

Chapter 9

Anxiety Disorders



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Introduction

In this chapter, we review significant practical data about the prevalence, etiology, and diagnosis of anxiety in people living with HIV, as well as the relation between anxiety and the outcomes of HIV infection. We also provide an update of the most relevant information about comorbid psychiatric disorders and psychopharmacological and psychotherapeutic interventions for anxiety symptoms and anxiety disorders in people living with HIV.

Symptoms of anxiety may be a normal and expected reaction to stress. If this reaction includes excessive anxiety and worry and is disproportionate to the stressor and/or has a major impact on a person's function, it may be diagnosed as an anxiety disorder as defined in DSM-5 (1). Anxiety disorders have standardized categories that fulfill diagnostic criteria according to both the International Classification of Diseases, Clinical Modification (ICD-10-CM) and DSM-5. Anxiety is characterized by cognitive emotional symptoms such as excessive worry, fear, irritability, and physical symptoms such as fatigue, dyspnea, heart palpitations, and muscle tension. The anxiety disorders appear in a variety of clinical forms such as generalized anxiety disorder, panic disorder, and specific phobias [1].

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Since HIV infection has become a chronic illness for persons with access to HIV care and antiretroviral therapy, many persons with HIV infection and longer life expectancy are confronted with new challenges. Persons with HIV and access to care have to confront a long course of chronic illness that includes ongoing medical visits, diagnostic tests, medication intake, side effects, HIV stigma, and HIV serostatus disclosure, all of which may produce anxiety symptoms or trigger anxiety disorders. On the other hand, anxiety can also have an impact on the processes related to the HIV infection, such as adherence to treatment, inflammation, immune status, and systemic medical and psychiatric comorbidities. Clinicians caring for people with HIV need to become familiar with the prevalence, characteristics, diagnosis, differential diagnosis, impact, and the treatment of anxiety symptoms and anxiety disorders.

Epidemiology

Prevalence

As with the study of other psychiatric disorders in people with HIV, the prevalence rates of anxiety disorders and symptoms of anxiety depend on the methodology, characteristics of the population, and selection of diagnostic scales, tool, or other instruments used. In a critical review by Brandt et al. [2], the authors observed that none of the studies had employed an empirically derived representative sample, and only a few had used a control group. Of all the studies that used a diagnostic interview instead of questionnaire-based assessments, prevalence rates for anxiety disorders were notably higher among PLWHA than the general population. The median prevalence of anxiety disorders among PLWHA in the reviewed studies where diagnostic interview were employed was about 23%. When examining specific anxiety disorders, panic disorder, generalized anxiety disorder (GAD), and social anxiety disorder, but not specific phobia, showed higher rates of prevalence in persons with HIV compared to the general population [2].

Diagnosis

Persons living with HIV constitute a unique population of persons who may experience extreme negative social stigma and discrimination related to HIV that puts them at an increased risk of both generalized anxiety disorder and panic disorder as well as other psychiatric disorders [3]. Although anxiety risk factors may be increased in people living with HIV/AIDS, the diagnosis of anxiety disorders, specifically, generalized anxiety disorder (GAD), is made using the same criteria as in the general population (see Table 9.1).

Table 9.1 Criteria for diagnosis of generalized anxiety disorder. According to the DSM-5 [1]

(A) Excessive anxiety for more days but not over 6 months
(B) Difficulty controlling worry
(C) Associated with at least three of these symptoms (restlessness, fatigue, difficulty concentrating, irritability, muscle tension, sleep disturbances)
(D) Significant life impairment
(E) Not attributable to another substance or medical condition
(F) Not being better explained by another medical disorder

Table 9.2 Autonomic symptoms of anxiety

Heart palpitations or pounding
Sweating
Trembling or shaking
Sensation of shortness of breath
Chest pain or discomfort
Nausea or abdominal distress
Feeling dizzy or light-headed
Hot flushes
Muscle tension
Hyperventilation
Sleep disturbance
Fatigue
Increased perspiration
Cold sweats

It is important to note that patients with anxiety disorders and HIV are at a higher risk for other systemic medical disorders that may present with similar symptoms; therefore, it is crucial to rule out other diagnoses as mentioned in criterion E before making the diagnosis. Although we discuss the diagnosis of anxiety disorders in this section, it is important to keep in mind that these disorders do not exist in a vacuum separate from one another. Of HIV-positive individuals with anxiety disorders, about 50% have concomitant depressive or substance use disorders [4]. Identification and treatment of multimorbid psychiatric disorders are crucial for the improvement of outcomes.

Clinical Features

Persons living with HIV and AIDS may have a broad spectrum of clinical presentations and may complain of somatic and autonomic symptoms [5]. See Table 9.2 for the somatic manifestations of symptoms of anxiety disorders. It is important to recognize that patients are at risk for infection, malignancy, and other health emergencies, given their HIV status. With this in mind, physicians and other clinicians

cannot assume that the presenting symptoms are purely due to the somatic manifestations of an anxiety disorder, but must first rule out other medical causes that may be life-threatening, such as pneumonia, sepsis, or anemia.

Differential Diagnosis and Diagnostic Pitfalls

Persons with HIV and AIDS have multimorbid diagnoses and are at a higher risk for health complications than immunocompetent individuals are, so it is important to keep a broad differential (Table 9.3) when you are evaluating a patient with HIV.

Tools for Diagnosis and Assessment

In order to diagnose an HIV-positive patient with a generalized anxiety disorder, the patient must meet the aforementioned DSM-5 criteria. Additionally, the diagnosis is supported by evaluating the patient for risk factors such as caffeine use, poor sleep hygiene, substance abuse, and other comorbid psychiatric illness [5]. Data from clinical experience and case reports suggest that patients on the antiretroviral medication efavirenz may have increased irritability, unusual dreams, and more severe anxiety than patients not on this medication. However, randomized studies do not support this claim, so the link is unclear. Clinicians should ask about these symptoms and use their clinical judgement for additional medication management [5–8].

Additionally, screening tools and questionnaires may be a practical way to assess for anxiety-related symptoms in these patients. The Client Diagnostic Questionnaire (CDQ) is a brief diagnostic screening tool designed for use by non-mental health

Table 9.3 Differential diagnosis of an HIV-positive patient with anxiety symptoms

Anxiety disorders
Generalized anxiety disorder
Panic disorder
Post-traumatic stress disorder
Depressive disorders
Major depressive disorder
Dysthymia/persistent depressive disorder
Bipolar disorders
Substance use disorders (e.g., intoxication or withdrawal)
Other medical conditions/disorders
Thyroid disorders
Cardiopulmonary disorders
Infection (correlate with CD4+ count and opportunistic infections)
Malignancies
Neurological disorders
Side effects of medications

professionals to assess the range of psychiatric disorders known to be prevalent among persons infected with HIV or at high risk of infection including depressive disorders, anxiety disorders, PTSD, and substance use disorders. For the diagnosis of any of these disorders, the CDQ shows a sensitivity of 91% and a specificity of 78% and an overall accuracy of 85% [9]. One benefit of screening tools is that they enable untrained individuals to administer them. This can help identify more at-risk patients without overextending the clinician. The *New York State Department of Health AIDS Institute* guidelines recommend screening for anxiety annually. However, the guidelines also recommend screening for changes in sleep habits, appetite, and suicidal/homicidal ideation at *every visit*. The guidelines do not use formal screening measures for anxiety but suggest asking about periods of anxiety greater than 1 month, sudden “spells or attacks” of anxiety, and autonomic symptoms consistent with a panic attack/anxiety [10].

Measuring HIV symptomatology does not have to be complicated with long questionnaires; simple tools with as few as four questions are effective and valid. One study of women living with HIV found that assessing HIV-related anxiety causing sleeping difficulty, decreased appetite, decreased desire to socialize, and difficulty concentrating was a valid measure of psychological, psychosocial, and physical distress [11].

There are several screening tools for measuring anxiety, but none specifically for the HIV population. Table 9.4 shows the most commonly used instruments for anxiety. There is no clear benefit supporting the use of one tool over the other. In any case, they are meant to supplement the diagnostic approach of the clinician. Please see Chap. 5 for a detailed discussion of the use of screening tools for psychiatric disorders in persons with HIV.

Case Vignette 9.1: Diagnosis

Ms. A was a 28-year-old woman with known HIV-positive status who presented to your clinic complaining of anxiety for the previous 6 months. She stated that she felt worried most days and that it had impacted her ability to concentrate at work as well as enjoy her social life. She also noted difficulty sleeping as well as muscle tension over the previous 6 months. The patient denied suicidal or homicidal ideation. She was diagnosed with HIV 6 years previously and remained clinically asymptomatic on a single combination pill.

What is the most likely diagnosis?

- (a) Major depressive episode
- (b) Post-traumatic stress disorder
- (c) Generalized anxiety disorder
- (d) Panic disorder

Correct answer: (c).

Table 9.4 Evidence-based tools to screen for anxiety

Screening instrument	Administration	Items	Time of administration in minutes
Hamilton Anxiety Rating Scale – HAM-A [12]	By clinician	14	10–15
State-Trait Anxiety Inventory – STAI [13]	Self-report	40 (20 state and 20 trait symptoms)	15–20
Profile of Mood States – POMS [14]	Self-report	65 (9-item tension/ anxiety subscale)	10–15
Hospital Anxiety and Depression Scale – HADS [15]	Self-report	14 (7-item anxiety subscale; excludes somatic symptoms)	5–10
General Anxiety Disorder 7 – GAD7 [16] (screening for generalized anxiety disorder, panic disorder, social anxiety disorder, and post-traumatic stress disorder)	Self-report	7	5

Etiology

The etiology of anxiety in persons with HIV and AIDS is poorly understood and likely due to the complex biopsychosociocultural interactions that manifest in a variety of presentations. First, certain pharmacological therapies may cause symptoms of anxiety (e.g., efavirenz, interferon, corticosteroids). Second, biologic factors such as chronic inflammation (i.e., secondary to HIV infection) have been implicated as etiologies of anxiety [17]. Third, the relationship between chronic stress and changes in the hypothalamic-pituitary-adrenal system resulting in immune dysfunction has been described and is correlated with both depression and anxiety, suggesting another potential etiology of these highly multimorbid conditions in HIV infection.

HIV is related to a variety of cognitive and social stressors, such as disease stigma, health worries, and serostatus disclosure concerns [18]. After ruling out biologic mechanisms, other causes should be explored such as social, cognitive, and behavioral etiologies associated with the manifestation of anxiety in persons with HIV and AIDS (Table 9.5.). Furthermore, transdiagnostic domains, such as anxiety sensitivity, distress tolerance, emotion dysregulation, avoidant coping, and personality factors, have been implicated in the psychopathology of anxiety in this population.

Anxiety sensitivity is defined as the extent to which individuals believe anxiety and its related sensations (e.g., racing heart, numbness) may have harmful personal consequences [19, 20]. Cumulative data from cross-sectional studies provides empirical evidence that anxiety sensitivity is related to anxiety and related depressive symptoms, as well as HIV symptoms and poorer medication adherence among

Table 9.5 Possible causative mechanisms of anxiety in HIV subjects

<i>Biologic factors</i>
Medical therapies (e.g., efavirenz, interferon, corticosteroids)
Chronic inflammation (from HIV infection)
<i>Behavioral factors</i>
Maladaptive coping behaviors
Maladaptive health behaviors
<i>Cognitive processes</i>
Cognitive impairment (e.g., major or mild neurocognitive disorder, delirium)
Perception of stress
<i>Social processes</i>
HIV stigma
Role interference
<i>Transdiagnostic processes</i>
Anxiety sensitivity
Distress tolerance
Emotion dysregulation
Avoidant coping
Personality factors

Based on data from Ref. [2]

persons with HIV and AIDS. Anxiety sensitivity has also been implicated in clinically significant outcomes such as suicidality in this population. While this cross-sectional data is limited, the effect of anxiety sensitivity appears to be clinically significant in that it is incremental [2].

Distress tolerance, the perceived ability to withstand negative emotional/physical discomfort or the act of withstanding a distressing internal state elicited by a stressor [21], has interestingly been found to significantly predict depressive symptoms, panic symptoms, and social anxiety symptoms, as measured by the Inventory of Depression and Anxiety Symptoms (IDAS) in persons with HIV and AIDS [22]. This is believed to be mediated by emotion dysregulation, in which subjects have difficulty in the self-regulation of affective states and difficulty with self-control over affect-driven behaviors [23, 24]. Even after adjusting for covariates (e.g., demographics, substance use), emotion dysregulation was significantly related to panic and social anxiety symptoms among persons living with HIV and AIDS [2].

Another transdiagnostic process which has been implicated in anxiety manifestation in persons living with HIV and AIDS is avoidant coping [2]. Coping reflects conscious, voluntary attempts to manage internal or external stressors that an individual perceives as exceeding psychological-based resources [25]. Several studies have shown that avoidant coping was significantly related to increased anxiety symptoms [26, 27].

In regard to personality factors, neuroticism was significantly related to anxiety symptoms, whereas openness and conscientiousness were significantly negatively related to anxiety symptoms [28], meriting further investigation into the role personality may play in anxiety psychopathology among persons living with HIV and AIDS. It is worth noting that while much of the data in the literature on these topics is limited due to the cross-sectional nature of many of the studies, the findings

described above are still of clinical relevance. Further research into the causative mechanisms of anxiety in HIV subjects is warranted, as this topic is difficult to research given the multiple biopsychosocial factors as well as transdiagnostic domains described above interplaying in a complex manner and manifesting as anxiety in this population (Table 9.5).

Case Vignette 9.2: Etiology

Mr. B was a 34-year-old male with HIV who was new to your clinic and presented complaining of 2 months of episodes consisting of a “racing heart,” numbness in his hands, and feeling “like he cannot breathe.” These episodes occurred a couple times each week. He said he otherwise had been feeling well besides mild difficulty with memory during daily tasks, which he says it was not of concern to him. He recently started a new medication when he last saw his provider, but cannot remember the name of it. Upon further discussion, he stated that he actually had not been seen since his original diagnosis, claiming he could manage this on his own and did not want the diagnosis to interfere with his schedule and more importantly did not want others to know he had HIV. He requested a refill of whatever the previous provider had him on.

What potential etiology(s) of anxiety in this HIV patient are present?

- (a) Medication side effect
- (b) Underlying HIV infection and chronic inflammation
- (c) Multiple transdiagnostic domains (i.e., anxiety sensitivity)
- (d) All of the above

Correct answer: (d)

What is the next best step in working up the etiology of his symptoms?

- (a) Dismiss the patient’s concerns, as it is likely nothing, and tell him to follow up in 3 months if symptoms do not resolve.
- (b) Determine what HIV medication(s) the patient was on, and if known to cause symptoms of anxiety (e.g., efavirenz), switch to an alternative pharmacologic therapy.
- (c) Order additional labs and testing (e.g., thyroid panel) to first rule out other pathologies that may be causing the patient’s symptoms.
- (d) Order a CT chest/abdomen/pelvis to evaluate for pheochromocytoma.

Correct answer: (c)

Impact of Anxiety on HIV

Sexual Transmission

Although most research examining the relationship between mental health and sexual transmission risk behaviors in people living with HIV is focused on depressive disorders and substance use, some research gives attention to the anxiety disorders. A review by Brandt et al. [2] yielded nine studies examining this relationship; of those, five reported a positive association between anxiety symptoms and sexual risk-taking behaviors, two reported no association, and two reported a negative association. Overall, the number of available studies on this topic is very limited, particularly when considered within the context of the broad spectrum of symptoms that the anxiety disorders encompass, ranging from specific phobias to generalized anxiety, from predominantly somatic features to symptoms that are largely cognitive.

The number of distinct anxiety disorders suggests that there could be multiple anxiety-specific pathways that affect sexual risk-taking behaviors in people living with HIV. Various models have been suggested to explain this relationship [29]. These include the idea that increased sexual activity could be a coping strategy to avoid intolerable feelings of stress or that anxiety itself could negatively impact decision-making. Substance use can further moderate this relationship. Another posited model, based on existing theories of social anxiety, suggests that people with HIV and high social anxiety could avoid negotiating conversations around condom use, as a result of their preoccupation with being negatively evaluated by others. Avoidance of negotiation about condom use may increase the risk of unprotected sexual behavior and result in negative long-term consequences. For example, two cross-sectional studies by Hart et al. [30, 31], involving MSM living with HIV, demonstrated an association between social anxiety and increased unprotected insertive anal intercourse with partners who were not known to have HIV. However, a later cross-sectional study by O’Cleirigh et al. [32] demonstrated no association between sexual transmission risk behavior and social anxiety, as well as panic disorder.

Additional limitations to existing research on the impact of anxiety on HIV sexual transmission risk factors include the lack of prospective studies and the lack of studies on the effect of interventions, which could improve clinical practice in the future. Finally, there is also a dearth of qualitative data, such as interviews, that could reveal insights of people living with both HIV and anxiety disorders on how their symptoms of anxiety affect their perspective on sexual risk-taking.

Quality of Life

Among the general population, many studies have investigated the effect of anxiety disorders on quality of life. There is a substantial body of literature demonstrating that among medically healthy individuals as well as specific groups of people living with chronic medical illness, different anxiety disorders are associated with dysfunction in quality of life [33, 34] and in specific domains of health-related quality of life [35].

No studies have been reported to examine the effect of anxiety disorders on quality of life among people living with HIV. One recent meta-analysis identified five studies that commented on this relationship; all five studies seemed to suggest that the presence of anxiety symptoms was associated with lower quality of life among this population [2]. However, these were all cross-sectional studies, and examinations of the relationship between anxiety and quality of life were performed via secondary analysis. Future studies are necessary to clarify the nature of this relationship and to identify useful interventions to guide clinical practice.

Case Vignette 9.3: Quality of Life

Mr. C was a 45-year-old man who worked full time as a nurse in a hospital and was a single parent of two young children. He was diagnosed with HIV 8 months previously and had since been experiencing new symptoms of uncontrollable worry, restlessness, irritability, and muscle tension. He ruminated over whether and when to disclose his HIV diagnosis to his children, who were unaware. Mr. C feared that he will one day become very ill and unable to care for his children. He also worried that his coworkers at the hospital will learn about his HIV diagnosis and look down upon him and that it would put his job at risk. He felt tired and worn out and noticed more physical pain throughout the day. He had less time and energy for spending time with his children and friends. He felt distracted and unable to accomplish his usual tasks at work.

For individuals such as Mr. C, being diagnosed with HIV and experiencing symptoms of anxiety is related to lower health-related quality of life. How is health-related quality of life defined in this context?

- (a) How a person's HIV diagnosis and anxiety symptoms impact functioning and perceived well-being in multiple domains of life (physical, mental, and social)
- (b) How well a person is able to cope with their new diagnosis
- (c) How much time a person is able to spend on meditation, exercise, and other wellness activities
- (d) How highly a person rates their satisfaction with their health

Correct answer: (a)

Suicidal Thoughts

Suicide is a serious global public health concern, which, in many countries, has been shown to disproportionately affect people living with HIV, even *after* the advent of effective antiretroviral therapy [36]. Various studies have sought to identify risk factors for suicidal thoughts and behaviors in persons living with HIV and AIDS. There is limited research consisting of three cross-sectional studies and one retrospective cohort study that examines the relationship between anxiety disorders and suicidal thoughts and behaviors among people living with HIV [2]. While this initial data would suggest that symptoms of anxiety are associated with thoughts and behaviors related to suicide, these associations were examined via secondary analysis, and the four studies used different measures to screen for and identify anxiety.

The currently available research and clinical knowledge are too limited to ascertain whether anxiety disorders are a risk factor for suicidal thoughts and behaviors among people living with HIV. Among the general population, anxiety disorders have been more extensively examined as potential risk factors for suicide, and most recent meta-analyses have indicated that anxiety disorders in themselves are very weak predictors of suicide over time [37]. Future research is necessary to clarify if this weak association between anxiety and suicidal thoughts is applicable to people living with HIV and to better understand the role of anxiety disorders in assessing suicide risk in this population. There is a notable absence of any prospective data, which would be an important area for future study. Please see Chap. 13 for a detailed discussion on suicide and suicidality in persons with HIV and AIDS.

Cognitive Impairment

HIV-associated neurocognitive disorders remain globally highly prevalent and contribute significantly to morbidity from HIV infection, in spite of the many advances in HIV care and treatment with antiretroviral medications. While the relationship between anxiety and neurocognitive disorders has been more extensively described in the general population, the role of anxiety in moderating cognitive impairment is less well understood among people living with HIV. There are only four studies examining this association [2]. Three of the four studies used a cross-sectional design that examined the relationship between anxiety and cognitive impairment via secondary analysis; they used self-report of cognitive symptoms rather than a battery of neuropsychiatric tests. There was only one prospective study, and it utilized the Wechsler Adult Intelligence Scale as a measure of cognitive performance over time [38].

From the existing data, it is unclear if the anxiety itself causes cognitive function to worsen, or if anxiety and cognitive impairment are *both* symptomatic of the same HIV-related brain involvement. Further research, including more prospective

studies, and more standardized and rigorous methods of evaluating cognitive performance, is needed to more accurately understand the nature of the relationship between anxiety symptoms and cognitive impairment.

Case Vignette 9.4: Adherence to ARV Treatment

Mr. D was a 32-year-old male with a long history of anxiety, which worsened significantly after he was diagnosed with HIV 1 year previously. About 9 months previously, he established care at an HIV specialty clinic. On his first appointment, he felt flooded by the barrage of information he received about his diagnosis, and he had difficulty retaining any information. He also worried that a friend or a coworker would see him walking into the clinic and that this would place him at risk of being rejected by his friends or losing his job. Since his first appointment at the HIV specialty clinic, Mr. D missed more than half of his follow-up appointments. He took his ARV medication sometimes but experienced significant physical symptoms of anxiety when taking his medication, as they reminded him of his illness. He continued to have detectable levels on his viral load tests.

Among individuals diagnosed with HIV, persons with symptoms of GAD experience the following in comparison to persons without symptoms of GAD:

- (a) Lower ART prescription
- (b) Lower ART adherence
- (c) Lower viral suppression
- (d) All of the above

Correct answer: (d)

Case Vignette 9.5: Risk Behavior

Mr. E is a 28-year-old male with a history of social anxiety and HIV, which was diagnosed a year and a half ago. After a brief hiatus, Mr. E decided that he was ready to start dating again. He had already noticed that some of his friends who were aware of his HIV diagnosis had been acting differently around him and sometimes avoid physical touch with him. He worried about how he will disclose his HIV status to potential partners and how they will react to it. He wondered if potential partners will react negatively and be less interested in him if he asks them to use condoms during sex. He also worried if he will have more difficulty performing sexually while using a condom. He felt overwhelmed when he thought about how he might navigate some of these difficult conversations, and he sometimes felt it would be easiest to avoid those conversations altogether.

What is the proposed mechanism for how symptoms of anxiety lead to increased high-risk sexual behaviors in individuals diagnosed with HIV?

- (a) Internalized self-stigma leading to decreased condom use
- (b) Fear of being negatively evaluated by a sexual partner leading to decreased condom use
- (c) Increased use of recreational drugs to attenuate social anxiety
- (d) All of the above theories have been suggested but need to be explored further in future research

Correct answer: (d)

Case Vignette 9.6: Illness Progression

Ms. F is a 45-year-old female who was diagnosed with HIV 3 years ago. Her diagnosis came as a very unexpected surprise, and since then, she has continued to feel overwhelmed by her diagnosis of HIV, which she views as unpredictable and frightening. Several years prior, she lost a close friend to an AIDS-related complication. For the past 3 years, she has experienced frequent and uncontrollable worry that a protracted and severe course of illness is in her future as was the case for her friend. She fears that she will become too ill to work or to spend time with her loved ones. As a result of these worries, she has difficulty sleeping at night, and during the day, she is often tired, irritable, and unable to focus. Throughout most of this time, she has engaged fairly consistently with her HIV care, consistently taking ARV medication.

Recently, Ms. F started to attend individual therapy sessions with an embedded mental health practitioner in her HIV care clinic. In therapy, she engaged in cognitive restructuring exercises which helped her realize that her illness had not progressed in the 3 years since her diagnosis and had actually remained very stable. This has helped to decrease her symptoms of anxiety and improve her overall quality of life.

How is anxiety related to HIV disease severity and progression?

- (a) Anxiety protects against disease progression by promoting increased bodily vigilance and engagement with HIV care.
- (b) Anxiety hastens disease progression via the anxiety state's impact on the immune system response.
- (c) There have been a few studies examining the relationship between anxiety and disease progression, and their results have not consistently established any clear relationship.
- (d) After controlling for prescription and adherence to ART, there is still a positive relationship between anxiety and disease progression.

Correct answer: (c)

Therapy

Pharmacological Treatment

Benzodiazepines (BZPs) comprise two-thirds of the cases where medications are prescribed for anxiety among HIV-infected individuals [39]. Patients with HIV infection are particularly sensitive to the side effects of BZPs, especially excessive sedation. However, studies examining the efficacy of BZPs for the treatment of anxiety in HIV-infected individuals are lacking [39]. In a survey done to a group of mental health clinicians (mostly psychiatrists) and medical students who provide care for persons with HIV and AIDS in the United States and other areas in the world, clonazepam and lorazepam were considered benzodiazepines of choice for the first treatment of syndromal anxiety disorders (e.g., panic disorder) in HIV patients [40]. Clonazepam and lorazepam do not have active metabolites and are safe in terms of drug-drug interactions with antiretroviral treatment [40]. Non-BZP hypnotic agents (e.g., zopiclone, zolpidem, zaleplon) should also be used with caution in patients with antiretroviral treatment. Other therapeutic options for anxiety include SSRI, buspirone, and pregabalin. In the survey by Freudenreich et al., escitalopram and citalopram were considered first-choice treatment for depression [40]. They also could be considered as non-BZP first-choice treatment of anxiety disorders. Please see Chap. 17 for more detailed information about the use of psychopharmacologic agents and antiretrovirals as well as drug-drug and drug-illness interactions in persons living with HIV and AIDS.

Non-pharmacological Interventions for Anxiety Symptoms and Disorders in Persons with HIV and AIDS

Results of research studying non-pharmacological interventions for anxiety symptoms in HIV patients range from showing little to no significant effect to notable reduction in anxiety symptoms by certain interventions. In a systematic review of 39 studies including 50 treatments, Clucas et al. [41] found that non-pharmacological interventions were generally more successful in reducing symptoms than pharmacological approaches. Intervention methods that were studied were psychological, psychosocial, physical, or nutritional supplementation; 48% of these were shown to be effective and included cognitive behavioral stress management (CBSM), cognitive behavioral therapy, art therapy, peer support counseling, relaxation training, and therapeutic touch. Another study consisting of a randomized controlled trial by Jones et al. [42] also found that CBSM decreased anxiety more than individual information sessions teaching stress management.

Other interventions that were proven to be effective focused on mindfulness techniques. In a randomized controlled trial by González-García et al. [43], a

Table 9.6 Evidence-based non-pharmacological therapeutic options for HIV patients with anxiety

Cognitive behavioral therapy
Cognitive behavioral stress management
Mindfulness-based cognitive therapy
Peer support counseling

mindfulness-based cognitive therapy program resulted in reduction of anxiety symptoms with a large effect size from baseline to 8 weeks in addition to improving subjective quality of life, overall emotional state, and immunity status over 3 months. Another study [44] showed that a mindfulness-based stress reduction program (MBSR) could even be associated with decline in the CD4+ T lymphocyte count. There is some evidence that group therapy may be helpful for people living with HIV for adapting to the diagnosis or recovering from anxiety in relation to this [45]. The most used non-pharmacological interventions are summarized in Table 9.6.

Conclusions

All clinicians caring for persons living with HIV and AIDS can benefit from familiarity with the high prevalence of both anxiety symptoms and anxiety disorders in their patients across the life span. Indeed, estimated rates of anxiety disorders among persons with HIV and AIDS are much higher than those among the general population, with rates about 23% in some studies. Although the etiology of anxiety is poorly understood and likely due to the complex biopsychosociocultural interactions that manifest in a variety of presentations, the impact of anxiety on quality of life and general function on persons living with HIV and AIDS is very clear. However, compared with the efforts to improve diagnosis and treatment for depressive disorders, anxiety disorders are sometimes regarded as the neglected condition in psychiatric care of persons with HIV. Screening for anxiety disorders is indicated on a regular basis, not only by psychiatrists and other mental health clinicians, but are also indicated as part of routine evaluations by other professionals caring for persons living with HIV and AIDS. There is little evidence of the efficacy of psychopharmacological treatment for anxiety disorders in HIV; however, non-pharmacological strategies such as cognitive behavioral therapy, cognitive behavioral stress management, mindfulness-based cognitive therapy, and peer support counseling seem to give greater benefit. HIV clinicians should recommend these non-pharmacological strategies or, at least, relaxation techniques to prevent or address anxiety in their patients.

Disclosure The opinions and assertions expressed herein are those of the author(s) and do not necessarily reflect the official policy or position of the Uniformed Services University or the Department of Defense.

Multiple-Choice Questions

1. According to the critical review by Brandt et al. (2017) [2], what is the approximate mean value of anxiety disorders prevalence among PLWHA, based on diagnostic interviews?

- (a) 50%
- (b) 40%
- (c) 30%
- (d) 10%

Correct answer: (c)

2. When examining specific anxiety disorders individually, which has a *similar* rate of prevalence in PLWHA compared to in the general population?

- (a) Generalized anxiety disorder
- (b) Panic disorder
- (c) Specific phobia
- (d) Social anxiety

Correct answer: (c) (Brandt et al. 2017 [2]).

3. Which of the following statements about anxiety sensitivity in PLWHA is not true?

- (a) Anxiety sensitivity is defined as the extent to which individuals believe anxiety and its related sensations to be harmless.
- (b) Anxiety sensitivity is related to anxiety and related negative mood symptoms.
- (c) Anxiety sensitivity is related to HIV symptoms.
- (d) Anxiety sensitivity is related to poorer medication adherence among PLWHA.

Correct answer: (a) (McNally, 2002 [19]; Reiss 1985 [20]).

4. Among the following, which psychometric tool to screen persons with HIV for anxiety may be considered most suitable?

- (a) Hospital Anxiety and Depression Scale
- (b) Beck Depression Inventory
- (c) Hamilton Depression Rating Scale
- (d) Patient Health Questionnaire-9

Correct answer (a) (Zigmond and Snaith 1983 [15])

5. In relation to the pharmacological treatment of anxiety in PLWHA, which is the incorrect answer?

- (a) A high percentage of medications prescribed for anxiety among HIV-infected individuals are benzodiazepines (BDZ).
- (b) Patients with HIV infection are particularly sensitive to the side effects of BZPs, especially excessive sedation.
- (c) Alprazolam was considered benzodiazepine of choice for the treatment of syndromal anxiety disorders.

(d) Non-pharmacological interventions were generally more successful in reducing anxious symptoms than pharmacological approaches.

Correct answer: (c) (Freudenreich 2010 [40])

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