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Moral Injury (JI Harris, Section Editor)

Moral Injury in the Context of Substance Use Disorders: a Narrative Review

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Opinion statement

The rate of annual drug overdose deaths in the USA recently topped 100,000 (CDC/National Center for Health Statistics 2021), an illustration of the critical need to prevent and treat substance use disorders (SUDs). As a complex, chronic medical condition, substance use treatment requires psychological, emotional, and spiritual interventions along with medical care. The recently developed concept of moral injury has been increasingly studied and applied to military service members who experience conflict between the expectations or survival needs of combat and their moral values. This review explores whether moral injury, along with the related emotional, psychological, and spiritual symptoms, can also develop in the context of SUDs. This review identified 5 manuscripts related to moral injury arising in a substance use context. These studies were small in sample size and qualitative in nature but did indicate the presence of moral injury within the context of substance use. Further studies are needed to better understand and treat moral injury related to SUDs. A conceptualization of how moral injury may arise in the context of substance use is presented here. It is suggested that the activation of the primitive dopaminergic reward

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system causes a potential conflict between the experienced need for the addictive substance and a person's moral code or values. The moral injury resulting from this collision may impact treatment and recovery.

Introduction

The last decade has seen a burgeoning interest in the conceptualization, recognition, and treatment of moral injury. Although the moral impact of trauma and war has been a theme in human philosophy and literature for centuries, moral injury was introduced as a clinical issue requiring medical intervention by Litz et al. in 2009 [1]. They posited that harmful existential, social, psychological, emotional, and spiritual consequences may stem from exposure to events that conflict with core moral values or expectations. Whereas post-traumatic stress disorder (PTSD) symptoms may constellate as fear-based reactions, moral injury seems to be associated more with guilt, shame, feelings of worthlessness, trouble with forgiveness, and/or loss of meaning-making. Moral injury has been described using the analogy to a secondary infection from a wound: "Primary psychological injury equates to the direct damage done by a bullet; the complications — for example, alcohol abuse — equate to hemorrhage and infection" [2].

Like its frequently co-occurring counterpart PTSD, moral injury was first and is still mainly studied in a military context. In other words, moral injury has largely been recognized in relation to events (often referred to as potentially morally injurious events or PMIEs) that occurred during combat or military deployment. PMIEs can be events that were perpetrated directly, that were witnessed, that one felt helpless to stop, and/or that involved betrayals by a peer or military leader [1, 3]. Some examples from the military context might include killing a civilian or prisoner of war, witnessing human bodies or remains, not being able to prevent or heal bodily harm to fellow service members, being asked to do something ethically or morally questionable by a military commander or authority. These events do not always result in the symptoms of moral injury. However, the harm moral injury inflicts is always related to the conflict between the demands stemming from these intense high-pressure experiences and one's personal moral code or core beliefs. The crucial factor is the collision between the two sets of demands; following the former violates the latter. The injury occurs in this clash, in what Brock and Lettini call a "deep sense of transgression" [4•].

Debate over the exact definition and conceptualization of the term remains, but the proliferation of studies on the topic [5•] illustrates an increasing recognition of the moral and spiritual injuries inflicted by war. A growing number of diverse and interprofessional clinicians, researchers, and scholars have joined the discussion around how to recognize and conceptualize moral injury and how to treat the negative existential, social, psychological, emotional, and spiritual distress stemming from morally injurious experiences.

Along with increased scrutiny in a military context has come the recognition that moral injury may also occur in other high-stakes situations in which a collision occurs between actions or decisions stemming from pressure, expectations, or survival needs, and one's preexisting moral code or expectations. Studies have examined moral injury in civilian populations such as health care providers [6], educators [7, 8], law enforcement personnel [9, 10], and refugees [11–13] and have postulated its relevance for lawyers [14], journalists [15], and child welfare providers [16–18]. The COVID-19 pandemic raised the question of whether health care providers are faced with moral injury when they are not able to treat patients according to their standards of ethical care [19–21], as well as whether essential workers being asked to work in unsafe environments feel a sense of moral injury due to conflict between the duty to their work and the risk to their personal health and that of their families' [22].

Given its recognition in these other clinical contexts, it is worth asking whether moral injury may be experienced by persons with SUDs, and if so, how the clinical knowledge and interventions emerging from

the study of military-related moral injury might be translated into a substance use context. Despite their prevalence and dramatic societal impacts, SUDs are under treated [23]. Along with increasing access to and reducing social stigma around SUD treatment, there is a continuous need to evaluate and improve treatment modalities, including the incorporation of approaches that provide holistic care.

This paper identifies major gaps in the literature that should inform future research to better study and treat moral injury in this population. It presents a conceptualization of how moral injury may arise in the context of a SUD.

Methods

A literature search was performed using full-text searches in Cochrane, PubMed, Embase, PsychArticles, and within abstracts of all the databases in VA VISN 1's Knowledge Library (for a listing of included databases, see https://vaww.visn1.knowledgelibrary.va.gov/home/databases). Additional searches were done using Google Scholar, google searches of.gov and.edu sites, conference proceedings, and by further looking through the footnotes of the above articles.

The search was conducted by looking for the pairing of the keyword "moral injury" with one of the following substance use–related terms: substance use disorder, substance dependence, substance abuse, addiction, alcohol, alcoholism, tobacco, cannabis, marijuana, stimulant, hallucinogen, and opioid. Given the limited data, our inclusion criteria were broad.

Data extraction

See Fig. 1 for flow diagram. The search yielded 272 results, with 207 remaining after duplicates were removed. The full text of these studies was reviewed and the reference to moral injury and substance use–related terms was examined. Articles were then excluded if they cited only tangential or insubstantial reference to moral injury or substance use, or if the two were considered irrespective of one another. After review, 65 articles were identified that discussed the connection between moral injury and substance use.

Of these 65 articles, 47 postulated or investigated the connection between substance use and combat-related moral injury. Seven more did the same in relation to a general trauma experience (3), police killing (1), military sexual trauma (1), and a patient safety incident (1). In all cases, substance use was considered in relation to moral injury sustained elsewhere, rather than as a context itself in which moral injury might arise.

Of the twelve articles in which substance use is considered as a context for the development of moral injury, seven contained no clinical data relevant to SUDs, but rather mentioned substance use/SUDs in their discussion section as a recommendation for future research. There were five articles that met our search criteria.

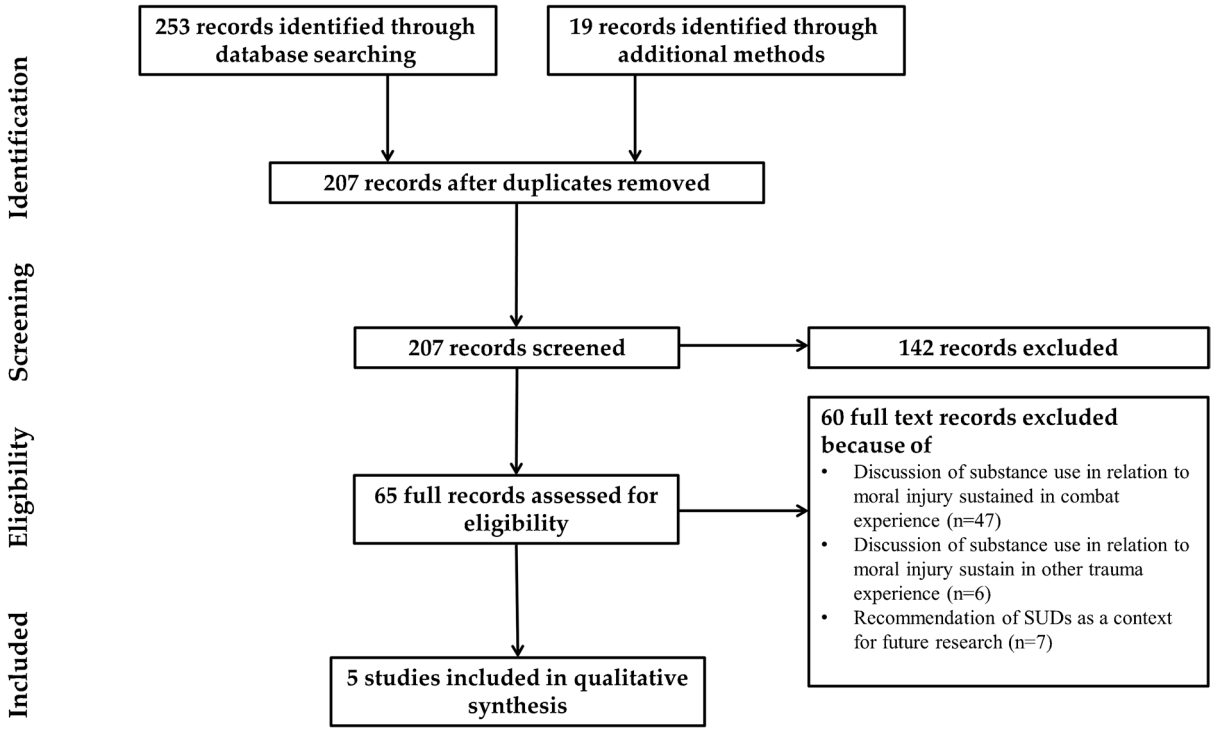

Fig. 1 Study flow diagram.

Results

See Table 1 for summary. Three of the articles were related to the development of a scale to measure perpetration-induced distress in civilian populations [24–26].

One study was a qualitative focus group looking at moral injury in African-American women who were in treatment for SUDs [27].

The final study consisted of interviews of Alcoholics Anonymous members who had been in recovery for at least 5 years and were asked to reflect on the experience of moral injury related to their substance use [28].

Discussion

The dearth of research in this area may relate more to the relatively recent introduction of the concept rather than a lack of relevance. As noted, seven of the studies of moral injury in military context included commentary by clinicians and researchers positing potential applicability in substance use treatment. For example, one provider working in the Impact of Killing program hypothesizes directly on the SUD experience as analogous: "When patients are using substances they also do things that they feel bad about…lie, cheat

Table 1 Summary of included study characteristics examining moral injury arising in the context of SUDs

Author (year)	Design	Patient population	Sample size	Outcomes
Steinmetz (2018, 2019, 2019)	Developing a scale to measure perpetration-related distress in civilian populations; Category "caused harm while using drugs or alcohol" included as qualifying perpetration event for study sample	Participants recruited from MTurk	Three studies, $n = 44$, 398,73	"causes harm while using drugs or alcohol" was the second highest reported perpetration event, with 7 out of 44, 59 out of 398, and 6 out of 73. Participants reported moderately high levels of distress associated with their acts of perpetration
Hartman (2015)	Two focus groups	African American women in substance abuse treatment program in Southern California	$n = 13$	Qualitative accounts of moral injury shared by group participants; moral injury discussed within broader experiences of traumatic experiences, vulnerabilities, and/or abuse
Van Herik (2015)	Interviewing AA participants as to whether their drinking caused moral injury	Caucasian men over the age of 50, participants in AA, at least 5 years in recovery	$n = 8$	Each participant noted regretting actions they had taken while drinking, all noted guilt or shame, not all subscribed to having "injured themselves"

and steal and don't pay child support or get into domestic violence or just being a bad father or whatever it is and sometimes all roads lead to Rome as far as guilt and shame" [29•].

In their book presenting current clinical practice around moral injury, Currier, Drescher, and Nieuwsma note some caution around the expansion of research into moral injury in non-military settings, worrying that this will divert attention from the care of service members and Veterans [30•]. They also wonder how an "overlay of criminality" will impact treatment and whether providers may have an easier time providing care for Veterans who commit morally questionable acts in the context of war than they would for civilians committing acts in the context of their substance use. Nonetheless, they argue against setting parameters over who "deserves" treatment for moral injury. They counsel recognition of the history of social stigma in relation to questions of treatment and urge against "exclud[ing] or marginaliz[ing] certain civilian groups with potentially high risks of moral injury (e.g., violent offenders)" [30•].

The data offered by Hartman and Van Herick, although both generated by qualitative studies of small sample size, indicate the presence of moral injury among persons with SUDs. Both studies were able to identify potentially morally injurious events and/or values violations occurring in the context of substance use. Both also shared reflections by study participants on the ensuing negative spiritual, emotional, and psychological impacts.

As noted in the "Methods" section, several studies sought to evaluate the connection between moral injury sustained in combat and subsequent substance use. The general thought is that substance use is a mechanism for coping with trauma and/or difficult emotions, and as such an example of self-harm associated with moral injury [1]. Analysis of the data in these studies is somewhat hampered by challenges around how to differentiate PTSD and MI symptomology, but many studies do show a connection between combat-related MI and/or PMIEs and later substance use [31–33]. While these studies did not meet the inclusion criteria for this review, they are important to the discussion around MI and SUDs, not least of all by raising the possibility of multiple sources of moral injury and their interactive effects. For example, a military Veteran might have experienced a potentially morally injurious event in combat and use substances to cope with the impact of that experience. This substance use could lead to additional morally injurious events which could in turn confirm, exasperate, or complicate the earlier moral injury symptoms. It may even be that the presence of this later moral injury contributes to inconclusive or mixed results when trying to track or understand combat MI.

Conceptualization of moral injury arising in the context of SUDs

We present a conceptual model of moral injury arising in the context of SUDs. This conceptualization is illustrated in Fig. 2.

The dopamine hypothesis of SUDs describes mesolimbic dopaminergic neurons serving as the final common pathway for the reinforcement process [34]. Addictive substances activate this pathway in ways even more reinforcing than food by activating dopamine in the nucleus accumbens shell and not

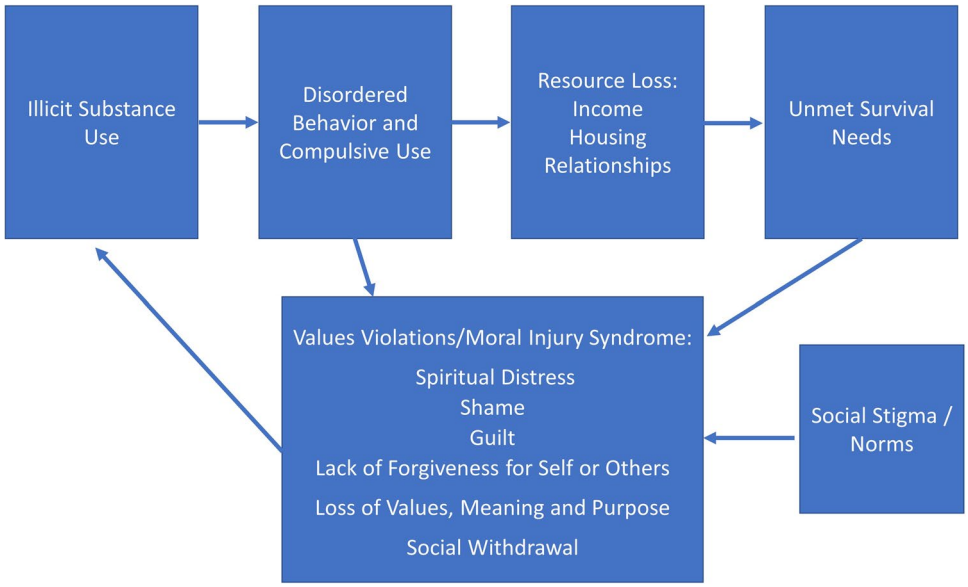

Fig. 2 A conceptual model of moral injury arising in the context of substance use.

core [35]. While the primitive function of the dopaminergic reward system is to reinforce those activities meant for survival and procreation, addictive substances hijack this system and insert themselves into a high level of reinforcement, thus leading to compulsive use.

Under situations of extreme stress, where survival may be at risk, it is not surprising that one might operate in a way that directly contradicts their own moral compass in order to survive. If the options are either to continue to uphold high moral standards and possibly die or break moral character to survive, most would choose the latter. In fact, the purpose of the primitive dopaminergic reward system is to see to it that most people will choose the latter, to continue to ensure survival. The resulting moral injury is difficult to consolidate though more easily justifiable when there seems to be "no choice" in the matter.

During the development of a substance use disorder, the exact system designed to ensure that we break moral character to ensure survival is now ensuring that we break moral character to compulsively seek the substance we are addicted to. To the hijacked brain, the substance is as important as food, water, and sex. The difference is that the moral injury is occurring in the context of the use of a drug (something that seems to imply "a choice"). Attempting to consolidate the breaking of the moral compass by justification with obtaining a drug is impossible. The resulting compulsive use and moral injury is devastating to the person addicted to the substance.

Additionally, this activation of the dopaminergic reward system and the resulting behavioral consequences lead to social and interpersonal challenges, as evidenced by the inclusion of these criteria in the diagnosis of a SUD [36]. These challenges include risk for housing instability/homelessness [37, 38], increased hospitalizations [39], food insecurity [40], and loss of employment

[41]. Such resource loss creates further insecurity and unmet survival needs, continuing to exasperate the circumstances that allow for moral injury.

There may be controversy and even reluctance around comparing the combat experiences of military service members with the experiences of persons dealing with SUDs. This may be true even when the persons are one and the same, as in the case mentioned above of a Veteran who might be at risk for developing both types of moral injury. Further research is needed to better understand the experiences of persons living with one or both of these types of moral injury and to compare the different contexts in which MI might develop. For instance, moral injury developed in relation to illicit substance use could be less localized to a specific event and experienced in a more longitudinal and chronic manner. Also, the high degree of social stigma around SUDs may have a moderating effect on the intensity of moral injury symptoms.

It may also be that moral injury resulting from SUD pathways has many of the same components of moral injury resulting from a combat situation. The clinical presentation typical of moral injury, particularly guilt, remorse, grief, shame, and lack of self-forgiveness, has long been noted within SUD treatment [42–46]. Substance use care may be able to be improved by the incorporation and/or adaptation of moral injury treatment modalities.

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Declarations

Conflict of Interest
The authors declare no competing interests.

Human and Animal Rights and Informed Consent
This article does not contain any studies with human or animal subjects performed by any of the authors.

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