Human immunodeficiency virus (HIV) is a retrovirus that has infected over 70 million people and killed over a million worldwide since its discovery in the early 1980s. Prevention and treatment of HIV provides a rare opportunity to examine the intersection of theory, research findings, and methodological approaches that are central to the discipline of health psychology. First, HIV is a chronic, infectious disease; one of the few illnesses that combine these two features. As a result, HIV prevention research is imbued with the burden of contagion, while HIV treatment research is informed by dynamics of chronic illness. Second, HIV is a disease that specifically affects the immune system, providing an important context within which to study psychoneuroimmunology and biobehavioral mechanisms in the relationships among stress, immune function, health behavior, and health outcomes. Third, HIV is transmitted specifically through sexual behavior and drug use, requiring examination of behavioral dynamics ranging from risk perception to hot/cold decision making to intimate relationships. And fourth, the demographics of the HIV epidemic are inherently intersectional. HIV disproportionately impacts sexual minorities, gender minorities, and people of color, demanding the development of intersectional approaches to systemic disparities in incidence, morbidity/mortality, and access to care.

In this chapter, we focus on the implications of these dynamics for health psychology research. We review four specific topics: (1) psychoneuroimmunology, stress, and coping; (2) stigma and health; (3) risk perception and behavior; and (4) intersectionality. Our review is designed to highlight the specific application of these topics to HIV, and the ways in which research within the field of HIV has expanded theory and methods for health psychology as a whole.

Psychoneuroimmunology, Stress, and Coping

HIV is a retrovirus that specifically targets and destroys CD4+ T-helper lymphocyte cells, which play an important role in the immune system by “helping” to regulate the response of other immune cells. HIV uses these CD4 T-cells for viral transcription and replication, destroying existing cells and prohibiting the creation of new ones. If left untreated, viral levels in the blood exponentially increase and the number of CD4 T-cells precipitously declines, causing patients to become immunocompromised and vulnerable to infectious diseases and other pathogens. Individuals living with HIV are diagnosed with AIDS if their CD4 count drops below 200/mm³ or if they develop an AIDS-defining clinical condition. As a disease of the immune system, HIV provides an important context within which to
advance the study psychoneuroimmunology, including the biobehavioral mechanisms that influence stress, immune function, health behavior, and health outcomes.

**Impact of Depression and Stress on HIV Disease Progression**

People living with HIV (PLWH) are particularly vulnerable to depression and depressed mood; depression is the most common neuropsychiatric diagnosis among HIV-positive patients (Bing et al., 2001). Some evidence suggests that depression increases over the course of disease progression, but high rates of depression have been identified in all phases of HIV infection. Depression and depressive symptoms are associated with a host of negative clinical indicators, including decreased CD4 counts, increased viral load, more rapid progression to AIDS, and increased risk of mortality (see Nanni, Caruso, Mitchell, Meggiolaro, and Grassi (2015) for a recent review).

Relatedly, PLWH report high levels of stress, including disproportionally high levels of trauma history and post-traumatic stress disorder (Leserman, 2008). Stressful life events have been measured both in terms of their direct relationship with HIV disease (i.e., stress associated with illness management or disease progression) and in terms of the role of independently occurring stressors (e.g., change in employment, relationships, finances, etc.). Studies demonstrate that higher cumulative stress levels are associated with increased viral load, more rapid CD4 cell decline, progression to AIDS, and overall reports of clinical symptoms (Ironson et al., 2015; Leserman, 2008). Similarly, individuals with more categories of lifetime trauma (e.g., physical or sexual abuse, childhood neglect) are more likely to develop an AIDS-related clinical condition and have higher AIDS-related mortality rates (Brezing, Ferrara, & Freudenreich, 2015; Leserman, 2008). Research in this field posits a bidirectional relationship between depression/stress and disease progression.

**Physiological Mechanisms**

There are two primary mechanisms through which psychological factors influence immune functioning: the hypothalamic-pituitary-adrenal axis (HPA axis) and the sympathetic nervous system (SNS). In the HPA axis, stressful conditions cause the release of adrenocorticotropic hormone (ACTH), which then travels the circulatory system causing the adrenal cortex and medulla to secrete the stress hormones of cortisol and the catecholamines epinephrine and norepinephrine (Sapolsky, Romero, & Munck, 2000). Increased cortisol levels are associated with a number of negative HIV-related health outcomes, including the inhibition of cellular-immune responses (Cupps & Fauci, 1982), increased rates of cell decline (Nair, Mahajan, Hou, Sweet, & Schwartz, 2000), and increased rates of CD4 apoptosis, i.e., programmed cell death (Amendola et al., 1996).

Stress may also influence disease progression through activation of the sympathetic branch of the autonomic nervous system (ANS). After a stressor, the ANS triggers the release of norepinephrine at sympathetic nerve terminals in regions that are primary sites of HIV replication, such as lymphoid organs (Nance & Sanders, 2007). The release of norepinephrine causes cellular changes that suppress interferon-gamma (IFN-γ) and interleukin-10 production, which predict higher HIV viral load over time. A longitudinal study found that individuals with higher ANS activity before beginning ART had poorer HIV viral load suppression and decreased CD4 cell reconstruction (Cole et al., 2001).

PLWH may also be particularly vulnerable to depression arising from neurobiological changes associated with viral penetration of the central nervous system (CNS). The direct inflammatory effects of HIV infection on the immune system can interact with stress-linked responses outlined earlier to exacerbate these effects. A detailed description of the ways in which neuroendocrine, immuno-inflammatory, and monoaminergic pathways can influence the development of depressive states among PLWH is outlined in a review by Del Guerra, Fonseca, Figueiredo, Ziff, and Konkiewitz (2013).
Adherence Behavior

From a behavioral perspective, the impact of depression or stress on HIV disease progression is most likely mediated through adherence. Individuals with depressive symptoms or high levels of stress are less likely to be adherent with their medication regimens, leading to poorer clinical outcomes. A meta-analysis of 29 studies revealed that treatments to reduce depression were successful in enhancing adherence to anti-retroviral treatment, with the odds of adherence 83% better when people were treated for depression (Sin & DiMatteo, 2013).

Coping and Other Health Behaviors

The psychological burden of HIV disease itself is a stressful experience that can lead to depressive symptoms. Not only are HIV-positive individuals dealing with management of a chronic illness, but they are often subject to stigmatization that can impact stress response (see section on HIV stigma, later in the chapter). Meta-analyses indicate that approach-focused coping strategies, problem-focused coping strategies, and positive reappraisal are the most consistently associated with better affective, health behavior, and physical health outcomes for PLWH (Moskowitz, Hult, Bussolari, & Acree, 2009). In contrast, avoidance-focused coping strategies, hopelessness, behavioral disengagement, and social isolation are associated with negative mental and physical health outcomes (Ironson et al., 2015; McIntosh & Rosselli, 2012). Coping strategies that involve alcohol or substance use both directly weaken the immune system and are consistently associated with non-adherence (Azar, Springer, Meyer, & Altice, 2010).

Integrated Models and Intervention Implications

While stress and depression predict HIV disease progression, evidence for the specific mediational pathways in this relationship is equivocal. In a recent prospective study, neurohormonal indicators were not associated with psychological variables and did not mediate the relationship between these variables and disease progression. Similarly, while cognitive behavioral and stress management interventions have been found to significantly decrease depression, anxiety, and stress among PLWH, a recent meta-analysis found that such interventions do not have significant impacts on CD4 counts or viral load (Crepaz et al., 2008; Scott-Sheldon, Kalichman, Carey, & Fielder, 2008). More research is needed to further elucidate reciprocal pathways of stress and immune function for the field of health psychology in general.

Stigma and Health

Classically defined, a stigma is a personal attribute or characteristic that is socially “discrediting” to an individual, associating them with something that society deems shameful or disgraceful (Goffman, 2009). HIV was a stigmatized condition from the first case reports, before the virus itself was even identified. Today, HIV-related stigma remains both prevalent and insidious. Research on HIV stigma highlights the ways in which stigma is a barrier to treatment and prevention efforts and the mechanisms through which stigma is directly and indirectly linked to health outcomes.

HIV as a Concealed Stigma

For most individuals living with the virus, HIV is a concealed stigma, meaning that PLWH can choose to hide or disclose their HIV status. While counterintuitive, research suggests that concealed stigmas are often associated with greater psychological distress than visible stigmas. According to
Pachankis (2007) comprehensive process model, concealed stigma leads both directly and indirectly to identity ambivalence and negative views of the self, while concerns about the threat of discovery and/or the decision to disclose a stigmatized identity may result in cognitive preoccupation, negative affective symptoms, social isolation, and impaired relational functioning. Non-disclosure of HIV serostatus has been shown to predict negative mental and physical health, especially among those with high social support (Fekete et al., 2009).

**Direct and Indirect Impacts of HIV Stigma on Health**

For individuals who disclose their HIV status (either voluntarily or because physical symptoms make HIV visible to others), stigma can also be a significant burden. Experiences of HIV-related stigma are consistently associated with poor physical and mental health (Logie & Gadalla, 2009), including increased anxiety, loneliness, depressive symptoms, suicidal ideation, and social withdrawal (Smit et al., 2012). In addition, stigma concerns can prevent HIV-positive individual from seeking out the care they need (Wagner, Hart, McShane, Margolese, & Girard, 2014), and fears of disclosure can prevent them from adhering to medication in situations in which someone might ask about their pills (Sweeney & Vanable, 2016). Stigma on the part of providers can result in the receipt of suboptimal care and neglect of other aspects of PLWH’s health or well-being (Kinsler, Wong, Sayles, Davis, & Cunningham, 2007; Wagner et al., 2014).

**The HIV Stigma Framework**

The HIV Stigma Framework operationalizes specific associations between stigma mechanisms and health outcomes (Earnshaw & Chaudoir, 2009; Earnshaw, Smith, Chaudoir, Amico, & Copenhaver, 2013) by distinguishing among three types of HIV-related stigma: 1) enacted stigma, i.e., specific acts of prejudice and discrimination experienced by PLWH; 2) anticipated stigma, i.e., the expectations of PLWH that they will be subject to future prejudice or discrimination; and 3) internalized stigma, i.e., the application of negative attitudes and feelings about HIV by PLWH to themselves and their own identity. Data collected using this framework indicate that the relationship between enacted stigma and affective, behavioral, and health-related outcomes may be mediated through internalized and anticipated stigma in a serial fashion (Earnshaw et al., 2013; Turan et al., 2017). Those who experience more enacted stigma may anticipate future experiences of prejudice and discrimination, leading to internalization of negative thoughts and decreased psychosocial and physical well-being. Anticipated and internalized HIV stigma need not only apply to those who are HIV positive; HIV-negative individuals can be negatively impacted by the fear of being stigmatized were they to be diagnosed with HIV, or by association. Studies have shown that anticipated and internalized stigma among gay men negatively predicts HIV testing behavior (Golub & Gamarel, 2013; Mannheimer et al., 2014). And HIV-related stigma is playing a significant role in access to biomedical HIV prevention, i.e., pre-exposure prophylaxis (see section on risk perception and behavior, later in the chapter). The components of the HIV stigma framework can be applied to other types of stigma and various health outcomes, contributing to our understanding of these processes for the broader field of health psychology.

**Intervention Approaches to Combat Stigma**

Interventions aimed at reducing stigma have been operationalized into four main categories: 1) information-based approaches (e.g., brochures, social media campaigns); 2) skills building (e.g., training aimed at reducing negative attitudes among providers); 3) counseling/support (e.g., support groups, aimed at reducing the negative impact of stigma on PLWH); and 4) contact with affected
Risk Perception and Behavior

Once the virus itself was identified and described, it became clear that HIV transmission was preventable through behavior change, e.g., 100% condom use or clean needles. As a result, behavior change became the focus of HIV prevention activities, especially among those deemed highest risk for infection. Researchers interested in changing HIV-related risk behavior adopted many classic theories from the field, including the Health Belief Model (Hochbaum, Rosenstock, & Kegels, 1952; Rosenstock, Strecher, & Becker, 1994), the Theory of Reasoned Action/Planned Behavior (Montano & Kasprzyk, 2015), the Social Cognitive Model (Bandura, 1994), and the Transtheoretical Model (Prochaska, Redding, Harlow, Rossi, & Velicer, 1994). Additional behavior change models have been developed specifically for HIV prevention, most notably the Information, Motivation, Behavioral Skills (IMB) model (Fisher & Fisher, 2002). The vast majority of these health behavior models focus on risk perception as a central feature of (and prerequisite to) behavior change, positing that a heightened perception of HIV risk will lead to greater motivation to reduce this risk, resulting in behavior change.

The Role of Risk Perception in the HIV Prevention Field

As such, many interventions have focused on increasing risk perception as a core strategy for HIV prevention. In line with the Health Belief Model and others, HIV education campaigns have emphasized both disease severity and susceptibility. This focus resulted in many fear-based HIV-prevention messaging campaigns, many of which included images of death or illness, overplayed the ease of disease transmission, and stressed the extent to which individuals were underestimating their risk because they trusted their sexual partners. This last element became arguably the most ubiquitous, with scores of specific messages aimed at increasing risk perception by engendering partner mistrust.

Many HIV prevention interventions also included a risk assessment component, in which individuals were asked a series of questions about their recent sexual behavior. These risk assessments were designed as educational opportunities to increase risk perception; counselors provide information about the risk of transmission from specific sexual practices and may then leverage the clients’ new understanding of their own risk to segue into other prevention targets (e.g., motivation, skill-building, self-efficacy).

Unfortunately, evidence for role of HIV risk perception in the adoption of risk reduction practices is equivocal at best. Some studies have found perceived risk to be positively associated with risk reduction behavior, but others have found no relationship or even a negative association (Krishnaratne, Hensen, Cordes, Enstone, & Hargreaves, 2016). Meta-analyses of behavioral interventions for HIV prevention have found relatively small effect sizes (LaCroix, Snyder, Huedo-Medina, &
Johnson, 2014; Webb & Sheeran, 2006), and many researchers, providers, and advocates have been frustrated at the failure of behavioral intervention to continue to reduce infection rates.

Perhaps most importantly, there are two ways in which the focus on increasing risk perception has been particularly damaging to HIV prevention goals. First, the emphasis on partner mistrust may actually have had an ironic effect of decreasing condom use, especially among individuals who consider themselves in a relationship (even if that relationship is only a few weeks old). Data suggest that intimacy motivations—i.e., the desire to feel close to a sexual partner—may be the strongest barrier to condom use, in some cases even stronger than beliefs that condoms disrupt sexual pleasure (Golub, Starks, Payton, & Parsons, 2012; Newcomb, Ryan, Garofalo, & Mustanski, 2014; Starks, Payton, Golub, Weinberger, & Parsons, 2014). Both heterosexual and gay couples report that condom use signals a lack of trust and can disrupt the emotional bond of sexual intimacy (Jadack, Fresia, Rompalo, & Zenilman, 1997). In fact, the high rates of new HIV infections among gay men attributable to main (as opposed to casual) partners (Goodreau et al., 2012) is likely due to the fact that individuals report stopping condom use as soon as they consider themselves to be in a primary partnership (Purcell et al., 2014).

Second, the focus on risk perception has led to an explosion of language around “high-risk” individuals, groups, and behaviors, which may actually suppress prevention behavior. Regardless of objective behavior, few people identify as “high-risk,” even when they are well educated about HIV transmission (Kowalewski, Henson, & Longshore, 1997; MacKellar et al., 2007). This natural tendency not to identify with negative labels, such as high-risk, is compounded by data indicating that groups with highest incidence (e.g., gay men of color) actually have lower rates of engaging in risk behavior, compared to their white counterparts (Millett, Flores, Peterson, & Bakeman, 2007). This discrepancy is confusing to patients, and may contribute to medical mistrust and conspiracy theories that prevent individuals from seeking care (Brenick, Romano, Kegler, & Eaton, 2017; Quinn et al., 2016). Moreover, concerns about being seen as high-risk for a stigmatized condition like HIV has been found to reduce individuals’ risk perception (Weinstock, Dale, Linley, & Gwinn, 2002; Young, Nussbaum, & Monin, 2007) as well as their willingness to engage in prevention or screening behavior, including HIV testing (Earnshaw, Smith, Chaudoir, Lee, & Copenhafer, 2012; Golub & Gamarel, 2013). There is also evidence that a focus on high-risk language may be a significant barrier to uptake of newly developed biomedical prevention strategies, such as pre-exposure prophylaxis (PrEP).

**Risk Perception and Pre-Exposure Prophylaxis (PrEP)**

In 2012, the FDA approved the use of anti-retroviral medication for HIV prevention, a strategy that is known as pre-exposure prophylaxis, or PrEP. PrEP marked the advent of the first biomedical prevention strategy for HIV; if taken daily, PrEP is associated with a 90–99% reduction in the risk of HIV transmission. Despite its potential to significantly reduce infection rates, uptake of PrEP has been slower than anticipated, especially among communities with the highest incidence (Eaton, Matthews, et al., 2017). One of the key struggles for PrEP implementation has been risk perception. Almost all patient education, provider education, and clinical guidance emphasize that PrEP is for “people at very high risk for HIV infection” [emphasis added (CDC, 2014)]. As a result, although data indicate that PrEP acceptability (i.e., hypothetical interest) is quite high, recent data indicate that the vast majority of individuals who meet criteria for PrEP eligibility do not believe that PrEP is appropriate for them (Parsons et al., 2017). Evidence indicates that many individuals believe that PrEP is only for people who are promiscuous (Eaton, Kalichman, et al., 2017), which limits their willingness to consider it as a prevention strategy. Similarly, data indicate that providers’ determinations about which patients are high-risk “enough” to warrant PrEP limit prescription practices, and
that these determinations are often based on implicit biases about patient characteristics (Blackstock et al., 2017; Karris, Beekmann, Mehta, Anderson, & Polgreen, 2013).

At the same time that PrEP uptake may be limited by a historic emphasis on risk perception, the intervention itself has revolutionized the meaning of HIV risk. The dissociation of HIV prevention from an exclusive focus on condom use has been both challenging and liberating to the field. The concept of PrEP-related risk compensation has been widely applied by researchers, despite limited evidence (Alaei, Paynter, Juan, & Alaei, 2016; Jenness et al., 2017). Data suggest that providers may be less likely to prescribe PrEP to individuals who they think aren’t using condoms because of fears of risk compensation, even though these individuals are precisely the patients who would most benefit from a biomedical prevention strategy (Calabrese, Earnshaw, Underhill, Hansen, & Dovidio, 2014). Risk compensation beliefs are prevalent among patients as well, with participants endorsing the belief that PrEP causes people to have more risky sex or that people should pick their sexual partners more carefully instead of taking PrEP (Eaton, Kalichman, et al., 2017; Farhat, Greene, Paige, Koblin, & Frye, 2017).

However, many advocates, providers, and researchers are responding to this challenge by calling for a renewed focus on sex positivity and agency in HIV prevention. There has been an increased interest in acknowledging pleasure and intimacy as motivating forces in sexual behavior, and framing PrEP as a prevention strategy that can support these motives while still protecting individuals from infection (Calabrese & Underhill, 2015). PrEP has been touted as liberating individuals from the constant fear of infection and rumination about HIV during sexual activity, and empowering individuals to take control of their sexual health. In contrast to condom use, promoting PrEP use as an HIV prevention strategy does not require fighting against psychological motives such as salience, present bias, and affective cues (Grant & Koester, 2016). The development of new PrEP interventions may signal a shift in the very core of HIV prevention efforts, away from risk perception and toward control over sexual health. Such efforts will need the work of health psychologists to be truly effective, and may also help inform the application of novel prevention strategies in other areas of the field.

Intersectionality and Health Outcomes

Developed by black feminist scholars, intersectionality theory posits that dimensions of social inequality—gender, sexual orientation, race, ethnicity, class, and others—are not merely “additive” in individuals’ experience of social systems, but interact to shape access to and treatment by these systems (Crenshaw, 1989, 1991). Intersectionality reframes traditional single-category understanding of discrimination to focus on populations that have historically been ignored. Applying an intersectionality framework can increase our understanding of the ways in which health disparities are created and maintained by the intersection of multiple social inequalities (Bowleg, 2012).

HIV as an Intersectional Illness

Intersecting social identities play a critical role in determining who is most at risk for HIV, who has access to treatment, and which communities are disproportionately affected (Watkins-Hayes, 2014). HIV/AIDS disproportionately impacts sexual minorities, gender minorities, and people of color, and being HIV positive is in and of itself a stigmatized identity that intersects with other marginalized social identities to impact health. In particular, HIV epidemiology highlights the structural racism that persists in the United States. In 2015, 45% of those newly diagnosed with HIV in the U.S. were African American, although African Americans make up only 12% of the population (CDC, 2016). The rate of new infections among black women is 20 times higher than that for white women, and over 60% of all women living with HIV are black (CDC, 2016). HIV is also an illness that impacts sexual and gender minority individuals; sexual minority men account for 70% of new infections in
Black gay men have the highest relative risk of HIV infection, with some estimates suggesting that one in two Black gay men may become HIV-positive in his lifetime. Transgender women also experience disproportionate rates of diagnosis (CDC, 2016), and more than half of transgender women diagnosed with HIV from 2009–2014 were African American (Clark, Babu, Viewel, Opoku, & Crepaz, 2017). These disparities have pushed HIV researchers to examine complex inequalities using an intersectional lens to develop interventions to address social and structural barriers to HIV prevention and treatment.

**Research on Intersectionality and HIV Infection**

Intersectional perspectives have enhanced understanding of the role of discrimination—and resilience—in the lives of individuals with intersectional identities. Research with black heterosexual men has highlighted macro social-structural inequality and day-to-day experiences of racial discrimination and microaggressions as critical factors in HIV risk (Bowleg, Teti, Malebranche, & Tschann, 2013). Research on black gay and bisexual men highlights experiences of race-based discrimination in the gay community and experiences of sexual identity-related discrimination in black communities (Bowleg, 2013). Research with HIV-positive women demonstrates the ways in which intersections of HIV-related stigma, sexism and gender discrimination, racism, homophobia and transphobia present barriers to health and well-being (Logie, James, Tharao, & Loutfy, 2011). Taking an intersectional perspective has contributed to the development of strategies that directly address discrimination as an HIV risk factor, while also highlighting the tremendous benefits (e.g. personal growth, community connection) individuals associate with their intersectional identities, and the opportunities for applying a strengths-based approach to intersectional identity research (Bowleg, 2013; Logie et al., 2011).

**HIV Across the Lifespan**

Although not usually categorized as an intersectional identity, age plays an important role in HIV infection and the determinants of access to prevention and care. As people with HIV live longer and healthier lives, the percentage of older adults living with HIV is increasing, with estimates that individuals ages 50 and over now account for over 45% of Americans living with HIV (CDC, 2016). Complementing the trend among older populations, rates of new HIV infections among individuals under 30 have continued to rise. In 2015, youth ages 13–24 comprised 22% of new diagnoses in the U.S.

Providing comprehensive care to HIV-positive adults as they age will require a shifting understanding of the intersections among gender, race/ethnicity, sexual identity, and age in both interpersonal contexts and medical settings. Ageism is a significant problem in the health care system, where assumptions that individuals over 50 are not sexually active and/or are not at risk for sexually transmitted diseases have led to a lack of engagement of older adults in HIV and STD testing, safer sex discussions, and preventive care. Such biases limit the identification of newly infected older adults, and have had negative impacts on engagement in timely treatment. On the other end of the spectrum, concerns about providing sexuality education and services to adolescents has historically limited HIV prevention, and the discrimination that gay teens may experience from their families or communities has contributed significantly to HIV infection rates.

It is also crucial to consider specific age-related factors in HIV prevention and care. HIV disease has been associated with physical and neurological changes described as “premature aging,” including higher rates of comorbidities and earlier onset of geriatric symptoms (Deeks & Phillips, 2009; Guaraldi et al., 2011). Increased efforts to understand these changes are critical, both in enhancing our understanding of the impact of HIV on the brain and CNS, but also in understanding the
psychological impacts of age- and illness-related decline. HIV specialists may not be equipped to handle the comorbidities associated with aging among their HIV-positive patients, while gerontologists may not be trained on the synergistic impact of HIV disease on the aging body. Health psychologists will be vital to the development of comprehensive and competent care for older adults that recognizes the intersections among illness and aging.

For adolescents and emerging adults, health psychology has been and will continue to be critical in the development of context-specific, developmentally appropriate intervention strategies. The social and neurobiological context within which young people engage in behavior that might increase their risk of HIV infection differs from other groups, and focus on youth infected with and affected by HIV has contributed to growing literature on risk, decision making, and the adolescent brain (Yoskowitz, Kaufman, Denton, & Patel, 2017). A focus on youth has also led to an explosion of media-based interventions and an enhanced understanding of virtual social networks in determining risk perception and behavior (Muessig, Nekkanti, Bauermeister, Bull, & Hightow-Weidman, 2015). Finally, the development of new theoretical models for youth engagement, most notably positive youth development (PYD) approaches, have enhanced both HIV prevention and care as well as our ability to engage young people in health promotion interventions more broadly (Gavin, Catalano, & Markham, 2010).

**Conclusions**

This chapter highlights specific areas in which health psychology has both contributed to and benefited from research in HIV prevention and care. Moving forward, there are several ways in which health psychologists will be critical to advances in addressing the HIV epidemic. In the context of psychoneuroimmunology, stress, and coping, future research will be focused on understanding immune pathways in the context of increasingly effective treatment. As the major coping tasks for HIV-positive individuals shift from responding to acute illness toward managing a chronic condition, the integration of illness into identity will be paramount. Research and intervention focused on improving quality of life for HIV-positive individuals will benefit greatly from research on stress and coping in other chronic conditions. Research and intervention focused on improving adherence behavior may benefit from the unique experience of both HIV-positive and HIV-negative individuals taking similar medications on similar schedules for both prevention and care. Insights into “status-neutral” approaches the bridge the divide between prevention and care can inform innovative strategies for addressing illness in which the line between those at-risk-for and those living-with a particular condition is blurred, e.g., diabetes or hypertension.

In the context of sustained efforts to combat stigma and its negative effects on both prevention and care, health psychology theory, research, and intervention strategy is vital. At the same time, concepts developed to understand the experience of PLWH—e.g., the distinctions among enacted, anticipated, and internalized stigma—can be usefully applied to individuals with a host of acute and chronic conditions. The revolutionary shift in HIV prevention away from fear-based messaging toward sex positivity and agency in the context of PrEP and other emerging biomedical prevention strategies is informed by seminal health psychology research, but can also be used to revitalize approaches to behavior change for other health conditions. And finally, health psychology has much to learn from—and contribute to—intersectional perspectives on heath and health behavior. These approaches can also help challenge the field to incorporate systemic approaches to improving health outcomes. To the extent to which so many critical health issues and disparities arise from common drivers of poverty, racism, and classism, these perspectives can help lead us toward integrated strategies for addressing health outcomes more broadly.
HIV/AIDS

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