



Collaborative design: outdoor environments for veterans with PTSD

Collaborative
design

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Abstract

Purpose – Providing veterans diagnosed with post-traumatic stress disorder (PTSD), their families, and staff opportunities to experience physical and mental restoration in outdoor environments designed based on evidence is important. The purpose of this paper is to explore the relationship between evidence-based collaborative design of outdoor environments and their potential capacity to contribute to a veteran's journey to wellness.

Design/methodology/approach – There is no existing precedent in the peer-reviewed literature linking positive health outcomes associated with outdoor environments to veterans with PTSD. This review of the literature is conceptualized as a means to extrapolate these benefits to this unique population.

Findings – Access to nature improves physiological and psychological health outcomes. A collaborative design approach ensures that design outcomes meet specific populations' needs.

Practical implications – Many service-members are reluctant to seek traditional treatments for PTSD, fearing threat to future military service and limited available resources. Alternative treatments, access to sensitively designed outdoor environments and/or a re-examination of traditional treatments and the environments in which they are provided supports best practice approaches to ameliorating the debilitating effects of this disorder.

Social implications – An integrated design approach blending the skills of landscape architecture and occupational therapy is key to achieve design outcomes that support the healing process to meet the needs of this vulnerable population.

Originality/value – An inter and/or trans-disciplinary team approach to design and programming of outdoor environments for veterans with PTSD blends landscape architecture with occupational therapy to ensure both form and function are achieved, thus positing positive health outcomes.

Keywords Post-traumatic stress disorders, Armed forces, Rehabilitation, United States of America, Veterans, Collaborations, Outdoor environments, Evidence-based design, Positive health outcomes, Landscape architecture, Occupational therapy

Paper type Conceptual paper



Introduction

Environmental conditions positively affect health outcomes and are especially important in residential facilities, where patients stay for extended periods of time. Because the built environment is an “important domain for self-discovery and therefore for the establishment of a sense of self” (Golembiewski, 2013), the design of environments to support improved health outcomes for specific patient groups in mental health facilities requires that patient needs and patient-staff relationships are at the center of the decision making. A patient-centered approach is critical when planning specialized psychiatric facilities as each serves a distinct population requiring unique design considerations. An integrated, interdisciplinary design team of clinicians and designers who are well-versed in evidence-based design for specific patient needs will best guide patient-centered design decisions. This article explores specific design considerations for one such group, veterans returning from US combat missions.

Much of the existing research on the effects of environments on health outcomes applies to the elderly, those with physical challenges, or those with depression. This article summarizes key parts of existing research to make informed recommendations for environmental design features for rehabilitation and residential facilities for veterans with post-traumatic stress disorder (PTSD), traumatic brain injuries, and depression. We also present the case for the merit of “interdisciplinary” (team members maintain roles in the collaborative process) and “transdisciplinary” (team members share roles in cross-disciplinary collaboration) design.

Post traumatic stress disorder

According to ongoing U.S. Veteran’s Administration (VA) research, among veterans returning from recent conflicts, the rate of PTSD diagnosis ranges from 10 to 18 percent, which incurs a cost of \$4 to 6.2 billion over a two-year period for treatment (Rosenthal *et al.*, 2011). Included within those diagnosed with PTSD are those with additional diagnoses including traumatic limb amputation and mild traumatic brain injury (Dougherty *et al.*, 2010; Rosenthal *et al.*, 2011), which increases the complexity of treatment and design considerations. The secondary effects of PTSD not only spread, but may also be intensified in family settings (Institute for Alternative Futures, 2009).

Symptoms associated with PTSD include intense feelings of fear and anxiety, which may lead individuals with this disorder to avoid people, places, or situations that could cause them to re-experience the trauma (American Psychological Association, 2000). People with PTSD experience self-regulation issues, thus impairing their ability to logically set and achieve goals, to prioritize, and to deal with environmental demands (Tangney *et al.*, 2004). Presenting symptoms of PTSD include thought intrusions, self-absorption, emotional numbing, and hyper-arousal. These can make family and public outings an unpleasant and anxiety-provoking experience for the veteran and their family, leading to activity avoidance. With limited opportunities to seek healthy outlets and the support of others (Hayes *et al.*, 2010), veterans with PTSD and their spouses and partners often report feelings of social isolation. Because veterans are also at significant risk for other mental health issues including depression, substance abuse, self-regulation issues, interpersonal issues and suicide, an interdisciplinary or transdisciplinary collaborative design process that includes contributions from allied and mental health clinicians is important to assure that the needs of this vulnerable population are met.

Addressing the needs through collaborative design

The rehabilitation process requires a dedicated team of clinicians and support staff committed to ensuring a veteran’s recovery. Clinicians are critical for planning and implementing the treatment protocol. Engaging them as part of an interdisciplinary or transdisciplinary team comprised of allied and mental health professionals and designers in the design process is recommended to create effective health care settings.

The tendency in landscape research and design has been to study the “biological, physical, social, and cultural elements of landscape” without the support of other disciplines (Sokols, 2011, p. 1). We propose and illustrate below, that the most effective designs for veterans with PTSD, or any population served in a psychiatric milieu may be achieved through interdisciplinary and transdisciplinary design processes that meld the collective skills and knowledge of allied health, mental health, and design professionals (Table I).

Meaningful and purposeful

Creating environments for veterans to engage in tasks or activities that they want and need to do should be the primary purpose of an interdisciplinary or transdisciplinary design process. Engagement in activities (occupation) develops and maintains self-identity, engenders a sense of purpose, and helps to construct meaningful lives as “[...] life meaning helps us to be well” (Christiansen, 1999, p. 547). Designing for inclusion of meaningful and purposeful activities entails a multidimensional design process that centers upon understanding the user population. To optimize health outcomes for veterans, facility design should support a range of activities including, physical and psychological rehabilitation therapies, athletic training, reestablishment of close social connections similar to those experienced in previous military service, and task- specific vocational activities such as service dog training and farming that rehabilitate or teach new skills for reentry into military service or civilian life. Designing spaces for specific patient populations entails understanding how research can create a scaffolding to support an infusion of meaning and purpose. The support of

Design team members	Professional contribution to design process
Landscape architects	Training in site, hardscape, and planting design Understanding of physical and cultural effects of designed spaces
Allied health professionals (occupational therapy, physical therapy, therapeutic recreation, speech and language therapy, nursing)	Understand human structure and function Identify specific patient needs Recommend spatial features for outdoor physical, psychological, cognitive, sensory, and vocational rehabilitation Optimize use of outdoor environments in meaningful ways
Mental health professionals (psychology, social work, counselling)	Understand psychological processes impacting function Recommend spatial features for outdoor psychological, cognitive, and vocational treatment

Table I.
Design dream team

meaning and purpose includes designing for a sense of control, social support and the experience of nature (Ulrich, 1992) (Plate 1).

Designing for a sense of control

The study of “salutogenesis” examines what causes health and what keeps people healthy (Antonovsky, 1987, 1996; Golembiewski, 2010; Lindström and Eriksson, 2006). The main premise of salutogenesis is a “sense of coherence” (“SOC”), an overarching and fluid representation of confidence (Antonovsky, 1987). Three factors associated with SOC are: a feeling that internal and external life experiences make sense (comprehensible); that life experiences are within attainable limits (manageable); and that life experiences are of worth and value (meaningful) (Antonovsky, 1987; Golembiewski, 2010; Lindström and Eriksson, 2006). While stressors are inevitable, SOC is the “capability to perceive that one can manage in any situation independent of whatever is happening in life” (Lindstrom and Eriksson, 2006, p. 241). SOC allows people to balance myriad ranges of experiences while staying as healthy as possible.

On the other hand, one of the most profound human needs is experiencing a sense of control. Loss of control, a state of imbalance, or unpredictability may lead to or exacerbate depression, anxiety, and heightened sense of pain. Among veterans, a sense

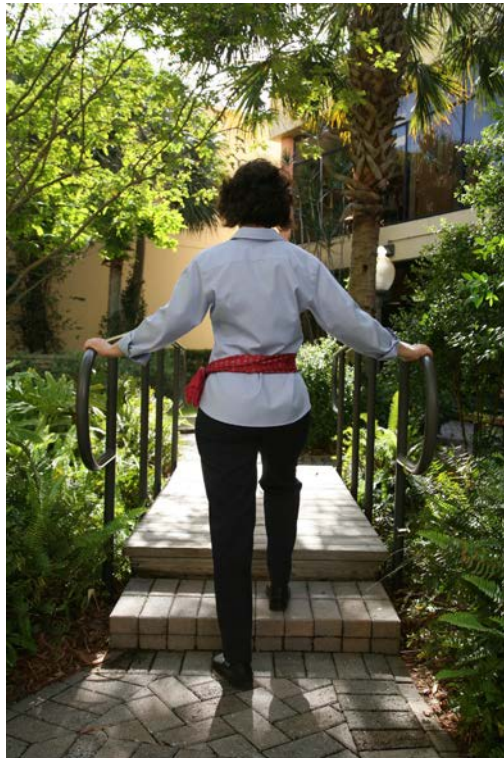


Plate 1.
Placing meaningful and purposeful activities like physical rehabilitation in natural settings reduces stress and improves health outcomes

Source: Photo courtesy of Studio-Sprout, Inc.

of control is critical because the military training that has defined their lives instills preparedness and confidence to address any challenge.

Environmental design features that provide veterans with a sense of control may include: familiarity, reduced perceptual and sensory distortion, avoidance of ambiguity, spaces for self-care activities (Golembiewski, 2010), defensible spaces, clear wayfinding, and choices. We discuss the last three with regard to design of outdoor environments for veterans with PTSD.

Defensible spaces

Newman's (1996) conceptualization of defensible spaces entails restructuring interior and exterior spaces within the built environment so that users can experience a sense of control. For veterans, especially those with severe PTSD, environments must be defensible in order to feel safe and maintain a sense of control, meaning there are no perceived spaces from which a (figurative) sniper might possibly attack. These spaces need to be free of sharp turns, blind corners, and plantings that obscure walkways (Newman, 1996). Spaces that can be readily perceived in their entirety will be more comfortable (Plate 2).

Wayfinding

Outdoor environments must make sense to the user. Cognitive mapping is how people acquire and process information about the features and attributes of the physical environment (Lang, 1987). These mental representations or schema provide clarity or



Source: Photo courtesy of Amy Wagenfeld

Plate 2.
Spaces perceived as
defensible may foster a
sense of control

as Lynch suggested, legibility in understanding and navigating one's physical environment (Lang, 1987). Lynch's three components of environmental images: identity, structure, and meaning factor significantly into wayfinding processes in terms of making places imageable (Lang, 1987). Including representative art or other design features make it easier for users to understand and possibly better connect with the space and feel it is a worthwhile investment of time to be in the space. There is less mental capital expended when something makes sense, thus reducing added stress and perception of uncertainty.

A wayfinding system is an integrated system of coordinated elements, including visible and easy to understand signs, color coding and numbers, clear and consistent verbal directions, consistent written and electronic information, and a legible physical setting (Carpman and Grant, 1993). Golembiewski (2013) suggests, "For best effect, space[s] should be logical, non-repetitive and well marked with measurable objects and function" (p. 15). Visitors tend to move along more integrated routes and routes that have fewer turns from all other routes (Ulrich *et al.*, 2004). These routes and features should be identified when planning facilities and key points marked with signage 300' on center such that the distance between signs does not exceed 300' (Plate 3).



Plate 3.
People feel more personally valued when maintaining a level of independence going about their everyday activities

Notes: Understandable wayfinding is a crucial part of experiencing a sense of control. Clear wayfinding systems have been shown to reduce stress and may allow veterans to better deal with environmental demands, especially if they are learning to use a prosthetic device. Signage colors and icons should be consistent throughout wayfinding materials, including maps and written directions

Source: Photo courtesy of Amy Wagenfeld

Choices

The USA military protocol requires being 10 minutes early to appointments. Paired with lagging physician, therapist, and pharmacy schedules, a veteran can spend large amounts of time waiting. Waiting can result in uncertainty, annoyance, irritability, stress and anger (Taylor, 1994). Waiting rooms with moveable comfortable furniture arranged in small flexible groupings can foster social connections while reducing stress (Ulrich *et al.*, 2004). Seating arrangement deserves careful consideration. Rows of chairs where people cannot comfortably converse face-to-face or lacking personal space may increase stress (Ulrich *et al.*, 2004). Findings from a study at seven outpatient practices at Weill Cornell Medical Center indicate positive correlations between more attractive environments and higher levels of perceived quality, satisfaction, staff interaction and reduction of patient anxiety. Healthcare facilities typically provide some sort of distraction, usually a television and/or magazines in waiting spaces (Becker and Douglass, 2008). These minimal efforts can be supplemented by pleasant stimuli including views of or access to comfortable outdoor areas, patient-education resources, and refreshments. A choice of what to do while waiting provides sense of control and helps to reduce stress and anxiety (Hosking and Haggard, 1991).

Social capital

The capacity of a community to foster the building of networks of connections is called “social capital” and may provide its members with a resource that enhances ability to optimize performance and well-being (*Total Fitness for the 21st Century: Conference Report for Alternative Futures*, 2009). An extensive collection of research links social support to positive outcomes on a variety of illnesses as well as to health behaviors and health outcomes among certain vulnerable populations (Landsdowne, 2011). There is strong evidence that social capital can be fostered and increased by providing relaxing places to sit with others.

Positive social support influences health outcomes in a variety of ways, including improving self-esteem and coping skills, increased knowledge and understanding of available health and support services, and encouraging healthy behaviors (Landsdowne, 2011). Positive social support improves recovery outcomes from severe mental illnesses, including fewer hospitalizations, decreased symptomatology, increased self-esteem, improved social skills and increased satisfaction with health (Cohen *et al.*, 2004). These are important outcomes for veterans with PTSD.

Creating social bonds are important for developing a sense of identity and meaning. Koenen *et al.* (2003) found that veterans who formed social bonds were more likely to be in remission from PTSD, yet veterans experiencing weakening social bonds experienced extreme feelings of isolation and were more likely to experience chronic PTSD. For veterans diagnosed with PTSD, peer support can be a crucial factor in their recovery and assists with suicide prevention.

Positive social support improves health outcomes of people receiving mental health services. Supporters in social support couples report better overall well-being than individuals who are simply givers or receivers of support (Hogan *et al.*, 2002). This finding aligns with the “warrior ethos” of never leaving a fallen comrade, which is the foundation of bonds that are instilled during military training and ensures that fellow veterans are best placed to give real support. Mental health peer supporters experience similar benefits to those of the support receivers including reduction in hospitalizations

and personal growth through increased confidence, coping skill, self-esteem and a sense of empowerment (Solomon, 2004). In accordance with the warrior ethos, social support has the potential to exponentially benefit other veterans when given the opportunity to engage in this type of support system.

Places become meaningful to people because of the physical and emotional connections they experience there (Saar and Palay, 2009). Places also derive meaning for people because of social connections with others in those spaces (Gustafson, 2001). Designing facilities for veterans, especially those with PTSD, that support social connections may foster and reestablish strong ties formed during previous combat missions. Social connections and support may be enhanced through thoughtful design of spaces for casual encounters and programmed activities. Developing these types of spaces in outdoor natural settings strengthens the positive impact.

Inviting outdoor spaces provide opportunities for sharing similar experience, advice, and guidance that can assist recovery. Outdoor spaces can be important means for veterans to tap into the warrior ethos of caring for one another. Special places, such as barbeque pits, basketball courts, and sheltered picnic areas can help to create meaningful relationships with people. Small informal spaces can become meaningful places for veterans to socialize and support their comrades (Plate 4).

An elemental starting point of any space meant to support and promote wellness is the physical and sensory comfort of its users and support for social interaction. Outdoor environments that feel safe, are easily accessible, have comfortable furnishings protected from the elements, provide for privacy, and include a variety of types of spaces or adaptable features for people to seek what best suits them will encourage people to come outside and socialize (Picker Institute and Center for Health Design, 1999). Carefully designed outdoor areas foster both a sense of control and



Plate 4.
Providing protection from the elements and a transition from indoors are important qualities of comfortable outdoor spaces that foster social support

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social support by offering adaptable alternatives to indoor spaces (choices) and pleasant places for social connection and recreation in ways that are “enjoyable and sustainable” (Dustin *et al.*, 2010, p. 6). Facilities that support users and uses have the potential to strengthen relationships and build community (Kaplan *et al.*, 2007), both of which are crucial for veterans’ road to wellness.

The experience of nature

Incorporating nature into the design of healthcare settings can complement medical intervention and help improve health outcomes (Dustin *et al.*, 2010). “Healing gardens figure in a broader transformation of the places where healing occurs, a transformation spurred on by recognition of the importance of place characteristics for health care” (Hartig and Cooper-Marcus, 2006, p. 537). This important idea is validated through quantitative research findings (Herzog *et al.*, 2003; Schweitzer *et al.*, 2004; van den Berg and Custers, 2011). The desire for veterans to socialize outdoors by barbecuing, exercising, or hanging out is backed by a growing body of research indicating that experiencing the outdoors in natural settings increases socialization and improves overall health outcomes (Pretty *et al.*, 2005; Waliczek *et al.*, 2005).

Including meaningful and purposeful activities such as exercise, social, and vocational pursuits within a natural context may actually amplify their beneficial effects. Studies of positive health outcomes following outdoor exercise and gardening in natural environments as well as the benefits of bringing nature inside have been reported (Table II).

Passive spaces in nature can also be an effective backdrop for treatment of one of the hallmark symptoms of PTSD: “attentional fatigue”. Attention restoration theory (ART) (Kaplan, 2001; Kaplan and Kaplan, 2003, 1989) proposes that the negative and enduring effects of attentional fatigue that results from performing prolonged mental and physical tasks requiring focused attention are best ameliorated through engagement and/or connection with natural settings. Mental or attentional fatigue can lead to decreased productivity and accuracy, impulsivity, anger, and careless behavior (Kaplan and Kaplan, 1989) as well as a general decline in health (Antonovsky, 1987) (Plate 5).

Cognitive behavioral therapy (CBT) (Rosenthal *et al.*, 2011) emphasizes thinking as the basis for how one feels or acts. Even if a situation cannot change, through CBT, a person learns to think about or respond to situations in a more effective way. Because positive results are realized when combining traditional cognitive-based therapies with therapeutic gardening activities for adults with stress-related disorders (Eriksson *et al.*, 2010), an important consideration for collaborative design teams is to implement features that encourage and facilitate combining CBT with therapeutic outdoor activities.

Zones of challenge

While a natural setting has a demonstrable influence on health outcomes, the spatial relationships of therapeutic environments may also play a role. According to a National Academy of Sciences report, the only effective treatment for combat related PTSD is graded exposure therapy (Rosenthal *et al.*, 2011). In this type of treatment a person with PTSD is gradually and in a step-wise fashion, re-introduced to stimuli that are the root cause of the trauma. Designing outdoor environments as “zones of challenge”, in which activities suitable for beginning stages of psychological and

Authors	Findings
Herzog <i>et al.</i> (2003)	Socializing and exercising outdoors reduces stress on the autonomic nervous system, improves attention and sense of self-satisfaction, diminishes aggressive behavior, and improves positive social interaction
Kuo and Sullivan (2001a, b)	Levels of aggression are significantly lower when nature is present outside of apartments as compared to no nature. There are fewer reports of fear, incivility, less violent behavior, and reported crimes for those living in greener spaces
Gonzales <i>et al.</i> (2009)	Mental health benefits are associated with nature-based therapeutic activities
Gonzalez <i>et al.</i> (2010)	Reduction in depression, rumination, and an increase in attention of 28 "patients with [...] major depression, dysthymia, or depressive phase of bipolar II disorder and a Beck Depression (BDI) score of [\geq]15" (p. 2004) was noted following engagement in nature-based activities. A series of regular follow-ups for three months showed persistent results
Bodin and Hartig (2003)	Moderating effects of environments, specifically attentional and emotional regulation during a run in a park or urban setting suggested that runners experienced a heightened sense of physiological restoration following a run in a park versus urban environment. This positively correlates the moderating effects of psychological well-being with physical exercise done in natural environments
Hamer <i>et al.</i> (2009)	Exercising for a minimum of 20 minutes a week, including gardening was associated with better mental health and reduced risk of cognitive decline
Jonasson <i>et al.</i> (2007)	Results of patients' experiences of working in a training garden after neurological damage revealed that training garden activities were beneficial and productive. Results may benefit clinical practice and apply to other groups of patients, but further research is needed
Park <i>et al.</i> (2010)	<i>Shinrin-yoku</i> , a term for taking in the forest atmosphere or forest bathing was coined by the Japanese Ministry of Forestry and Fisheries in 1982. For the 280 participants, walks in a forest area (<i>shinrin-yoku</i>) led to lower cortisol levels, lower blood pressure, greater parasympathetic nerve activity and lower sympathetic nerve activity as compared to walks in an urban area
Lohr and Pearson-Mims (2000)	Enhancing indoor environments with plants improved tolerance to aversive stimuli. Participants were willing to keep their hand submerged in a bucket of ice water for five minutes when there was a plant in the room versus no plant versus a Table lamp and ambient decorations

Table II.
Health benefits
associated with
interaction with nature



Source: Photo courtesy of Amy Wagenfeld

Plate 5.
A variety of plants and
water features provide soft
fascination, which reduces
attentional fatigue

physical rehabilitation are sited near barracks complements this treatment approach. Each successive zone in the outdoor environment provides increasingly challenging activities the further one moves away from a therapy clinic or barracks. The three elements of SOC: comprehensible, manageable, and meaningfulness (Antonovsky, 1987) factor significantly into the “zones of challenge” concept. Mastery from one zone to the more complex next zone entails an internal and external feeling that it makes sense to do so, is within reasonable limits of one’s mental and physical capabilities, and is most of all, a meaningful and purposeful endeavor.

“Adaptation level (AL)” is the concept that one’s comfort level to stimulation changes as a result of experiences and enables a person to experience well-being and to display adaptive behaviors (Labouvie-Vief, 2009). Lawton and Nahemow (1973) suggested that adaptive behaviors and sense of comfort are governed by personal competence and the complexity of the environment. Like SOC, AL can be extrapolated to the concept of “zones of challenge”. Crossing from one ‘zone’ to another more distal zone entails a certain degree of stress and increasing levels of competency, which then manifest as improved tolerance and adaptation to increasingly complex psychological and physical challenges within outdoor environments. Stress may in fact provide a salutogenic effect if well designed environmental supports are established (Antonovsky, 1987). Environments supportive of

the just right challenge, neither lack challenge or are overly stimulating (Lawton and Nahemow, 1973) and provide the optimal opportunity to enhance SOC as well as AL.

Creating inviting physical environments in which innovative therapies can be conducted holds potential to increase the likelihood that veterans with PTSD will find opportunities to heal even without seeking conventional treatment. Proximity and access to available treatment options in outdoor environments may also encourage veterans who reject traditional treatment because of perceived stigma, fear of future employability, negative effects on career advancement, and lack of adequate care by trained clinicians (Hoge *et al.*, 2004). Relaxation, mainly through transcendental meditation (TM), is understood to decrease blood pressure and stress response (Rosenthal *et al.*, 2011). It is simple to learn and can be practiced anywhere and does not carry the stigma of traditional therapy approaches (Rosenthal *et al.*, 2011). Experienced TM practitioners reporting a carry-over of transcendental experiences in sleeping and waking states demonstrated increased EEG amplitude and organization associated with TM practice during choice contingent negative variation tasks as compared to two other participant groups (Tecce *et al.*, 2002). Rosenthal *et al.* (2011) evaluated TM as a means to counteract the hyper-arousal response associated with PTSD via the Clinician Administered PTSD Scale (CAPS), viewed by the VA as the gold standard for assessment of PTSD for military veterans and civilian trauma veterans. After 12 weeks of twice daily, 20-minute meditation sessions, the authors concluded, "...results of this small, uncontrolled pilot study found that TM may have helped to alleviate symptoms of PTSD and improve quality of life in veterans with combat related PTSD" (Rosenthal *et al.*, 2011, p. 629).

Virtual reality exposure (VRE) therapy has also shown promise as an effective treatment for PTSD, especially for those with a long history of it. VRE recreates a computer simulation of a traumatic environment through which patients navigate at their own pace (Ready *et al.*, 2010), thereby increasing the patient's sense of control.

Application of these innovative therapeutic approaches to an appropriately designed outdoor setting or an indoor setting enriched with plants is a logical next step in the evolution of treatment protocols. According to the DSM-IV TR (American Psychological Association, 2000), there are six criteria associated with a diagnosis of PTSD. They are Criterion A: stressor; Criterion B: intrusive recollection; Criterion C: avoidant/numbing; Criterion D: hyper-arousal; Criterion E: duration; and Criterion F: functional significance. The incorporation of elements in a therapeutic setting to address these criteria, for established or innovative therapy, is the design challenge. Design features that may be helpful are illustrated below (Table III).

Conclusion

Care for returning veterans present distinct challenges for the VA medical system that is best met by application of an interdisciplinary or transdisciplinary collaborative design team. Creating optimal environments that specifically address the needs of veterans with PTSD has tremendous potential to improve health outcomes. Strengthening a veteran's sense of control and fostering social support through provision of meaningful and purposeful activities in well-designed natural settings with appropriate adjacencies sets the stage for maximum benefits from healthcare settings. Programs and spaces sited at facilities providing opportunities to participate in meaningful outdoor activities such as service dog training, sustainable farming, and physical and psychological rehabilitation in a naturalistic setting have tremendous potential to improve health outcomes for veterans diagnosed with PTSD.

Criteria	Concept associated with treatment	Physical manifestation
Stressor	AL and sense of control	Public spaces providing opportunities for graded social challenges
Intrusive recollection	Nature and positive distractions	Water feature, wildlife plantings
Avoidant/numbing	Soft fascination	Long range view of soft landscape
Hyper-arousal	Social support	Picnic spaces, smoking areas
Duration	Controlled graded stressors	Physical challenge course
Functional significance	Meaningful and purposeful activities	Service dog training center, farming, music practice

Table III.
PTSD diagnostic criteria
and recommended design
features

It is critical that practitioners from multiple disciplines including, allied health, mental health, and design professions be brought together from the outset to establish an interdisciplinary or transdisciplinary collaborative design team to create and implement treatment programming and infrastructure. This provides significant advantages, including an inclusive diversity of perspectives, an authentic understanding of patient and staff needs, improved communication, and more insightful design approaches. Such a structure is the most responsible way to ensure that designs at these facilities meet and exceed the unique needs of this vulnerable and deserving population.

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