



Racial and Ethnic Health Disparities in Incarcerated Populations

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Abstract

Alarming disparities in population health and wellness in the United States have led to multi-disciplinary research efforts to create health equity. Identifying disparities, elucidating the etiological bases of disparities, and implementing solutions to eliminate disparities are part of the U.S. national health agenda. Racial and ethnic disparities have been identified throughout the cancer control continuum, in cardiovascular disease, diabetes and a multitude of other conditions. The causes of disparities are complex, condition specific, and conjectured to result from combinations of biological and socio-behavioral factors. Racial and ethnic health disparities within the vast incarcerated communities have been excluded from most studies, yet are of significant ethical and fiscal concern to inmates, governing bodies, and non-incarcerated communities into which inmates return. Importantly, research on racial and ethnic disparities in this unique population may shed light on the relative etiologies of health disparities and solutions for creating health equity throughout the general population in the United States.

Keywords

Discrimination in medical care; Health Disparities; Imprisonment; Incarceration; Medical care; Minorities; Prison; Prisoners – Health and hygiene; Race; Ethnicity

Cover Page Footnote

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ABSTRACT

Alarming disparities in population health and wellness in the United States have led to multidisciplinary research efforts to create health equity. Identifying disparities, elucidating the etiological bases of disparities, and implementing solutions to eliminate disparities are part of the U.S. national health agenda. Racial and ethnic disparities have been identified throughout the cancer control continuum, in cardiovascular disease, diabetes and a multitude of other conditions. The causes of disparities are complex, condition specific, and conjectured to result from combinations of biological and socio-behavioral factors. Racial and ethnic health disparities within the vast incarcerated communities have been excluded from most studies, yet are of significant ethical and fiscal concern to inmates, governing bodies, and non-incarcerated communities into which inmates return. Importantly, research on racial and ethnic disparities in this unique population may shed light on the relative etiologies of health disparities and solutions for creating health equity throughout the general population in the United States.

Keywords: Health Disparities; Incarceration; Prison; Race; Ethnicity

INTRODUCTION

Over 7.1 million United States residents, 1 in every 33 adults, are classified as inmates due to being incarcerated, on probation or parole (Glaze 2011). 2.3 million United States adults, one in every 104, are currently incarcerated in prisons or jails (Glaze 2011). The health and wellness of this vast community elicits multi-tiered ethical and fiscal concerns; and impacts multiple communities, including inmates themselves and the communities into which they are released. Incarcerated settings are inherently unique due to the potential for cross-racial and ethnic similarities in sociological and environmental factors including diet and health care; therefore inmate health has the potential to inform our general understanding of disparate health between racial and ethnic groups. We propose that studying racial and ethnic health disparities in prisons can serve as a model for elucidating the determinants of disparities and creating solutions relevant to health equity in non-incarcerated settings.

Racial and Ethnic Health Disparities Facts & Figures

Cardiovascular disease, cancer, and diabetes are the first, second, and seventh leading causes of all deaths, respectively, and together, these diseases are estimated to cause more than half of all annual deaths in the United States (Murphy 2012). While no racial or ethnic group is immune from these illnesses, minority populations bear a persistently higher burden from cardiovascular disease, cancer and diabetes (Heron, Hoyert et al. 2009). African Americans die from cancers at a rate of 1.2 fold higher than Caucasians. Prostate Cancer, the most common cancer in African American and Caucasian men, shows the most profound racial disparity of all cancers, with a 1.6 fold higher incidence rate and a 2.4 fold higher mortality rate among African Americans than Caucasians. Mortality from cardiovascular disease is 1.3 fold higher among African Americans than Caucasians, and the mortality rate from diabetes is an astonishing 2.1 fold higher among African Americans than Caucasians. Hispanics have lower mortality rates from cardiovascular disease and cancer than do African Americans and non-Hispanic Caucasians; however, mortality from diabetes is 1.5 times higher among Hispanics than non-Hispanic Caucasians. Racial and ethnic minorities also suffer from disparately higher rates of other ailments including infant mortality, pediatric asthma, and HIV/AIDS. Eliminating health disparities is a national priority with both ethical and economic significance. Many minority groups with disproportionately poorer health have been identified and characterized; however, effective interventions and preventative efforts to create health equity must be tailored to address the etiological bases of health disparities, which are complex and not well understood. Delineating etiologies of health disparities is an essential component of the Department of Health and Human Services' systems-approach framework structured to strategically address the disparately poor outcomes in minority health (Graham 2008) and is critical for designing appropriate interventions to create health equity.

Etiologies of Disparities

Racial and ethnic health disparities stem from complex socio-behavioral and biological combinations that have not yet been clearly delineated. The conjectural *socio-behavioral etiologies* of racial and ethnic health disparities include economics (Andresen and Miller 2005; McKenzie and Jeffreys 2009; Vona-Davis and Rose 2009), health care utilization and differential health care quality (Flores; Ruffin, Gorenflo et al. 2000; Fincher, Williams et al. 2004; Ross, Berkowitz et al. 2008; Barocas and Penson), diet (Verhoeven, Goldbohm et al. 1996; Dubbert, Carithers et al. 2002; Drake, Keane et al. 2006; Chan, Lok et al. 2009; Kim and Park 2009), exercise (Dubbert, Carithers et al. 2002; Antonelli, Freedland et al. 2009; Sea, Poon et al. 2009), exposures to toxins including alcohol and tobacco (Coyle 2009), and the physical environment

(Gold and Wright 2005). Proposed *biological etiologies* of racial and ethnic health disparities include genetic factors such as skin color which impacts vitamin D levels (Ginde, Liu et al. 2009; Rhee, Coebergh et al. 2009; Gandini, Boniol et al. 2010), racially linked allelic variations in disease causing genes (Dunn, Agurs- Collins et al.; Mathias, Grant et al.; VanCleave, Moore et al.), and developmental factors such as low and high birth weights which may alter the developing child's biology in a manner that creates susceptibility to chronic diseases later in life (Kuzawa and Sweet 2009). The efficacies of sociological and biological interventions depend upon the relative contributions of the etiologies of disparate health which is currently not well understood.

Ideally, delineation of the relative contributions of environmental and biological bases of racial and ethnic health disparities would be conducted within large, multi-racial and ethnic congregate or communal settings wherein several lifestyle and environmental factors conjectured to contribute to disparities are similar within and across racial and ethnic groups. Incarcerated populations are an example of such a setting in which lifestyles and environments including health care access, dietary options, exercise opportunities, and the physical environments are strikingly similar among and between racial and ethnic groups than those typically found in non-incarcerated communities.

Access to wellness conditions are in theory quite similar across racial and ethnic groups of incarcerated individuals, yet the actual use of health care, dietary consumption, fitness regimens, smoking habits, and sun exposures have never been measured across incarcerated racial and ethnic groups. We propose that analysis of cross-racial and ethnic inmate health including health behaviors within incarcerated settings will permit researchers to tease out the relative contributions of socio-behavioral and biological factors that contribute to racial and ethnic-health disparities, while simultaneously addressing broader health concerns affecting the inmate population.

Racial and Ethnic Health Disparities among Prison Inmates

Currently, there is a paucity of research regarding the cross-racial and ethnic health of prisoners, limited to the peripheral analyses of the few reports on chronic health among inmates. Mathew et al. documented the cross-racial and ethnic prevalences of 17 different cancers among prison inmates in the Texas Department of Criminal Justice, but direct ratios or comparisons were not calculated (Mathew, Elting et al. 2005). The report concluded that overall 5-year cancer survival rates did not differ between black and non-Hispanic white inmates, or between white and Hispanic inmates; but 5-year cancer survival rates were higher for Hispanics than non-Hispanic blacks. Data extrapolated from the Survey of Inmates in State and Federal Correctional Facilities (SISFCF) and the National Health Interview Survey-Sample Adult Files (NHIS-SAF) demonstrated that hypertension is higher among imprisoned Caucasians relative to the general Caucasian U.S. population, but no different among imprisoned Black or Hispanics relative to the general Black and Hispanic U.S. populations (Binswanger, Krueger et al. 2009). These data are the first to address the issues of disparities in health among the predominant racial and ethnic inmate populations.

INCARCERATED COMMUNITIES AS A MODEL FOR UNDERSTANDING DISPARITIES

The well-being of incarcerated individuals and communities is a mounting ethical and fiscal concern that deserves great attention. In addition to efforts to improve inmate wellness, we propose that understanding the cross-racial and ethnic health of incarcerated individuals and

incarcerated communities may serve as a model for understanding and removing racial and ethnic health disparities in the non-incarcerated population. Here we describe the rationale for such studies, ethical considerations, and feasibility and limitations. We also propose a research agenda for understanding racial and ethnic health disparities via incarcerated populations.

Rationale

Correctional facilities are large, multi-racial, and ethnic congregate settings with potential to be inherently similar between and within the socio-behavioral environments and lifestyles of different racial and ethnic groups. Recent data indicates that 2.3 million United States residents, or 1% of adult U.S. residents are incarcerated either in prison or jail (Sabol 2011), a United States historical high and the highest among every country in the world (King 2005). Offenders sentenced to more than one year of incarceration serve their sentences in prisons which are currently home to over 1.6 million people (one in every 200 US residents) (Glaze 2011, Guerino 2011), with more than 6.5 million U.S. adults (one in every 32) having been imprisoned during their lifetimes (Sabol 2010). Approximately 32% of black, 17% of Hispanic, and 5.9% of white men in the United States serve time in prison during their lifetimes. In 2010 the U.S. prison population was comprised of approximately 1.5 million men and 113,000 women; 38% of prison inmates self-identify as African American, 32% Caucasian, and 22% Hispanic (Guerino 2011). The existence of relatively common environments in many prisons offers opportunities to reduce confounders among study variables found to have univariate associations with cancer risk.

The structure and function of correctional departments can produce similarity within the physical, structural, and behavioral environments and accommodations for inmates. While the socio-environmental conditions of all inmates are not anticipated to be identical, they have the potential for remarkable cross-racial and ethnic similarities of several health related socio-environmental factors relative to the cross-racial and ethnic variation of the non-incarcerated community.

Inmates of all races and ethnicities are housed together within correctional facilities, and thus exposed to similar physical environments including healthful and toxic exposures. The scope of food choices in correctional facilities is limited to the daily meals provided and supplemental purchases from correctional canteens. Physical activity is available to the majority of inmates and like food consumption, the range of activities are limited relative to the variation among and across racial and ethnic groups in the non-incarcerated community. Comprehensive healthcare (prevention, treatment, emergency, follow-up visits) is in principal accessible to inmates of all races and ethnicities.

The scope of healthcare services is independent of socio-economic or employment status and unlike the vast provider variation in non-incarcerated communities, inmate healthcare is delivered by the same providers within each incarcerate community independent of race and ethnicity of the inmate.

There has been a long and well documented record of mistreatment of inmates by prison staffs; therefore we acknowledge that the descriptions provided above of racial and ethnic similarities in prison environments may be true for properly managed prison environments. Highly professional and well managed prison settings are of particular interest for these studies. Prior to conducting studies of racial and ethnic disparities in prisons, it is essential that prisons included in such studies meet the highest professional standards and that observations related to meeting those standards be carefully and fully documented.

Ethical Considerations

Due to the inherent vulnerability of incarcerated populations, research including incarcerated persons must be conducted utilizing purely non-coercive measures and upholding the highest standards that surpass expectations for non-vulnerable populations. Studies of racial and ethnic health disparities among incarcerated groups can benefit individual inmates and others as a clearer understanding of the factors contributing to racial and ethnic disparities and poor health and wellness are elucidated. The ethical considerations for studying racial and ethnic health disparities among incarcerated groups must reflect subpart C of the Protection of Human Subjects regulations as defined by the Department of Health and Human Services (Title 45 Part 46, 2009). We suggest that studies of racial and ethnic disparities among prisoners may fall into several permissible categories of research involving prisoners, including the following three as defined by the Department of Health and Human Services: “*A study of prisons as institutional structures or of prisoners as incarcerated persons*”, “*Research on conditions particularly affecting prisoners as a class*”, and “*Research on practices, both innovative and accepted, which have the intent and reasonable probability of improving the health or well-being of the subject*”.

Research on the etiologies of racial and ethnic health disparities among inmates is ethical if correctly carried out with appropriate human subjects’ protections. Studies should be conducted with the highest level of regard to the inmates’ interest and willingness to participate in studies, conscientiously providing maximal benefits to incarcerated communities and individuals, while serving as a model to understand and eliminate disparities among both incarcerated and non-incarcerated populations. The system of participation in health research has largely excluded inmates who we argue should be afforded more opportunities to be represented in health studies, a position supported by the 2006 Institute of Medicine report on Ethical Considerations for Research Involving Prisoners (Gostin 2006).

Feasibility and Limitations

Several characteristics of incarcerated settings provide methodological advantages, as well as a few limitations that should be considered when designing disparities studies behind bars.

Some advantages include the following. Departments of corrections utilize intake surveys and examinations to help guide the daily needs of inmates. These records may include work history (in order to define areas of expertise that may be harnessed within correctional facilities), crime committed, address of residence prior to incarceration, health grades, educational attainment, and other information. These records may provide valuable contextual information related to inmate health, health disparities, and health etiologies. Health care utilization including exams, procedures, and laboratory results are detailed in medical records that are housed in the prisons either as paper or electronic records. Unlike non-incarcerated individuals the medical records of inmates are maintained as single, comprehensive records stored in a single location. This provides methodological advantages in case finding the prevalences and possible disparities in health and wellness and treatments and services provided. These records also serve as a back-up data source for health surveys, and can also be used to help gauge the efficacy of interventions.

Dietary logs kept by correctional facilities provide additional advantages. All meals provided to inmates and foods available in the canteens are documented by the prisons, therefore self-reported dietary intake can be reliably supported by the prison dietary menus and canteen reports. Physical activity of inmates is organized and monitored by prison staff; therefore, self-reported physical fitness levels can be compared to population-based estimates of physical

activity as reported by the prison departments of wellness. In addition to the analyses of prison records as positive controls for accuracy of self-reported surveys, the universal risk of inaccuracy in memory recall associated with self-reported surveys is likely to decrease due to the repetitious daily routines of inmates.

Finally, follow-up studies and interventions are feasible and practical in an incarcerated setting. Unlike non-incarcerated study participants, the duration of time a study participant may reside in one location can be speculated upon prior to conducting interventions, and the location of incarcerated study participants is recorded even when participants have relocated to a different institution.

Important limitations to the use of prison populations in the types of studies suggested include facility restrictions, reading level of inmates, and health care variability. These limitations can be addressed through thorough research and understanding of the specific institution, and strong scientific study designs that account for any limitations.

Correctional facility security restrictions vary by institution; therefore, researchers need to become familiar with tools and resources that are permissible within a facility, including the use of computers and writing utensils. Institutions also vary in the resources and alacrity to accommodate researchers. For example, some institutions may permit researchers to conduct one-on-one interviews while other institutes may not.

Facility services such as food and fitness options must also be considered when considering the use of lifestyle surveys. Since resources including food and fitness options are limited within correctional facilities much of the content within available validated instruments is not relevant to the lives of inmates. To our knowledge, lifestyle survey instruments specific to the incarcerated communities have not been utilized or validated. As with the use of surveys in any study population, literacy levels should be considered.

Inmate's educational attainment varies across institutions and is usually evaluated upon entrance into the facility. If reading levels of inmates are lower than that of a validated survey instrument, methods that circumvent this limitation ought to be considered, such as reading surveys to groups of inmates, which have demonstrated success within correctional settings for high and low literacy rate inmates (Styve 2000; MacKenzie 2007).

While inmates in all departments of corrections have the right to comprehensive health care, departments vary in the scope of clinical services, and the standards of practice provided to inmates. Clinical guidelines, including screening and testing for chronic health conditions, as well as treatment protocols vary among institutions, and should be considered when evaluating and extrapolating information regarding the health of prisoners.

Incarcerated setting provides several methodological strengths and some limitations that can be overcome within a study design. Studies within correctional facilities should be conducted in a manner considerate of the burden to the correctional facility staff, and more so, through collaboration and partnership with departments of corrections.

Research Agenda

A transdisciplinary approach is needed to conduct health disparities studies in prison settings, including collaborations with prison officials, social-science and health researchers, biologists, criminologists, and penal ethicists. Studies of the kind mentioned may be practical and ethical only in settings meeting high standards of professionalism and service. Prior to conducting research in prisons it is necessary to identify institutions and facilities that provide professional confinement, and quality health care and other services to inmates. Appraisals of

institutional settings should include examination of possible corruption, racial segregation, and overall quality of health and wellness services and practices.

A three pronged research agenda including (1) case finding; (2) analyses of biological and socio-environmental environments; and (3) the efficacy of interventions may serve as the foundation for addressing health disparities in prisons. Cross-racial and ethnic comparisons of the health of inmates and case finding are keys to understanding racial and ethnic health disparities. Inmate's health can be reviewed for currently incarcerated socio-behavioral and biological factors, as well as pre-prison socio-behavioral or biological factors, that may influence access and health disparities. Creating and implementing interventions is essential for defining the etiologies of racial and ethnic health disparities as well as obtaining information that may improve access and health equity among racial and ethnic groups. Innovative interventions offered to prisoners may include inmate-to-inmate lay health advisor programs coupled with inmate-release programs for service as community health advisors.

CONCLUSION

Correctional facilities are home to millions of people whose health concerns are valued individually, have direct impacts on the health of the non-incarcerated communities into which they are released, and can contribute greatly to our understanding of health disparities, yet studies of racial and ethnic health disparities in incarcerated communities are scant. Incarcerated communities as congregate settings in which socio-behavioral environments and lifestyles are more similar between and within racial groups than those usually found outside prison walls. The etiologies of observed disparities in cardiovascular disease, Diabetes Mellitus, cancers and other conditions might be more clearly defined within incarcerated communities than have been thus far. Non-inmate congregate settings, such as long-term veteran's facilities, fraternal orders, nursing homes, and monasteries and rectories have more lifestyle heterogeneity than incarcerated communities, smaller populations, and little ethnic diversity; and, with the exception of monasteries and rectories, are home to people of an exclusive age range, thereby prohibiting early life studies.

While research on racial and ethnic disparities among inmates is of great importance, the utmost ethical considerations must be followed when working with this vulnerable population. Indeed, we believe more studies of the kind suggested have not been done with these populations due to concerns about the long history of abuse that calls for strong human subject protections that will help overcome the sad history of pseudo-science impositions on minority populations. Therefore, what we are proposing calls for vigilance surrounding approval of studies, procedures used, and the scientific reporting of results even to the extent of appointment of panels to follow such studies from approval through conclusion and reporting.

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