

Editorial

HIV-Infected Individuals with Mental Illness: A Case of Syndemics

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Submitted: 13 September 2013

Accepted: 17 September 2013

Published: 19 September 2013

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Abstract

The concept of syndemic is described as a term that is critical to better understand the interaction between multiple co-morbidities within vulnerable individuals, specifically to explicate the epidemiology of HIV among persons with serious mental illness (SMI), SMI among persons with HIV, and finally HIV among persons with opportunistic infections. Incidence rates among each of these vulnerable populations are reviewed and multiple factors are considered to explain the reported rates. The authors suggest that the syndemic may be driven by disparities in access to care, quality of the care that is provided, treatment adherence, availability and adequacy of housing, quality of social networks, as well as individual differences in risk behavior. Concluding remarks point to the importance of substance abuse as a mediator. The authors propose that future research efforts focus on interventions designed to address the HIV/SMI syndemic

INTRODUCTION

Previous research with the population of persons with serious mental illness (SMI) has demonstrated high rates of both psychiatric and general medical comorbidity [1,2]. Likewise, the HIV positive population has dramatically elevated rates of mental illness and other physical co-morbidities. This pattern of co-occurring conditions has been described as a syndemic [3] which occurs [3-5] when linked health problems involving two or more afflictions interact synergistically, and contribute to excess burden of disease in a population. Evidence for syndemics arises when health-related problems cluster by person, place, or time. For example, the SAVA syndemic is comprised of substance abuse, violence, and AIDS, three conditions that disproportionately afflict those living in poverty in US cities [6].

Physical Health among Persons with SMI

Recent studies have documented that the physical health status of persons with mental illnesses are compromised in comparison with others without SMI [7]. Because population-based studies such as the National Health and Nutrition Examination Survey typically do not sample enough persons with severe mental illnesses to allow robust comparisons with the general population, it has proven difficult to determine the relative risk of various illnesses and diseases for persons with serious mental illness. An alternative approach that has been used frequently to compare the health status of populations, but until recently was ignored in mental health services research, are

studies of mortality [8,9]. Dembling et al [8] used linked records from the Massachusetts Department of Mental Health and multiple cause of death data to conclude that, on average, persons with mental illness lost 8.8 years of potential life in comparison with the general population. They identified HIV infection rates as elevated in persons with serious mental illnesses. Comorbid substance abuse is common among individuals with severe mental illness and adds another layer of diagnostic complexity. Separate substance abuse and SMI treatment delivery systems are typical but for individuals with co-occurring substance abuse they are less effective than treatment programs that integrate mental health and substance abuse [10]. Findings from the ECA provide some background for these observations as they reported that lifetime substance abuse disorders occur for 17% of the general population, yet are 48% for persons with schizophrenia, and as high as 56% of persons with bi-polar illness [11]. A review of the literature concluded that between 25-35% of persons with SMI were current, active substance abusers [12]. Evidence also shows that factors related to substance abuse in the general population such as being young, urban, male, single, and poorly educated also are operative among the SMI [13]. Any substance use at all appears to compromise the effectiveness of mental health treatment [10]. Because large numbers of persons with mental illness also abuse substances, and substance abuse is related to early death from a variety of causes, Dickey and colleagues [9] extended work on mortality among persons with severe mental illness by examining the impact of substance use in addition to mental disorders on excess mortality from external causes. They

also found mental illness increased mortality rates threefold when compared to the Medicaid population treated only for non-psychiatric, non-substance use related medical conditions, and that the odds of death by injury for dually diagnosed persons were more than eight times higher.

HIV among persons with SMI

SMI individuals are more likely than others to contract HIV [14]. Several studies using convenience samples have found alarmingly high rates of infection among those newly admitted to New York City inpatient facilities (5-8%) [15], among homeless mentally ill men (19%) [16], and among persons dually diagnosed with severe mental illness and substance abuse (23%) [17]. More recently, a large multi-site study of HIV prevalence among inpatients and outpatients in Connecticut, Maryland, New Hampshire, and North Carolina found rates of 3.1%, or roughly three times the general population [14]. Reviews of HIV risks as a consequence of severe mental illness suggest that this greater risk is a function of lower socio-economic status, higher rates of substance use, homelessness, and risky sexual behavior including unprotected sex and sex for sale.

Similarly, a study by investigators focusing on a large urban population of Medicaid recipients in Philadelphia found the treated prevalence of HIV among Medicaid recipients with an SMI diagnosis to be 3.7% [1]. We demonstrated that the relative risk of acquiring HIV/AIDS is at least three to five times greater in persons with an SMI as in the general Medicaid population. From surveillance data gathered in collaboration with the Philadelphia Health Department, we also now know that the self-reported mode of HIV transmission is different in the SMI population, with more transmission through heterosexual contacts and injection drug use than in the general population. In another study [2], persons with co-morbid SMI and HIV/AIDS had the highest annual treatment expenditures at \$13,800 per person followed by the SMI only at \$7400, almost fifty percent less, while the HIV/AIDS only group was \$5700 per person. The control group had expenditures of \$1800 per person. Expenses include all outpatient and inpatient treatment costs per year per subject and exclude pharmacy and nursing home care.

SMI among persons with HIV

The prevalence of psychiatric disorders has also been found to be high among sero-positive individuals. Myers found a greater risk of psychiatric disorder among HIV-positive African-American males in an inner-city community compared with those in the same community who were seronegative [18]. By crossing the New Jersey HIV/AIDS registry and Medicaid claims, Walkup and colleagues found that 5.7% of those on the registry had received a diagnosis of schizophrenia [19], much higher than the national prevalence rate of 1% [20]. In the same paper, they report that 6.8% of those on the registry received a diagnosis of major affective disorder for a total of 12.5% with a serious mental illness.

HIV and OI

Opportunistic infections remain the major cause of morbidity and mortality for patients with advanced HIV disease. Patients with a history of an opportunistic infection have significantly

higher monthly mortality, controlling for CD4 cell count, than those without a history of an opportunistic infection [21,22]. Further, in the United States opportunistic infections have been shown to reduce the quality and duration of life for approximately 1 million persons who have HIV infection, especially for the estimated 250,000 persons who are severely immunosuppressed, as measured by a CD4+ T-lymphocyte count below 200 cells/uL [23].

A number of factors could be related to these poorer outcomes for persons with mental illness in addition to HIV infection. Access to care may be compromised in these individuals and any available HIV care for persons with co-occurring mental illnesses may be of poorer quality than care available to other HIV positive persons. However, one study in New Jersey found that HIV positive persons with severe mental illnesses had no less access to state-of-the-art antiretrovirals than other HIV positive persons [24].

HAART has had a profound impact on the natural history of HIV disease in settings where access to treatment has existed, and was perhaps most dramatically demonstrated in the ACTG 320 study where subjects on protease inhibitors had half of the hazard of clinical progression as controls [25]. Subsequently, the strong relation between clinical endpoints and surrogate markers (e.g., HIV viral load in plasma and CD4 lymphocyte count and percent) transformed HIV clinical studies from using clinical endpoints to surrogate markers [26-28]. However, the benefits of therapy are not universal, as demonstrated by observational studies in clinical settings, in which up to only 50% of subjects achieve undetectable viral loads as compared with >80% in clinical trials [29].

In this paper we described the syndemic between mental illness, HIV, and a variety of outcomes. To prevent a syndemic, one must prevent or control not only each disease or illness but also the forces that tie them together. We believe that the syndemic between these disorders occurs because of the ecology within which persons with HIV and SMI reside. There are tremendous disparities regarding access to care, quality of care, adherence to medications and treatment, housing, social networks, as well as individual behavioral risks. Perhaps substance use acts as an important mediator. More research is needed in order to examine the extent to which the HIV and mental illness syndemic is amenable to intervention.

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Cite this article

Blank MB, Eisenberg MM (2013) HIV-Infected Individuals with Mental Illness: A Case of Syndemics. *Ann Psychiatry Ment Health* 1(1): 1001.