have higher past-month income ($p < .001$), to live alone ($p < .001$), and to be White ($p < .05$). No significant differences were found among comparisons of women receiving SSDI and non-SSDI recipients on variables of education, lifetime employment, homelessness, or marital status.

As expected women receiving SSDI reported poorer overall health ($p < .05$) and more severe bodily pain ($p < .001$). Women receiving SSDI were more limited than non-recipients with regard to moderate activity, but there were no differences between groups in limitations of walking or vigorous activity (e.g., lifting heavy object, sports). Women receiving SSDI were more likely to be HIV positive ($p < .001$) and to have consumed more health services, as indicated by statistically significant differences in the mean number of past-12-month healthcare visits ($p < .001$), past-12-month psychiatric service utilization, ($p < .001$), and past-12-month psychiatric medication utilization ($p < .001$). However, there were no differences between groups in regard to lifetime SUD treatment.

Table 2 reports population differences of mental health, trauma, and social support variables. Several of the childhood victimization questions did not differ significantly between the groups, however questions regarding psychological abuse (Q1,2), physical abuse (Q3,4) and sexual abuse (Q5,6) were significantly different as women who received SSDI were more likely to report psychological, physical and/or sexual childhood abuse and to report that their first sexual experience was not consensual ($p < .01$). Additionally, women receiving SSDI were more likely to report childhood food insecurity (Q8; $p < .05$).

Examination of relevant mental health variables revealed that women receiving SSDI had higher mean LOC scores, indicating a higher external locus of control whereby they were more likely to perceive themselves as less capable of impacting their lives and more likely to attribute success or failure to external forces. No differences were found among self-esteem or any of BSI psychopathology scale scores. However, women receiving SSDI were more

likely to meet the criteria for PTSD ($p<.01$) and report more severe PTSD symptoms. Finally, women were receiving SSDI scored lower for measures of social support than women not receiving SSDI ($p<.05$).

Discussion

This exploratory study established the prevalence of disability among a sample of women on probation/parole who have experienced victimization through examination of SSDI receipt. Among healthcare and social service providers, SSDI receipt is often used as a proxy for disability status. One advantage in using SSDI as a proxy for disability is that the SSA defines disorder-specific disability in stringent terms, meaning that if one is receiving SSDI, it is for significant functional impairment. A limitation of this method for measuring disability is that it excludes those who have not applied for SSDI, those whose applications have been denied, and possibly those with intermittent impairments and/or conditions with variable symptomatology severity, which may be more readily denied by the SSA. Given that SSDI can serve to corroborate self-reported disability status, it is a useful measure by which to determine disability rates among CJS-involved women, even if it is likely to produce some underestimate in the overall prevalence.

Disability prevalence was expected to be higher among women in this sample (Bronson et al., 2015; SSA, 2016; Steadman et al., 2009). When utilizing SSDI receipt as a proxy for disability, it was determined that one-fifth of the women were disabled in some capacity. This rate, while approximately 11% higher than the prevalence of disability among the general population in Kentucky, is nearly four times higher than the general population nationally (4.7% versus 20.6%) (SSA, 2011; 2016). However, it is still lower than rates of self-reported disability found in the nationally representative sample inmates in the NIS-3 (Bronson et al., 2015). However, utilization of SSDI receipt as a marker of disability more accurately measures the prevalence of severe and chronic disabilities. When excluding vision and hearing disabilities, the prevalence of 20% found in the current study is higher than the rate of ambulatory, self-care, and independent living disabilities reported in the NIS-3 among jail inmates and prison inmates. These three categories are more likely to reflect chronic disabilities that would be most likely to warrant SSDI receipt, since these disabilities include impairments that limit mobility and successful independent living tasks such as shopping (Bronson et al., 2015). The most prominent reason for SSDI receipt among adults in the U.S. is due to physical disorders (SSA, 2016), however mental health disorders comprise the second largest stand-alone disability category (26.5) next to musculo-skeletal system and connective tissue conditions (31.7%). Since the current data does capture the reason for SSDI receipt, it is unknown to the extent which specific disabilities or morbidities are represented in the current data.

Women in both the SSDI group and non-SSDI group were similar in many important areas, such as educational attainment, substance use history, and mental health symptomatology. However significant differences arose when comparing age, income, solitary living, and race. Given general profiles of those reporting disability, it was expected that women receiving SSDI would be older. However, the mean age for women receiving SSDI was 42.6. Nationally, women ages 40-44 comprise only 6.6% of all female SSDI-recipients (SSA,

2016). Women in this sample receiving SSDI were also more likely to have incomes in the \$500-\$999 range, which is the likely income category for women of their average age according to Social Security Administration data (SSA, 2016). Though these benefit amounts are low, they may serve as a protective factor in the lives of SSDI-recipients, not just economically, but also facilitating opportunities for these women to assume a positive role as provider (Angell, 2011; Hansen, Bourgois, & Drucker, 2014). Women reporting disability were also more likely to be White which is consistent with findings from national CJS-disability survey data (Bronson et al., 2015) but not general population trends (Centers for Disease Control and Prevention, 2015). It is unclear if this is due to qualitatively greater severity in impairments in functioning for White versus minority groups in this sample; greater access to screening and greater likelihood of SSDI benefit approval of for White compared to minority groups; or race-based discrepancies in self-report of SSDI status. Given the limited research in this area, further studies are needed to determine if this constitutes a trend of disability or a trend of bureaucracies.

Women receiving SSDI scored higher for external LOC than those not receiving SSDI. CJS-involved women (Asberg & Renk, 2014; Gussak, 2009), as well as individuals with a history of childhood victimization (Bolger & Patterson 2001), have been found to demonstrate higher external LOC. Higher external LOC has been associated with depressive symptoms and with less adaptive coping strategies against stress (Harrow, Hansford, & Astrachan-Fletcher, 2009). Women receiving SSDI were also more likely to live alone and to have weaker social support. When examining stress, LOC, and social support as predictors of psychological functioning among a sample of CJS-involved women, Asberg & Renk (2014) found that perceived social support accounted for half of the variance in depression and anxiety. Insufficient social support and social integration are associated with poor health outcomes among multiple populations (Berkman, Kawachi, & Glymour, 2014).

Individuals receiving SSDI often report poor general health and high rates of bodily pain, however, both groups had elevated rates of impaired functioning. For instance, approximately 20% of non-recipients reported severe/very severe bodily pain. Additionally, one quarter of this group reported limitations in walking or moderate activity which lasted more than three months. This finding indicates that some women may be functionally impaired, but not receiving SSDI benefits. Many individuals with chronic health conditions will at some point apply for SSDI, but a large portion will be denied (Fremstad & Vallas, 2013). There are multiple qualifying thresholds for SSDI eligibility, the first of which includes having a condition that meets or exceeds items deemed by the SSA to be a medical impairment (e.g. endocrine, neurological, immunological disorders) and which presents with significant severity so as to interfere with “basic work-related activities” (SSA, 2015). Part of this qualification includes that the SSDI applicant’s condition prohibits her from engaging in former work-related activities in addition to other potential forms of gainful employment (SSA, 2015). In other words, SSDI applicants must demonstrate that their condition hinders them from functioning in any occupational capacity. Beyond these criteria, there is significant variability between what medical conditions are deemed eligible for SSDI receipt (SSA, 2015). Between 2006-2008 only 40% of those who applied for SSDI were approved (SSA, 2013). It is possible that despite high rates of disability among CJS-involved women,

some fail to meet the qualifying threshold for SSDI, thus placing them in highly vulnerable circumstances.

Similar to other investigations, the women in this exploratory study reported multiple forms of childhood adversity and victimization (Aday et al., 2014; McDaniels-Wilson & Belknap, 2008). Rape as a unique trauma has been associated with mental health disorders and poor health outcomes (Chen et al., 2010; Smith & Breiding, 2011). Approximately 19% of women in the U.S. have reported lifetime instances of rape (Black et al., 2011), which is consistent with the sample as a whole. However, 31.3% of women receiving SSDI in this study reported that their first sexual intercourse was non-consensual, compared to 17.5% of non-recipients. More broadly, actual and/or threatened forced sexual contact was reported by approximately one-third of the sample, and a majority of women reported childhood physical and psychological abuse. Adversity and victimization across the lifecycle are positively correlated with increased risk for acquiring adult morbidities (Danese et al., 2009), including complex presentations of PTSD (Cloitre et al., 2009; Green et al., 2016; Twaite & Rodriguez-Srednicki, 2004), further indicating that women who have experienced victimization are in need gender-specific, trauma-informed care as a possible means for improving chronic health outcomes (Covington, 2008; Messina, Calhoun, & Braithwaite, 2014).

Higher rates for past-12-month health care service utilization, including past-12-month psychiatric medication and psychiatric service utilization by women receiving SSDI suggests that, despite similarities for BSI scores, women with disabilities may be disproportionately impacted by trauma-related mental health disorders. This is supported by the finding that more SSDI-recipients met diagnostic criteria for PTSD and presented with greater PTSD symptom severity. Childhood adversity and PTSD are both independently and conjointly associated with mental and physical health conditions, including chronic pain (Coppens et al., 2017; Dube et al., 2009; Huffhines, Noser, & Patton, 2016; Outcalt et al., 2015; Scioli-Salter et al., 2015) and there is support for the idea that PTSD symptom severity mediates the relationship between childhood adversity and other mental health disorders in CJS-involved adults (Greene, Ford, Wakefield, & Barry, 2014). Harner and colleagues (2013) found that women with the most severe PTSD symptoms were likely to be linked to mental health services during incarceration, whereas only half of women with moderate-severe PTSD and comorbid issues were provided with care. Since prison has become a primary but imperfect provider of mental health services for women, those whose symptoms are not identified or treated while incarcerated may be less likely to access services upon release and may instead utilize higher-cost, emergency care which insufficiently meets their long-term needs (Leukefeld et al., 2006; Staton, Leukefeld, & Logan, 2001). Conversely, it could be that both groups in this sample are similar in their mental health profile, but that women receiving SSDI are somehow more inclined or able to regularly access healthcare (Ramaswamy, et al., 2015; Upadhyayula, Chan, Rhodes, & Leonardo, 2015). The interceding role of availability and continuity of care during and subsequent to incarceration in shaping disability outcomes for CJS-involved women requires further exploration. Future investigations into the determinants of perceived disability and SSDI rates for CJS-involved women should also closely examine the role that childhood trauma plays in adult risk for morbidities and disability.

Indeed, the relationship between trauma and poor health requires that policy makers and healthcare providers reexamine the efficacy of one-size-fits-all assessment and treatment practices for this population. This includes serious consideration of the idea of promoting gender-responsive, trauma-informed care as a standard intervention modality. Targeting PTSD symptomatology and addressing it concurrently with other conditions has been demonstrated as improving outcomes (Hien et al., 2009; Flanagan, Korte, Killeen, & Back, 2016). Shifting healthcare to a trauma-informed service model could improve the lives of CJS-involved women by preventing some health problems from developing, but also by addressing issues that are known to exacerbate serious health conditions that have the potential to deteriorate into chronic disability if overlooked or insufficiently treated (Harris & Fallot, 2001; Mason et al., 2016; Murphy et al., 2016).

Encouragingly, women who experience multiple psychosocial challenges are increasingly seeking treatment (Grella, 2012) and trauma-informed care is advancing as a “best practice” (Machtiger et al., 2015). However, substantial policy changes are being debated that would restrict the accessibility of medical insurance, including Medicaid (Eltorai & Eltorai, 2017; Kim & Richardson, 2012), along with revisions to SSDI aimed at steepening eligibility criteria while reducing benefits (Sperling, 2017). Many social welfare programs which CJS-involved women are likely to utilize have been systematically diminished over the past four decades and insufficient continuity of care between correctional institutions and community-based treatment providers persists (Hansen et al., 2014; Shafer, Prendergast, Melnick, Stein, & Welsh, 2014; Vail, Niyogi, Henderson, & Wennerstrom, 2017). For vulnerable populations with multiple health conditions, SSDI may be one of the few in-roads to relative stabilization. However, SSDI status may be less secure for CJS-involved individuals, as benefits are generally suspended after 30 consecutive days of incarceration and recipients are not automatically eligible upon release (SSA, 2017b). Rather, benefit reinstatement varies among persons and circumstances. Understanding how disruptions in benefit patterns impact the lives of CJS-involved women is another area that warrants exploration.

Limitations

The current study used SSDI status as a proxy to explore disability among CJS-involved women. As a result, disability rates are likely underestimated as only those with the most severe conditions and/or those who had already applied for and begun receiving SSDI benefits at time of study participation were able to be counted as disabled. We were unable to determine women’s functioning prior to entry into the CJS, the age of disability onset, and the circumstances under which impairments in functioning first materialized. Such information will be important in establishing a broader causal narrative regarding disability among CJS-involved women. Additionally, this study was exploratory and did not have information on specific disability type. Future research would benefit by exploring this subject in consideration of childhood adversities and victimization. Finally, findings should be considered in the context of the state where the study was conducted. Kentucky ranks third in the nation for female incarceration rates, with 108 per 100,000 incarcerated as of 2015 and remains among the top five states for highest SSDI per capita, with approximately 7.3% of residents receiving SSDI (SSA, 2016; The Sentencing Project, 2015). Of those who have applied for SSDI in Kentucky, roughly 70% of initial applications are denied

(Disability Benefits Center, 2017). States with differing characteristics may find different prevalence and traits among CJS-involved women receiving SSDI, though instances of adversity and prior victimization would likely continue to be a commonly observed feature across regions. Lastly, it is important to recognize that adversity and victimization may have been experienced by a portion of the women in this sample during childhood as well as adulthood, given that study inclusion criteria could be satisfied with either childhood or adult victimization experiences. Findings should be interpreted with the understanding that even among women receiving SSDI reporting no childhood adversity or victimization, these women may have experienced victimization in adulthood. That only variables related to childhood adversity and victimization were examined without equal consideration for such experiences in adulthood leaves open a gap for future research to fill. Specifically, it will be important to determine what differences exist between groups who have experienced childhood adversity and victimization exclusively versus groups who have experienced both, and to determine what factors mediate the relationship between types of victimization and disability.

Conclusion

This exploratory study described disability prevalence among women on probation and parole as a means of laying a foundation for future work. Consistent with previous investigations of CJS-involved women (Bronson et al., 2015; Wilper et al., 2009), we found high rates of disability. While some physical and mental health limitations linked to structural disadvantage may be more difficult to correct, the high rates of childhood victimization and PTSD among disabled women in this study highlights the importance of intervention for young, at-risk females, as well as the need for policy reforms which could promote accessibility of evidenced-based, gender-responsive, and trauma-informed care within the criminal justice system (Bowen & Murshid, 2016; Dobrow, Goel, & Upshur, 2004; Harner, Budescu, Gillihan, Riley, & Foa, 2015). In addition to establishing more accurate rates of disability prevalence for non-elderly women involved in the CJS, more research is needed in order to establish a better understanding of the possible relationships which exist between early childhood adversity and victimization, criminal offending, and disability among women.

References

- Aday RH, Dye MH, & Kaiser AK (2014). Examining the traumatic effects of sexual victimization on the health of incarcerated women. *Women & Criminal Justice*, 24(4), 341–361.
- Adler NE, & Newman K (2002). Socioeconomic disparities in health: pathways and policies. *Health affairs*, 21(2), 60–76. [PubMed: 11900187]
- Anda RF, Brown DW, Felitti VJ, Bremner JD, Dube SR, & Giles WH (2007). Adverse childhood experiences and prescribed psychotropic medications in adults. *American journal of preventive medicine*, 32(5), 389–394. [PubMed: 17478264]
- Anda RF, Felitti VJ, Bremner JD, Walker JD, Whitfield CH, Perry BD, & Giles WH (2006). The enduring effects of abuse and related adverse experiences in childhood. *European archives of psychiatry and clinical neuroscience*, 256(3), 174–186. [PubMed: 16311898]
- Angell M (2011). The illusions of psychiatry. *The New York Review of Books*, 58(12), 20–22.
- Asberg K, & Renk K (2014). Perceived stress, external locus of control, and social support as predictors of psychological adjustment among female inmates with or without a history of sexual

abuse. *International journal of offender therapy and comparative criminology*, 58(1), 59–84. [PubMed: 23070955]

- Barbotte E, Guillemin F, & Chau N (2001). Prevalence of impairments, disabilities, handicaps and quality of life in the general population: a review of recent literature. *Bulletin of the World Health Organization*, 79(11), 1047–1055. [PubMed: 11731812]
- Benach J, Vives A, Amable M, Vanroelen C, Tarafa G, & Muntaner C (2014). Precarious employment: understanding an emerging social determinant of health. *Annual review of public health*, 35.
- Berkman LF, & Glass T (2000). Social integration, social networks, social support, and health. *Social epidemiology*, 1, 137–173.
- Berkman LF, Kawachi I, & Glymour MM (Eds.). (2014). *Social epidemiology*. Oxford University Press.
- Binswanger IA, Krueger PM, & Steiner JF (2009). Prevalence of chronic medical conditions among jail and prison inmates in the United States compared with the general population. *Journal of Epidemiology & Community Health*, jech-2009.
- Black MC, Basile KC, Breiding MJ, Smith SG, Walters ML, Merrick MT, & Stevens MR (2011). The national intimate partner and sexual violence survey (NISVS): 2010 summary report. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 25.
- Bloom D, Cafiero E, Jané-Llopis E, Abrahams-Gessel S, Bloom L, Fathima S, & O'Farrell D (2012). The global economic burden of noncommunicable diseases. Program on the Global Demography of Aging.
- Bowen EA, & Murshid NS (2016). Trauma-informed social policy: A conceptual framework for policy analysis and advocacy. *American journal of public health*, 106(2), 223–229. [PubMed: 26691122]
- Bronson J, Maruschak LM, & Berzofsky M (2015). Disabilities among prison and jail inmates, 2011–12. US Department of Justice Bureau of Justice Statistics.
- Carson EA (2015). Prisoners in 2014. Washington, D.C.: Bureau of Justice Statistics.
- Centers for Disease Control and Prevention. (2015, August 20). Key Findings: Prevalence of Disability in the US | Features | Disability and Health | NCBDDD | CDC. Retrieved from <https://www.cdc.gov/ncbddd/disabilityandhealth/features/key-findings-community-prevalence.html>
- Chesney-Lind M (2003). Imprisoning women: The unintended victims of mass imprisonment. *Invisible punishment: The collateral consequences of mass imprisonment*, 79–94.
- Chen LP, Murad MH, Paras ML, Colbenson KM, Sattler AL, Goranson EN, & Zirakzadeh A (2010, July). Sexual abuse and lifetime diagnosis of psychiatric disorders: systematic review and meta-analysis. In *Mayo Clinic Proceedings* (Vol. 85, No. 7, pp. 618–629). Elsevier. [PubMed: 20458101]
- Cloitre M, Stolbach BC, Herman JL, Kolk BVD, Pynoos R, Wang J, & Petkova E (2009). A developmental approach to complex PTSD: Childhood and adult cumulative trauma as predictors of symptom complexity. *Journal of traumatic stress*, 22(5), 399–408. [PubMed: 19795402]
- Coppens E, Van Wambeke P, Morlion B, Weltens N, Giau Ly H, Tack J, & Van Oudenhove L (2017). Prevalence and impact of childhood adversities and post-traumatic stress disorder in women with fibromyalgia and chronic widespread pain. *European Journal of Pain*.
- Covington SS (2008). Women and addiction: A trauma-informed approach. *Journal of psychoactive drugs*, 40(sup5), 377–385.
- Danese A, Moffitt TE, Harrington H, Milne BJ, Polanczyk G, Pariante CM, & Caspi A (2009). Adverse childhood experiences and adult risk factors for age-related disease: depression, inflammation, and clustering of metabolic risk markers. *Archives of pediatrics & adolescent medicine*, 163(12), 1135–1143. [PubMed: 19996051]
- DeLongis A, Folkman S, & Lazarus RS (1988). The impact of daily stress on health and mood: psychological and social resources as mediators. *Journal of personality and social psychology*, 54(3), 486. [PubMed: 3361420]
- Derogatis LR (1993). *Brief Symptom Inventory: Administration, scoring, and procedures manual*. National Computer Systems (NCS).
- Dobrow MJ, Goel V, & Upshur REG (2004). Evidence-based health policy: context and utilisation. *Social science & medicine*, 58(1), 207–217. [PubMed: 14572932]

- Dube SR, Fairweather D, Pearson WS, Felitti VJ, Anda RF, & Croft JB (2009). Cumulative childhood stress and autoimmune diseases in adults. *Psychosomatic medicine*, 71(2), 243. [PubMed: 19188532]
- Dube SR, Felitti VJ, Dong M, Chapman DP, Giles WH, & Anda RF (2003). Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study. *Pediatrics*, 111(3), 564–572. [PubMed: 12612237]
- Dumont DM, Brockmann B, Dickman S, Alexander N, & Rich JD (2012). Public health and the epidemic of incarceration. *Annual review of public health*, 33, 325–339.
- Edwards VJ, Holden GW, Felitti VJ, & Anda RF (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: results from the adverse childhood experiences study. *American Journal of Psychiatry*, 160(8), 1453–1460. [PubMed: 12900308]
- El-Bassel N, Gilbert L, Frye V, Wu E, Go H, Hill J, & Richman BL (2004). Physical and sexual intimate partner violence among women in methadone maintenance treatment. *Psychology of Addictive Behaviors*, 18(2), 180. [PubMed: 15238060]
- Eltorai AE, & Eltorai MI (2017). The Risk of Expanding the Uninsured Population by Repealing the Affordable Care Act. *Jama*, 317(14), 1407–1408. [PubMed: 28241204]
- Fazel S, Hope T, O'Donnell I, Piper M, & Jacoby R (2001). Health of elderly male prisoners: worse than the general population, worse than younger prisoners. *Age and ageing*, 30(5), 403–407. [PubMed: 11709379]
- Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, & Marks JS (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American journal of preventive medicine*, 14(4), 245–258. [PubMed: 9635069]
- Flanagan JC, Korte KJ, Killeen TK, & Back SE (2016). Concurrent treatment of substance use and PTSD. *Current psychiatry reports*, 18(8), 1–9. [PubMed: 26685903]
- Foa EB (1995). *Posttraumatic Stress Diagnostic Scale Manual*. National Computer Systems Inc.
- Foa EB, Cashman L, Jaycox L, & Perry K (1997). The validation of a self-report measure of posttraumatic stress disorder: The Posttraumatic Diagnostic Scale. *Psychological assessment*, 9(4), 445.
- Folkman S (2013). Stress: appraisal and coping In *Encyclopedia of behavioral medicine* (pp. 1913–1915). Springer New York.
- Fremstad S, & Vallas R (2013). *The Facts on Social Security Disability Insurance and Supplemental Security Income for Workers with Disabilities*. Washington: Center for American Progress.
- Galster GC (2012). The mechanism (s) of neighbourhood effects: Theory, evidence, and policy implications In *Neighbourhood effects research: New perspectives* (pp. 23–56). Springer Netherlands.
- Green BL, Dass-Brailsford P, Hurtado de Mendoza A, Mete M, Lynch SM, DeHart DD, & Belknap J (2016). Trauma experiences and mental health among incarcerated women. *Psychological trauma: theory, research, practice, and policy*, 8(4), 455.
- Green BL, Miranda J, Daroowalla A, & Siddique J (2005). Trauma exposure, mental health functioning, and program needs of women in jail. *Crime and Delinquency*, 51(1), 133–151.
- Greenberg GA, & Rosenheck RA (2008). Jail incarceration, homelessness, and mental health: A national study. *Psychiatric services*, 59(2), 170–177. [PubMed: 18245159]
- Greene CA, Ford JD, Wakefield DB, & Barry LC (2014). Posttraumatic stress mediates the relationship between childhood victimization and current mental health burden in newly incarcerated adults. *Child abuse & neglect*, 38(10), 1569–1580. [PubMed: 25073733]
- Grella C (2012). Longitudinal recovery trajectories of women with a history of heroin dependence: Impact of family relationships and mental health status. *Journal of Substance Abuse Treatment*, 43(3), e7.
- Griffin MG, Uhlmansiek MH, Resick PA, & Mechanic MB (2004). Comparison of the posttraumatic stress disorder scale versus the clinician-administered posttraumatic stress disorder scale in domestic violence survivors. *Journal of traumatic stress*, 17(6), 497–503. [PubMed: 15730068]

- Gussak D (2009). Comparing the effectiveness of art therapy on depression and locus of control of male and female inmates. *The arts in psychotherapy*, 36(4), 202–207.
- Gutierrez SE, & Van Puymbroeck C (2006). Childhood and adult violence in the lives of women who misuse substances. *Aggression and Violent Behavior*, 11(5), 497–513.
- Hansen H, Bourgois P, & Drucker E (2014). Pathologizing poverty: New forms of diagnosis, disability, and structural stigma under welfare reform. *Social Science & Medicine*, 103, 76–83. [PubMed: 24507913]
- Harner HM, & Riley S (2013). The impact of incarceration on women's mental health: Responses from women in a maximum-security prison. *Qualitative health research*, 23(1), 26–42. [PubMed: 23034774]
- Harner HM, Budescu M, Gillihan SJ, Riley S, & Foa EB (2015). Posttraumatic stress disorder in incarcerated women: A call for evidence-based treatment. *Psychological Trauma: Theory, Research, Practice, and Policy*, 7(1), 58.
- Harris M, & Fallot RD (2001). Envisioning a trauma-informed service system: a vital paradigm shift. *New directions for mental health services*, 2001(89), 3–22.
- Harrow M, Hansford BG, & Astrachan-Fletcher EB (2009). Locus of control: Relation to schizophrenia, to recovery, and to depression and psychosis—A 15-year longitudinal study. *Psychiatry research*, 168(3), 186–192. [PubMed: 19573929]
- Hatzenbuehler ML, Phelan JC, & Link BG (2013). Stigma as a fundamental cause of population health inequalities. *American journal of public health*, 103(5), 813–821. [PubMed: 23488505]
- Hien DA, Jiang H, Campbell AN, Hu MC, Miele GM, Cohen LR, & Suarez-Morales L (2009). Do treatment improvements in PTSD severity affect substance use outcomes? A secondary analysis from a randomized clinical trial in NIDA's Clinical Trials Network. *American Journal of Psychiatry*, 167(1), 95–101. [PubMed: 19917596]
- Heise DR (1969). Separating reliability and stability in test-retest correlation. *American Sociological Review*, 34, 93–101.
- Huffhines L, Noser A, & Patton SR (2016). The link between adverse childhood experiences and diabetes. *Current diabetes reports*, 16(6), 54. [PubMed: 27112958]
- Human Rights Watch. (2012). Old behind bars: The aging prison population in the United States. Retrieved from https://www.hrw.org/sites/default/files/reports/usprisons0112webwcover_0.pdf
- Institute of Medicine. 2007 *The Future of Disability in America*. Washington, DC: The National Academies Press 10.17226/11898
- James DJ, & Glaze LE (2006). Highlights mental health problems of prison and jail inmates. Retrieved from Bureau of Justice Statistics website: <https://www.bjs.gov/content/pub/pdf/mhppji.pdf>
- Kawachi I, Subramanian SV, & Kim D (2008). Social capital and health. *Social capital and health*, 1–26.
- Kim J, & Richardson V (2012). The impact of socioeconomic inequalities and lack of health insurance on physical functioning among middle-aged and older adults in the United States. *Health & social care in the community*, 20(1), 42–51. [PubMed: 21733029]
- Koob GF (2009). Brain stress systems in the amygdala and addiction. *Brain research*, 1293, 61–75. [PubMed: 19332030]
- Kushel MB, Hahn JA, Evans JL, Bangsberg DR, & Moss AR (2005). Revolving doors: imprisonment among the homeless and marginally housed population. *American Journal of Public Health*, 95(10), 1747–1752. [PubMed: 16186453]
- Leukefeld CG, Hiller ML, Webster JM, Tindall MS, Martin SS, Duvall J, & Garrity TF (2006). A prospective examination of high-cost health services utilization among drug using prisoners reentering the community. *The journal of behavioral health services & research*, 33(1), 73–85. [PubMed: 16636909]
- Loeb SJ, & AbuDagga A (2006). Health-related research on older inmates: An integrative review. *Research in nursing & health*, 29(6), 556–565. [PubMed: 17131280]
- Logan TK, Walker R, Jordan CE, & Leukefeld CG (2006). Women and victimization: Contributing factors, interventions, and implications. American Psychological Association.

- Lynch S, DeHart D, Belknap J, & Green B (2012). Women's pathways to jail: The roles and intersections of serious mental illness and trauma. Washington, DC: US Department of Justice, Bureau of Justice Assistance.
- Lynch SM, DeHart DD, Belknap J, Green BL, Dass-Brailsford P, Johnson KM, & Wong MM (2017). An Examination of the Associations Among Victimization, Mental Health, and Offending in Women. *Criminal Justice and Behavior*, 44(6), 796–814.
- Mason SM, Austin SB, Bakalar JL, Boynton-Jarrett R, Field AE, Gooding HC, & Sogg S (2016). Child Maltreatment's Heavy Toll: The Need for Trauma-Informed Obesity Prevention. *American journal of preventive medicine*, 50(5), 646. [PubMed: 26689978]
- McEwen BS, & Morrison JH (2013). The brain on stress: vulnerability and plasticity of the prefrontal cortex over the life course. *Neuron*, 79(1), 16–29. [PubMed: 23849196]
- McHugo GJ, Kammerer N, Jackson EW, Markoff LS, Gatz M, Larson MJ, ... & Hennigan K (2005). Women, co-occurring disorders, and violence study: Evaluation design and study population. *Journal of Substance Abuse Treatment*, 28(2), 91–107. [PubMed: 15780539]
- Messina N, Calhoun S, & Braithwaite J (2014). Trauma-informed treatment decreases posttraumatic stress disorder among women offenders. *Journal of Trauma & Dissociation*, 15(1), 6–23. [PubMed: 24377969]
- Meyer JP, Springer SA, & Altice FL (2011). Substance abuse, violence, and HIV in women: a literature review of the syndemic. *Journal of women's health*, 20(7), 991–1006.
- Min MO, Minnes S, Kim H, & Singer LT (2013). Pathways linking childhood maltreatment and adult physical health. *Child abuse & neglect*, 37(6), 361–373. [PubMed: 23195701]
- Murphy A, Steele H, Steele M, Allman B, Kastner T, & Dube SR (2016). The clinical Adverse Childhood Experiences (ACEs) questionnaire: Implications for trauma-informed behavioral healthcare In *Integrated Early Childhood Behavioral Health in Primary Care* (pp. 7–16). Springer International Publishing.
- Nowicki S, & Duke MP (1974). *Adult Nowicki-Strickland internal-external control scale*. ETS m 1977.
- Nowotny KM, Belknap J, Lynch S, & DeHart D (2014). Risk profile and treatment needs of women in jail with co-occurring serious mental illness and substance use disorders. *Women & health*, 54(8), 781–795. [PubMed: 25204664]
- Outcalt SD, Kroenke K, Krebs EE, Chumbler NR, Wu J, Yu Z, & Bair MJ (2015). Chronic pain and comorbid mental health conditions: independent associations of posttraumatic stress disorder and depression with pain, disability, and quality of life. *Journal of behavioral medicine*, 38(3), 535–543. [PubMed: 25786741]
- Pico-Alfonso MA (2005). Psychological intimate partner violence: The major predictor of posttraumatic stress disorder in abused women. *Neuroscience & Biobehavioral Reviews*, 29(1), 181–193. [PubMed: 15652265]
- Powers MB, Gillihan SJ, Rosenfield D, Jerud AB, & Foa EB (2012). Reliability and validity of the PDS and PSS-I among participants with PTSD and alcohol dependence. *Journal of anxiety disorders*, 26(5), 617–623. [PubMed: 22480715]
- Robins RW, Hendin HM, & Trzesniewski KH (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Personality and social psychology bulletin*, 27(2), 151–161.
- Rotter JB (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological monographs: General and applied*, 80(1), 1.
- Salisbury EJ, & Van Voorhis P (2009). Gendered pathways: A quantitative investigation of women probationers' paths to incarceration. *Criminal justice and behavior*, 36(6), 541–566.
- Schnittker J, & John A (2007). Enduring Stigma: The Long-Term Effects of Incarceration on Health*. *Journal of health and social behavior*, 48(2), 115–130. [PubMed: 17583269]
- Scioli-Salter ER, Forman DE, Otis JD, Gregor K, Valovski I, & Rasmusson AM (2015). The shared neuroanatomy and neurobiology of comorbid chronic pain and PTSD: therapeutic implications. *The Clinical journal of pain*, 31(4), 363–374. [PubMed: 24806468]
- Sered S, & Norton-Hawk M (2013). Criminalized women and the health care system: the case for continuity of services. *Journal of Correctional Health Care*, 19(3), 164–177. [PubMed: 23711803]

- Shafer MS, Prendergast M, Melnick G, Stein LA, & Welsh WN (2014). A cluster randomized trial of an organizational process improvement intervention for improving the assessment and case planning of offenders: A Study Protocol. *Health & justice*, 2(1), 1.
- Simpson SS, Yahner JL, & Dugan L (2008). Understanding women's pathways to jail: Analysing the lives of incarcerated women. *Australian & New Zealand Journal of Criminology*, 41(1), 84–108.
- Smith SG, & Breiding MJ (2011). Chronic disease and health behaviours linked to experiences of non-consensual sex among women and men. *Public Health*, 125(9), 653–659. [PubMed: 21855097]
- Social Security Administration. (2017a). Part I - General Information. Retrieved September 10, 2017, from <https://www.ssa.gov/disability/professionals/bluebook/general-info.htm>
- Social Security Administration. (2017b). What prisoners need to know. Retrieved from <https://www.ssa.gov/pubs/EN-05-10133.pdf>
- Social Security Administration. (2016). Annual statistical report on the Social Security Disability Insurance program, 2015 (13-11826) Retrieved from https://www.ssa.gov/policy/docs/statcomps/di_asr/
- Sperling G (2017, 5 23). The fuzzy claims used to justify cutting social security disability insurance. *The Atlantic*. Retrieved from <https://www.theatlantic.com/business/archive/2017/05/ssdi/527802/>
- Staton M, Leukefeld C, & Logan TK (2001). Health service utilization and victimization among incarcerated female substance users. *Substance Use & Misuse*, 36(6-7), 701–715. [PubMed: 11697606]
- Steadman HJ, Osher FC, Robbins PC, Case B, & Samuels S (2009). Prevalence of serious mental illness among jail inmates. *Psychiatric services*, 60(6), 761–765. [PubMed: 19487344]
- Straus MA, Hamby SL, Boney-McCoy S, & Sugarman DB (1996). The revised conflict tactics scales (CTS2) development and preliminary psychometric data. *Journal of family issues*, 17(3), 283–316.
- Tjaden P, Thoennes N. Prevalence, Incidence, and Consequences of Violence Against Women: Findings from the National Violence Against Women Survey. Washington, DC: U.S. Department of Justice; 2000.
- Tolman RM (1989). The development of a measure of psychological maltreatment of women by their male partners. *Violence and victims*, 4(3), 159–177. [PubMed: 2487132]
- Tolman RM (1999). The validation of the Psychological Maltreatment of Women Inventory. *Violence and victims*, 14(1), 25–37. [PubMed: 10397624]
- Tripodi SJ, & Pettus-Davis C (2013). Histories of childhood victimization and subsequent mental health problems, substance use, and sexual victimization for a sample of incarcerated women in the US. *International journal of law and psychiatry*, 36(1), 30–40. [PubMed: 23196054]
- Twaite JA, & Rodriguez-Srednicki O (2004). Childhood sexual and physical abuse and adult vulnerability to PTSD: The mediating effects of attachment and dissociation. *Journal of Child Sexual Abuse*, 13(1), 17–38. [PubMed: 15353375]
- Ramaswamy M, Upadhyayula S, Chan KYC, Rhodes K, & Leonardo A (2015). Health priorities among women recently released from jail. *American journal of health behavior*, 39(2), 222–231. [PubMed: 25564835]
- Vail WL, Niyogi A, Henderson N, & Wennerstrom A (2017). Bringing it all back home: Understanding the medical difficulties encountered by newly released prisoners in New Orleans, Louisiana a qualitative study. *Health & Social Care in the Community*, 25(4), 1448–1458. [PubMed: 28370837]
- Van Olphen J, Eliason MJ, Freudenberg N, & Barnes M (2009). Nowhere to go: How stigma limits the options of female drug users after release from jail. *Substance abuse treatment, prevention, and policy*, 4(1), 10.
- Ware JE Jr, & Sherbourne CD (1992). The MOS 36-item short-form health survey (SF-36): I. Conceptual framework and item selection. *Medical care*, 473–483. [PubMed: 1593914]
- Weiser SD, Neilands TB, Comfort ML, Dilworth SE, Cohen J, Tulskey JP, & Riley ED (2009). Gender-specific correlates of incarceration among marginally housed individuals in San Francisco. *American journal of public health*, 99(8), 1459–1463. [PubMed: 19542041]
- Williams BA, Lindquist K, Hill T, Baillargeon J, Mellow J, Greifinger R, & Walter LC (2009). Caregiving behind bars: Correctional officer reports of disability in geriatric prisoners. *Journal of the American Geriatrics Society*, 57(7), 1286–1292. [PubMed: 19582902]

- Williams BA, Lindquist K, Sudore RL, Strupp HM, Willmott DJ, & Walter LC (2006). Being old and doing time: Functional impairment and adverse experiences of geriatric female prisoners. *Journal of the American Geriatrics Society*, 54(4), 702–707. [PubMed: 16686886]
- Wilper AP, Woolhandler S, Boyd JW, Lasser KE, McCormick D, Bor DH, & Himmelstein DU (2009). The health and health care of US prisoners: results of a nationwide survey. *American journal of public health*, 99(4), 666–672. [PubMed: 19150898]
- Wittchen HU, Carter RM, Pfister H, Montgomery SA, & Kessler RC (2000). Disabilities and quality of life in pure and comorbid generalized anxiety disorder and major depression in a national survey. *International clinical psychopharmacology*, 15(6), 319–328. [PubMed: 11110007]

Table 1.

Means and proportions of demographic and health variables

	All	SSDI recipients	Non-SSDI recipients	p value
N	406	83 (20.4%)	323 (79.6%)	
Age ***	37.2	41.6	36.1	.000
High School/GED	73	70.0	74.0	.432
Has ever been employed in their lifetime	97.6	92.0	99.5	.001
Past-month Income ***				
<\$500	52.5	15.7	63.5	.001
\$500-\$999	31.5	68.7	22.3	
\$1,000-\$1,999	12.3	15.7	11.7	
>\$2,000	2.0	0.0	2.5	
Living Alone ***	16.5	31.3	12.7	.001
Homeless	34.1	26.5	36.0	.103
Marital Status				
Single	44.5	43.4	44.8	.170
Married, in relationship	16.8	10.8	18.3	
Divorced, separated, widowed	38.8	45.8	36.9	
Race *				
White	50.6	59.8	46.7	.035
Non-White				
General Health *				
Excellent	6.6	7.2	6.5	.022
Very Good	18.7	10.8	20.7	
Good	40.9	33.7	43.7	
Fair	26.8	37.3	24.1	
Poor	6.9	10.8	5.9	
Bodily Pain ***				
None/Very Mild	34.7	25.3	37.1	.001
Mild/Moderate	40.3	31.3	42.7	
Severe/Very Severe	25.0	43.4	20.2	
Walking				
No Limitations in Activity	51.1	43.2	53.1	.273
Limitations in Activity <3 months	22.0	24.7	21.3	
Limitations in Activity >3 months	26.9	32.1	25.6	
Moderate Activity **				
No Limitations in Activity	52.6	37.0	56.6	.004
Limitations in Activity <3 months	20.6	23.5	19.8	
Limitations in Activity >3 months	26.8	39.5	23.6	
Vigorous Activity				
No Limitations in Activity	47.0	39.0	49.1	.061

	All	SSDI recipients	Non-SSDI recipients	p value
<i>Limitations in Activity <3 months</i>	18.9	15.9	19.7	
<i>Limitations in Activity >3 months</i>	34.1	45.1	31.3	
HIV positive ***	2.7	8.4	1.2	.001
Number of healthcare visits past 12 –months ***	6.2	9.6	7.2	.001
Past 12-month Psychiatric Service Utilization ***	39.4	59.0	34.4	.000
Past 12-month Psychiatric Medication ***	37.4	61.4	31.5	.000
SUD treatment ever	66.6	69.9	65.7	.475

Significant User-Non-User differences

*
p<.05

**
p<.01

p<.001

Table 2.

Means and proportions of mental health, trauma, and social support variables

	All	SSDI Recipients	Non-SSDI Recipients	p value
N	406	83 (20.4%)	323 (79.6%)	
<i>Childhood victimization</i>				
1. Did your parents or caretaker ever treat you like you were stupid or inferior and/or call you names in private?*	54.7	66.3	51.7	.018
2. Did your parents or caretaker ever insult, shame, or humiliate you in front of others?***	61.6	73.5	58.6	.013
3. Did your parents or caretaker ever physically hurt you on purpose (including grabbing, slapping, burning, scalding, punching, choking, throwing you around, or harshly spanking you)?*	62.5	72.3	60.1	.040
4. Did your parents or caretaker ever beat you up?*	36.9	47.0	34.2	.031
5. Did your parents or caretaker ever force or threaten you to do sexual things other than intercourse (for example, forced petting or forced oral sex)?***	33.5	49.4	29.6	.001
6. Did your parents or caretaker ever force or threaten you to have sexual intercourse and it actually happened?***	22.5	33.7	19.7	.007
7. Did you ever see someone physically abuse your mother?	58.9	62.2	58.1	.504
8. While growing up, did you frequently not have enough food to eat?*	12.6	21.7	10.3	.021
9. While growing up, did you frequently feel unloved?	42.4	44.6	41.8	.371
10. During childhood, did you ever live with both your father and mother in the same home at the same time?	68.3	72.5	67.2	.362
11. Parents were never married or are divorced, separated, or widowed.	69.9	69.7	70.1	.947
Age of sexual intercourse	13.6	13.2	13.7	.293
First sexual intercourse was not consensual**	20.3	31.3	17.5	.006
<i>Mental Health</i>				
Locus of Control ***	17.0	19.1	16.5	.001
Self-esteem	12.2	12.1	12.2	.694
BSI Global Severity Index	1.18	1.31	1.14	.101
Anxiety	1.2	1.3	1.2	.247
Depression	1.3	1.4	1.2	.217
Somatization	1.0	1.2	1.0	.092
Obsessive-Compulsive	1.4	1.6	1.4	.135
Interpersonal Sensitivity	1.3	1.5	1.3	.164
Hostility	1.0	1.0	0.9	.369
Phobic Anxiety	0.9	1.0	0.9	.203
Paranoid Ideation	1.3	1.5	1.3	.062
Psychoticism	1.2	1.3	1.1	.190
<i>PTSD</i>				
Meets diagnostic criteria for PTSD**	48.6	61.4	45.3	.009
Severity Total**	18.1	21.9	17.2	.006
Social Support *	10.5	9.2	10.5	.018

Significant User-Non-User differences

*
p<.05

**
p<.01

p<.001

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript