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Review Article

Kratom Use Disorder: Clinical Implications, Screening, and Management Strategies

Adrienne Hicks [1], Vanessa Hurley [1,*]

[1] Department of Psychiatry, VA New England Healthcare System, West Haven, CT, USA

Correspondence: Vanessa Hurley (vanessa.hurley@va.gov)

Abstract:

Objective: Kratom (Mitragyna speciosa) has emerged as a widely accessible nonprescription substance that is being utilized in the United States. Kratom is commonly used for self-management of pain, psychiatric symptoms, and opioid withdrawal. Veterans receiving care within the Veterans Health Administration (VHA) represent a high-risk population due to elevated rates of chronic pain, post-traumatic stress disorder (PTSD), and substance use disorders (SUDs). Despite increasing prevalence, kratom use remains underrecognized and is not routinely assessed in clinical practice. This narrative review studies the pharmacology, patterns of use, and clinical implications of kratom among Veterans and proposes a standardized screening framework for implementation within the VHA. This will help to align with the patient centered care delivered to our Veterans related to mental health conditions often concurrent with substance use, pain management, and opioid safety. **Methods:** A targeted narrative review of the literature was conducted using PubMed, Google Scholar, and relevant federal agency reports. Search terms included "kratom," "Mitragyna speciosa," "substance use disorder," "opioid withdrawal," and "Veterans." Articles were selected based on relevance to pharmacology, epidemiology, adverse effects, and clinical implications. Findings were synthesized and interpreted using DSM-5-TR substance use disorder criteria. **Results:** Kratom exhibits partial agonist activity at μ-opioid receptors, producing dose-dependent stimulant and opioid-like effects. According to the National Institutes of Health's National Library of Medicine, mu-opioid receptors, found in the brain and spinal cord, are primarily responsible for pain relief and other opioid-like effects such as euphoria and respiratory depression. Veterans frequently use kratom to self-manage pain, mood symptoms, and opioid withdrawal (Garcia-Romeu et al., 2020; Grundmann, 2017). Kratom use is associated with dependence, withdrawal, and increased risk of polysubstance use (Post et al., 2019). Detection remains limited due to lack of standardized screening tools and the absence of detection in routine toxicology panels. **Conclusions:** Given the rising incidence of kratom use among Veterans and associated clinical risks, implementation of a standardized screening within the VHA is an appropriate intervention. Incorporating DSM-5-TR-informed criteria into structured assessments can help improve early identification, enhance patient safety, and support evidence-based treatment strategies.

Keywords: Kratom; Veterans; Substance Use Disorder; Screening; VHA; Opioid Withdrawal

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1. Introduction

Kratom (Mitragyna speciosa) is a plant-derived psychoactive substance that has gained increasing popularity in the United States due to its stimulant and opioid-like properties. Kratom is native to South East Asia, specifically Malaysia, Thailand and Indonesia that has been utilized for medical and recreational purposes. Kratom has emerged in the United States as a non-prescription substance used for self-management

of pain, mood disorders, and opioid withdrawal (Prozialeck et al., 2019; Singh et al., 2016) [1,2].

Veterans receiving care within the Veterans Health Administration (VHA) represent a vulnerable population due to disproportionately high rates of chronic pain, post-traumatic stress disorder (PTSD), and substance use disorders (SUDs). Veterans experience high rates of chronic pain, PTSD, and SUDs, which may contribute to use of alternative substances such as kratom. Despite this, kratom use is rarely assessed in clinical settings, is not detected on standard urine toxicology panels, and no formal classification in the DSM-5-TR exists.

From a health services perspective, lack of standardized screening represents a gap in measurement-based care and safety within the VHA.

2. Results / Review of Literature

Kratom contains multiple bioactive alkaloids, majority being mitragynine and 7-hydroxymitragynine, which exert partial agonist effects at μ-opioid receptors (Kruegel & Grundmann, 2018) [3]. These effects are dose-dependent, with lower doses associated with stimulant properties and higher doses producing opioid-like sedation and analgesia.

The significant difference in the mechanism of action between kratom and opioids is there is no activation of the β-arrestin 2 which has been associated with many of the undesired effects of opioid receptor activation such as constipation, respiratory depression, and dependence.

Variability in product structure, lack of oversight, and inconsistent labeling complicate dosing and risk assessment in clinical practice.

Kratom use in the United States has increased significantly, with individuals reporting use for pain management, mood regulation, and mitigation of opioid withdrawal symptoms (Garcia-Romeu et al., 2020; Grundmann, 2017; Schimmel et al., 2021) [4-6]. Despite evidence-based treatments being available, many Veterans are seen to be using kratom due to unmet clinical needs such as inadequate symptom relief and negative medication-related adverse effects.

According to research, the United States Centers for Disease Control and Prevention and Drug Enforcement Administration have warned that Kratom has the potential to cause psychosis or death. Poison control centers in the United States reported receiving more than 3400 calls regarding Kratom use from 2014-2019 which includes reported deaths. The perceived benefits often create increased barriers to engagement with evidence-based treatments.

Kratom use is associated with a range of adverse effects, including gastrointestinal symptoms, hepatotoxicity, cardiovascular effects, seizures, and psychiatric manifestations such as psychosis (Olsen et al., 2019; Post et al., 2019) [7,8].

Data from U.S. poison control centers demonstrate increasing reports of kratom-related toxicity and fatalities, frequently involving concurrent substance use (Post et al., 2019) [8].

Chronic use may result in tolerance, physiological dependence, and withdrawal symptoms resembling opioid withdrawal, including irritability, insomnia, myalgias, and cravings (Boyer et al., 2008) [9].

3. DSM-5-TR Considerations

Although kratom is not categorized in the DSM-5-TR, its pharmacologic and psychologic effects support evaluation under existing substance use disorder criteria (Hasin et al., 2013) [10]. Clinicians may apply DSM-5-TR domains, which include

impaired control, social impairment, risk behaviors, and pharmacologic criteria to assess problematic kratom use.

Research suggests that the use of kratom has the possibility to meet criteria for substance use disorder in individuals with sustained or high-frequency use.

4. Clinical Implications

Kratom use introduces multiple clinical challenges within the VHA. Kratom use is under-detected, diagnostically vague, and increases risk of adverse outcomes. Failure to identify use may impact treatment decisions and medication safety.

Without standardized screenings or guidelines, the true prevalence, severity and impact of kratom use amongst Veterans with SUD may lead to suboptimal treatment planning for clinicians. This can include inappropriate medication adjustments in Veterans who are engaged in medication assisted therapy (MAT) and/or psychiatric care.

The increasing prevalence of kratom use among Veterans underscores the need for improved clinical awareness and systematic screening approaches. Current gaps in detection may contribute to underdiagnosis, delayed intervention, and increased risk of adverse outcomes.

5. Proposed Screening Framework

A structured screening approach includes assessment of exposure, motivations, DSM-5-TR criteria, severity classification, and medication safety considerations.

Scoring can be similar to other diagnostic screening criteria for substance use disorder to classify Kratom using a quantitative number (0-1 negative, 2-4 mild use, 4-6 moderate use, ≥6 severe use)

Integration of kratom-specific screening into electronic health records (EHRs) may increase early identification. Clinician/care team education regarding kratom's pharmacology and clinical effects is essential to improve diagnostic accuracy and treatment planning.

Table 1. Proposed Screening Framework

Domain	Component	Example
Exposure	Lifetime/current use	Have you used kratom?
Motivation	Pain/PTSD/mood	Why do you use kratom?
DSM Criteria	Control/craving	Do you feel unable to stop?
Severity	Criteria count	0–1 none, ≥6 severe
Safety	Medication interaction	Any interactions?

6. Discussion

Kratom represents a unique and evolving challenge in clinical practice. Its legal status and widespread availability contribute to its perception as a safe alternative to conventional medications, despite growing evidence of harm.

Significant gaps remain in the understanding of kratom use disorder, including the absence of standardized diagnostic criteria and evidence-based treatment guidelines. Given the potential for dependence, withdrawal, and interaction with other substances, failure to identify kratom use may lead to misinterpretation of treatment response and missed intervention opportunities.

7. Conclusions

Kratom use represents an emerging health concern among Veterans. Implementation of a standardized, DSM-5-TR-informed standardized screening may improve detection, safety, and patient centered outcomes. Future research should evaluate the implementation and clinical impact of kratom screening within VHA settings.

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