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Challenges of Depression and Suicidal Ideation Associated With Aging With HIV/AIDS: Implications for Social Work

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As the number of older adults with HIV/AIDS increases, new challenges are emerging that threaten their ability to age with this disease. Threats of particular concern are depression and suicidal ideation. Studies show that those aging with HIV/AIDS have a number of stressors that tax their coping mechanisms, increasing vulnerability to depression and suicidal ideation. These stressors can be categorized into three areas. First, there are psychosocial stressors that can contribute to depression. Second, there are health and biochemical stressors that can contribute to depression, as well as compromise cognitive abilities needed to adapt to such stressors. Third, cognitive stressors may create predispositions to depression. In particular, certain cognitive abilities needed to cope with depression and suicidal ideation may be compromised by aging with HIV/AIDS. A model of these stressors is provided for didactic purposes, as well as to suggest implications for social work practice and research.

KEYWORDS *HIV/AIDS, aging, depression, suicidal ideation, cognition, stress*

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According to the Centers for Disease Control and Prevention (CDC, 2009), the number of older adults with HIV/AIDS is growing rapidly. Based on their 2007 surveillance data, older adults 50 years old and older comprised 16% of new HIV/AIDS cases, 20% of AIDS cases, and 38% of AIDS-related deaths. The number of older adults with HIV/AIDS is expected to grow for three reasons. First, Highly Active Antiretroviral Therapy (HAART) greatly extends the lifespan for those who are infected with HIV/AIDS as long as they have access to medications, adhere to medication regimens, and tolerate the medications (Cellerai, Little, & Loes, 2008; Perez & Moore, 2003). Second, increasing numbers of older adults are being infected in later life, partly due to the fact that many in this age group do not perceive that they are at risk for contracting this disease (Henderson et al., 2004). Third, the population of older adults with HIV/AIDS parallels the unprecedented growth of the older population in general.

Although a better prognosis of living much longer with HIV/AIDS is obviously welcome, the challenges of aging with this disease have only recently been recognized. Two particular challenges that may threaten one's ability to age well with HIV/AIDS are depression and suicidal ideation. The purpose of this article is to present a model of the unique stressors that contribute specifically to depression and suicidal ideation in this growing population. Based largely on the Transactional Model, stressors associated with chronic illness can deplete one's resources to cope (Lazarus & Folkman, 1984); the depletion of such resources can compromise biopsychosocial functioning and may be expressed as depression and suicidal ideation. For this article, *stressor* is defined as a factor that one appraises as particularly harmful and/or compromises one's well-being. *Depression* is defined as "clinically significant distress or impairment in social, occupational, or other important areas of functioning" (American Psychiatric Association, 1994, p. 327), characterized by feelings of sadness and hopelessness. Suicidal ideation is defined as an extreme version of depression characterized by thinking about ending one's life to avoid distressing feelings of depression. The unique challenges of depression and suicidal ideation in those aging with HIV/AIDS will be presented by combining the gerontological and HIV/AIDS literatures for this emerging clinical population.

DEPRESSION AND SUICIDAL IDEATION

Unique challenges are associated with both aging and HIV/AIDS. With aging, stressors such as losses of close friends and family, increases in comorbidity, declines in productivity and financial resources, and changes in physical appearance are common (Alexopoulos, 2005). Many of these challenges are also observed with HIV/AIDS (Vance & Robinson, 2004); however, people living with HIV/AIDS also may suffer from disease-related depression and anxiety (Prachakul, Grant, & Keltner, 2007; Vance, 2006).

Combined, the synergy of aging with HIV/AIDS may create emotionally troubling stressors that compromise coping abilities; the appraisal of such stressors can result in depression, and in more severe instances, suicidal ideation. This point becomes obvious when examining depression and suicidal ideation in older adults and adults with HIV/AIDS.

As seen in the gerontological literature, older adults experience higher rates of depressive symptoms and suicidal ideation than the general population. According to the National Center for Health Statistics (2004), although this age group comprises 13% of the population, they disproportionately comprise 18% of all suicides; this increase is observed more in older White men. According to the CDC (2008), between 8 to 20% of community-dwelling older adults have depression; this is in contrast to 5.4% of the general population (Pratt & Brody, 2008). In severe cases, this depression translates into suicidal ideation. In a sample of 611 adults aged 65 years old and older, Scocco, Meneghel, Caon, Dello Buono, and De Leo (2001) found that 17% responded affirmatively to a question about experiencing suicidal ideation. Those who reported such suicidal ideation were also significantly more likely to present more negative affect including anxiety and depression.

As seen in the HIV/AIDS literature, adults with HIV/AIDS also experience higher levels of depression and suicidal ideation. In a sample of 207 women with HIV/AIDS in New York City, Cooperman and Simoni (2005) found that 27% reported that they attempted suicide within the first week after being diagnosed, and 42% attempted suicide within the first month after being diagnosed. Even after the initial shock of being diagnosed with HIV/AIDS has worn off, stressors associated with HIV/AIDS appear to make coping with this disease difficult. In a sample of 2,909 adults with HIV/AIDS, Carrico et al. (2007) found that 19% reported suicidal ideation within the past week. In this study, the challenge of living with HIV/AIDS is highlighted in that this sample was diagnosed for 8.6 ($SD = 4.6$) years on average.

Older adults and adults with HIV/AIDS suffer from depression and suicidal ideation more than the general population, which suggests that people aging with HIV/AIDS may face particular problems in this area. Using the Center for Epidemiological Studies—Depression scale, Vance (2006) found in a group of younger and older adults with ($n = 50$) and without ($n = 50$) HIV/AIDS that those with HIV/AIDS reported significantly higher levels of depressive symptomatology. Furthermore, such depressive symptomatology was associated with older age, loneliness, and self-perceived HIV/AIDS-related stigma. Kalichman, Heckman, Kochman, Sikkema, and Bergholte (2000) examined a sample of 113 older adults with HIV/AIDS and found that 27% experienced suicidal ideation within the prior week. This rate is 8% higher than the rate reported by of all adults with HIV/AIDS (Carrico et al., 2007). These early studies strongly suggest that among those who are aging with HIV/AIDS, unique stressors, as well as the appraisal of such

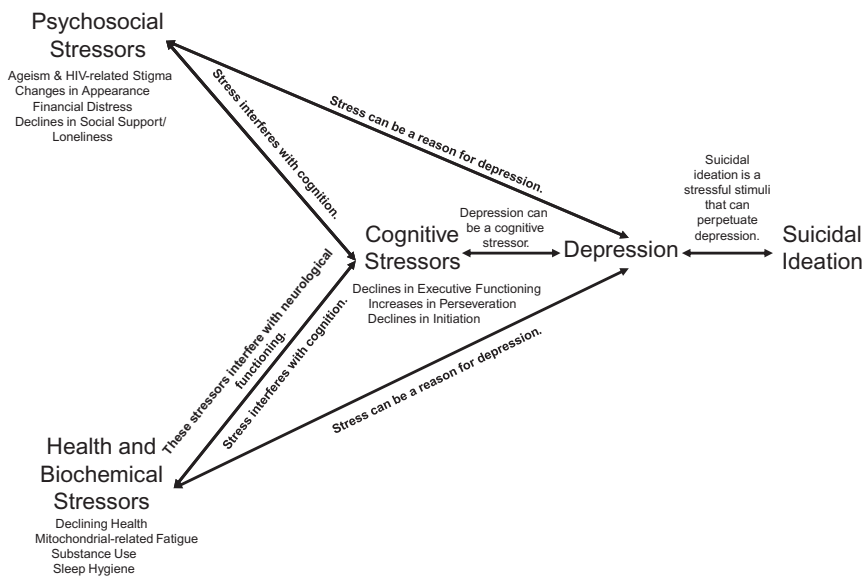


FIGURE 1 Stressors influencing depression and suicidal ideation.

stressors, may overwhelm coping mechanisms resulting in depression and suicidal ideation.

Stress Model of Depression and Suicidal Ideation

Figure 1 provides an overview of three types of stressors that uniquely contribute to depression and suicidal ideation associated with aging with HIV/AIDS. These stressors are categorized in three areas: psychosocial, health and biochemical, and cognitive. The individual stressors within each area are either known to be more prevalent with aging and HIV and/or are more likely to have an increased effect on depression and suicidal ideation.

Psychosocial Stressors

Vance, Moneyham, Fordham, and Struzick (2008) proposed one of the first conceptual models that identified the unique stressors associated with depression and suicidal ideation in this growing population. Figure 1 incorporates these psychosocial stressors and indicates their relationship to other types of stressors. In this improved model, the psychosocial stressors associated with aging and HIV/AIDS predispose older adults with HIV/AIDS for depression and suicidal ideation. These psychosocial stressors are ageism and HIV/AIDS-related stigma, physical changes in appearance, financial distress, and declines in social support/loneliness.

Ageism and HIV/AIDS-related stigma are both forms of social prejudice that when combined, exert particular influences on individuals. For example, in a qualitative study of older adults with HIV, some older adults expressed that they feel discriminated by medical and service providers because “they are too old to have this disease” or that “they should have known better, given their age, to have contracted HIV” (Nichols et al., 2002). In a qualitative study of 25 older adults with HIV/AIDS, Emler (2006) found that 68% reported experiences of ageism and HIV/AIDS-related stigma. Such experiences related to several themes, including: stereotyping, rejection, fear of contagion, employment discrimination, internalized ageism, homophobia, and violations of confidentiality. Likewise, in a sample of 172 older adults with HIV/AIDS, Nichols et al. (2002) reported that some participants did not seek the help they needed from religious organizations, family and friends, and community services because they felt they were being judged and unaccepted by others for being an older person with HIV/AIDS. Compounding this issue further, even in settings that support people with HIV/AIDS, flyers and health education materials frequently focus on younger adults, but seldom feature depictions of older adults. Such social stigma may be intensified for those who are poor, women, and people of color.

Physical changes in appearance are common with aging. Although such changes are not necessarily uncomfortable, for some people, these changes may be quite stressful (Collins, Wagner, & Walmsley, 2000). This stress may be compounded for someone aging with HIV/AIDS who is also experiencing lipodystrophy. This condition is characterized by disfiguring of the face (e.g., sunken cheeks and protruding facial bones), arms, legs, back, and torso, and is caused by a redistribution of fat in the body. This is a metabolic condition caused by the very thing that helps people to age with this disease, HAART. For some, these disfiguring changes in personal appearance can be quite striking, resulting in lower self-esteem, declines in social interactions, poorer adherence to medication, and increased depression and suicidal ideation (Collins et al., 2000; Funk, Brissett, Friedman, & Bressler, 2007; Sharon, 2004). Thus, for many who are also struggling with age-related changes in physical appearance, lipodystrophy may be particularly stressful (Vance & Robinson, 2004).

Financial distress is a powerful stressor, taxing even the most resilient person. For older adults with limited earning potential and productivity, this may be a source of depression and suicidal ideation (Steffens, 2007). In fact, among 7,485 older adults, Fairweather, Anstey, Rodgers, Jorm, and Christensen (2007) found that those who were looking for work were nearly 7 times more prone to suicidal ideation within the past year than those not seeking work. Obviously, given the cost of living with HIV/AIDS, financial distress may be intensified for those who are aging with this disease. Nichols et al. (2002) found in their sample of older adults with HIV/AIDS,

63% ranked “not having enough money to live on” as their primary difficulty. This stressor may be compounded by those aging with HIV/AIDS as they compare themselves to their same-age peers without HIV/AIDS who are retiring or preparing for retirement. Meanwhile, those aging with HIV/AIDS may have been sick for long periods, lost valuable job skills and work experience, and have less financial security and earning potential.

Changes in appearance, perceived ageism or stigma, or financial distress can obviously contribute to social isolation. Given this, older adults with HIV/AIDS may be more vulnerable to declines in social support and loneliness. For example, in a sample of 160 older adults with HIV/AIDS living in New York, Shippy and Karpiak (2005) found that, in general, this group had very poor social networks. First, they found that most participants indicated that their main source of support was from others also infected with HIV/AIDS. Second, of these participants, 71% lived alone; 53% were not in a committed relationship; and 57% reported that they had unmet emotional needs. Corresponding to this, they also found that 58% of their participants reported being depressed. These findings are germane, given that in a sample of nearly 3,000 adults with HIV/AIDS, Carrico et al. (2007) found that not being in a romantic relationship; being either bisexual, homosexual, or transgendered; and being depressed were all risk factors for suicidal ideation.

Health and Biochemical Stressors

A number of health and biochemical stressors may further weaken the coping mechanisms of those aging with HIV/AIDS. These health and biochemical stressors include declining health, fatigue, substance use, and sleep disturbances. Declining health can contribute to depression and suicidal ideation (Fishbain, Cutler, Rosomoff, & Rosomoff, 1997; Kalichman, Difonzo, Austin, Luke, & Rompa, 2002). In a sample of middle-aged and older adults with HIV/AIDS, Kalichman et al. (2000) observed that suicidal ideation was associated with low t-cell counts, high/detectable viral load, and medication side effects. In addition, those aging with HIV/AIDS are more susceptible to pulmonary disease, frailty, and pain resulting in increases in suicidal ideation (Desquilbet et al., 2007; Goodwin, Kroenke, Hoven, & Spitzer, 2003; Heisel & Flett, 2006; Ratcliffe, Enns, Belik, & Sareen, 2008).

With age and HIV/AIDS, several conditions become common, such as hypertension (Artero et al., 2004), diabetes (Trento et al., 2004), heart disease, and high cholesterol (Haan & Wallace, 2004); all of which have been shown to negatively impact cognitive abilities. Furthermore, some HIV/AIDS medications have side effects, such as hypertension, insulin resistance, and dyslipidemia, that also negatively impact cognitive abilities (Heath et al., 2001).

Fatigue caused by mitochondrial damage occurs as a natural part of aging and for some with HIV/AIDS; therefore, as some people age with

HIV/AIDS, fatigue may be more pronounced. This idea corresponds to the mitochondrial theory of aging, which proposes that as one ages, free radicals damage mitochondrial DNA (Loeb, Wallace, & Martin, 2005). As damage accumulates over the lifespan, gradually mitochondrial DNA replicates itself less efficiently (Ozawa, 1998). Over time, this translates into the mitochondria producing less chemical energy needed for healthy cell function; collectively, the entire physiological system functions less efficiently, resulting in decreased physiological reserves and system-wide fatigue (Brierley, Johnson, James, & Turnbull, 1996). This process may be accelerated for people with HIV/AIDS.

Nucleoside reverse transcriptase inhibitors, a class of HIV/AIDS medications, may damage mitochondrial DNA, result in less energy, and produce more fatigue (Medina, Tsai, Hsiung, & Cheng, 1994). The mutual combination of HIV/AIDS medications and age-related dysfunction in mitochondrial DNA means older adults with HIV/AIDS may suffer more from accelerated aging and fatigue. Studies have shown the use of HIV/AIDS medications correlate with fatigue, as well as depression and suicidal ideation (Ferrando et al., 1998; O'Mahony, Myint, Steinbusch, & Leonard, 2005). Furthermore, Liu, Atamna, Kuratsune, and Ames (2002) suggested that preventing mitochondrial DNA decay in the brain through particular antioxidants and metabolites may prevent decline in cognitive abilities, which is important, given that older adults with HIV/AIDS are more vulnerable for developing cognitive impairment (Becker, Lopez, Dew, & Aizenstein, 2004).

Substance use is endemic to the population of older adults living with HIV/AIDS. By comparing a variety of diverse national and international population databases of adults with and without HIV, Rabkin, McElhiney, and Ferrando (2004) concluded that, although the frequency of substance use disorders declines with age, this trend was not reflected in older adults with HIV/AIDS. In a sample of 914 older adults with HIV/AIDS aged 50 years old or older, Karpiak, Shippy, and Cantor (2006) found that nearly a third continued to use alcohol (38%) and illicit substances (37%). Unfortunately, substance use may result in reinfection and interfere with medication adherence, further compromising health outcomes (Pinsky & Douglas, 1992).

In addition, the stress created from a lifestyle of substance use can tax coping mechanisms by impairing cognitive ability. Brady (2006) reported that alcohol abuse impairs cognitive functioning. Furthermore, alcohol is a depressant that may contribute to feelings of fatigue, which may further contribute to feelings of depression and suicidal ideation (Julien, 1998; Kolodziej & Weiss, 2000). Carrico et al. (2007) also found that habitual marijuana use was associated with depression and suicidal ideation. Raphael, Wooding, Stevens, and Connor (2005) reported that chronic use of marijuana can also aggravate other mental health conditions such as anxiety and depression. For older adults with HIV/AIDS who may already be experiencing cognitive impairments, substance use may further impair cognitive abilities.

Sleep disturbances are also correlated with depression (Cooper-Patrick, Crum, & Ford, 1994; Davison & Neale, 1998; Krahn, Miller, & Bergstrom, 2008). Sleep disturbances occur with greater frequency and intensity with age (Cole & Richards, 2007) and in those with HIV/AIDS (Rubinstein & Selwyn, 1998). Poor sleep hygiene can also contribute to fatigue and declining health (Alvarez & Ayas, 2004; Avidan, 2003) as well as cognitive declines (Szelenberger & Niemcewicz, 2000). In a sample of 115 adults with HIV/AIDS, Rubinstein and Selwyn, using the Pittsburgh Sleep Quality Index, identified 73% of their sample as having significant sleep disturbances. Those who experienced sleep disturbances were also more likely to exhibit cognitive declines. Also, sleep disturbances may be more prevalent with the use of some HIV/AIDS medications (Reid & Dwyer, 2005). Thus, sleep disruptions are expected to be higher in older adults with HIV/AIDS (Vance & Burrage, 2005). As a result, those aging with HIV/AIDS may have more sleep-related cognitive impairments.

Cognitive Stressors

Both the psychosocial and the health/biochemical stressors compromise coping mechanisms. However, the stress created from them can disrupt cognitive ability, particularly in relation to undermining neurological health. This point is important, because good cognitive abilities are considered a coping resource. In a sample of 15,590 older adults, emotional distress and cognitive impairment were predictive of passive and active suicidal ideation (Ayalon, Makin, Arian, Chen, & McDonel, 2007). Given the neurological and cognitive changes associated with HIV/AIDS and aging, those aging with this disease may also experience specific cognitive stressors that interfere with the ability to cope to these other stressors, increase the propensity for ruminative thinking, and thus contribute to depression and suicidal ideation.

In general, older adults with HIV/AIDS are more susceptible to declines in cognitive abilities (Vance & Struzick, 2007). In a recent study of 201 adults with and without HIV/AIDS, Vance (2007) found that, compared to younger adults with HIV/AIDS and older adults without HIV/AIDS, older adults with HIV/AIDS performed consistently worse on a number of cognitive tests that measure executive functioning, speed of processing, attention/memory, and psychomotor ability. Other studies have also found that older adults with HIV/AIDS are vulnerable to cognitive declines (e.g., Hinkin, Castellon, Atkinson, & Goodkin, 2001). These studies suggest that this growing population may be drawing upon fewer cognitive resources as they cope with the stressors of aging with HIV/AIDS; furthermore, many of these stressors may deplete cognitive resources.

Distinct neurological changes associated with aging with HIV/AIDS may predispose one to depression and suicidal ideation. These particular changes are in the cognitive domains of executive functioning and perseveration and initiation. Executive functioning relies on the health of the

prefrontal and frontal cortex. This cognitive ability consists of analytical thinking, abstract thought, reasoning skills, and problem solving. Over the lifespan, this part of the cortex slowly shrinks in response to physiological insults and normal aging (DiGirolamo et al., 2001). In HIV/AIDS, insults to this brain region are more pronounced, as seen by increases in neural activation signaling that more cognitive reserves are being used to compensate for declining function (Ernst, Change, Jovicich, Ames, & Arnold, 2002). Finding that older adults with HIV/AIDS perform poorly on measures of executive functioning suggests that these adults, as a group, may not possess sufficient executive skills needed to develop solutions to address the stressors associated with aging with this disease. Dombrowski et al. (2009) compared 32 suicidal depressed older adults to 32 nonsuicidal depressed older adults and found that those who were suicidal performed worse on cognitive measures including executive functioning, even though both groups were both depressed. This finding highlights the importance that executive functioning plays in suicidal ideation. However, even if executive functioning abilities are available to formulate and initiate a solution, another neurological change associated with HIV/AIDS and aging may hinder the ability to instigate a plan of action.

Perseveration and initiation are related cognitive abilities stemming from the same neurological structures; they can be considered as opposite abilities on a cognitive continuum. Perseveration refers to the ability to focus and think or engage consistently on a topic or behavior. Thus, perseveration is useful when an adaptive behavior or thought must be done repetitively. However, perseveration is harmful when the repetitive behavior or thought is maladaptive, such as thinking that "Life is horrible because I have HIV." At the other end of the continuum, initiation refers to the ability to begin a new thought or behavior. In other words, this cognitive ability allows one to switch attention or start a new behavior or thought and works in tandem with executive functioning. This ability is especially useful when the previous thought or behavior is no longer adaptive. Although both abilities are necessary, damage to the neurological substrates may exaggerate and distort these abilities such that a maladaptive behavior or thought may be repeated and the ability to initiate an adaptive behavior or thought in its place is hindered. Perseveration and initiation rely primarily on two neurological subcortical substrates—the substantia nigra and basal ganglia (Lezak, 1995). Both of these have been shown to experience insults in aging with HIV/AIDS (Vance, 2004). Although damage associated with age is slow but incremental (Melega, Lacan, Harvey, & Way, 2007), damage associated with HIV/AIDS appears to be more dramatic (Berger et al., 2000; Vance, 2004). In severe cases, damage to these areas resemble symptoms of parkinsonism (not to be mistaken with Parkinson's disease), which can be characterized as more perseveration, less initiation, and not surprisingly, mood dysregulation (Vance, 2004). Thus, as people are confronted by a stressor, they may

negatively think about the stressor, perceiving it to be more challenging than it actually is. As the negative thoughts increase, the ability to initiate a new thought and calm down may be short circuited. Engagement in this negative thought cycle is referred to as ruminative thinking and reflects problems with perseveration. In fact, Fairweather et al. (2007) suggested that those with ruminative personalities are more likely to experience suicidal ideation.

INTEGRATION OF THE MODEL

A model of depression and suicidal ideation in older adults with HIV/AIDS representing the connections between the psychosocial, health and biochemical, and cognitive stressors is presented in Figure 1. The double-headed arrows between the stressors and depression and suicidal ideation represent the fluidity through which these factors interact. The model starts with the psychosocial stressors that can be reasons for depression, and because of their negative affect, can interfere with cognition. Health and biochemical stressors can also be seen as reasons for depression and their negative affect can interfere with cognition too; however, these stressors have unique characteristics that can disrupt the neurological integrity of the brain that further compromises cognitive ability.

Cognitive stressors represent an access point in the model. Cognitive ability is necessary to accurately perceive the gravity of stressors and to respond effectively. As cognitive ability is compromised, the ability to cope with the psychosocial and health and biochemical stressors may also be compromised, which in turn, feeds back into more stress that taxes cognitive abilities and leads to depression. As discussed earlier, increases in perseveration and subsequent ruminative thinking, along with declines in executive functioning and the ability to initiate exaggerate this feedback loop. In fact, depression as an intense negative emotion can contribute to cognitive stressors (Bassuk, Berman, & Wypij, 1998). If depression becomes severe enough, it may be expressed as suicidal ideation. Suicidal ideation is a stressful stimulus that can be an additional reason for depression, which, in turn, perpetuates and intensifies suicidal ideation.

This model provides a basic framework for understanding why adults with HIV/AIDS, especially those who are older, may be more susceptible to depression and suicidal ideation. It does this in two primary ways. First, it provides a list of factors within three categories of stressors endemic to this population that can contribute to feelings of depression and suicidal ideation. Even though this list is not exhaustive, it does provide a glimpse into possible areas of intervention. Second, this model emphasizes the importance of cognitive abilities in mediating the stressors contributing to depression and suicidal ideation. Intervention that focuses on the stressors that deplete cognitive resources may break the cycle.

IMPLICATIONS FOR RESEARCH AND PRACTICE

As the number of older adults with HIV increases, additional research in depression and suicidal ideation is warranted to facilitate clinical practice in social work. As such, several areas of research and practice should be explored. First, longitudinal studies are needed to determine the strength of each of these stressors. Although this model was created based on evidence in the literature, the rate of cognitive decline in certain areas, along with the impact of health and psychosocial stressors, have yet to be studied in conjunction in this population.

Second, this model does not incorporate intrapersonal resources and personality traits such as hardiness, spirituality, wisdom, or improved problem solving or emotional optimization that can occur with age. For example, Carstensen, Fung, and Charles (2003) theorized that, over time, adults become more proficient at making choices that optimize their emotional health. Thus, some older adults may be particularly skilled at avoiding personal interactions that produce negative affect and at seeking situations that produce positive affect. Similarly, hardy people have been shown to weather physical and psychosocial stressors more than nonhardy people (Farber, Schwartz, Schaper, Moonen, & McDaniel, 2000). Using a cognitive-behavioral intervention, Vance, Struzick, and Masten (2008) suggested ways to improve hardiness in adults with HIV/AIDS. In this client-centered approach, social workers would counsel their clients one-on-one to determine what personal activities and resources he or she has to craft an individualized cognitive-behavioral plan designed to mitigate the role of stressors and augment feelings of hardiness, personal control, and well-being. Perhaps this approach would prove effective in reducing the severity of depression and suicidal ideation in this population.

Third, social workers can use this model to sensitize themselves about the possible connections related to depression and suicidal ideation in this population. Awareness of cognitive limitations, health concerns including cardiovascular risk associated with HIV/AIDS and substance use, and psychosocial stressors such as loneliness, stigma, and financial distress in their clients may provide an early alert to potential problems with depression and suicidal ideation later in life. Early interventions that target these stressors may result in better emotional and mental status for their clients.

Fourth, cognitive ability is often compromised with the intense emotional reactivity that many of these stressors produce. Given that some stressors can result in neurological changes as well, neurocognitive interventions should be examined. Vance and Struzick (2007) developed a social work model highlighting the factors that can compromise successful cognitive aging with HIV/AIDS. They proposed several mediators that can mitigate cognitive decline or accentuate cognitive ability. Mediators that mitigate such effects are good nutrition, physical activity, social stimulation, and

cognitive remediation therapy; all of which have been shown to be associated with maintaining or improving cognitive ability. Likewise, mediators that accentuate this predisposition are poor sleep hygiene, substance use, depression, comorbidities, and medications, especially polypharmacy, which is more common in older adults with HIV/AIDS. Further research is needed to explore how to help older adults with HIV/AIDS avoid HIV-related cognitive deficits in order to help them maximize existing coping abilities.

This model suggests areas in which older adults with HIV/AIDS may be vulnerable, in particular cognitive functioning. Such cognitive declines impact one's ability to negotiate in the larger social system and result in poor person-to-environment fit. Therefore, one of the mechanisms to improve such fit may be to develop ways to bolster one's cognitive abilities.

CONCLUSION

Social workers have been engaged in the delivery of HIV/AIDS services from the beginning of the epidemic. Those services include specifically-designed HIV/AIDS programs, as well as HIV/AIDS-focused interventions in more mainstream agencies, such as older adult programs (Trickett & Pequegnat, 2005). The model proposed here can be used to help sensitize social workers to the psychosocial, cognitive, and health and biochemical stressors that can contribute to depression and suicidal ideation in adults aging with HIV. Addressing the cognitive changes that can accompany aging with HIV is particularly important; cognitive appraisal can influence how adults perceive their circumstances and situation. To focus practice efforts on cognitive stressors associated with HIV/AIDS and aging, social workers may need to refresh and expand their knowledge of cognitive functioning and related intervention approaches. In doing so, Vance and Struzick (2007) presented several strategies that social workers can adapt to promote successful cognitive aging in their clients which can be used to ultimately improve their quality of life.

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