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Psychosocial Determinants of Health among Incarcerated Black Women: A Systematic Literature Review

Carlos Mahaffey, Pharm.D., M.P.H.¹, Danelle Stevens-Watkins, Ph.D.², and Joi-Sheree' Knighton, M.A., Ed.S.³

¹235 Dickey Hall, Department of Behavioral Sciences, University of Kentucky, Lexington, Kentucky, 40506. Phone: 859-257-8273. Fax: 859-257-5662. carlos.mahaffey@uky.edu

²235 Dickey Hall, Department of Educational, Counseling, and School Psychology, Center on Drug & Alcohol Research, University of Kentucky, Lexington, Kentucky, 40506. Phone: 859-257-7889. Fax: 859-257-5662. d.stevenswatkins@uky.edu

³235 Dickey Hall, Department of Educational, Counseling and School Psychology, University of Kentucky, Lexington, Kentucky, 40506. jsnighton@uky.edu

Abstract

Black women are disproportionately incarcerated and experience greater health outcomes compared to White and Hispanic women. This systematic literature review aims to identify the major psychosocial determinants of health and service utilization among incarcerated Black women. The ecological model for health behavior was used to frame the literature presented and explain how individual, interpersonal, and societal level factors impact health. Nineteen articles met inclusion criteria for this review. Psychosocial factors were identified at each level such as: mental health problems (individual); sexual behavior (interpersonal); and dysfunctional/negative relationships (community). The factors form a dynamic relationship that influences the health and service utilization of Black women and do not exist independently. Future research should examine within-group differences to highlight the unique needs and culture within the Black community in the context of psychosocial determinants. This synthesis of relevant studies can serve to inform change in correctional policies, practices, and reduce health disparities.

Keywords

African Americans; female; vulnerable populations; prison; determinants of health; health disparities; public health

Despite a decreasing trend in the total number of prisoners since 2010, the number of female prisoners is steadily increasing.¹ Black women, especially, are being incarcerated at a rate much greater than White women, 113 per 100,000 compared to 51 per 100,000.¹ Furthermore, Blacks are disproportionately incarcerated, representing 22% of women in prison but only 13% of women in the United States.¹⁻² Prior to entering jail or prison, incarcerated women are more likely to present with poorer health than women in general or incarcerated men.³ These women also report that limited access to healthcare and a lack of gender specific health services within facilities exacerbate their health issues.³ Moreover, the health of minority women is disproportionately impacted due to issues including lower

education and job skills, substance use and sexual behavior, and policies that unfairly target and incarcerate non-White individuals.⁴ As a result, incarcerated Black women are a vulnerable population, experiencing heightened health disparities related to both individual behaviors and societal factors. The purpose of this systematic literature review is to identify the psychosocial determinants of health and service utilization among incarcerated Black women. Identifying these determinants is one step toward developing strategies to reduce the racial health disparities that exist within correctional facilities and subsequently within Black communities.

Health disparities among incarcerated Black women

Prisoners experience a disproportionate number of health issues and concerns when compared to the general United States population.⁵ Similarly to Black women in community settings, incarcerated Black women are disproportionately impacted by health issues including: sexually transmitted infections, HIV/AIDS, substance use, and post-traumatic stress disorder (PTSD).⁶ However, research has consistently revealed the health issues of incarcerated women are treated inadequately or largely ignored.⁷⁻¹¹

Sexually transmitted infections (STI) and HIV/AIDS

According to an HIV Surveillance Report by the Centers for Disease Control and Prevention (CDC), Black women represented 63% of all new HIV infections by women in 2013.¹² The CDC also estimates that 1 in 7 persons currently living with HIV are incarcerated annually. More than 14% of jail inmates and 20% of prisoners have had a sexually transmitted infectious disease during their lifetime compared to less than 5% of the general population.¹³ As such, risky sexual behaviors that occur in closely-confined correctional settings place incarcerated women at a greater risk for STI and HIV.¹⁴

Substance use

More than half of incarcerated women in state and federal prisons and local jails have used drugs in the month prior to their arrest.¹⁵ Substance use disorders among incarcerated women are reportedly between 30-70% compared to 3-6% in the general population.¹⁶ In addition, incarcerated women are more likely to be convicted of a drug-related crime than any other offense.^{8,17,18} Over a ten year span, drug-related convictions of Black women increased 707% compared to a 306% increase in drug-related convictions of White women.¹⁴ Often these offenses are related to possession of drugs, potentially criminalizing health problems such as substance use disorders.^{19,20}

Mental health

Incarcerated women are more likely to have experienced physical and sexual assault and trauma^{21,22}. However, these women describe aspects of incarceration itself that contributes to deterioration of their mental health including victimization by other inmates or prison staff, prison violence, solitary confinement, and separation of mothers from their children and families.²³⁻²⁵ A study of a national sample of state and federal prisoners (40.6% and 43.4% Black, respectively) revealed that more than 26% were diagnosed with a mental health disorder in their lifetime but only 18% of those diagnosed were taking medication for

their diagnosis during their incarceration.²⁶ Untreated, mental health problems often exacerbates substance use disorders and in tandem contribute to poor physical health outcomes.²³

Ecological model for health promotion

Multiple factors interact to influence the health of incarcerated Black women. Psychosocial factors that are influential in health outcomes include: individual behavior, families, neighborhood and community, culture, and correctional facilities. The ecological model for health promotion encompasses these factors utilizing five constructs (individual factors, interpersonal processes and primary groups, institutional factors, community factors, and public policy) and frames this systematic review (see Figure 1).²⁷

The individual factors consist of one's knowledge, attitudes, beliefs, and behavior. For this review, individual knowledge is defined by the years of education received. Incarcerated women often have limited education, which has been linked to difficulty in understanding positive health behavior and results in poor health status.^{4, 11, 15} Specific individual behaviors measured include drug use and drug-related criminal activity, such as distribution, and types of criminal conviction. Demographic individual factors measured include income and/or employment status as well as living situation.

Interpersonal factors are defined by the relationships between individuals, their significant others, family members, friends, and peers. Interpersonal factors may exert positive or negative influence on the individual's health and health behavior. Institutional factors are measured by disparities in health and treatment based on income, race and gender. Given well-documented health disparities among criminal justice involved Black women, correctional facilities (jails and state and federal prisons) and the conditions experienced within these facilities will be examined as institutional factors.^{11,14,25,28} Community factors are defined by examining the groups to which individuals belong such as, families or neighborhoods and relationships between the individual and community level services including substance use and mental health treatment, hospitals, clinics, and other health service facilities. Lastly, policy factors are defined by the laws, policies, and procedures that may discourage health-seeking behaviors and/or limit access to health information and resources.²⁷

The current systematic literature review fills a significant gap in the extant literature. First, the psychosocial factors affecting the health of incarcerated Black women are identified. Second, health service utilization among incarcerated Black women is examined.

Methods

The systematic review was completed by conducting a literature search of peer-reviewed studies examining health, health disparities and health service utilization among incarcerated Black women. The following questions were posed for this review:

- 1) What are the major psychosocial determinants of health among incarcerated Black women?

- 2) What major factors determine health service utilization among incarcerated Black women?

Eligibility inclusion and exclusion criteria

Inclusion criteria for articles were: 1) Black women were identified as a specific subgroup of the incarcerated sample; 2) analysis or discussion of findings were stratified by race and/or gender; 3) study sample were adult women, 18 years or older; 4) focus on health disparities; and 5) articles published in 2000 or later. Exclusion criteria included: 1) dissertations; 2) books and book abstracts; 3) literature reviews or meta-analytic studies; 4) editorial or commentary articles; 5) studies conducted outside of the United States; and 6) studies that did not specify the number or percent of Black women in the sample.

Search strategy

Literature searches were conducted through the EBSCOhost Online Research Resource using the following seven databases: Academic Search Complete, CINAHL with Full Text, Health Source – Consumer Edition, MEDLINE, Psychology and Behavioral Sciences, PsycINFO, and Sociological Collection. Keywords were searched in the full text of manuscripts. Potential articles for inclusion were also identified by utilizing backward search methods (identifying articles by reading others) (see Figure 2).

The following is an example of the search terms entered into EBSCOhost to search across each of the seven databases:

1. (*Black OR African-American OR African American*) AND (*women OR females*)
2. *jails OR prison OR incarcerated OR corrections*
3. *racial OR ethnic* AND (*health disparities OR health issues OR health outcomes*)
4. 1 AND 2
5. 2 AND 3
6. 1 AND 2 AND 3

Study selection

Articles were chosen for full text review by assessing the title and abstract for relevance to the review objectives. The current review is limited to empirical studies, and excludes literature reviews, meta-analytic studies, editorials and commentaries, and special government reports. Selected articles described the study participants, including the specific number of Black women and location; research objectives related to disparities in health or receiving health care; the study design and analysis; measures such as age, education level, employment status, health insurance status, sexual and/or drug risk behaviors, history of traumatic experiences, or self-perception of health; and the ecological theoretical framework.

Results

A total of 390 articles found in EBSCOhost were screened by title and abstract for selection into this review. Ninety-three of these articles that specified “Black women”, “ethnic/racial health issues, outcomes, or disparities”, and “jail, prison, or incarcerated” in the abstract and list of key words were downloaded for a full text review, excluding the remaining 297 articles. After examination and determining eligibility for inclusion and exclusion criteria as well as relevance, 19 articles were selected for inclusion and 74 articles were excluded. Figure 2 describes the study selection process and provides reasons for exclusion of 74 full-text articles. Data and findings from the identified 19 articles were used to examine the research questions of interest (see Table 1).

Overall, the results of the articles reviewed had similar findings. Black women were more likely to be homeless and unemployed compared to White women, have no insurance and no usual source of healthcare, and have higher rates of HIV and STI compared to White and Hispanic women. Black women were also less likely to report injection drug use compared to other women. However, a discrepancy was found in the literature reviewed concerning consistent condom use by Black women when compared to White women. Some articles that reported significant findings between the association of incarceration and poor health outcomes did not provide a distinction between Black women and non-Black women to examine racial differences. Further details are provided in the following paragraphs.

Research Question 1: What are the major psychosocial determinants of health among incarcerated Black women?

Individual

The individual determinants of health described by the articles include homelessness, education, prior incarceration, substance use, and mental health problems.

Homelessness, education, and prior incarceration—A study by Freudenberg and colleagues; examining differences between men, women, and male youth (N=1,946; 63.2% Black women) from Rikers Island; found that women were more likely to be homeless, have less than a high school education, and involved in illegal activities as a source of income.²⁹ More specifically, Freudenberg and colleagues found that Black women were more likely to be homeless, have missed work due to substance use, and report HIV positive status when compared to Hispanic women.²⁹

Substance use—Altice and colleagues examined prevalence of HIV infection and associated risk factors among 3,315 female prisoners (41% Black; n=1,335) in Connecticut. Results indicated that both injection and non-injection drug use were associated with HIV seropositive women.³⁰ However, Freudenberg and colleagues found that Black women were least likely to report injection drug use compared to White women.²⁹ Similarly, a study by McClelland and colleagues examining HIV risk behaviors of 948 women in jail (40.4% Black) revealed that although HIV risk was highest among injection drug users, Black women were least likely to inject drugs.³¹ Another study by Rosen and colleagues

examining associations between HIV and characteristics of 5,958 female prisoners (42.8% Black) in North Carolina reported that being Black, using crack or cocaine, having a drug-related conviction, and a prior incarceration of more than a year were associated with HIV infection.³² Overall, non-injection drug use, along with a drug-related conviction, was positively associated with HIV infection among incarcerated Black women.

Mental health problems—A study by Harner and colleagues examined the prevalence of PTSD and the association between mental and physical health conditions among 387 female inmates (25% Black) in a maximum-security state prison.²¹ Harner and colleagues found that 45% of the women met criteria for diagnosis of PTSD and were significantly more likely to report physical health issues such as chest pain, headaches, and shortness of breath, as well as mental health issues including depression, anxiety, and prior suicide attempts.²¹ Interpersonal factors related to abuse and trauma are associated with diagnosable mental health problems.

Interpersonal

Relationships between incarcerated women and family members, peers, or partners were determinant factors of their health through risky sexual behavior, history of physical or sexual abuse, and intimate partner violence.

Sexual behaviors—Altice and colleagues found that sex with an injection drug user, transactional sex (sex in exchange for money, drugs, protection, or rent), sex with strangers, and history of an STI were associated with increased risk for HIV.³⁰ In a comparison study of self-reported risk behaviors and history of STI among incarcerated women (N=428; 18% Black), Bonney and colleagues found that Black women were significantly less likely to have ever used illicit drugs (heroin, cocaine, or opiates) compared to White women but 2.26 times more likely to have an STI compared to White women.³³ Hogben and colleagues' study with 472 women (61.4% Black) in one of two prisons in Mississippi and Tennessee also found higher STI prevalence rates among Black women (43.9%) compared to the overall average (38.9%).³⁴ This disparity in STI prevalence of Black women could partially be explained in a qualitative study by Farel and colleagues; the authors examined the sexual practices and the context of relationships among Black women (N=29) in one of two North Carolina prisons.³⁵ Farel and colleagues reported that condoms were used minimally with male partners and were based on the women's trust of their partner and perception of commitment, their desire to have children, or the male partner's preference.³⁵ Additionally, Freudenberg and colleagues reported that all women were significantly less likely to always use a condom and more likely to report never using a condom in the 30 days before their arrest compared to adult men.²⁹ Farel and colleagues also reported that women in current relationships with another woman perceived a low risk of getting an STI and used no protective barriers with female partners, but instead described their female partners' concurrent relationship with male partners as putting them at risk for an STI.³⁵

History of abuse—A study by Ravi and colleagues examining associations between violence and HIV risk in sample of 1,588 incarcerated women (41.9% Black) found that 45% experienced physical violence, 46.9% experienced physical violence and rape, and 65%

experienced some type of violence in their lifetime.³⁶ Ravi and colleagues reported that women with a past experience of physical violence were significantly more likely to have unprotected sex with a primary partner. However, women that experienced rape or both rape and physical violence had no significant increase in odds of having unprotected sex with a primary or non-primary partner.³⁶ Asberg and Renk examined two groups of women, N=169, incarcerated at a county correctional facility (26.1% Black) and N=420 undergraduate women enrolled in psychology courses at a large university in the southeastern United States.³⁷ Although the college sample was almost three times larger than the prison sample, results revealed that 65.7% of incarcerated women identified at least one experience of childhood sexual abuse compared to 35.5% of the female college students.³⁷ Another study by Nowotny and colleagues examined the risk profiles of 491 female detainees (37.4% Black) that were diagnosed with a co-occurring disorder (CCOD), a serious mental illness and any substance use disorder in the past year, and found that these women had a high prevalence of physical abuse (86.5%), sexual assault or rape (79.8%), and intimate partner violence (76.9%).²⁴ Hebert and colleagues conducted a study to examine the differences in the psychosocial profile and risk behaviors of 147 female inmates at the Women's Facility of the Rhode Island Department of Corrections. The women were divided into two groups based on the types and level of trauma experienced.³⁸ Hebert and colleagues reported that the group with a higher average number of exposures to traumatic experiences also had significantly higher numbers of alcohol related problems and consequences, injection drug-using main partners, and self-reported medical problems compared to incarcerated women with a lower average of traumatic experiences.³⁸

The limited literature indicated that incarcerated Black women perceived themselves as having a low risk for acquiring HIV, based condom use on trust and/or their male partner's preference, and subsequently had a high prevalence of STI. Physical violence, sexual assault or rape, intimate partner violence, and trauma were highly prevalent among incarcerated women compared to the population in general and were positively associated with risky sexual behavior, serious mental health problems, and substance use disorders.

Institutional

Incarceration itself and the conditions of incarceration (setting, length of sentence, quality of health care) are described as correlates of health among incarcerated Black women.³⁹ The basic health care offered for incarcerated women is the same as that offered for incarcerated men, focusing on single issues while the multiple health issues pertinent to women's needs in general are often neglected or ignored.^{8,40,41} A qualitative study by Hatton and colleagues, examining perception of health by formerly incarcerated women (N=18; 11% Black) and 60 currently incarcerated women (32% Black), revealed unsanitary conditions in a correctional facility such as: lack of enough soap and cleaning supplies, limited clean towels and sheets, infestations, dirty showers, and uncontrolled bacterial infections.⁴² Overall, the literature revealed that the health care offered in correctional facilities for women was not specific to their needs, of poor quality, or not offered at all.

Community

Dysfunctional and negative relationships between friends, family, and communities can influence the use and abuse of alcohol and other drugs by women.⁴³ Nowotny and colleagues described that women with CCOD were most likely exposed to drugs by family members who used (62%) or were given drugs (14%) or alcohol (31%) by their parents during childhood.²⁴ A study by Messina and Grella, examining childhood traumatic experiences (CTE) impact on adult physical and mental health issues and behaviors of 491 female California prisoners (40% Black), found that family violence was the most reported type of CTE (47.6%) and the odds of prostituting, taking psychotropic medication, receiving treatment for mental health, having a gynecological problem, STI, or alcohol problem, and reporting a fair or poor health status increase significantly with the occurrence of each CTE.⁴⁴ In contrast, Staton-Tindall and colleagues' study of N=366 female, substance using inmates (27% Black) found that positive parental influence was associated with less HIV risk behavior and drug use and positive influence from peers was associated with less drug use only, despite the presence of any additional negative influences or relationships.⁴³ The literature revealed that community factors such as family and friends can influence the health of incarcerated women negatively (exposure to family violence or drugs and alcohol were associated with physical and mental health issues) or positively (support from parents or peers was associated with decreased drug use).

Policy determinants of health

The Anti-Drug Abuse Act began the "War on Drugs" in which sentencing policies resulted in the disparities in sentencing and incarceration of People of Color, most affecting Black women who are more likely than men to be incarcerated for drug related offenses.^{22,28} Hogben and colleagues found that among their study sample of 472 incarcerated women from Mississippi and Tennessee (61.4% Black), 41.2% were convicted on drug related charges.³⁴ Additionally, Rosen and colleagues examined 5,958 women in North Carolina Prisons (42.8% Black) and found that nearly 42% had a drug-related conviction.³²

Research Question 2: What major factors determine health service utilization among incarcerated Black women?

Health service utilization is based on a balance of factors that are closely associated with one another, and may exist as the result of the other. For the purposes of this research question, individual and community level factors will be described together, followed by institutional and policy level factors. Individual and community level factors associated with health service utilization include insurance status, source of health care services (e.g., hospital emergency room), and access to health services.

Individual and community

Incarcerated Black women often come from environments of poverty, are under-educated, and have received limited resources to improve their health as well as the health of their families.^{22,41} Bonney and colleagues found that 48.7% of Black female inmates in their study (n=77) had no health insurance prior to incarceration and only 20.8% reported having

a usual source of medical care.³³ A study by Staton and colleagues to examine the relationship between substance use, health, mental health, and treatment utilization among 60 incarcerated women in the Kentucky Correctional Institute for Women (55% Black) found a significant association between emergency room utilization and mental health issues.¹⁸ Staton and colleagues also reported that women had an average of 13.7 visits to emergency rooms.¹⁸ Furthermore, a study by Severson and colleagues to examine differences of victimization and utilization of health services by 157 women in a correctional facility (58% Black) and 109 women in the community (39% Black), found that having a “lack of transportation” or a “scheduling conflict” was associated with poor physical and mental health, incarceration, and alcohol and drug problems.⁴⁵ The literature revealed that incarcerated women often lack health insurance and consequently use the emergency room for their health care needs or avoid seeking health services due to not having transportation or other barriers.

Institution and policy

Correctional facilities have become a primary source of health care for poor, Black women and other ethnic minorities.⁶ These incarcerated women whom lack health insurance and access to health care may receive screening and medical diagnoses of illnesses but not the needed treatment and preventive health services.^{20,46} Institution and policy level factors, combined with the unsanitary conditions and lower quality healthcare described previously, contributes to the underutilization of health services during incarceration.⁴⁰⁻⁴² Institution and policy level factors include the availability, guidelines, and processes to receiving health care. A qualitative study by Fisher and Hatton, examining the health care experience within a correctional setting among formerly incarcerated women (N=31; 19% Black), revealed that women described being sent to multiple providers for the same issue, not receiving adequate treatment or a sufficient quantity of treatment, and that specific needs and requests were dismissed or ignored.¹⁰ Furthermore, the availability of health services in some prisons is limited to the number of health professionals contracted and the frequency they work in the facility. For example, in Fisher and Hatton's study, women reported having to wait one to two weeks to see someone for serious medical issues and requirement of co-payments for health services (policy requires offenders to pay a co-pay for services, upwards of \$10 in all federal prisons and majority of state prisons) as significant barriers to receiving needed health care.¹⁰ In addition, these women believed the services were not worth the cost. A qualitative study by Young of 15 women incarcerated in a state correctional facility in northwestern United States revealed that women had primarily negative views of health care and treatment in prison and reported being disregarded, rushed, and treated poorly by providers based on stereotypes of incarcerated people.¹⁷ Young also reported that women felt they received the minimum level of care and waited weeks to months to receive medications or medical equipment.¹⁷ Another study by Hatton and colleagues, examining 78 women and their perception of health care in prison, reported that a lack of privacy, along with the waiting time and co-payments, associated with seeing a health professional were barriers to seeking health care during incarceration.⁴²

Discussion

The population of incarcerated women is growing at a faster rate than incarcerated men, increasing 2.3% from 2012 to 2013 compared to 0.1% for men over the same period.² There is a need to focus on the health of incarcerated Black women, who remain disproportionately incarcerated and experience significantly greater disparities in health than Whites, Hispanics, and other racial/ethnic groups. The current systematic literature review provides an overview of the psychosocial determinants that affect Black women's health individually, within relationships, among families and communities, and through specific institutions processes and national policies. Overall, incarcerated Black women are frequent non-injection drug users and are at risk for HIV/AIDS and STI through engaging in unprotected sexual activities with men, especially Black men, and women that have concurrent sexual partnerships. Incarcerated Black women's substance use and risky sexual behavior is associated with traumatic experiences involving physical and/or sexual violence in childhood and adulthood. The traumatic experiences tend to remain untreated and manifests into mental and physical health problems; exacerbated by a multiple marginalized identity of being female, Black, and having histories of criminal justice involvement.^{14,25,47} Some studies concluded that women often initiate criminal activity by engaging in illegal activities to support their substance use problems and could result in risky their health behaviors (e.g., trading sex for drugs, housing, or food).^{22,35} Others discussed how the interaction between poverty, mental illness, lack of insurance, and substance use often result in incarceration for Black women, especially for minor crimes resulting in conviction and sentencing opposed to diversion for treatment.^{48,49} In these situations, the root issues are not addressed and women's health problems are in jeopardy of being exacerbated.⁵⁰

Strengths and limitations

Several extant literature reviews were identified in the systematic search process for this paper.⁵¹⁻⁵⁵ However, this systematic review is unique in identifying the underlying psychosocial factors associated with the physical and mental health of incarcerated Black women by utilizing a framework to clarify how these factors impact their health from different societal levels. This review includes both quantitative and qualitative studies for a better understanding of the psychosocial determinants of health for incarcerated Black women and provides both an overview of the prevalence of health issues and factors as well as in-depth explanations of these issues.

There is limited research examining the health of incarcerated Black women, the segment with the highest rate of incarceration among women.^{2,56} Out of the 19 articles reviewed, only one focused on the psychosocial determinants of health among incarcerated Black women, using an exclusively Black sample. One-third of the articles performed race-specific analyses, while the remaining articles failed to examine the differences in health and health determinants by either race and/or gender, despite acknowledging the disparity that exists in the number and health of incarcerated Black women compared to White and Hispanic women. This significant limitation makes it difficult to measure the actual breadth of racial disparities and subsequently, the importance of identifying strategies to reduce them.

Additionally, the studies reviewed heavily relied on self-reported data to measure health behavior and identify health determinants.

Health care implications

Personal factors among incarcerated Black women including perception of health, drug and sexual behavior, attitudes toward health services and relationships with partners and families must be considered in tandem when developing research studies and/or treatment interventions. Across the studies reviewed, associations are found between individual behaviors and the types of relationships and community experiences. Therefore, conducting research or interventions focusing on a single risk factor to address the health of or health disparities experienced by incarcerated Black women, may not be as effective.⁵⁶

With regard to health service utilization, studies consistently revealed a lack of health insurance, access to primary health care, or consistent treatment for diagnosed health illnesses. As a result, many incarcerated Black women have the best opportunity to receive health care services during incarceration and it is critical for them to receive the most appropriate health care. However, there exists a combination of barriers to receiving health care during incarceration related to the facility policies and practices of the health professionals that served the women.^{10,17,18,33,42,45} Poor health care services in correctional facilities create a desire for incarcerated women to want to “handle problems on their own” or “allow the problem to get better itself”.⁴⁵ Consequently, health care services within the prison should adhere to standards for quality, appropriateness, timeliness, and cost.

Conclusion

The psychosocial determinants of health and utilization of health services identified in this review do not exist independent of one another. These factors also do not only impact incarcerated Black women but all incarcerated persons and their families and communities. Therefore, these factors must not be considered in isolation. There is a clear need for studies focused exclusively on Black women. Health studies comparing Black women to White women have resulted in an understanding of the known racial health disparities. Therefore, understanding within-group factors that promote health among poor and underserved have the potential to examine culturally congruent factors and strengths within groups of Black women. Future efforts should also focus largely on policies, as the progress to be made will only be as successful as the policies that contribute to unfair sentencing practices, reinforce high-risk behaviors within facilities, and deter women from seeking health care while incarcerated. In addition, multi-level longitudinal studies are needed to assess changes on the individual, interpersonal, community, institution, and policy levels and the subsequent impact those changes have on health disparities among incarcerated Black women. This systematic literature review contributes significantly by focusing on incarcerated Black women and highlighting their unique needs given the established disparities in health and health service utilization.

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References

1. Carson, EA. Prisoners in 2013. U.S. Department of Justice/Bureau of Justice Statistics; Washington, DC: Sep. 2014 Available at: <http://www.bjs.gov/content/pub/pdf/p13.pdf>
2. Table 1. Population by sex and age, for Black alone and White alone, not Hispanic: 2012.. Annual Social and Economic Supplement to the Current Population Survey/U.S. Census Bureau. Dec. 2013 Available at: <http://www.census.gov/population/race/data/ppl-ba12.html>
3. Harner HM, Riley S. Factors contributing to poor physical health in incarcerated women. *J Health Care Poor Underserved*. May; 2013 24(2):788–801. [PubMed: 23728045]
4. Fisher AA, Hatton DC. Women prisoners: health issues and nursing implications. *Nurs Clin N Am*. Sep; 2009 44(3):365–73.
5. Fazel S, Baillargeon J. The health of prisoners. *Lancet*. Mar; 2011 377(9769):956–65. [PubMed: 21093904]
6. Hatcher SS, Toldson IA, Godette DC, et al. Mental health, substance abuse, and HIV disparities in correctional settings: practice and policy implications for African Americans. *J Health Care Poor Underserved*. May; 2009 20(2A):6–16. [PubMed: 19711489]
7. Willingham BC. Black Women's Prison Narratives and the Intersection of Race, Gender, and Sexuality in U.S. Prisons. *Critical Survey*. Jan; 2011 23(3):55–66.
8. Braithwaite RL, Treadwell HM, Arriola KR. Health disparities and incarcerated women: a population ignored. *Am J Public Health*. Oct; 2005 95(10):1679–81. [PubMed: 16186446]
9. Guthrie B. Addressing incarcerated women's unique and unidentified health care needs. *J Obstet Gynecol Neonatal Nurs*. Jul.2011 40(4):468.
10. Fisher AA, Hatton DC. A study of women prisoners' use of co-payments for health care: issues of access. *Womens Health Issues*. Jun; 2010 20(3):185–92. [PubMed: 20457406]
11. Freudenberg N. Adverse effects of US jail and prison policies on the health and well-being of women of color. *Am J Public Health*. Dec; 2002 92(12):1895–9. [PubMed: 12453803]
12. Centers for Disease Control and Prevention. HIV surveillance report, 2013. CDC; Nov. 2014 Available at: <http://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-vol-25.pdf>
13. Maruschak, LM.; Berzofsky, M.; Unangst, J. Medical problems of state and federal prisoners and jail inmates, 2011–12. U.S. Department of Justice/Bureau of Justice Statistics; Washington, DC: Feb. 2015 Available at: <http://www.bjs.gov/content/pub/pdf/mpsfpi1112.pdf>
14. Blankenship KM, Smoyer AB, Bray SJ, et al. Black-white disparities in HIV/AIDS: the role of drug policy and the corrections system. *J Health Care Poor Underserved*. Nov; 2005 16(4 Suppl B):140–56. [PubMed: 16327113]
15. Sarteschi CM, Vaughn MG. Double jeopardy: A review of women offenders' mental health and substance abuse characteristics. *Victims and Offenders*. Mar; 2010 5(2):161–82.
16. Springer SA. Improving healthcare for incarcerated women. *J Womens Health (Larchmt)*. Jan; 2010 19(1):13–5. [PubMed: 20088653]
17. Young D. Women's perceptions of health care in prison. *Health Care for Women International*. Apr; 2000 21(3):219–34. [PubMed: 11111467]
18. Staton M, Leukefeld C, Webster JM. Substance use, health, and mental health: problems and service utilization among incarcerated women. *Int J Offender Ther Comp Criminol*. Apr; 2003 47(2):224–39. [PubMed: 12710367]
19. Anderson TL, Rosay AB, Saum C. The impact of drug use and crime involvement on health problems among female drug offenders. *The Prison Journal*. Mar; 2002 82(1):50–68.
20. Dumont DM, Brockmann B, Dickman S, et al. Public health and the epidemic of incarceration. *Annu Rev Public Health*. Apr.2012 33:325–39. [PubMed: 2224880]
21. Harner HM, Budescu M, Gillihan SJ, et al. Posttraumatic stress disorder in incarcerated women: A call for evidence-based treatment. *Psychol Trauma*. Jul.2015 7:58–66. [PubMed: 25793594]

22. Cox RJA. The impact of mass incarceration on the lives of African American women. *Rev Black Polit Econ*. Jun; 2012 39(2):203–12.
23. Harner HM, Riley S. The impact of incarceration on women's mental health: responses from women in a maximum-security prison. *Qual Health Res*. 2013; 23(1):26–42. [PubMed: 23034774]
24. Nowotny KM, Belknap J, Lynch S, et al. Risk profile and treatment needs of women in jail with co-occurring serious mental illness and substance use disorders. *Women Health*. Nov; 2014 54(8): 781–95. [PubMed: 25204664]
25. Rich JD, Cortina SC, Uvin ZX, et al. Women, incarceration, and health. *Womens Health Issues*. Nov; 2013 23(6):e333–4. [PubMed: 24183407]
26. Reingle Gonzalez JM, Connell NM. Mental health of prisoners: identifying barriers to mental health treatment and medication continuity. *Am J Public Health*. Dec; 2014 104(12):2328–33. [PubMed: 25322306]
27. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. *Health Educ Q*. Dec; 1988 15(4):351–77. [PubMed: 3068205]
28. Shavers VL, Shavers BS. Racism and health inequity among Americans. *J Natl Med Assoc*. Mar; 2006 98(3):386–96. [PubMed: 16573303]
29. Freudenberg N, Moseley J, Labriola M, et al. Comparison of health and social characteristics of people leaving New York City jails by age, gender, and race/ethnicity: implications for public health interventions. *Public health reports*. Nov; 2007 122(6):733–43. [PubMed: 18051666]
30. Altice FL, Marinovich A, Khoshnood K, et al. Correlates of HIV infection among incarcerated women: implications for improving detection of HIV infection. *J Urban Health*. Jun; 2005 82(2): 312–26. [PubMed: 15872190]
31. McClelland GM, Teplin LA, Abram KM, et al. HIV and AIDS risk behaviors among female jail detainees: implications for public health policy. *Am J Public Health*. May; 2002 92(5):818–25. [PubMed: 11988453]
32. Rosen DL, Schoenbach VJ, Wohl DA, et al. Characteristics and behaviors associated with HIV infection among inmates in the North Carolina prison system. *Am J Public Health*. Jun; 2009 99(6):1123–30. [PubMed: 19372527]
33. Bonney LE, Clarke JG, Simmons EM, et al. Racial/ethnic sexual health disparities among incarcerated women. *J Natl Med Assoc*. May; 2008 100(5):553–8. [PubMed: 18507208]
34. Hogben M, St. Lawrence J, Eldridge GD. Sexual risk behavior, drug use, and STD rates among incarcerated women. *Women & Health*. Oct; 2001 34(1):63–78.
35. Farel CE, Parker SD, Muessig KE, et al. Sexuality, sexual practices, and HIV risk among incarcerated African-American women in North Carolina. *Womens Health Issues*. Dec; 2013 23(6):e357–64. [PubMed: 24183410]
36. Ravi A, Blankenship KM, Altice FL. The association between history of violence and HIV risk: a cross-sectional study of HIV-negative incarcerated women in Connecticut. *Women's Health Issues*. Aug; 2007 17(4):210–6. [PubMed: 17570681]
37. Asberg K, Renk K. Comparing incarcerated and college student women with histories of childhood sexual abuse: The roles of abuse severity, support, and substance use. *Psychol Trauma*. Mar.2013 5(2):167.
38. Hebert MR, Rose JS, Rosengard C, et al. Levels of trauma among women inmates with HIV risk and alcohol use disorders: behavioral and emotional impacts. *J Trauma Dissociation*. Jun; 2007 8(2):27–46. [PubMed: 17804382]
39. Binswanger IA, Redmond N, Steiner JF, et al. Health disparities and the criminal justice system: an agenda for further research and action. *J Urban Health*. Feb; 2012 89(1):98–107. [PubMed: 21915745]
40. Harner H, Burgess AW. Using a trauma-informed framework to care for incarcerated women. *J Obstet Gynecol Neonatal Nurs*. Jul; 2011 40(4):469–76.
41. Guthrie B. Toward a gender-responsive restorative correctional health care model. *J Obstet Gynecol Neonatal Nurs*. Jul; 2011 40(4):497–505.
42. Hatton DC, Kleffell D, Fisher AA. Prisoners' perspectives of health problems and healthcare in a US women's jail. *Women Health*. Nov; 2006 44(1):119–36. [PubMed: 17182530]

43. Staton-Tindall M, Frisman L, Lin HJ, et al. Relationship influence and health risk behavior among re-entering women offenders. *Womens Health Issues*. Jun; 2011 21(3):230–8. [PubMed: 21315617]
44. Messina N, Grella C. Childhood trauma and women's health outcomes in a California prison population. *Am J Public Health*. Oct; 2006 96(10):1842–8. [PubMed: 17008581]
45. Severson M, Postmus JL, Berry M. Incarcerated women: consequences and contributions of victimization and intervention. *Int J Prison Health*. Feb; 2005 1(2/3/4):223–40.
46. Nijhawan AE, Salloway R, Nunn AS, et al. Preventive healthcare for underserved women: results of a prison survey. *J Womens Health (Larchmt)*. Jan; 2010 19(1):17–22. [PubMed: 20088654]
47. Haywood TW, Kravitz HM, Goldman LB, et al. Characteristics of women in jail and treatment orientations. A review. *Behav Modif*. Jul; 2000 24(3):307–24. [PubMed: 10881379]
48. MacDonald J, Arkes J, Nicosia N, et al. Decomposing racial disparities in prison and drug treatment commitments for criminal offenders in California. *J Legal Stud*. Jan; 2014 43(1):155–87. [PubMed: 25382877]
49. Mauer M. Addressing racial disparities in incarceration. *The Prison Journal*. Sep; 2011 91(3 Suppl):87S–101S.
50. Dumont DM, Allen SA, Brockmann BW, et al. Incarceration, community health, and racial disparities. *J Health Care Poor Underserved*. 2013; 24(1):78–88. [PubMed: 23377719]
51. Foley L, Papadopoulos I. Perinatal mental health services for black and ethnic minority women in prison. *British Journal of Midwifery*. Aug; 2013 21(8):553–562.
52. Kouyoumdjian FG, Leto D, John S, et al. A systematic review and meta-analysis of the prevalence of chlamydia, gonorrhoea and syphilis in incarcerated persons. *International Journal of STD & AIDS*. Apr; 2012 23(4):248–254. [PubMed: 22581947]
53. Adimora AA, Schoenbach VJ. Social context, sexual networks, and racial disparities in rates of sexually transmitted infections. *The Journal of Infectious Diseases*. Feb; 2005 191(Supplement 1):S115–S122. [PubMed: 15627221]
54. Sacks JY. Women with co-occurring substance use and mental disorders (COD) in the criminal justice system A research review. *Behavioral Sciences & the Law*. Jul; 2004 22(4):449–466. [PubMed: 15282834]
55. Williams DR, Williams-Morris R. Racism and mental health: the African American experience. *Ethnicity & Health*. Aug; 2000 5(3-4):243–268. [PubMed: 11105267]
56. Hall MT, Golder S, Conley CL, et al. Designing programming and interventions for women in the criminal justice system. *Am J Crim Justice*. Mar; 2013 38(1):27–50.

Figure 1. Ecological Model for Health Promotion

Adapted from: McLeroy, KR, Bibeau, D, Steckler, A, and Glanz, K (1988). An Ecological Perspective on Health Promotion Programs. *Health Education Quarterly* 15(4): 351-377.

Figure 2.
Flow diagram of study selection process.

Table 1

CHARACTERISTICS AND KEY FINDINGS OF STUDIES (N=19)

Authors (date)	Research objectives	Participants and location	Black women subgroup % (sample)	Study design/analysis	Measures	Findings
Alice, Marinovich, Khoshnood, et al. (2005) ³⁰	To determine the prevalence of HIV infection, risk factors associated with infection, and whether clinical laboratory markers could be predictive for HIV infection.	3,315 prisoners in the Connecticut Department of Corrections	41% (n=1,335)	Cross-sectional - chi-square/t-tests and logistic regression	Age, race/ethnicity, education, incarceration history, general health, STI history, alcohol and drug use and sexual risk behaviors, and laboratory abnormalities	Black women were 49% of the HIV positive inmates and found to be at increased risk for HIV compared to White or Hispanic women. Injection and non-injection drug use were both associated with HIV seropositive women. Sharing of injection equipment and heroin use were also both strongly associated with HIV seropositive women. Sexual risk behaviors leading to increased risk of HIV included sex with an injection drug user primarily, as well as transactional sex for money, drugs, protection or rent; sex with strangers; and history of STI (specifically, syphilis and herpes).
Asberg and Renk (2012) ³⁷	To determine the best predictors to incarceration for survivors of childhood sexual abuse (CSA) among two groups of women: incarcerated in prison and enrolled in college	Incarcerated females at a county correctional facility (N=169) and women enrolled in undergraduate psychology courses at a large university in the southeastern United States (N=420).	26.1% of the incarcerated sample and 12.9% of the college student sample	Cross-sectional - chi-square/t-tests and logistic regression	Experiences of CSA, depression, symptoms of trauma, victimization, substance use, history of criminal justice involvement, coping techniques, social support, family environment, and social environment response to disclosure of CSA	65.7% of the incarcerated sample (n=110) and 35.5% of the college student sample (n=149) identified at least one experience of CSA.
Bonney, Clarke, Simmons, et al. (2008) ³³	To compare self-reported sexual risk behaviors and history of STI by race/ethnicity in incarcerated women	428 inmates in the Rhode Island Department of Corrections	18% (n=77)	Cross-sectional - chi-square, analysis of variance, and logistic regression	Age, race/ethnicity, education, employment history, housing situation, health insurance status, substance use history, health self-perception, sexual risk behavior	48.7% of Black women had no health insurance; 20.8% reported having a usual source of medical care. Black inmates self-reported a lower rate of health compared to Whites and Hispanics but were significantly less likely to have ever used illicit drugs including heroin, cocaine or opiates (67.5%) compared to Whites (74.8%) and less likely to be infected with Hepatitis-C (9.1%) when compared to Whites (27.6%). Blacks were 2.3 times more likely to have used condoms consistently but 2.6 times more likely to have a history of an STI than Whites.
Farel, Parker, Muessig, et al. (2013) ³⁵	To examine the context of sexual practices and relationships of incarcerated Black women	29 inmates in one of two women's prisons in North Carolina	100% (N=29)	Qualitative - multistage, iterative process and thematic coding of transcripts	Age, incarceration history, history of transactional sex, children, STI history,	Participants that were in relationships primarily with women reported having low risk of getting an STI when compared to a relationship with a man.

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	that may influence HIV and STI risk				risk behavior for HIV and STI, sexual risk behavior, and descriptions of sexual partners and past relationships	Many participants described concurrent partnerships among their female partners with both males and females that put them at risk for STI and HIV. Participants described no protective barriers used with female partners and minimal condom use with male partners; based on the participants' trust of their partner and perception of commitment, desire to have children, or their male partner's preference. Additionally, 14 women (10 of the 15 HIV positive women) described experiences of transactional sex in exchange for money or drugs.
Fisher and Hutton (2010) ¹⁰	To examine women prisoners' use of co-payments for health care in how it impacts their access to care and their health	31 formerly incarcerated women	19% (n=6)	Qualitative, Community Based Participatory Research (CBPR) - consensual qualitative research strategy	Administration and implementation of co-payments for health services, reasons for avoiding health services, timeliness and quality of health care, and consequences from not receiving health care services	Women described the co-payments as a burden and barrier to receiving health care, being that they didn't have much money and lacked jobs while in prison or families to provide any money for health services. Women that received health services described them as not being worth the cost, not timely, and sometimes having their requests ignored. Women reported that co-payment policies were not followed, which resulted in multiple co-payments made for the same health issue.
Freudenberg, Moseley, Labriola, et al. (2007) ²⁹	To examine differences in the criminal justice experience, health status, substance use, and sexual behavior by gender, age, and race/ethnicity among men, women, and male youth and Black and Hispanic ethnicities.	1,946 inmates soon to be released from Rikers Island Detention Center	63.2% (n=447)	Cross-sectional - bivariate comparison analysis	Race/ethnicity, age, marital status, children status, living situation, employment status, sources of income, education level, history of criminal justice involvement, health indicators, alcohol and drug use, health and social risk indicators, sexual behaviors, HIV/AIDS, and priority needs.	Black women were more likely homeless, to have missed work due to drug use, utilized drug treatment, and report HIV positive status than Hispanic women. Black women were less likely to report injection drug use, which supports HIV transmission through sexual behaviors. Overall, women were significantly more likely to be homeless, have less than a high school education, involved in illegal activities as a source of income, and currently incarcerated on drug charges than adult men. Women reported higher prevalence of issues consisting of oral health, depression, asthma, hypertension, anxiety disorder, and diabetes. Women were significantly less likely to always use a condom and more likely to report never using a condom in 30 days prior to arrest compared to adult men.
Hammer, Budescu,	To determine prevalence of PTSD, identify	387 inmates in a maximum security state prison	25% (n=96)	Cross-sectional - chi-square likelihood ratio	Age, race/ethnicity, education level, history	No significant differences in the demographics of women with PTSD

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Gillihan, et al. (2015) ²¹	traumatic experiences, and an association between physical and mental health conditions.				of incarceration, current incarceration conviction, past physical and mental health problems, and post-traumatic stress disorder diagnosis and symptoms	diagnosis. 45% of the women met the criteria for diagnosis of PTSD, of which 58% (n=102) had moderate to severe symptoms. The types of traumatic experiences reported included: both nonsexual and sexual assault; sexual contact as a minor by someone more than five years older; and witnessing violence in their lifetime. Participants with PTSD diagnosis were significantly more likely to report of physical issues such as chest pain, headaches, and shortness of breath and more reports of mental health issues including depression, anxiety, and attempts at suicide.
Hatton, Kieffler, and Fisher (2006) ⁴²	To determine former and current prisoners' perception of their health, how they dealt with health issues, and what could be done to improve the health care of women in jail.	78 women (N=18 formerly incarcerated and N=60 women currently incarcerated in a county jail)	11% (n=2) of the formerly incarcerated participants and 32% (n=19) of the currently incarcerated participants	Qualitative - verbatim transcription and thematic coding	Race/ethnicity, age, education, children, history of criminal involvement (number and amount of time incarcerated), mental and physical health problems, health problems attributed to the correctional facility, barriers to health care, and potential solutions	Women reported physical problems specific to female health issues including STI, amenorrhea, and yeast infections. Mental health problems included stress, substance use withdrawal, and not receiving medication for diagnosed mental health issues. Hatton and colleagues reported that health problems developed or were exacerbated by unsanitary conditions such as lack of adequate soap and cleaning supplies, limited clean towels and sheets, infestations, dirty showers, uncontrolled bacterial infections, and mismanagement of medication (delayed administration, premature discontinuation, receiving the wrong medication, or allergic reaction). Hatton and colleagues reported the lack of privacy, waiting time to see a health professional, and co-payments associated with receiving health services as barriers to health care identified by the women in the study.
Hebert, Rose, Rosengard, et al. (2007) ³⁸	To explore differences in risk behaviors and psychosocial profiles of incarcerated women based on the types and level of trauma experienced; Class 1 (n=75) or Class 2 (n=72)	147 inmates from the Women's Facility of the Rhode Island Department of Corrections	26.7% of Class 1 and 16.7% of Class 2	Cross-sectional - latent class analysis, chi-square, and analysis of variance	Race/ethnicity, age, self-rated health status, self-reported number of medical conditions, health insurance status, number of visits to the doctor or the emergency room, high school completion, type and amount of trauma experienced, mental health (presence of depression, PTSD, or	Both groups were similar in age, education level, race/ethnicity and the types of trauma experienced. However, there was a significant difference in the amount of trauma experienced between the two groups; Class 2 participants had a higher average number of exposures to all measured types of trauma (sexual-1.47, physical - 1.56, crime related - 3.11, and general- 6.75) compared to Class 1 participants (sexual - 0.84, physical - 0.69, crime related - 0.63, and general - 3.27). Additionally,

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Hogben, St. Lawrence, and Eldridge (2001) ³⁴	To explore the current and lifetime risk behaviors, experiences, and disease burden of incarcerated women	472 women incarcerated in one of two prisons in Mississippi and Tennessee	61.4% (n=290)	Cross-sectional - t-tests, logistic regression, and non-parametric tests	generalized anxiety disorder (GAD)), past and current alcohol and drug use, drug and sexual risk behavior, and the number of people in social group that are 1) living with HIV, 2) ever had a drug or alcohol dependence, and 3) promoters of alcohol use	there were significantly higher numbers of alcohol related problems and consequences, main partners that were injection drug users, and self-reported medical problems among participants in Class 2 compared to participants in Class 1. The authors also reported that both classes of participants reported more traumatic experiences, depression, and symptoms of PTSD than in other studies with female, jail detainees.
McClelland, Teplin, Abram, et al. (2002) ³¹	To examine HIV/AIDS risk behaviors of women detained in jail to identify specific subgroups of women at high risk for acquiring HIV/AIDS	948 women detained in jail	40.4% (n=371)	Cross-sectional - m-estimator, Kruskal-Wallis test, and ordered logistic regression	STI history, sexual risk behavior (numbers of male and female partners ever and in the past 30 days, use of condoms or latex barriers, and frequency of vaginal, anal, or oral sex without a condom), treatment for any STI in the past 30 days, and drug use (in their lifetime and in the last 30 days)	Mostly charged for drug-related crimes (41.2%); lifetime use of any drug was 75.9%. The lifetime prevalence of STI among women was 38.9%, however STI rates were higher for Black women (43.9%). Condom use in the last sexual encounter with a man was 30.5%; latex barrier use in last sexual encounter with a woman was 4.3%. Lifetime drug use was associated with lifetime number of male partners, lifetime number of female partners, and unprotected vaginal sex within the past 30 days. Lifetime drug use was NOT associated with last condom use, recent sex with a new partner, nor STI. STI were associated with forcible sexual contact.
Messina and Grella (2006) ⁴⁴	To examine the association between the cumulative number of childhood traumatic experiences and adult physical and mental health issues and behaviors	491 female inmates in a California prison	40%	Cross-sectional - chi-square, t-tests, and logistic regression	Race/ethnicity, history of criminal involvement, drug use, and sexual behavior, and type of charge (felony or misdemeanor)	"Never using protection" in vaginal sex and oral sex was highest among Hispanic women and lowest among Black women. Black women were also the lowest percentage users of injection drugs and sharing of needles. Non-Hispanic white women, women with mental health disorders, women who engage in transactional sex, and women with substance use disorders were at highest risk for acquiring HIV/AIDS through sexual behaviors and injection drug use behaviors.
					Childhood traumatic events (emotional abuse and neglect, physical abuse and neglect, or sexual abuse); household dysfunction (family violence, parental separation/divorce, incarcerated family member, or out-of-home	The most reported type of childhood traumatic experience was family violence (47.6%). Women with more childhood traumatic experiences were involved with the criminal justice system at younger ages and had more prior arrests than those with no reports of childhood traumatic experiences. Controlling for histories of substance use and criminal justice, one childhood

Authors (date)	Research objectives	Participants and location	Black women subgroup % (sample)	Study design/analysis	Measures	Findings
Nowomyn, Belknap, Lynch, et al. (2014) ²⁴	To examine the risk profiles of incarcerated women with co-occurring serious mental illness and substance use disorders, referred to as current co-occurring disorders (CCOD)	491 randomly selected women in nine local county jails in Idaho, Colorado, South Carolina, Maryland, and Virginia.	37.4% (n=183)	Cross-sectional - chi-square, t-test, and logistic regression	Age, race/ethnicity, relationship status, education, employment status, history of incarceration, both childhood and adult traumatic experiences, family risk exposure, mental health, substance use, and access to and utilization of treatment service	traumatic event significantly increases the odds of women prostituting, taking psychotropic medication, receiving an STI, having an alcohol problem, having a gynecological problem, and reporting fair or poor health status. Women with CCOD (having a serious mental illness and any substance use disorder within the past year) were more likely to be exposed to drugs by family members, had more prior convictions, and higher likelihood to be incarcerated for violent offenses than women without CCOD. Women with CCOD were found to have high prevalence of physical abuse (86.5%), sexual assault/rape (79.8%), and intimate partner violence (76.9%).
Ravi, Blankenship, and Alice (2007) ³⁶	To examine the association between a history of violence and unprotected sex (primary male or non-primary male or female partners) for HIV infection	1,588 incarcerated women entering the Connecticut Department of Corrections	41.9% (n=658)	Cross-sectional - chi-square and logistic regression	Age, race, education, history of sex work, drug use, employment status, type(s) of sexual partner(s), history of violence, condom use, and HIV risk.	Nearly half (45.4%) of the sample had a history of drug use. Most of the women (65%) had experienced some type of violence in their lifetime. Forty-five percent of the women experienced physical violence only while 46.9% of the women experienced both physical violence and rape. The authors found that physical violence was significantly associated with unprotected sex with primary partner. Higher rates of violence were found to be more likely among Whites, inmates with a history of sex work, and inmates with a history of drug use. Ravi and colleagues found no relationship between any history (or type) of violence and unprotected sex with a non-primary partner.
Rosen, Schoenbach, Wohl, et al. (2009) ³²	To examine associations between HIV infection and inmate characteristics in a large southern state prison system	21,419 male and female inmates in the North Carolina Department of Corrections Prison System; one-third were women (n=5,958)	42.8% of female inmates	Cross-sectional - bivariate correlations and logistic regression	Age, race/ethnicity, education, employment, employment status, HIV status, sexual and drug related HIV risk behavior, drugs use, mental health status, and history of criminal justice involvement	Nearly 42% of women had a drug-related conviction ever, 64.9% had ever used cocaine or crack, and 9.4% shared needles in their lifetime. Black women represented 75% of HIV positive women. HIV infection was associated with being Black, crack or cocaine use, drug-related conviction, and previous incarceration of more than a year. Women who engaged in sex with men who have sex with men were also a greater risk for HIV infection.

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Severson, Postmus, and Berry (2005) ⁴⁵	To examine the differences of victimization and utilization of health services and/or interventions between a group of incarcerated women and a group of non-incarcerated women in a rural Midwestern state	266 women either located in rural and urban communities (n=109) or incarcerated in a women's correctional facility (n=157)	Black women comprised 58% of the prison sample and 39.4% of the community sample	Cross-sectional - cross tabulations and phi coefficients	Race/ethnicity, age, education level, living arrangements, children, childhood physical or sexual abuse, sexual assault, interpersonal violence, current health and mental health status, current alcohol and/or dependence, support services utilization, service helpfulness, and barriers to help seeking	Nearly half of the total sample reporting experiences of every type of victimization measured. Incarcerated women reported significantly higher rates of victimization than women in the community, mostly experiencing interpersonal violence (100%); rape (72.6%), and childhood sexual abuse (68.2%). Having a lack of transportation or a scheduling conflict was associated with poorer physical and mental health, incarceration, and alcohol and drug problems; and consequently reported by 46.2% of women in prison compared to 29.9% of women in the community.
Staton, Leukefeld, and Webster (2003) ¹⁸	To examine the relationship between substance use, general and mental health issues, and treatment utilization among incarcerated women	60 inmates in the Kentucky Correctional Institute for Women	55%	Cross sectional - Pearson and point-biserial correlations	Demographics: substance use (alcohol, marijuana, cocaine, sedatives, opiates, or multiple substances) during their lifetime and 30 days prior to incarceration, numerous specific health issues; mental health conditions including depression, anxiety, hallucinations, and cognitive problems; and utilization of the emergency room and/or hospital, psychiatric services, and alcohol/drug treatment	The top five health issues reported were drugs (90%), oral health (86.7%), reproductive health (78.3%), trauma or physical injury (73.3%), and mental health (70%). Many participants reported receiving alcohol or drug treatment (80%) but only an average of 1.6 or 2.2 times, respectively. In addition, participants visited emergency rooms 13.7 times on average and 53% of participants received mental health treatment during their lifetime. Correlations revealed significant and positive associations between utilization of the emergency room and mental health issues such as anxiety, suicidal ideation, and suicide attempts. Receiving substance abuse treatment was also significantly associated with having a STI and the years of alcohol use.
Staton-Tindall, Frisman, Lin, et al. (2011) ⁴³	To examine the influence of family and social networks on the health risk behavior of adult women offenders	366 female, substance using inmates from three previous studies conducted as part of the Criminal Justice Drug Abuse Treatment Studies (CJDATS)	27% (n=99)	Cross-sectional - Bivariate analyses and logistic regression	Positive or negative relationship influences from parents, peers, and partners within the 6 months prior to incarceration, injection drug use, and sexual risk behaviors	Positive parental influence was associated with less HIV behavior and drug use while positive peer influence was associated with less drug use. In contrast, negative peer influences were associated with more drug use. Additionally, negative relationships had no significant effects on the association between positive influences and offender's risk behaviors prior to incarceration.
Young (2000) ¹⁷	To examine the perceptions of women requesting and receiving health care in prison	15 women incarcerated in a northwestern state correctional facility	20% (n=3)	Qualitative - transcription from audio recordings and coding into categories from the following research	Demographic information (race, age, education level, most serious type of offense, length of current	Women had both positive and negative perceptions of the health care and treatment, but they were primarily negative. All of the women described at least one experience of non-empathetic

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				questioned determined after reviewing the text: How is medical care and the manner in which treatment is provided perceived by the inmates?	sentence, and alcohol/ drug dependency) and perceptions of care (inadequate and adequate) and treatment (non-empathetic and empathetic)	treatment, including being treated based on stereotypes of incarcerated persons, disregarded, or being rushed. Women felt that they only received the minimum level of health care and that their health issues and concerns were not completely addressed. Women reported that health professionals sometimes refused or ignored requests if they were not scheduled or if they were a recurring issue. Women also reported waiting weeks to months to receive medication or medical equipment. Other reports from women described receiving an incorrect diagnoses and/or medication.