Journey to Wellness: A Socio-Ecological Analysis of Veterans in Recovery from Substance Use Disorders

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Abstract

Substance use disorders are increasingly prevalent among veterans in the United States. Veterans in recovery face unique challenges, such as high rates of psychiatric comorbidities, difficulties adjusting to civilian life, and inadequate housing and mental health services. While prior research has explored veterans' experiences in recovery, studies have not implemented a multi-level perspective in their analyses. The current qualitative study examined how individual veteran experiences intersect with interpersonal and systemic factors. Semi-structured focus groups were conducted with veterans who were former or current residents of recovery homes (N=20). Thematic analysis was utilized to explore veterans' personal experiences through the CHIME-D framework (Connectedness, Hope & Optimism, Identity, Meaning in Life, Empowerment, and Difficulties). The data were further analyzed within a socio-ecological model (intrapersonal, interpersonal, community). Each component of the CHIME-D framework was salient across all focus groups, with Connectedness, Empowerment, and Difficulties being the most prominent themes that occurred across all socio-ecological levels. Results suggest that recovery initiatives can effectively assist veterans by promoting empowerment, facilitating social connections, and addressing co-occurring difficulties across multiple socio-ecological contexts. Additionally, treatment programs should encourage veterans to take on meaningful roles in their communities. Future research should continue to explore veterans' recovery experiences using a socio-ecological model.

Key Words: substance use disorders; thematic analysis; veterans, recovery; CHIME-D; socio-ecological model

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Substance use disorders (SUDs) are some of the most prevalent mental health conditions among veteran populations. In 2019, an estimated 1.3 million veterans had a SUD diagnosis (Lan et al., 2016; SAMHSA, 2019). Additionally, veterans have higher rates of SUD diagnoses than nonveterans, with an estimated 90% of veterans having an additional comorbid mental health diagnosis which can exacerbate substance misuse and symptom severity (Lan et al., 2016; Seal et al., 2011). The development of SUDs has been linked to distinct environmental risk factors veterans are exposed to during and after military service, including deployment, chronic stress, and reintegration difficulties (Cerdá et al., 2014; Seal et al., 2011; Teeters et al., 2017).

In addition to these unique risk factors for SUDs, veterans experience systemic barriers and complexities when initiating recovery. Laudet et al. (2014) report that veterans often do not seek help until after leaving the military and, on average, begin recovery seven years later than non-veterans. Moreover, treatment gaps for veteran mental health are concerning as 85.1% of veterans with SUDs do not access treatment (SAMHSA, 2019), and even less receive adequate treatment (Grekin et al., 2021). Housing instability is also a concern for veterans, as SUDs are a pervasive risk factor for homelessness (Tsai & Rosenheck, 2015). Overall, evidence demonstrates that SUD and recovery differ for veterans compared to the general population.

While there is substantial literature on the etiology and treatment of SUDs among veterans, their lived experiences in recovery have been given less attention (Larson et al., 2012; Koch, 2019). Recovery is an idiosyncratic process involving changes and transformations to one's attitudes, behaviors, and personal and social well-being (Pitt et al., 2007; Wood & Alsawy,

2018). The trends within this population suggest that research on veterans' perspectives in recovery is essential to understand the specific factors shared by veterans who engage in treatment. Choy (2014) outlined that qualitative methodology allows researchers to explore underlying values, beliefs, and assumptions, particularly for diverse groups. Thus, qualitative research designed to capture recovery's versatile characteristics for veterans may provide a richer picture of veterans' experiences. The current study uses focus groups to explore the broad, socio-ecological factors that promote recovery and well-being in this population.

Several definitions of recovery have been proposed, including the prominent conceptual model: the CHIME framework (Leamy et al., 2011). Leamy et al. (2011) developed CHIME through a systematic review and narrative synthesis of personal recovery experiences in mental illness. This work represents the first systematic review of recovery processes beyond clinical outcomes (e.g., abstinence, symptomatology, drug use cessation) (Van Weeghel et al., 2019). The CHIME framework has been applied to several unique populations (e.g., adolescents, justice-involved individuals, & those recovering from eating disorders; Naughton et al., 2018; Senneseth et al., 2022; Wetzler et al., 2020), but it has not yet been applied to a veteran population. The CHIME framework may uncover aspects of recovery that have not yet been explored in veteran SUD treatment.

The acronym, CHIME, represents five elements supportive of recovery: Connectedness (e.g., support from individuals and groups, relationships, being part of the community), Hope & Optimism (positive thinking, dreams, aspirations, motivation to change), Identity (dimensions of identity, positive sense of self), Meaning in Life (goals, meaningful social roles and experiences, spirituality), and Empowerment (personal responsibility, control over life, strengths-focused; Leamy et al., 2011). For a comprehensive list of subthemes, see *Table 2*.

Building on this framework, Stuart et al. (2017) discussed how adverse experiences in recovery should be included. Their study found that the theme of Difficulties (e.g., disempowerment, ambivalence, stumbling, struggling, and suffering) was equally as prominent as the five previously established themes; thus, they recommended that the CHIME framework include this component (i.e., CHIME-D; Stuart et al., 2017). By incorporating Difficulties in the framework, a broader range of individuals' experiences, including personal challenges and deficits in communal support, can be captured (Stuart et al., 2017). Subsequent studies support the utility of CHIME-D for SUD research and demonstrate the salience of each component of the framework within recovery experiences (Dekkers et al., 2020; Van Weeghel et al., 2019).

Few studies have explored the interactions between personal, relational, and environmental influences on SUD recovery for veterans. The socio-ecological model has been established in public health interventions to consider how personal and contextual factors interact to promote or inhibit health-affecting behaviors. McLeroy et al. (1988) propose four levels that influence and determine health behaviors: intrapersonal, interpersonal, organizational, and community. Intrapersonal refers to individual characteristics such as attitudes, identity, and skills, while interpersonal considers social networks and social support systems. Organizational and community factors focus on environmental determinants of behavior, such as social resources, social identity, and broader group belonging. The socio-ecological approach provides contexts for higher-level factors and considers how these levels interact to impact behavior. This model further moves beyond how social influences, such as peer pressure, affect individual drug use; it additionally considers the interaction of relationships and social groups within individual risk factors for substance use (McLeroy et al., 1988). For a specialty population like veterans in SUD recovery, a socio-ecological model may

be particularly effective for analyzing components of recovery as it considers the vital influences of group membership and social networks, as well as broader systemic factors.

Prior literature on CHIME-D emphasizes the need for further research on the interconnectedness of themes across socio-ecological levels. Van Weeghel et al. (2019) conducted a scoping review of past research on personal recovery and found that most studies endorsed that factors that promote and inhibit recovery often impact each other. Building on this, Dekkers et al. (2020) identified Connectedness as the primary CHIME-D element of recovery for individuals in Narcotics Anonymous groups. These findings emphasize the interconnectedness of CHIME-D themes and the necessity of social and community capital for recovery. The Difficulties theme in the CHIME-D framework considers the role of the community among inhibitory themes of recovery (Stuart et al., 2017). However, there is still an apparent gap in the framework for addressing higher-level factors that promote recovery and the interaction of themes across contexts. Although the CHIME-D framework emphasizes individual-level aspects of each theme, research in SUD recovery can benefit from an expanded, multi-level understanding of each component. In the current study, the CHIME-D framework's original themes will be expanded to address the impact of individual and higher-level contexts.

Particularly, it is essential to consider how community, intrapersonal, and organizational resources contribute to hope and empowerment for veterans. Hope is generally conceptualized as an individual-level process, which fosters motivation and action toward the future and goals (Gutierrez et al., 2020), but research on veterans has found hope to be substantially influenced by intimate relationships and social environment (Wadell et al., 2020; Dekkers et al., 2020). Similarly, previous research on recovery for veterans emphasized that empowerment can be influenced by community activism, advocacy, and feelings of power and powerlessness

(Kaczinski et al., 2009). Systemic difficulties also stifle veteran independence, reduce hope, and threaten their positive self-identity (Maguire et al., 2022).

Likewise, recovery literature defined Connectedness as social resources, social identification, and group membership (Haslam et al., 2009). Individual veterans belong to multiple social groups, but the veteran identity is often central to their self-concept. A strong sense of veteran identity is a protective factor in recovery (Guerrero et al., 2021; Firmin et al., 2016). These definitions of connectedness and veteran identity significantly overlap as veterans derive so much of their identity from group membership. Furthermore, veterans often derive much meaning in life through a sense of pride, purpose, and belonging gained from being in the military (Maguire et al., 2022). In the current study, our deductive method of contriving subthemes for the CHIME-D framework emphasizes the interconnectedness of these major themes. These expanded definitions highlight how factors that span the socio-ecological model are integral in understanding aspects of recovery.

Current Study

The current study is the first to qualitatively investigate the intersection of veterans' recovery experiences across socio-ecological levels. Three focus group interviews were conducted with veterans who were former or current residents of the Oxford House (OH), a network of community-based recovery homes. The six components of the CHIME-D framework were applied to the data. The CHIME-D framework has been criticized for potential oversight of societal factors that impact individuals in recovery, particularly at the community and environmental level (Leamy, 2011; Van Weeghel et al., 2019). The current study employed a socio-ecological model (McLeroy et al., 1988) to address these concerns with the CHIME-D framework. The socio-ecological model highlights complex interactions between the

intrapersonal (e.g., individual processes), interpersonal (e.g., social processes), and community (including organizational and broader community factors) levels that influence individual recovery outcomes. According to this theory, factors at each level will individually and collectively facilitate or hinder veterans' recovery process. The study explores the following research questions: (1) How do socio-ecological levels interact and impact SUD recovery for veterans? (2) Can the CHIME-D framework be effectively expanded to include a socio-ecological perspective and applied to SUD recovery research? and (3) What implications do socio-ecological level interactions have for policy and treatment? The study's findings hope to advance researchers' and practitioners' understanding of veterans' experiences in recovery settings and improve veterans' recovery outcomes at individual and higher systems levels.

Method

Context

The current study collected data from veterans who were former or current OH residents. OHs are the largest network of recovery homes in the United States. Unlike traditional recovery houses, OHs do not have any professional, paid recovery staff to assist residents with treatment. Instead, homes are self-governed, and residents keep each other accountable for sobriety and rule-abiding. Residents may stay in the house for any length of time, as long as they abstain from disruptive behavior, maintain sobriety, complete delegated chores, and pay their share of the rent (Oxford House Manual, 2019).

The initial conceptualization of the current study was a collaborative effort between researchers and the OH organization. The seventh author has an established partnership with the OH organization's founder, leaders, and members spanning 27 years. Before conducting the

current study, the OH organization expressed interest in learning more about veterans' experiences within their homes.

Participants and Recruitment

Purposive sampling was utilized to recruit participants- this method is a form of non-probability sampling that involves selecting participants who are informed about a phenomenon of interest, given their personal qualities and experiences (Patton, 1990). Participants were recruited from the 2018 OH Convention in Kansas City, Missouri. During this annual four-day convention, current OH residents, alumni, and other OH representatives attended various workshops, informational panels on recovery, and events for networking and socializing. Purposive sampling allowed for time-efficient recruitment of participants given the limited time of the OH Convention and the niche population of interest. The study was advertised on the OH's national Facebook page two weeks before the convention. The post included a description of the study, eligibility requirements, and how to participate. The researchers set up a vendor table during the first two days of the convention and approached people with information on the study to boost recruitment efforts. To be eligible for this study, participants needed to have previously served in the military, be a current or former OH resident, and be willing to participate in focus group discussions related to their experiences.

A total of 20 people who were eligible and expressed interest in participating were randomly assigned to one of the three focus groups (N= 11, N= 6, N= 3), which took place on the third day of the convention. The participants were 19 males and one female, with the majority being current residents (N= 17) and some being alumni (N= 3). The majority of participants were White (N= 17), and some were Black (N= 3). Not all participants disclosed

their ages, but they shared their era of service: Operation Enduring Freedom (OEF) / Operation Iraqi Freedom (OIF) (N = 14), Gulf War (N= 5), and Vietnam War (N= 1).

Focus Group Procedures and Protocol

All three focus groups were conducted in private conference rooms at the Sheraton Hotel, the venue for the 2018 OH Convention. A focus group methodology was selected since it allowed researchers to gain insight into individual lived experiences while also benefiting from group interactions, which can elicit ideas that may not otherwise emerge during individual interviews (Morgan et al., 1998). Before starting the focus group discussions, facilitators provided an overview of informed consent, the purpose of the research, and the risks and benefits associated with participation. Participants were informed that confidentiality could not be guaranteed due to the nature of focus group studies. However, facilitators instructed participants not to disclose any information shared in the group sessions to non-participants. Before beginning discussions, facilitators also reviewed the focus group ground rules (e.g., speaking one at a time, not answering a question if they do not want to answer it). All participants provided written consent. Focus groups lasted between 75 to 90 minutes and were audio-recorded and transcribed verbatim. Focus groups took place in a two-hour window between conference sessions to ensure no schedule conflicts. Participants were not compensated for their participation. The seventh author's university's Institutional Review Board (IRB) approved this study.

Semi-structured questions were prepared as part of the focus group protocol (see Table 1). Questions were designed to elicit discussions regarding the veteran recovery experience in the OH. However, participants organically discussed their experiences beyond the OH,

including experiences with other recovery communities and mental health organizations. Participants also elaborated on personal and relational experiences of recovery.

Reflexivity

All authors wrote reflexive statements considering previous experiences with the study population before data analysis. All authors were part of the grant that funded this project and conducted prior research on OH and individuals with SUDs. The first six authors were involved in the coding and data analytic process, of which four had no contact with study participants. The first and fourth authors had not previously conducted research with a veteran population. However, the first author has prior clinical experience with individuals with SUDs, many of whom were veterans, and has family members that have served in the military. The sixth author had previous experience conducting research with veterans and feels a personal connection to the veteran community, given that she has many family members who have served in the military. All the authors were considered outsiders to the current population as none have previously served in the military nor lived in recovery homes. To address potential gaps in knowledge, authors engaged in a review of relevant literature to increase competency while simultaneously reducing biases.

Analytic Approach

The current study thematically analyzed focus group data. Thematic analysis is a popular method used to identify, analyze, and report patterns in qualitative data (Braun & Clarke, 2006). This approach was selected given its flexible nature, allowing for inductive and deductive analysis (Braun & Clarke, 2006). Further, it maintained consistency between past CHIME-D studies that also utilized thematic analysis (Leamy et al., 2012; Stuart et al., 2017).

The authors read each transcript several times for data immersion purposes. A two-step approach was used in the data analysis. In the first step, data were deductively analyzed line-by-line using the CHIME-D framework (Leamy et al., 2011; Stuart et al., 2017). The six main themes were present across the three focus groups. Codes were discussed and compared in pairs and in larger team meetings. In the second step, data were inductively analyzed to identify subthemes (Braun & Clarke, 2006). When determining subthemes, a major consideration was their saliency and consistency across at least two focus groups, although most subthemes did span across all three groups. This coding phase was an iterative process, where subthemes were applied and redefined until no new subthemes emerged.

By utilizing both inductive and deductive analysis, subthemes could closely reflect veteran-specific experiences while being organized under main themes from the CHIME-D framework. Both main themes and subthemes were organized into a codebook. The codebook was extended with direct quotes from each transcript representing the various main themes and subthemes; this served as a reliability check between the codes and raw data.

The finalized codebook was entered into *Dedoose*, a cloud-based software program for coding and analyzing qualitative data. Five researchers were paired into teams of two and assigned to code a focus group's transcript based on the codebook (one researcher coded two focus groups and was paired with a different partner each time). Each researcher first coded independently. Once pairs finished individual coding, they compared and discussed codes and code agreements with their partners for better reliability and analyst triangulation (Williams & Morrow, 2009). Coding disagreements were resolved by a third researcher or during weekly meetings with all coders present. After coders resolved disagreements, Kappa scores (McHugh, 2012) and percent agreement values calculated inter-rater reliability. Kappa scores range from

-1.00 to +1.00, with a score of +1.00 representing full agreement. Coding concluded when coders reached at least a 90% consensus, implying strong inter-rater reliability across the themes (McHugh, 2012).

Once theme identification and coding were completed, a socio-ecological approach was employed to organize the results. Themes and subthemes were categorized as one or more of three contexts: intrapersonal, interpersonal, and community. Intrapersonal refers to internal factors characteristic of an individual, interpersonal includes interactions with others, and community encapsulates higher-level systems and resources. Community and organizational levels were combined for two reasons: (1) participants often did not distinguish between the two, and (2) the format of the study considered individual reports on higher-level factors rather than evaluating organizations and communities. This holistic approach is essential in understanding the intersection of multi-level factors associated with veteran recovery. Salient themes were identified by their frequency of occurrence and overlapped across contexts. A comparison was made with the Leamy et al. (2011) analysis to identify patterns unique to the veteran population.

Results

Analyses revealed that all six main themes of the CHIME-D framework were present across the three focus group discussions: (1) Connectedness, (2) Hope & Optimism, (3) Identity, (4) Meaning in life, (5) Empowerment, and (6) Difficulties. Additional analysis revealed 17 subthemes; 14 of these subthemes were found across all three focus groups (see Table 2). Sponsor/Sponsee Relationship, Qualities of Self and Leadership, and Religion and Spirituality were only prevalent in two of the three focus groups. Most excerpts were coded with multiple themes and subthemes, supporting the interrelatedness of themes of recovery. Figure 1

illustrates which themes generally occurred in the following socio-ecological contexts; intrapersonal, interpersonal, and community. Correspondingly, these contexts were not mutually exclusive and often impacted one another.

Intrapersonal

In alignment with previous research on the CHIME-D framework, our results indicated that individual characteristics are vital factors in recovery. However, participants' intrapersonal successes and barriers to recovery could not be separated from community and systemic factors. Empowerment was the most salient intrapersonal theme, accounting for 21.3% of the coded themes. Generally, Empowerment included participant autonomy and self-efficacy for healthy decision-making:

"...our day-to-day decisions...in the precise moment thinking about every decision you make and determining whether or not that decision is a smart choice or that decision is a stupid choice. And a smart choice is going to keep you sober and keep you stable...a stupid choice can change your life (snaps fingers) that quickly."

As participants gained a sense of control and autonomy, they could better discern the impact of their choices. This self-awareness led participants to experience more strengths in recovery (e.g., sobriety milestones & goal generation) and maintain personal responsibilities. Analysis revealed these personal and recovery-related advancements coincided with interpersonal and community empowerment:

"I mean, just the fellowship you get out of the house sometimes. Even if it's a guy that's there for a day, a month, six months. That doesn't matter, that moment you have with them, that sober moment, that good talk, the open-heartedness, that's an experience in itself. Whether they go back out, they move on to better things, or whatever happens, that moment, those little things, that conversation still stays with me. And that just completely exonerates the bad. I dig that stuff. It's just, it builds me up, puts fuel in my tank."

As veterans drew from relationships and the sense of community in the OH, they felt individually empowered in their recovery. Similarly, the military structure provided the necessary skills that empowered veterans to identify difficulties that may arise in recovery. One

participant said that by utilizing personal and relational skills he learned through his military socialization, he was better able to harness his autonomy and embrace personal responsibilities. In other words, his intrapersonal strengths in recovery depended on prior community- and interpersonal-level Empowerment, Identity, and Connectedness. Another participant referenced the self-discipline needed to balance the chaos of living in the OH environment and maintaining his recovery status:

"But it's a consistent cycle...I'm expecting these things to happen, so I feel comfortable when the chaos hits...same thing with rotations for deployment.... I'm mentally ready because I know it's coming so I feel comfortable, and I can handle...the chaos because I know it's gonna happen. So, I feel like [I have] *a level of control. I feel like I know what's going on, I got this...."*

This veteran's ability to foresee and handle recovery-related challenges exemplifies how, for many participants, intrapersonal growth followed higher-level empowerment: support from peers and broader communities, such as the OH and the military, led to improvements in self-efficacy and autonomy. Participants also mentioned intrapersonal Difficulties that accompanied recovery. Issues regarding mental health were the most notable of these experiences. Several veterans recounted their experiences with PTSD, depression, anger management, and night terrors. Participants found self-efficacy was difficult to develop while struggling with their mental health:

"...having to deal with emotions and feelings that I've hid for so many years...it terrified me to think, you know, this is reality…because I just buried my pain with… mass amounts of liquor and drug use and…. I just didn't want to deal with it...that was the only way I knew how to sleep…"

Mental health issues often occurred in conjunction with feelings of disempowerment and hopelessness: participants' perceived inability to face mental health adversities fueled further intrapersonal conflicts such as feelings of inadequacy and defeat. Veterans struggled to manage the relationship between intrapersonal and external difficulties. For example, addressing mental health was often entangled with higher-level factors such as peer support and

access to care. Participants that felt empowered in their recovery by systemic and relational support were better equipped to address intrapersonal Difficulties. This effect was similar across recovery themes, as participants frequently reported personal strives as both influential to and influenced by interpersonal and community factors.

Interpersonal

Interpersonal factors were also significant across all major CHIME-D themes. Connectedness was the most prevalent theme in the current study, accounting for 25.4% of all the codes, illustrating the importance of social support and individual relationships across socio-ecological contexts for veterans in recovery. Participants described interpersonal factors through support from other residents and veterans in recovery. Connectedness also had the most overlap with other themes and most frequently occurred with Hope & Optimism and Empowerment. Participants expressed that residents shared a recovery alliance. They would check on their housemates' well-being while encouraging personal and recovery-oriented goals and believed that their housemates aided their reintegration into civilian lifestyles. One participant described that housemates intuitively sensed when another member faced challenges or low morale:

When one of us is going through something, we know…we can feel the tension... so we can bring it up, pull 'em up on it, accountability really comes into play right there. Even though none of them... have [ever] *served, or anything like that, but* [they] *can still* [help].

This participant emphasized that a bond existed among residents regardless of veteran status. House members were accountable to each other and willing to help their peers through difficulties. Receiving and providing assistance was important to participants and often facilitated their relationships. These relationships created a community for residents, as one participant even referred to his housemates as his "platoon." Nevertheless, veteran support was particularly beneficial to their recovery. One participant described that he switched to a sponsor

who was a veteran because a sponsor who understood military culture created a more effective relationship:

*"I had to switch my sponsor. And my sponsor's a vet. Now I can identify. Because he tells me to shut the hell up, sit down… I sit the f*** down... He's like my drill serg-... I know my drill sergeant had my life in his hands, and that's what I do with my sponsor."*

This participant suggested that his sponsor, who reminded him of his drill sergeant, provided more security than a non-veteran could. Other participants expressed comparable sentiments, suggesting that community-level Connectedness and Identity influenced interpersonal relationships. For instance, a participant described the dynamic between him and another veteran in the home as less inhibited than his relationships with other residents:

I got another vet in there now... and he's an army vet as well, so it's a—we're able to communicate on a level that I can't communicate with everybody else on. I can be brash, I can be blunt, and be honest. Ya know, I don't have to worry about anybody else—

A shared communication style among veterans enabled them to understand each other. Multiple participants noted that veterans share similar attitudes, experiences, and expectations that allow them to have a distinctively stronger kinship with each other. This finding particularly emphasizes the complex overlap of socio-ecological contexts as participants' veteran status (community) impacted their thoughts and feelings (intrapersonal), stimulating relationships (interpersonal), and further affected group belonging (community). A frequently mentioned challenge was tension between veterans and non-veterans. Within the Difficulties theme, interpersonal relationships accounted for over half (53.7%) of the codes. The most common challenges involved poor communication, disagreements over the maintenance of the household, and housemates' lack of accountability for responsibilities and empathy for their trauma. One participant expressed her conflicts with other residents in her home:

"Get with the program... if it has to do with your sobriety, it has to do with the house, where y'all at? What is going on?... Oh, you switched your medication a month ago?... don't you think it would be nice to know… I don't understand the whole communication [issue]*... Communicate.*

Talk to each other, let me know where you're at, and stuff like that. I ain't coming home for 2 days. I gotta work. How hard is that to do... I don't understand it... I want you to know because you're supposed to be my battle buddy, right?"

This participant implied that veterans view their recovery from a military perspective, contributing to closer relationships with veterans and tensions with non-veterans. The same participant later expressed that her communication style was tactless, and she had to learn how to speak more effectively to house members. However, she and other participants expressed gratitude for the opportunity to build these interpersonal skills because, while challenging, these conflicts assisted in their personal development. Participants indicated that interpersonal support and conflicts were paramount to intrapersonal aspects of recovery, such as autonomy and self-efficacy. Additionally, their interpersonal relationships were often directly connected to their involvement in veteran and recovery communities.

Community

In the current study, veterans' recovery journeys could not be separated from the impact of community and organizational systems. Multiple veterans cited inadequate resources to address their housing, mental health, and recovery needs. The Difficulties theme, which accounted for 15.7% of the data, encapsulated how systemic deficiencies exacerbated veterans' mental health vulnerabilities and added stress to their interpersonal relationships.

Many veterans mentioned turbulent family upbringings and how their previous experiences in the military had provided structure, support, and a sense of belonging. This systemic level of support from the military was crucial for individuals who lacked interpersonal support. Once discharged from the military, however, most participants struggled with their substance use and were left without their previously relied on structural support. Housing instability was one of the most prominent and consistent problems faced by participants, and it created substantial barriers to their overall functioning and recovery progress. One individual

discussed how the available Veterans Affairs (VA) supports were highly disorganized and, in combination with lack of interpersonal support, left him homeless:

"Because I was homeless, I had lost everything. I was living with my mom at the time. I had to live at the Salvation Army and that was an eye-opener. There was zero structure. There were two houses- one side was supposed to be for VA Veterans that had gone through the rehab program and the other side was the transient side for just people who were coming off the streets and wanted a place to stay. There was no policing of drugs or anything on that side and somewhat on the VA side it was a very very chaotic environment. The managing structure was not present, so it was just super chaotic- fights, feces-it was ridiculous. It was really, really bad. I had a confrontation with somebody at the salvation army because I caught them stealing from me and I confronted the person and I threatened him and for that I was kicked out of the program, and I didn't have anywhere else to go at that point my family had told me either you get help or you can get [lost]... so I couldn't go back to them."

Furthermore, some veterans were unaware of different treatment options outside the VA systems. One veteran discussed his difficulty navigating his options and the lack of transparency and connectivity when seeking help for his substance use:

"I didn't know anything about Oxford... I [had] never been to an AA or NA uh group before. I didn't know there was all this, you know, help for people in recovery, you know, two years ago...I'm just thankful and grateful to be clean today. I don't know what tomorrow brings but, you know, there's so many tools and resources out there for people that if you're slipping, if you want help, there's help there. And Oxford is definitely an asset and resource- I haven't seen anything else like it."

For many of the participants, the treatment model provided by the OH was the first to effectively meet their needs because it addressed issues at the intrapersonal, interpersonal, and community levels. The design of the OH housing model provided communal support, ensured stable housing, and incorporated local AA (Alcoholics Anonymous) and NA (Narcotics Anonymous) meetings. Unlike some non-veteran house members, participants also thrived off of the structure and rules. A system that holistically supported their basic needs was vital in their recovery journey.

Belonging to a recovery home also stimulated interpersonal empowerment by connecting veterans to other house members with similar goals. Beyond helping veterans build

relationships with others, the homes provided leadership opportunities and inspired them to give back to the recovery community. Once secure in their own recovery identity, veterans drew on their strengths and leadership abilities to uplift others and create better pathways to access treatment. Their journeys also brought insight into support resources that are especially helpful for other veterans in recovery. Many of the study participants became active in the larger recovery community. One veteran discussed his initiative to help other veterans in recovery homes:

"My goal... is I wanna open up a house for vets up there, you know? Cause there's a lot of vets up there that… can't get in anywhere. So, my- I'm making it a personal goal is to get a house that I can open for the vets. For all of us. Because it's easier to live with somebody that's been through what you been through."

Multiple empowered veterans felt a communal responsibility to help others. One veteran discussed finding meaningful work outside the OH organization to help veterans who may not have access to the OH or are unaware of various treatment options:

"I was able to get certified to teach a substance abuse program in prisons. I work with veterans in the prison, outside the prison, I mean, wherever-wherever I'm in I get the opportunity to do it and all those opportunities were a direct result of me living in the house."

Access to vital resources allowed veterans to emerge as leaders in their communities and draw upon their strengths. Community-level recovery resources (e.g., VA system, hospitals, communal recovery homes, mutual support groups, housing resources, educational opportunities) impacted their interpersonal relationships and individual recovery successes. Adequate systemic support made meeting treatment needs and personal goals attainable for some veterans. They were also able to give back to their respective recovery communities, yielding even more opportunities for future veterans to have successful recovery experiences.

Discussion

The current study explored veterans in SUD recovery based on the CHIME-D and a socio-ecological framework. Our findings support the interconnectedness of socio-ecological contexts and CHIME-D themes for analyzing SUD recovery in veterans' populations. Each socio-ecological context (i.e., intrapersonal, interpersonal, and community) revealed veterans' unique challenges and strengths in their journey to wellness from SUDs. The current model also considers how group membership (e.g., veteran and recovery home status) shapes participants' recovery course. Although findings are specific to OH residents, they can be applied to broader recovery communities.

Socio-*Ecological Approach and CHIME-D*

The current study's approach corroborates prior research that socio-ecological levels interact, thus impacting an individual's recovery experiences (Maina et al., 2021; Montiel Ishino et al., 2020). The analysis further demonstrates that the CHIME-D framework can be expanded to include a socio-ecological focus. By applying the socio-ecological framework, interactions between levels, particularly for Empowerment and Connectedness, were evident. Empowerment focused on intrapersonal achievements, learning to live with non-veterans, and access to recovery resources. Cumulatively, these levels enabled participants to overcome difficulties as they navigated their recovery, relationships, and broader communities more effectively.

Connectedness was salient across all socio-ecological contexts. This builds on Dekkers et al. (2020) analysis, which suggested that Connectedness was the primary recovery-supportive aspect in NA. Our findings further support that interpersonal relationships are paramount to individual recovery. They promote personal growth, stimulate a broader sense of community, and strengthen other CHIME-D recovery themes. Participants expressed their sentiments over veteran group membership, which affected how they perceived their non-veteran and veteran

housemates. This adds to the analysis done by Guerrero & Jason (2021), who found that veterans had closer friendships with residents if they resided with at least one other veteran, supporting that veterans may benefit from recovery communities that connect them with similar peers. Likewise, the data illustrates that the support of housemates integrated participants into the household and general recovery community, which was essential for participants' positive experiences and outcomes. Such social networks could foster a stronger sense of belonging and, in turn, stimulate Empowerment and Identity.

As individuals in recovery gain stability, they often become mentors and sponsors, creating a symbiotic relationship between the community and individuals (Dekkers et al., 2020). Cultivating leaders in the community strengthens recovery programs' quality and provide further opportunities for growth and prosocial behavior (Gorman et al., 2018; Reif et al., 2014). Leadership and peer support roles may be particularly beneficial for veterans. Unlike previous studies using the CHIME-D framework on non-veteran populations, the current findings revealed links between identity and leadership. Our findings uncover that connectedness and shared identities are vital to recovery, corroborating with extant literature (Beckwith et al., 2019; Guerrero & Jason, 2020; Guerro et al., 2021; Firmin et al., 2016). Having established veteran leaders can be both inspirational and a point of connection for veterans who are new to the recovery community. These leadership roles strengthen multiple CHIME-D components and diminish the effect of socio-emotional challenges that veterans found with non-veterans. Ensuring that veterans receive proper resources and care has implications for individual-level success and has the potential to develop emergent leaders who will improve recovery for other veterans and the community at large. Overall, the findings emphasize the utility of applying a

socio-ecological framework to CHIME-D, as the approach uncovered the interactions between socio-ecological levels and the effects of such interactions.

Implications for Theory, Research, and Practice

The findings have implications for both research and practice. The current study is the first to utilize a socio-ecological application of the CHIME-D framework. Organizing themes according to a socio-ecological framework can help create holistic recommendations for recovery, identify shortcomings in higher-level systems, and reduce the stigma surrounding substance misuse. First, organizations serving veterans should utilize Participatory Action Research Methods when investigating the efficacy of their treatment programs. Veterans in the current study had critical insight into gaps within the existing infrastructure. Understanding and integrating their feedback is essential for organizations to better address intersecting needs of this population. Notably, some veterans were completely unaware of resources and treatment options, indicating systemic failure. Greater educational and outreach efforts are needed to ensure accessible information on treatment services provided by the VA and other organizations.

Veterans with SUDs should be able to openly discuss and find resources for recovery and related issues, such as PTSD and homelessness. Participants in the current study mentioned that connecting with other veterans in recovery was one of the most valuable components of their recovery journey. The VA system and organizations focused on substance use recovery should consider establishing networks and support groups specific to veterans. For example, Gorman et al. (2018) found that Veteran Coffee Socials, a peer support model, effectively increased veterans' knowledge about available services and fostered relationships between veterans in recovery. Similarly, a strength of the OH model is that it provides community, connection to other veterans, resources, and housing. Future research should investigate how

organizations can improve access to and utilization of recovery services while bolstering a sense of community for veterans.

All the participants in the current study were members of the OH organization, though findings can be generalized to the broader recovery community. Participants suggested that the OH organization provides helpful resources and structure. Veterans seeking SUD treatment may find programs with similar qualities beneficial. For instance, the OH connects veterans with non-veterans and other veterans in recovery. The communal aspect of recovery homes brings a sense of community beyond individual friendships (Graham et al., 2009). As part of a house and larger national organization, veteran residents are introduced to multi-level support networks. Given that veterans' lifetime prevalence rate of homelessness is 10.2% (Tsai et al., 2021), it is also vital to have a recovery housing option where residents can stay as long as they need.

However, OH may not be an appropriate option for all veterans seeking treatment, as abstinence-based, communal recovery settings are not suitable for all individuals. Some veterans may prefer an environment that caters exclusively to veterans, and others may find that living in a more structured setting with support staff better meets their personal needs. Treatment providers should utilize person-centered approaches to meet the wide range of veterans' needs and goals. The OH model worked for the veterans in the current study, suggesting that other recovery initiatives that aim to empower, connect, and address co-occurring difficulties across socio-ecological levels can also be effective for veterans. Moreover, greater outreach initiatives should occur at the organizational level to inform and connect current veterans and VA systems with diverse community programs that support recovery in this group.

Limitations and Future Direction

Findings should be considered in light of several limitations. First, participants were current or former residents of OH. The OH organization and its members follow an abstinence-based model in which successful recovery from SUDs is defined as the complete cessation of alcohol and drug use. While the abstinence-based approach is prominent within the recovery community, it is not the only model followed. There is a range of recovery definitions and philosophies among those in the recovery community. Therefore, future studies should examine how different treatment programs and recovery models influence veterans' well-being across multiple ecological levels. Additionally, participants were recruited from the OH convention indicating a sampling bias. Veterans who had unsuccessful experiences in OH were less likely to attend the convention. Future studies can overcome this sampling bias by recruiting a more representative sample of veterans with varied experiences. The limitations of the OH convention constrained participant recruitment. Future studies should identify recruitment strategies with increased outreach to allow for more veteran perspectives and achieve greater data saturation.

Another limitation concerns our recruitment of a primarily white and male OEF/OIF veterans sample. Our participant demographics are representative of the broader OEF/OIF veteran population (Institute of Medicine, 2010). Nonetheless, it is vital to consider the additional barriers veterans of minoritized populations face. Given the disparities in SUD treatment outcomes among women, people of color, and members of the LGBTQ community (Acevedo et al., 2015; Batchelder et al., 2021; Verissimo & Grella, 2017), future studies should examine how the intersection of marginalized identities can impact veterans' recovery process from a socio-ecological perspective. Furthermore, participants in the study were primarily

OEF/OIF veterans; findings may not represent veterans' experiences from other service eras that warrant additional research.

Although the current study used analyst triangulation (Williams & Morrow, 2009) by having multiple researchers facilitate the focus groups and data analyses, member checking with other participants would have strengthened the findings. Member checking is an important way to determine whether results are valid by having participants confirm if findings truly reflect their experiences. Moreover, the current study utilized focus groups to collect data, allowing for the use of social interactions to elicit discussions that may otherwise not surface during individual interviews. However, a group setting may have prevented participants from being forthcoming about experiences that are difficult to share with others. It is possible this setting limits one's ability to elaborate on individual experiences. Lastly, even though some participants organically mentioned how long they had been in recovery, the study did not systematically collect this information on all participants. This information would have helped further contextualize participants' experiences.

This study represents a crucial step towards understanding how the socio-ecological systems in which veterans are embedded impact their recovery from SUDs. Therefore, additional research is required to better understand the implication of these findings. Given that greater community involvement positively impacts recovery from SUDs (Jason et al., 2021), community engagement among veterans in recovery is an important line of future inquiry. Prospective studies should consider how veterans' social environments inform their involvement within their respective communities. Specifically, how socially informed beliefs and behaviors relate to community engagement and help sustain their recovery efforts. Utilizing mixed methods or a combination of focus groups and individual interviews may also provide a

more comprehensive overview of recovery among this population. Future research should additionally consider other methods, such as situational analysis, that provide a more comprehensive understanding of community factors.

Conclusion

The current study contributes to the literature on veterans' experiences in SUD recovery. In particular, applying a socio-ecological model to the CHIME-D framework provided a more comprehensive understanding of recovery experiences. Our findings emphasize that veterans have distinctive characteristics that benefit or hinder their recovery across socio-ecological contexts. Specifically, participants emphasized that Empowerment, Identity, and Connectedness are vital components in their treatment. Recovery communities, military values, and shared group membership also significantly contribute to veterans' experiences. Systemic levels of support, such as housing and mental health resources, proved to be paramount to veterans' well-being. Veterans who had access to community-level support and resources were more intrapersonally empowered and, subsequently, inclined to help their peers. As such, stakeholders in the recovery community should consider investing in multi-level elements to improve SUD recovery programs for vulnerable populations. Additionally, policies should expand community-based recovery programs that incorporate such elements to provide greater access to recovery services. Future research should consider the interactions of socio-ecological contexts for SUD recovery. Thus, additional research should continue to refine the CHIME-D framework to incorporate a socio-ecological model when exploring veterans' experiences in SUD recovery.

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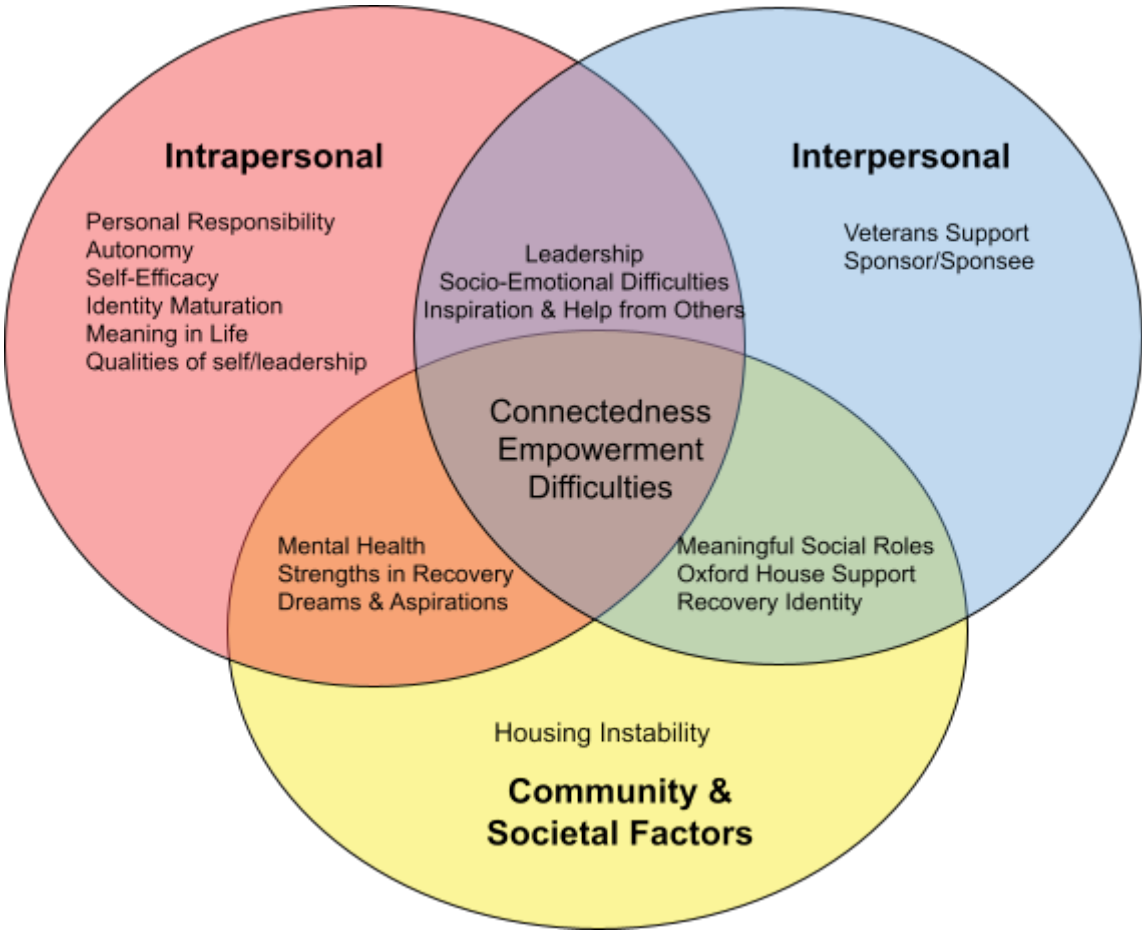
Table 1. Semi-structured focus group protocol questions

1. How would you describe your experience when you first moved into Oxford House? Probe: Are there any positive and/or negative experiences that stand out in your mind when you first moved into Oxford House? Describe them.
2. How would you describe your experience later on in your residency in Oxford House? Probe: Are there any positive and/or negative experiences that stand out in your mind when you first moved into Oxford House? Describe them.
3. How would you describe your relationships with other OH residents? Probe: Were you able to form bonds with other residents living in the house? Why or why not?
4. How would you say being a veteran influenced your interactions with others living in the house?
5. How do you feel living in Oxford House helped you?
6. How can Oxford House better meet your needs?
7. Would you recommend Oxford House to other veterans? Why or why not?

Figure 1



Recovery process master themes and subthemes mapped onto a biopsychosocial model

Table 2. Recovery processes themes and subthemes

Theme Subtheme	Frequency Number (%)	Leamy et al. similar subthemes
Category 1: Connectedness OH-related support Veteran Bond Sponsor/Sponsee relationship	174 (25.4%) 128 32 18	 Peer support/ support groups Being part of the community Support from others
Category 2: Hope & Optimism Inspiration and Help from Others Having Dreams & Aspirations	96 (14%) 61 27	 Hope-inspiring relationships Dreams and aspirations
Category 3: Identity Identity maturation Recovery identity Qualities of self & leadership	88 (12.9%) 26 28 50	 Rebuilding sense of self Overcoming stigma Dimensions of identity
Category 4: Meaning in Life Gratitude Social roles Religion and spirituality	73 (10.7%) 38 35 14	 Meaning of mental illness experiences Meaningful life social roles spirituality
Category 5: Empowerment Personal responsibility & autonomy Self efficacy Recovery strengths	146 (21.3%) 85 45 49	 Personal responsibility Control over life Focusing on strengths
Category 6: Difficulties Housing instability Mental health Socio-emotional difficulties	108 (15.8%) 16 38 58	