

## Research Article

# Aging Black Men Living with HIV: How Poor Mental Health, Social Issues, Lifestyle Factors, and Multimorbidity Interrelate

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## Abstract

The health emergency for aging Black men living with HIV is preventing and managing multimorbidity (i.e., cardiovascular disease), which develops at a greater rate and more accelerated or accentuated pace relative to the general aging HIV-uninfected population. Conditions confronting aging Black men living with HIV are associated with poor mental health (i.e., depression) being driven by or interacting with health-related biopsychosocial determinants, including social issues (i.e., inadequate social support), negative lifestyle factors (i.e., substance use), and existing morbidities. Compared to the age-matched uninfected adults, it may be even more difficult for older Black men living with HIV suffering from multimorbidity to improve mental health to the extent that their behaviors could support preventing and managing multiple diseases. Challenges to providing mental health services to this aging HIV-positive subpopulation involve their mistrust of the healthcare system; for example, trusting that healthcare practitioners can competently, with empathy, address social issues underpinning or interacting with poor mental health. Research and program designs must focus on how to engage best and maintain older HIV-positive Black men in mental health services. Due to the disproportionate number and severity of social issues, negative lifestyle factors, and morbidities linked to poor mental health in aging Black men living with HIV, compared to their non-Hispanic White counterparts, this paper focuses on the psychological health concerns among older HIV-positive Black men.

**Keywords:** Aging Black Men, HIV, Biopsychosocial

## Introduction

At the end of 2022, an estimated 35% of the 969,200 males aged >13 years living with diagnosed or undiagnosed HIV infection in the U.S. were Black/African American [1], even though African American/Black males made up approximately 7% of the U.S. population [1,2]. At the end of 2022, of the estimated 336,600 Black/African American males living with diagnosed or undiagnosed HIV infection, approximately 16% and 33%, respectively, were in the 45–54 and 55+ years age group [1,3]. A primary concern for aging Black men living with HIV and multimorbidity is premature death relative to their non-Hispanic White counterparts [4].

Due to the advent of antiretroviral therapy (ART), the projected life expectancy of HIV-infected persons has increased [5]. However, in a study linking HIV, ART, and longevity, Althoff et al. [4] reported that, even though there was an improvement in life expectancy

in persons living with human immunodeficiency virus (HIV) receiving ART in the U.S. and Canada, based on treatment onset at the age of 20, there were still life-expectancy disparities. In the 2012–2015 period, the life-expectancy gap for HIV-positive Black versus White men who have sex with men (MSM), respectively, was an additional 50.9 years and 60.3 years; and during that same timeframe, life-expectancy disparity for persons with injection drug use (IDU) versus non-IDU history, respectively, was an additional 39.9 years and 50.3 years. The researchers further noted that a 20% reduction in drug- and alcohol-related mortality would have the most significant life-expectancy benefit for Black MSM, White women, and people with a history of IDU. Other studies have identified the potential roles of structural racism and stigma, which can reduce access to and retention in healthcare in the unrelenting racial disparities in Black MSM as well as disparities among those with IDU histories [6–8]. Comparatively, based on poor mental health (i.e., depression, cognitive decline) interacting with social issues (i.e., inadequate social support, racism, the

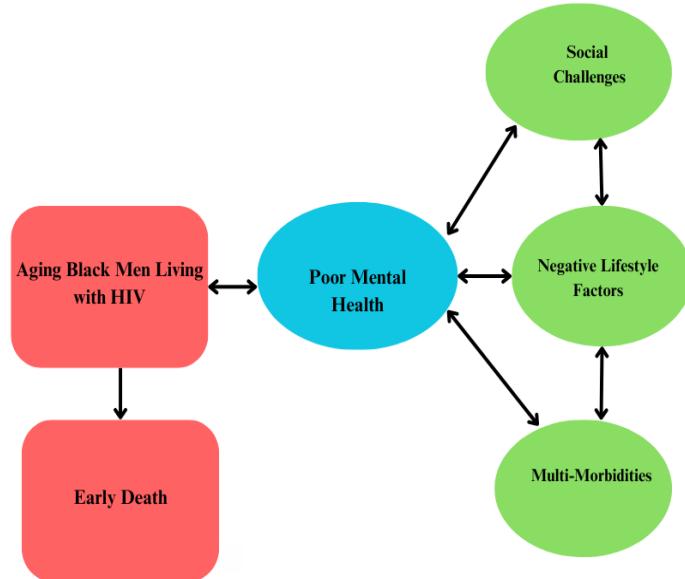
stigma attached to HIV status and sexual identity), negative lifestyle factors (i.e., physical inactivity, poor nutrition, substance use), and multimorbidity (i.e., cardiovascular disease [CVD], type 2 diabetes [T2D], hypertension [HTN]), aging Black men living with HIV may be predisposed to early death [4,9-14].

Poor mental health for aging Black men living with HIV, to some extent, could be characterized by chronic stress, cumulative stress, depression, and cognitive decline, which at times may be bidirectional sequelae, [15,16] thereby further compromising the mental and physical health of this aging HIV-positive subpopulation. Whereas social issues, negative lifestyle factors, multimorbidity, and early mortality may be partially mediated or modulated by mental health status [9,14,17]. Stress, for example, could mediate the overconsumption of a high-fat and high-sugar diet, leading to metabolic disorders such as obesity and T2D [18].

It must be emphasized how social issues and adverse lifestyle factors coalesce with poor mental health in aging Black men living with HIV [9,17]. Ennis and associates [9], for example, explored the interconnection between perceived social network, depressive symptoms, and alcohol use in a sample of 96 HIV-positive Black men and women 50 years and older. Results indicated that depressive symptoms were significantly associated with hazardous drinking and negatively related to having the desired amount of contact with a primary supporter while having the desired amount of contact with a confidant was negatively associated with hazardous drinking. Hazardous drinking may pose additional burdens among older Black men living with HIV, including fueling a wide range of diseases, many of which are typically associated with advanced aging, such as liver, cardiovascular, cerebrovascular, and renal diseases, as well as osteoporosis, cancer, metabolic alterations (i.e., increased insulin resistance, decreased glucose tolerance), T2D, and neurocognitive impairment [19]. Alcohol abuse also leads to medication nonadherence, antiretroviral resistance, and risky sexual behaviors [19].

The Figure below conceptualizes poor mental health as a potential mediator between early death among aging Black men living with HIV and bidirectional interactions of the health-related biopsychosocial determinants: social challenges, negative lifestyle factors, and multimorbidity. Following the Figure, the health-related determinants associated with mental health in aging Black men living with HIV will be indirectly explored through brief discussions regarding (1) chronic stress, cumulative stress, and depression; (2) stigma, discrimination, and mental health; (3) social support and mental health; and (4) cognitive decline, aging, and HIV. It is important to emphasize that the research is scant related to poor mental health interacting with health-related biopsychosocial determinants among aging Black men living with HIV.

**Figure:** Poor Mental Health as a Potential Mediator between Early Death among Aging Black Men Living with HIV and Social Challenges, Negative Lifestyle Factors, and Multi-Morbidities



#### Chronic Stress, Cumulative Stress, and Depression

Findings yielded by extant research strongly support the view that chronic stressors lead to worse physical health due to the repeated action of the body's stress response [20]. Repeated exposure to stressors leads to continuous physiological activation, deleteriously affecting the body's systems, thus compromising immune, neuroendocrine, gastrointestinal (GI), and cardiovascular health [21-23]. Empirical evidence further shows that many stressors are driven by discrimination, which, to a certain extent, may explain the health disparities experienced by older Black men living with HIV. Bogart et al. [24] explored perceived discrimination and physical health in HIV-positive Black and Latino MSM. The investigators identified that the Black MSM who experienced more significant racial discrimination were less likely to have a high CD4+ T-cell count and an undetectable viral load while more likely to visit the hospital emergency room. Markedly, the three types of discrimination (racial/ethnicity, HIV status, and sexual orientation) jointly predicted more significant AIDS symptoms.

Cumulative lifetime stress, precipitated by emotional and physical stressors throughout one's life, may result in depression [11]. Older Black men living with HIV may be exposed to more significant cumulative lifetime stress, compared to their non-White Hispanic counterparts, because of negative biopsychosocial indicators experienced throughout their lifetime. As such, for some aging

Black men living with HIV, stressors or stressful life events may include being diagnosed and living with HIV and multimorbidity, unemployment or underemployment, inadequate housing, low educational attainment, being uninsured or underinsured, victimization and revictimization, stigma, racism, a decline in physical health, and imminent threat of mortality, which may solely or synergistically predict poor mental health [25,26].

Research linking cumulative life stress or lifetime stressful events to depression specific to older HIV-positive Black men is absent from the literature. Albeit scant, available evidence nonetheless links cumulative life stress to depressive symptoms in aging Black men [11]. Thorpe and colleagues [11] explored this relationship in a sample of 850 middle-aged and older Black men by focusing on allostatic load (AL)—defined as a cumulative burden of chronic stress and life events [27]. Seven biomarkers were used to measure allostatic load: glycosylated hemoglobin, C-reactive protein (proinflammatory biomarker), high-density lipoprotein, total cholesterol, waist circumference, resting heart rate, and Cystatin-C (kidney-function biomarker)—these biomarkers are associated with multiple diseases such as T2D, CVD, and kidney [28-30]. The findings revealed that participants in the low AL group were, on average, younger (61.8 vs. 63.8 years) than those in the high AL group. Without controlling for HIV status and sexual identity, the authors further noted that a more significant proportion of Black men in the high AL group reported depressive symptoms than those in the low AL group.

Aging Black men living with HIV may engage in negative lifestyle behaviors to prevent, assuage, or manage stressors and stress throughout their lifetime. For example, Black men residing in poverty-stricken communities may consume poor diets (i.e., high fat, simple sugars), overeat, and abuse alcohol as a buttress against stressors, resulting in an acceleration of chronic diseases (i.e., obesity, T2D, CVD) [31]. It is important to note that, even though not assessed in the above study, research has suggested that physical activity was associated with low AL [32]. Poor sleep quality, unhealthy diet, overweight status, alcohol consumption, and cigarette smoking have been linked to high AL [33-36], many of which are associated with biomarkers assessed by Thrope et al. [11]. An overweight status, for example, could positively correlate with a measured waist circumference biomarker [37].

Based on their findings, Thrope and colleagues [11] concluded that Black men experience elevated stress from unfavorable social and economic circumstances. The authors' results underscored the importance of extending mental health services and fostering protective coping strategies or strengthening resilience for Black men once they enter middle age. However, the most significant hurdle for older Black men, including aging Black men living with HIV, struggling with poor mental health is accessing or feeling the need to access mental health services [11]. Lack of access may be caused by unaffordability, stigma, medical mistrust, masculinity-related social norms (i.e., seeking mental services is a sign of weakness), and being uninsured or underinsured [38]. Notwithstanding the challenges in accessing mental health services, healthcare providers should repeatedly assess stress levels

and depression in aging HIV-positive Black men and, if needed, provide a trustworthy, safe, and supportive treatment environment.

### **Stigma, Discrimination, and Mental Health**

The greater the stigma and discrimination based on HIV status, sexual orientation (i.e., gay or bisexual), and racism encountered by aging Black men living with HIV, the greater their symptoms of depression [25]. In a cohort of 181 Black MSM living with HIV (median age =  $43.3 \pm 8$  years), Bogart and colleagues [25] uncovered that stigma and discrimination due to HIV status, race/ethnicity, and sexual orientation were associated with more significant symptoms of depression and posttraumatic stress disorder (PTSD, i.e., re-experiencing, avoidance, and arousal). The results also indicated the presence of a statistically significant influence of the three-way interaction among three discriminations (HIV status, sexual orientation, racism) on depression, while perceived racism alone was negatively associated with depressive symptoms. The researchers posited that one explanation for the differential effect of sexual orientation and HIV discrimination from racial discrimination was related to the more concealable nature of sexual orientation and HIV status. Other researchers, however, have argued that self-protective mechanisms are not available to individuals who conceal (or do not disclose) their stigma, as mistreatment cannot be attributed to stigmatization if others are unaware of HIV status, sexual orientation, or other discriminatory characteristics [39,40]. In support of the nonprotective mechanism of the concealment concept, however, Bogart et al.'s findings suggested that MSM who took part in their study who identified as heterosexual and may have concealed their same-sex sexual behavior displayed worse PTSD symptoms of avoidance and re-experiencing [25].

Allen and colleagues [41] examined the role of adulthood adversities in the relationship between childhood adversities and depression in a sample of 117 HIV-positive Black men who have sex with men and women (MSMW) and who had a history of childhood sexual abuse. The findings indicated that the men's early adverse experiences were predictive of depression in adulthood; yet, this relationship was affected mainly by adulthood experiences, which were mediated by discrimination (racial and HIV) and high chronic stress and moderated by social support [41]. Generally, experiences of discrimination can negatively impact the mental health of aging Black men living with HIV; therefore, when healthcare providers assess mental health in this subpopulation, they must account for chronic episodes of discrimination linked to HIV status, sexual identity, and race.

### **Social Support and Mental Health**

Supportive and affirming social support networks can moderate the relationship between mental health (i.e., stress, depression, cognitive decline) and lifestyle factors (i.e., treatment adherence and risky sexual behaviors) for aging persons living with HIV [42,43]. More excellent perceived social support, for example, has been demonstrated to be associated with greater ART adherence and fewer sexual-risk behaviors in persons living with HIV [43,44]. Those aging with HIV, however, tend to have limited and

inadequate social networks, leading to isolation, which has been linked to greater loneliness and depression [42].

Whitehead et al. [45] uncovered that in a sample of 95 Black/African American HIV-positive persons (female and male; >50 years of age), depressive symptoms and trait anger (i.e., becoming angry at the slightest provocation) exhibited a strong inverse relationship with perceived support resources. Life stressors demonstrated a strong inverse relationship with perceived support. The association among depressive symptoms, trait anger, life stressors, and lower perceived support suggested that these factors played a role in one's ability to access needed support resources [45]. Some aging Black men living with HIV may be confronted with life stressors, such as stigma and marginalization associated with their sexual identity and HIV status, resulting in a lower ability to garner and maintain social networks. Aging Black MSMW living with HIV may experience biphobia (double discrimination), as they are subject to discrimination from both gay and straight communities [46]. The threat of biphobia coupled with HIV-status stigma, in many instances, perhaps is the reason why some aging Black MSM living with HIV and who identify as heterosexual conceal their sexual identity and HIV status, thereby culminating in an inability to develop strong, supportive, and affirming social networks, and thus resulting in loneliness and poor mental health [25]. Ultimately, engaging in positive, affirming, and accepting social networks may be challenging for some older Black men living with HIV because of their sexual identity and HIV status. Healthcare providers should partner with community (i.e., churches, community centers, and groups) and online (i.e., support groups) resources to ensure access to networks focusing on this aging HIV-positive subpopulation.

### Cognitive Decline, Aging, and HIV

Cognitive decline is hastened by a deficit in cognitive (or brain) reserve, reflected by the amount of damage that neurons (nerve cells) and neuronal connections can absorb without compromising the support for the physiological functions needed to sustain cognition [47]. Senescence or biological aging is associated with an increased risk for cognitive decline in older adults [47]. Still, it is relevant to emphasize that cognitive aging in older adults can take distinctly different forms depending on various factors (i.e., genetics and environment) [48].

In the U.S., 35-50% of adults with HIV exhibit some form of HIV-associated neurocognitive disorder (HAND) ranging from mild asymptomatic neurocognitive impairment to HIV-associated dementia [49]. In a review, Vance and colleagues [50] indicated that based on HAND, HIV affects the immune system, nervous system, and brain, potentially depleting the cognitive reserve in several ways. First, HIV can cross the blood-brain barrier and infect and kill glial cells (cells needed to support neuronal health) while producing neurotoxins. Second, HIV is considered a neuroinflammatory disease and has been demonstrated in clinical HIV studies to reduce cognitive reserve and induce cognitive impairments. Third, prolonged stress, depression, and anxiety associated with living with HIV may lead to hypothalamic-

pituitary-adrenal dysfunction, resulting in long-term exposure to the stress hormone cortisol; undue exposure to cortisol may damage the brain and prompt cognitive dysfunctions. The authors also emphasized that in older persons living with HIV, cognitive dysfunction may be increased due to the synergistic consequences of biological aging, HIV itself, and multimorbidity (i.e., T2D) [50].

Regardless of age and absence of a HAND diagnosis, cognitive decline may be accelerated or accentuated due to HIV infection alone. For example, Sheppard et al. [51] explored the cognitive decline trajectory in 146 neurocognitively normal participants of different races and genders. These individuals were assigned into one of four groups based on age (<40 years and >50 years) and HIV status (positive and negative). The study results indicated a nearly five-fold risk for developing neurocognitive disorder over approximately one year among HIV-positive individuals, irrespective of age. In older HIV-positive adults, however, lower baseline cognitive reserve, prospective memory, and verbal fluency individually predicted incidents of neurocognitive disorders at follow-up [51].

Data have shown neuropsychological health disparities in Black Americans with HIV, including aging HIV-positive Black men. Thompson and colleagues [52] examined neuropsychological inequality in a sample of 40 Black persons living with HIV, 83 White persons living with HIV, 28 Black HIV-negative individuals, and 64 White HIV-negative individuals aged 18 to 66 years. Significant findings indicated that the processing speed and semantic memory were lower in HIV-positive Black persons relative to HIV-positive White persons [52]. In another study, Xavier Hall and associates [17] explored biopsychosocial indicators of risk for cognitive impairment among a racially diverse sample of HIV-positive MSM. In the adjusted model, stress, chronic pain, Black racial identity, and having a sexual identity that is bisexual or another category were all positively associated with Cardiovascular Risk Factors, Aging, and Incidence of Dementia (CAIDE) risk scores. Additionally, sleep disorder had a positive link to CAIDE scores after adjusting for the baseline CAIDE risk scores. Notably, a CAIDE score of more than six shows an increased risk of dementia [17]. For example, of the 196 HIV-positive MSM in the study, 77.6% and 22.4%, respectively, were between 39-64 years (CAIDE = 6.9) and >64 years (CAIDE = 8.2). Furthermore, racial identities included 35.2% White (CAIDE = 7.1), 32.7% Black (CAIDE = 8.2), 21.9% Native Hawaiian and Pacific Islander & Asian (CAIDE = 6.1), and 10.2% Other (CAIDE = 6.8). Specific to sexual identity, 79.1% identified as gay (CAIDE = 7.0) and 20.9% as Other (CAIDE = 7.8). Excluding race, sexual identity, and age, most CAIDE indicators are modifiable through positive lifestyle interventions such as stress management, improved sleep quality, optimal nutrition, and physical activity [17,53].

Some aging Black men living with HIV and multimorbidity may experience more significant cognitive decline with additional morbidities facilitated by a low health literacy level relative to the general non-Hispanic, White HIV-positive population [54,55]. Health literacy is the degree to which individuals can obtain, process, and understand basic health information and

services required to make appropriate health decisions [56]. Beltran-Najera et al. [56] studied whether the higher rates of neurocognitive impairment in Black Americans living with HIV may at least partly be attributable to health literacy compared to White Americans living with HIV. The sample consisted of 25 Black persons living with HIV (68% male) and 61 White persons living with HIV, ages 27-70. Findings showed that Black HIV-positive persons performed lower on neurocognition and health literacy measures than White HIV-positive persons. Based on additional analysis, health literacy significantly mediated the lower scores on neurocognition measures for Black persons living with HIV. However, when controlling for health literacy as a mediator, there was no immediate difference in neurocognitive impairment between the races. Beltran-Najera and colleagues [56] emphasized that health literacy is consistently associated with medication nonadherence in the ART era, ultimately leading to neurocognitive impairment [57]. The researchers suggested that the study's mediating effect of health literacy on neurocognitive racial disparities may have been a function of the link between low health literacy and poor medication management, medical visit adherence, and attitudes related to HIV care [56,58-60]. All these negative treatment indicators reflect the potential for lower viral load suppression and disease management [61], which may be particularly detrimental to the neurocognition and longevity of older Black persons living with HIV and multimorbidity.

Along with low health literacy levels, some aging Black men

living with HIV and multimorbidity may be at a greater risk of experiencing cognitive decline than their non-Hispanic White counterparts, especially if they do not subscribe to or understand how an enriched environmental paradigm could support positive versus negative neuroplasticity. Positive neuroplasticity refers to the nervous system's ability to develop connections between neurons in response to novel, stimulating, and challenging stimuli, whereas negative neuroplasticity refers to the nervous system's tendency to deteriorate in response to little or no stimulation [62]. Multiple factors are associated with positive neuroplasticity, such as work, educational pursuits, intellectual interests, physical activity, proper nutrition, adequate sleep, and cognitive remediation therapy (i.e., playing a computerized game designed to improve visual attention and processing speed) [62-67]. Conversely, factors linked to negative neuroplasticity may include poor mental health, physical inactivity, substance use, suboptimal nutrition, social isolation, loneliness, and poor sleep quality [62,63,65,68]. Compared to their non-Hispanic White counterparts, some aging Black men living with HIV and multimorbidity may experience negative neuroplasticity because of lower educational attainment, health literacy, and being socially withdrawn due to stigma related to HIV, sexual identity, and race [25,56,62,64,68,69]. Positive neuroplasticity, identified in (Table 1a), is one of the benefits of positive lifestyle factors (Tables 1a and 1b) specific to aging persons living with HIV, including aging Black men living with HIV [53].

**Table 1a.** Positive Lifestyle Factors Improve the Health and Well-being of Aging Persons Living with HIV and Multimorbidity [53].

Positive Lifestyle Factors	Benefits of Positive Lifestyle Factors
Decreased Depressive Symptoms and Depression	<b>Increase</b> quality of life, cognition, smoking cessation, and treatment adherence. <b>Decrease</b> alcohol and substance use and risk of morbidity (i.e., T2D, HTN).
Positive Neuroplasticity <sup>a</sup>	<b>Increase</b> cognitive functioning (i.e., visual attention, processing speed, semantic memory, perceptual speed).
Optimal Nutrition	<b>Increase</b> compliance with RDI, gut integrity, BMD, muscle mass and function, and cognition. <b>Decrease</b> VAT <sup>b</sup> gain, obesity, malnutrition, risk of morbidity (i.e., T2D, CVD), and frailty. <sup>c</sup>
Physical Activity	<b>Increase</b> muscle mass and function, BMD, cardiorespiratory fitness, and cognition. <b>Decrease</b> VAT <sup>b</sup> gain, frailty, <sup>c</sup> falls, risk of fractures, depressive symptoms, depression, and risk of morbidity (i.e., osteoporosis, CVD, HTN, T2D).
Smoking Cessation	<b>Decrease</b> HIV-related infections (i.e., bacteria and pneumocystis pneumonia), risk of morbidity (i.e., coronary pulmonary disease, heart disease, stroke, cancer), treatment nonadherence, and mortality.

**Abbreviations:** **T2D:** type 2 diabetes; **HTN:** hypertension; **RDI:** recommended dietary intake; **BMD:** bone mineral density; **CVD:** cardiovascular disease; **HIV:** human immunodeficiency virus.

<sup>a</sup>Positive neuroplasticity refers to the nervous system's ability to develop connections between neurons (individual cells that make up the nervous system) in response to novel, stimulating, and challenging stimuli, which is associated with education, physical activity, proper nutrition, adequate sleep, and cognitive remediation therapy (i.e., playing a computerized game designed to improve visual attention and processing speed) [62].

<sup>b</sup>VAT (visceral adipose tissue) is intra-abdominal fat surrounding internal organs [70].

<sup>c</sup>Frailty represents a decreased physiological reserve and function that is more dominant with increasing age [71].

**Table 1b.** Positive Lifestyle Factors Improve the Health and Well-being of Aging Persons Living with HIV and Multimorbidity [53].

Positive Lifestyle Factors	Benefits of Positive Lifestyle Factors
Minimal Alcohol Use <sup>a</sup>	<b>Decrease</b> risk of morbidities (i.e., liver disease, CVD, T2D, cerebrovascular disease, cancer, renal disease, osteoporosis, neurocognitive impairment), medication noncompliance, ART resistance, unsafe sex, immune activation, inflammation, and mortality.
Safer Sex Practices	<b>Decrease</b> transmitting HIV and coinfections (i.e., gonorrhea, syphilis), and being coinfected with sexually transmitted viruses (i.e., HPV).
Quality Sleep	<b>Increase</b> cognitive functioning (i.e., reaction time, problem-solving). <b>Decrease</b> depression, inadequate emotional regulation, risk of morbidity (i.e., HTN, CVD, T2D), risk of VAT <sup>b</sup> gain, and insulin resistance.
HIV-Related Treatment Adherence	<b>Decrease</b> viral replication, ART resistance, and viral transmission during unprotected sex.
Non-HIV Related Treatment Adherence	<b>Decrease</b> worsening of physical conditions (i.e., HTN, T2D, CVD, dyslipidemia, insulin resistance).

**Abbreviations:** **CVD:** cardiovascular disease; **T2D:** type 2 diabetes; **ART:** antiretroviral therapy; **HIV:** human immunodeficiency virus; **HPV:** human papillomavirus; **HTN:** hypertension.

<sup>a</sup>Minimal alcohol use is no more than 1 drink per day for women and 2 drinks per day for men [72]. Examples of 1 standard drink include 12 fluid ounces of regular beer, containing about 5% alcohol; 5 fluid ounces of wine, containing approximately 12% alcohol; and 1.5 ounces of spirit (i.e., gin, whiskey), including about 40% alcohol [73].

<sup>b</sup>VAT (visceral adipose tissue) is intra-abdominal fat surrounding internal organs [70].

## Practice and Research Implications

Despite these alarming facts, cognitive decline in aging Black men living with HIV remains insufficiently studied, mainly associated with possible solutions. Vance et al. [74] conducted a focus group study involving 30 HIV-positive African Americans and Caucasians aged 50+ years to explore their perceptions of brain health and cognition. The results demonstrated that (1) older participants living with HIV expressed a variety of cognitive complaints that interfered with their daily functioning, and (2) the group lacked an appreciation of the importance of health behaviors for their brain health and cognition. Cognitive decline in aging Black men living with HIV may lead to decreased participation in activities of daily living and adherence to HIV- and non-HIV-related medications, causing a progression of HIV and multimorbidity and thus leading to early mortality [57]. Therefore, cognitive assessments should be a widespread practice in behavioral health and clinical settings, and, if needed, aging HIV-positive Black men should be provided treatment (i.e., implementing positive-neuroplasticity strategies) to slow down their cognitive decline.

Specifically, at the very least, mental health assessments should include chronic stress, cumulative stress, depression, and cognitive decline and how these mental health indicators interact with social issues, negative lifestyle factors, and disease conditions. A remedy, in part, for cognitive decline in aging Black men living with HIV and multimorbidity is to improve positive versus negative neuroplasticity—thus, positive lifestyle factors (i.e., food security, nutrition education, health literacy, physical activity, adequate sleep) and supportive social networks should be evaluated and addressed.

Taking a comprehensive preventive-clinical approach to identify and address health-related biopsychosocial concerns may support improving overall mental health as well as total health in older Black men living with HIV and multimorbidity. For members of this aging HIV-positive subpopulation who do access mental health services without entrée into comprehensive preventive-clinical and integrated care, providers should possess extensive referral lists of practitioners (i.e., social workers) outside their scope of practice. Healthcare referral systems operate best when there is a consistent and accessible exchange of information (i.e., via electronic records) regarding a client.

Qualitative and quantitative research projects must be conducted with aging Black men living with HIV and multimorbidity to ascertain what could draw and maintain them in mental health and healthcare services. For example, an empirical question could be, should mental health and healthcare services be integrated with preventive behavioral health services such as nutrition, exercise, substance use, social, and cognitive remediation therapy? Another question is, what could lessen or eliminate the mistrust of the healthcare system? Ultimately, more research and programs must be designed and implemented to deter disenfranchised and, often alienated, older Black men living with HIV and multimorbidity from being reactive versus initiative-taking regarding their healthcare needs.

## Conclusion

Significant limitations of this review were the scarcity of data specific to aging Black men living with HIV and poor mental health and that the reviewed research consisted of cross-sectional data with mostly small samples. However, the reviewed studies demonstrated that poor mental health among older Black men living with HIV and multimorbidity should not be viewed in isolation but as the psychological dimension of health-related biopsychosocial determinants, such as social issues, negative lifestyle factors, and disease conditions. Aging Black men living with HIV and multimorbidity are in jeopardy of dying early because of the unrelenting and destructive interconnectedness between poor mental health, social issues, negative lifestyle factors, and disease conditions. The threat of premature mortality is concerning, although a meager quality of life in the present tense is another significant difficulty confronting this aging HIV-positive subpopulation. For Black men living with HIV and multimorbidity who have lived into advanced years, it is highly plausible that many of them have been subjected to negative biopsychosocial determinants for an extended period throughout life, which impose significant obstacles to reconditioning how they view self-care and preventive services, as well as how they interact with the healthcare system, including mental health services.

Multiple hurdles exist for aging Black men living with HIV and multimorbidity to access and retain care through the healthcare system. These hurdles may be propagated for some Black men living with HIV and multimorbidity based on mistrusting that healthcare providers can address social challenges (i.e., financial insecurity, low education attainment as well as quality, being uninsured and underinsured, racism, the stigma attached to HIV status, sexual identity, and aging) competently with empathy. Specific to mental health service engagement, for some older Black men living with HIV and multimorbidity, it may be a sign of weakness or being less than masculine. In summary, issues associated with accessing and maintaining care for this HIV-positive subpopulation should be identified and addressed.

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