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Fatigue Symptom Management in People Living With Human Immunodeficiency Virus

Joseph D. Perazzo, PhD, RN¹, Allison R. Webel, PhD, RN¹, Joachim G. Voss, PhD, RN, ACRN, FAAN¹, and Maryjo Prince-Paul, PhD, APRN, ACHPN, FPCN¹

¹Frances Payne Bolton School of Nursing; Case Western Reserve University; Cleveland, OH

Abstract

Fatigue is a subjective, unpleasant, potentially disabling symptom rooted in physiological, psychological, and behavioral causes. People living with HIV are a population highly affected by fatigue due to risk factors associated with HIV-infection, treatment, and psychosocial disease burden. People with HIV are living longer, and are facing the challenge of a longer disease trajectory. Palliative nurses with expertise in symptom management can play a crucial role in helping people with HIV to engage in health behaviors that prevent or mitigate fatigue. In this paper we present a definition and overview of fatigue, describe the problem of fatigue in people living with HIV, and present a case study that illustrates the role of the palliative nurse in helping a person with HIV to cope with fatigue.

Fatigue

Fatigue is a subjective, unpleasant, potentially disabling symptom characterized by physical and/or psychological exhaustion, experienced both acutely and chronically, that results in impaired function.^{1,2} In states of fatigue, individuals experience an imbalance between their available physical and psychological resources and the resources required for optimal functioning.² Fatigue has been associated with depression, chronic disease states, prolonged exertion, stress, sleep disturbance and inactivity.² Although fatigue is often discussed in the context of physical weakness and sleepiness,² it is a multidimensional symptom that also impacts judgment, decision-making, motivation, and awareness.³

Fatigue in People Living with HIV

Fatigue affects nearly 90% of PLWH³ and has been reported as one of the most persistent and troubling symptoms they experience. While a direct link between HIV and fatigue remains elusive,³ PLWH have an elevated risk of fatigue related to hematologic and metabolic changes that are a direct result of HIV infection and treatment, as well as psychological and psychosocial stressors that have been linked with high fatigue symptom burden^{2,4,5} (Figure 1).

Physiological Factors

Anemia (generally defined as hemoglobin [Hgb] <13 in men; <12 in women) is common in PLWH, affecting more than 70% of individuals diagnosed.^{4,6} Anemia in PLWH is multifactorial and can be caused by chronic inflammation, medication side effects,

depressive symptoms, that lead to further fatigue.²¹ Compounding this problem are disparities in depression treatment among PLWH, particularly among highly-affected racial/ethnic minority groups.¹⁶ Without access to treatment, depression and its associated symptoms (including fatigue) persist,¹⁶ and can disrupt an individual's ability to achieve viral suppression and a stable immune system.¹⁹ Fatigue is also seen in PLWH who are receiving treatment for both HIV and depression, as sleep disturbance and insomnia are side effects of antiretrovirals¹⁵ and antidepressants.¹⁸

Behavioral Factors

Behavioral factors that contribute to fatigue in PLWH often contain both physiological and psychosocial components. Physical activity is a widely recommended health behavior that has demonstrated potential to combat fatigue in PLWH.²² Weibel et al.²² found that PLWH who engage in higher levels of physical activity reported 17% less fatigue than those who were more sedentary.²² Paradoxically, increasing physical activity may offer a solution to lower the severity of fatigue for PLWH, but fatigue symptom experience (psychological dimension), may diminish an individual's perceived ability to be physically active.²³ Researchers continue to seek out solutions to this problem through interventions designed to change behaviors that promote increased physical activity in PLWH.^{24–26}

One of the most prominent behavioral factors contributing to fatigue is poor sleep hygiene.^{27,28} Sleep disturbances are common in PLWH, affecting between 30–100% of PLWH,²⁸ and can manifest in a lack of or poor quality of sleep.^{5,28,29} Inability to sleep results from physiological factors including the affect of HIV on the central nervous system,²⁸ medication side effects (e.g. vivid dreams, neuropathy),^{15,29} effects of stimulant intake (e.g. nicotine, caffeine, amphetamines),^{28,29} or from psychological factors that impede restful sleep (e.g. anxiety and stress).^{17,30} In addition to inability to sleep, the aforementioned factors can diminish the quality of sleep resulting experiences of physical and mental fatigue, depression, and excessive daytime sleepiness.^{5,28,29} Finally, PLWH may turn to the use of substances or caffeine intake to help them sleep or to cope with fatigue or psychological symptoms,² but studies have found that such actions often exacerbate sleep disturbances thus perpetuating fatigue rather than eliminating it.

Assessment of Fatigue

Fatigue assessment is a crucial component of an HIV care plan that allows clinicians to understand patient-specific circumstances and conditions that lead to fatigue symptom experiences. As explained in a review by Barroso and Voss,¹ accurate assessments of fatigue are challenging due to limitations in how fatigue is measured. Measures may be unidimensional, only assessing certain aspects of fatigue (e.g. frequency, intensity, or functionality). For example, the widely-used Fatigue Severity Scale (FSS)³¹ primarily addresses the impact of fatigue on functionality without regard to intensity (despite its name). Furthermore, scales may have primarily been tested and validated some populations (e.g. cancer patients) but may not capture specific aspects of people living with other illnesses. Even though patients may primarily be focused on the physical dimension of fatigue, failure to assess fatigue as a multidimensional symptom results in a limited ability to

adequately address fatigue. Barroso and Lynn³² addressed these limitations by creating the HIV-related Fatigue scale, a validated fatigue measure for assessment of the intensity of fatigue, responsiveness to fatigue circumstances, and fatigue-related functional impairment in PLWH. The scale is ideal for determining how fatigue is affecting activities of daily living as well as mental and social functioning.

Proactive patient involvement in fatigue assessment through daily recording (e.g. journaling) can provide invaluable information for clinician understanding of symptoms, including fatigue. Mobile health (aka mHealth) technology has made it possible for people to record their symptoms in real time through smartphone applications and short message service (SMS).³³ While much of the mHealth research in PLWH has been focused on medication adherence,³⁴ it may prove to be an innovative and useful way to track and manage symptoms, and research into the uses of mobile technology in PLWH is ongoing.

Management of Fatigue

Once clinicians have been able to assess and measure fatigue they are faced with the challenge of determining the best course of action to treat and help patients manage fatigue. Clinical and pharmacological options include supplements to address hormone imbalances and anemia (when blood loss is not indicated) and to improve nutritional deficiencies that cause fatigue, as well as stimulant medications to directly treat fatigue symptoms.¹ While these measures been effective in alleviating fatigue symptoms in PLWH, little is known about how effective they are long term¹. Non-pharmacological interventions, particularly engagement in health behaviors (stress reduction, exercise),²² have also been effective in alleviating fatigue symptoms and have strong potential to be effective long term solutions for addressing fatigue in chronic illness. Furthermore, Webel et al.²⁷ found that a diet and exercise self-management intervention resulted in improved sleep hygiene in PLWH. Palliative nurses can play a pivotal role both as healthcare team members and directly with patients to recommend supplementation and nutritional consultation, educate patients on how to integrate health behaviors that will decrease inflammation, promote daytime energy through activity and rest planning as well as healthy sleep patterns, ultimately improving fatigue symptoms.

The following case study illustrates the potential role of palliative care integration in helping an individual living with HIV and suffering from fatigue.

Case Study

Sam is a 41-year-old Caucasian man living with HIV receiving care at an urban university-based infectious disease clinic specializing in the care of PLWH. He was diagnosed one year ago and presents to his regular clinic appointment with his brother whom he has lived with since being diagnosed. He has attended all scheduled appointments and adhered to his antiretroviral medication regimen. His appearance is unkempt and he is tearful, stating “I cannot keep going like this, I am so tired all the time I can’t do anything anymore.” His brother adds that he “doesn’t do anything anymore, he never eats- just snacks, drinks coffee, and smokes cigarettes” and “sleeps most of the day and is up all night on his computer”. He

denies alcohol use, is a 20 pack-year smoker, and occasionally takes a psychostimulant medication (dextroamphetamine/amphetamine; Adderall®) that he buys from a friend to “get some energy to go out” but that this is rare. His labs indicate an undetectable HIV-1 RNA viral load and normal CD4+ T-lymphocyte count. All laboratory values including hemoglobin and hematocrit, basic metabolic panel, thyroid stimulating hormone (TSH), and testosterone levels were within normal limits. Sam reports that he has not visited with his case manager because he “doesn’t need her”. His provider has requested a palliative care consultation for symptom management. Upon review, the palliative care nurse notes he reported 8 out of 10 on a basic fatigue assessment and a Beck Depression Inventory³⁵ score of 20 out of a possible 63 at this visit.

Sam’s fatigue is likely due to multiple factors including but not limited to physiological factors such as HIV medication side effects and poor nutrition; psychological factors including depression and anxiety; and behavioral factors including substance misuse, poor sleep hygiene, smoking inactivity, and excessive caffeine. The normal hemoglobin and hematocrit, testosterone, and TSH levels rule out a hematologic or hormonal cause, and the self-reported substance use (e.g. marijuana, amphetamines, caffeine, nicotine) provide insight into Sam’s difficulty achieving restful sleep. The palliative care nurse wants to gather more information about Sam’s fatigue that has not been captured from the basic rating scale. Sam completes the HIV-related Fatigue Scale which indicates poor responsiveness to fatigue circumstances, including high disruption to daily activities and high levels of social and mental functioning. Based on these findings, the palliative care nurse develops the following care plan.

Symptom Management Plan

- Provide Sam with encouragement, emphasizing his strengths including his adherence to medication and achievement of an undetectable viral load; also focusing on reinforcing that there are potential solutions to the problem of fatigue.
- Educate Sam on the benefits of working with case management emphasizing that case managers help to coordinate patient care, keep patients connected within the healthcare setting, and help patients solve unexpected problems. Ensure that Sam knows that having a case manager does not suggest that he is not independent, but that the case manager is someone he can work with on health-related matters including venues of care and healthcare financing.
- Educate Sam on sleep hygiene, emphasizing that rest periods are important, but sleeping throughout the day will make it difficult to sleep at night and perpetuates the cycle of fatigue. The palliative care nurse can leverage resources from the American Sleep Association at <https://www.sleepassociation.org>.
- Sam has some high-risk behaviors that likely have a direct relationship to fatigue, particularly his use of amphetamines, nicotine, and caffeine. In a judgment-free manner, express understanding of his desire to take substances that make him feel energized, but remind him that while caffeine, nicotine, and

amphetamines may appear to provide energy, they actually drain the body's resources more quickly, interfere with sleep, and can contribute more to fatigue than they prevent. The palliative care nurse can suggest stopping all caffeine intake after noon, and encourage Sam to stop taking amphetamines due to their high addiction potential and adverse psychological impact when not taken as prescribed.

- Sam's diet, particularly the snacking behaviors and lack of intake of nutritious food, is of particular concern both to his overall health and may be a major contributor to his fatigue. The palliative care nurse can provide Sam with resources such as the Veteran's Association website on nutrition for people with HIV/AIDS (www.hiv.va.gov/patient/daily/diet/index.asp), and review the information with him. The palliative care nurse should help Sam with meal planning emphasizing preparation of foods in advance and including food choices that Sam likes that contain adequate amounts of calories, protein, fruits, vegetables, and water.
- Work with Sam on a plan to increase physical activity, beginning with lower intensity activities (e.g. walking) and encouraging incremental increases in intensity (e.g. calisthenics) as tolerated. Emphasize that engaging in any form of exercise is better than none.
- Present Sam with options for smoking cessation, being careful not to appear judgmental or intolerant of smoking behavior. The palliative care nurse should emphasize Sam's ability to take steps to reduce and eventually quit smoking, highlighting that each step he takes to cut back on smoking can improve energy levels and help him get restful sleep. Furthermore, the palliative care nurse can refer Sam to the AIDS.gov smoking cessation website that offers help to PLWH to quit smoking including social support (e.g. via internet and phone support groups), smartphone app recommendations, and smoking cessation information materials.
- Refer Sam to a local support group for PLWH if available which may help him to find others he relates to and prevent social isolation related to HIV and his symptoms. If no such support group exists in the area, web-based resources such as Poz (www.poz.com) and The Body (www.thebody.com) contain informational and social support resources that Sam can explore to learn more about HIV and hear the stories of others living with HIV.
- Encourage Sam to keep a fatigue diary or use a symptom tracking smartphone app (e.g. trakmyhealth-www.trakmyhealthapps.com) that will help him identify time points and specific contexts associated with his fatigue, will be an invaluable resource in future clinical interactions, and will provide a tangible source from which Sam can identify improvements and setbacks with his health.
- Set up weekly phone calls for one month to provide Sam with support in the proposed changes.

Three-month Follow-up

At Sam's next appointment, his appearance is much improved. He has been in regular contact with a case manager who has connected him with a local HIV support group that meets two nights each week and does a group walk every weekend. In addition to support group meetings he has started volunteering three days each week answering phones at the organization's central office. He reports that he and his brother have started cooking meals for the week each Sunday and they are working together on eating healthy. His fatigue journal helped him realize that he was sleeping primarily during the mid-afternoon, often when he feels overwhelmed and frustrated by his current life situation. He states that while he often needs to rest, he does something to busy himself so he does not fall asleep during the day and so he can sleep through the night. His Beck Depression Inventory³⁵ and HRFS³² scores have both decreased and he states that he feels like he is doing something that helps himself and others by being involved with the support network. Finally, he states that he is working on not drinking caffeine after noon and has is using the web resources to help him cut down on cigarette smoking, learn more about how he can better his health, and connect with other people living with HIV.

Summary

In this paper we have provided an overview of fatigue in PLWH, and have illustrated potential nursing interventions to help a person living with HIV who is experiencing fatigue. Sam's palliative care nurse addressed his fatigue holistically, providing interventions and referrals consistent with physiological, psychological, and behavioral factors that cause fatigue. We believe that thorough assessment with validated measures and interventions designed to address the multiple dimensions of fatigue will yield the best results when helping patients to reduce fatigue. We are still learning about the implications of long-term infection with HIV, but in this paper have demonstrated the potentially disabling effects of fatigue. Palliative care nurses will continue to play an increasingly pivotal role in the care of PLWH as this population ages. Expertise in symptom management will be crucial to helping PLWH to achieve high quality of life and optimal health as they age.

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Key Implications for Palliative Care Nurses

- People living with HIV are at high risk for fatigue due to cardiovascular and metabolic changes that occur as a result of HIV infection and treatment.
- Fatigue is a multidimensional symptom that includes physical sensation changes, changes in thought processes and awareness, and is can impact behavioral and social function.
- Palliative care nurses with expertise in symptom management can advocate for people living with HIV by facilitating necessary clinical assessments and referrals, and can help people with HIV address physiological, psychological, and behavioral factors that cause fatigue through holistic care planning with patients.

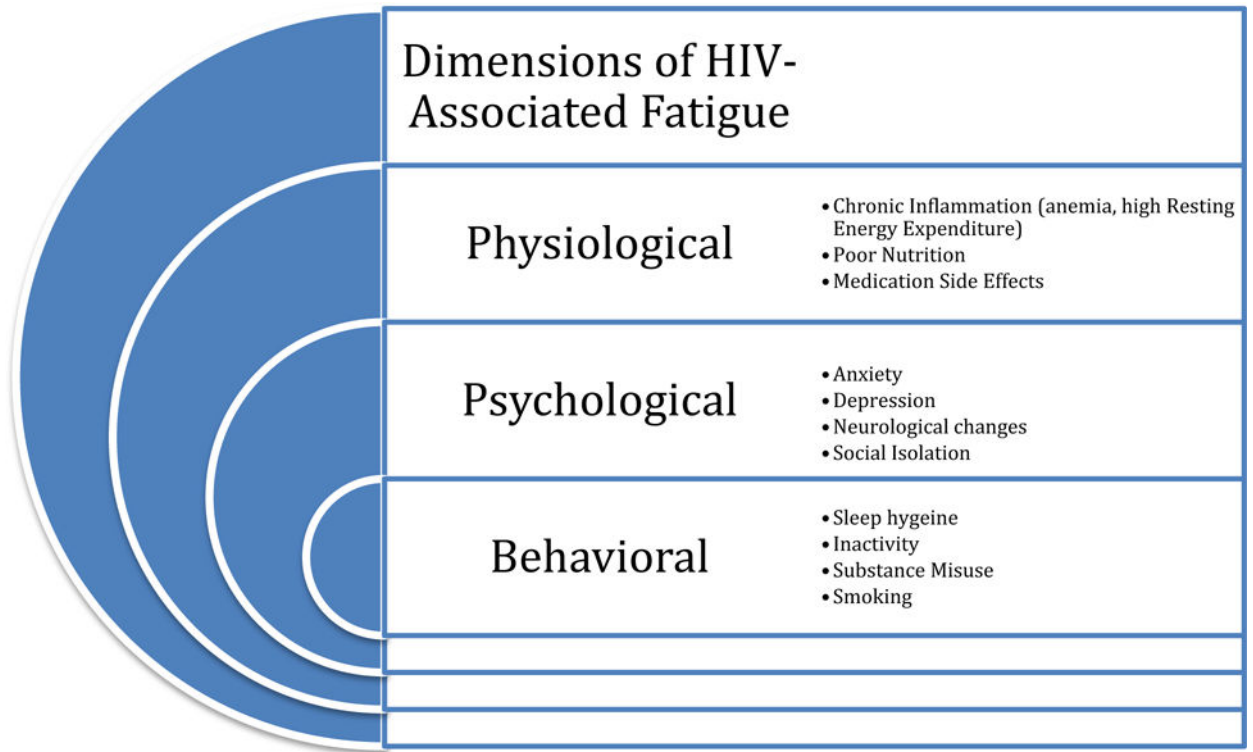


Figure 1. Dimensions of HIV-Associated Fatigue^{1,3,8-10,14,15,17,18,20,27}

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